



City of Cambridge

410 Academy Street
Cambridge, Maryland 21613
(410) 228-4020

CLOSED SESSION AGENDA

Monday, February 23, 2026
Council Chambers
305 Gay Street
Cambridge, MD 21613
5:15 pm

Notice to Citizens: City Council meetings are open to the public unless otherwise allowed by law. The purpose of this meeting is for the Council to hold a closed session pursuant to Md. Code Ann, General Provisions § 3-305(b)(1) to discuss personnel matters affecting specific individuals over whom the Council has jurisdiction. The majority of this meeting will be held in closed session; however, citizens may observe the open session portions of the meeting in person at Council Chambers or online at [Town Hall - Town Hall Streams](#). The regular Council meeting will begin at 6:00 p.m.

Agenda

- 5:15 pm
1. Meeting called to order.
 2. Motion to hold a closed session pursuant to Md. Code Ann., General Provisions § 3-305(b)(1) to discuss personnel matters affecting specific individuals over whom the Council has jurisdiction.
 3. Reconvene in Open Session
- 5:55 pm
4. Adjourn

City Council meetings are conducted in open session unless otherwise indicated. Pursuant to the Maryland Open Meetings Act, all or a portion of this meeting may be held in closed session by vote of the Commissioners. Please note that the order of agenda items is subject to change and that meetings are subject to audio and video recording.



City of Cambridge

410 Academy Street
Cambridge, Maryland 21613
(410) 228-4020

CITY COUNCIL MEETING AGENDA

Monday, February 23, 2026

Council Chambers

305 Gay Street

Cambridge, MD 21613

6:00 pm

Notice to Citizens: City Council meetings are open to the public unless otherwise allowed by law. Citizens may also observe the meeting online at [Town Hall - Town Hall Streams](#). During any public hearings, citizens may comment in person, by telephone at (410)-228-5808, or online by joining via Microsoft Teams, <https://teams.live.com>, selecting “Join a Meeting,” and entering the meeting ID (231 984 238 687 92) and password (ip3kq2FH).

Invocation 6:00 pm

Mayor to Convene Council in Regular Session 6:05 pm

Agenda

1. Commissioners to approve or amend agenda as presented. 6:06 pm

Presentations from Approved Guests

2. Proclamation and Presentation of the Key to the City in Recognition of Black History Month, Mayor Lajan Cephas Bey

a. Honoree: Rev. Charles T. Cephas Sr., Former Mayor of Hurlock

Consent Agenda 6:11 pm

3. Meeting Minutes

a. November 24, 2025, Regular Session

b. December 8, 2025, Regular Session

- c. January 12, 2026, Regular Session
 - d. January 28, 2026, Special Meeting
4. Captain Antonie Patton of the Cambridge Police Department is seeking to hold the Cambridge Police Annual Easter Egg Hunt on Saturday, March 28, 2026, from 11:00 a.m. to 1:00 p.m. at Gerry Boyle Park at Great Marsh, with a rain date of Saturday, April 4, 2026. Please see the attached application for additional details.
5. Jason Chance, TCR Event Management, is seeking to hold the following events:
- a. Six Pillars Century Bike Ride
On Saturday, May 9, 2026, from 7:00 a.m. to 4:00 p.m. at Gerry Boyle Park at Great Marsh. The applicant is requesting the use of the park for event operations. Please see the attached application and course map for additional details.
 - b. Cambridge Crab Run
On Sunday, May 10, 2026, from 7:00 a.m. to 11:00 a.m. at Gerry Boyle Park at Great Marsh. The applicant is requesting the use of the park for event operations, a noise variance, and City services. Please see the attached application and course map for additional details.
6. Lidia Fluhme, President of Gran Fondo New York, is seeking to hold the GFNY Race, Cambridge Maryland 2026 on Sunday, October 4, 2026, from 7:00 a.m. to 2:00 p.m. at the corner of Race Street and Cedar Street (City Lot). The request includes a road closure on Race Street between Cedar Street and Washington Street from 3:30 a.m. to 3:00 p.m. Set-up for the event will begin on Wednesday, September 30, 2026. The applicant is also requesting the use of City space, City services, and a noise variance. Additional details can be found in the application, site map, and course of operations.

Ordinances for First Reading

Ordinances for Second Reading, Public Hearing, and Council Action

Old Business

6:12 pm

7. Reconsideration of Ordinance No. 1262, Following Mayor's Veto
- a. Discussion of Mayor's Veto
 - b. Council Action

New Business

6:42 pm

8. FY 2027 Congressional Delegation Funding Requests, Resolution 25-02
 - a. **Council Agenda Report from Grants Coordinator, Tara Felts**
 - b. Council Action, Request for Approval

9. Public Safety Building, HVAC Replacement, Informational Purposes Only
 - a. **Council Agenda Report from Director of Public Works, Wayne Suggs**
 - b. Jamie Raithel, EBL Engineering

10. Trenton Street Pump Station
 - a. **Council Agenda Report from Environmental Program Director. Drew Koslow**
 - b. Council Action, Request for Approval

Upcoming Meetings

-  Board of Appeals meeting will be held on Tuesday, February 24, 2026, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613

-  The Mayor and Commissioners will be attending the CWDI Quarterly Partner Update Meeting on Thursday February 26, 2026, at 5pm, County Council Chambers, Room 110, 501 Court Lane, Cambridge Maryland 21613. This meeting will be open to the public and will also be streamed live on Town Hall Streams. [Stream Video - Town Hall Streams](#)

-  A Work Session will be held on Monday, March 2, 2026, at 5:30 PM in Council Chambers, 305 Gay Street, Cambridge, Maryland 21613.

-  Planning & Zoning meeting will be held on Tuesday, March 3, 2026, at 6 pm at Council Chambers, 305 Gay Street, Cambridge, MD 21613

-  Mayor's Accessibility Committee Meeting will be held on Thursday March 5, 2026, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613

-  The Mayor and Commissioners will be attending the Rescue Fire Company (RFC) Annual Banquet, scheduled for Saturday, March 7, 2026. No business of the Council will be conducted.

 City Council Regular Meeting – March 9, 2026, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613

Public Comment 7:15 pm

City Manager Comments 7:20 pm

11. Administrative Report from City Manager Glenn Steckman

12. Lead Hazard Reduction Capacity Building Initiative, Quarterly Report, Informational Purposes Only

a. **Council Agenda Report from Healthy Homes Program Manager, A.C. Alrey**

Council Comments 7:45 pm

Continuation of Closed Session (if necessary) 8:00 pm

Reconvene in Open Session (if a Closed Session is held) 8:20 pm

Adjourn 8:22 pm

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The City of Cambridge, Maryland



Proclamation

A PROCLAMATION HONORING REV. CHARLES T. CEPHAS, SR.

WHEREAS, Rev. Charles T. Cephas, Sr. is a lifelong Eastern Shore leader whose public life reflects deep commitment to community, advocacy, faith, and service; and

WHEREAS, Rev. Cephas made history as one of the first Black students to graduate from the then-newly desegregated Cambridge High School in 1967; and

WHEREAS, Rev. Cephas' excellence in track during his high school athletic career brought honor to Cambridge and Dorchester County, setting records which remain unbroken to this day; and

WHEREAS, according to the Maryland Public Secondary Schools Athletic Association (MPSSAA) Spring Record Book, Rev. Cephas, representing Cambridge High School, set a State record in the 100-yard dash with a time of 10.1 (9.6) seconds in 1967, is recognized as a standout performer in Maryland high school track history, was nicknamed "White Lightning," and is compared among the great athletes in Maryland history; and

WHEREAS, according to family and community accounts, Rev. Cephas competed against – and bested – individuals who later became Olympic and NFL greats; and

WHEREAS, after Cambridge High School chose not to sponsor his Olympic Trials/relay opportunity, Rev. Cephas' family believed in him and self-funded the trip - demonstrating the faith, sacrifice, and determination that often stand behind greatness; and

WHEREAS, Rev. Cephas devoted 26 years to elected service and leadership in the Town of Hurlock, serving more than two decades on the Town Council, including a term as Council President, before making history as Hurlock's first Black Mayor in 2021; and

WHEREAS, Rev. Cephas' leadership has been rooted in love for people, coalition-building, and practical progress founding Ministers and Citizens for Change to unite ministers and residents in advocacy for positive change; and

WHEREAS, Rev. Cephas' public service has included courageous advocacy for dignity and humane treatment within the justice system, including opposing a Queen Anne's County chain-gang policy that critics described as cruel and reminiscent of slavery; and

WHEREAS, beyond public office, Rev. Cephas has served Dorchester County in multiple roles, including as a realtor, mortgage broker, and police officer, demonstrating a life built on discipline, responsibility, and care for others; and

WHEREAS, Rev. Cephas embodies the enduring truth of holding fast to God's unchanging hand, showing that when others choose not to invest in your potential, you must stand in faith and invest in yourself, and while he may not have carried a "prestigious name," he has walked with God's hand upon his life, and that has proven more than enough; and

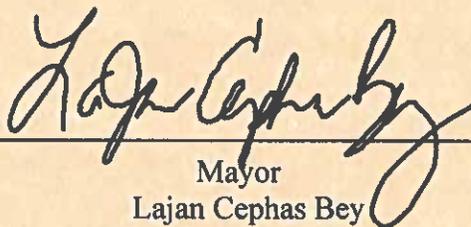
WHEREAS, Rev. Cephas is Black history in real time, and his life and leadership are part of the living story honored during MD250, reminding Maryland that progress is carried forward by people willing to serve, build, and stand firm with courage and faith; and

WHEREAS, Rev. Cephas' life stands as proof of resilience – tested, but never broken.

NOW, THEREFORE, I, Mayor of the City of Cambridge, Maryland, do hereby proclaim Rev. Charles T. Cephas, Sr. as a hometown hero of Cambridge and, in grateful appreciation for his lifetime of faith, service, leadership, and resilience, do hereby present him with the Key to the City of Cambridge as a symbol of his completed race to service.

Given Under Our Hands and the Seal of the City of Cambridge, Maryland
This 23rd day of February, Two Thousand Twenty-Six





Mayor
Lajan Cephas Bey



**City of Cambridge
Council Meeting Minutes, Regular Session
Council Chambers – 305 Gay Street
November 24, 2025, 6:00 PM**

Council Present: Mayor Lajan Cephas Bey
Commissioner Brett Summers – Ward One
Commissioner Shay Lewis-Sisco – Ward Two
Commissioner Frank Stout- Ward Three
Commissioner Spuddy Cephas, Commission President, Ward Four
Commissioner Brian Roche- Ward Five, Virtual

Also Present: City Manager Glenn Steckman
Assistant City Manager Brandon Hesson
City Attorney Patrick Thomas
Chief of Police of Police Justin Todd
Finance Director Perry Peregoy
Director of Planning Brian Herrmann
Housing Programs Manager Ed Crosby
Housing Programs Specialist Doris Mason
I.T. Manager Dale Price
Fire Chief Brad Walters, Virtual

Pastor Wayne Stone, a local pastor from Cambridge, led the invocation and expressed his gratitude to the Council for the invitation.

Commissioner Summers then led the Pledge of Allegiance.

Agenda

Commission President Spuddy Cephas made a motion to add an item to the closed session under Md. Code Ann. §3-305(b)(2), which allows discussion to protect the privacy or reputation of individuals regarding a matter not related to public business. City Manager Glenn Steckman requested that Council also include Md. Code Ann. §3-305(b)(14), which permits discussion before a contract is awarded or bids are opened on matters directly related to negotiating strategy or the contents of a bid or proposal, if public disclosure would adversely impact the public body's ability to participate in the competitive bidding process. Commission

President Cephas amended his motion to include this section, and the motion was seconded by Commissioner Lewis-Sisco. The motion passed with a 5-0 vote. Motion made by Commissioner Lewis-Sisco moved to approve the agenda as amended, and Commissioner Stout seconded the motion. The motion was approved with a 5-0 vote.

Presentations from the Approved Guests

David King and Kate Gibson gave a PowerPoint presentation on *Blackwater Rising*, an organization that supports Cambridge residents in growing and sharing fresh food while promoting food self-sufficiency. Through education and partnerships, the organization transforms underutilized spaces into productive gardens. Commissioner Summers thanked Ms. Gibson and offered remarks regarding a potential site for a future garden. The Council expressed appreciation to Ms. Gibson for her ongoing contributions to the community.

Consent Agenda

3. Sakina Cropper, District Executive for Scouting America-Delmarva Council is seeking to hold “CubScout Mobile” on Saturday, April 11, 2026, from 9 a.m. to 12:30 p.m. on Court Lane. Road closure on Court Lane from 9 a.m.-12:30 p.m. Rain date of Saturday, April 18, 2026. Please refer to application and map for additional details.

Commission President Spuddy Cephas moved to adopt the consent agenda as presented. Commissioner Stout seconded the motion, which passed with a 5–0 vote.

Ordinances for First Reading Ordinances for Second Reading

ORDINANCE NO. 1259 AN ORDINANCE OF THE COMMISSIONERS OF CAMBRIDGE, MARYLAND DECLARING CERTAIN REAL PROPERTY OWNED BY THE COMMISSIONERS OF CAMBRIDGE LOCATED AT 632 DOUGLAS STREET, SHOWN ON TAX MAP 302, GRID 16 AS PARCEL 2622, LOT 4, TAX IDENTIFICATION NO. 07-168365 TO BE SURPLUS AND NOT NEEDED FOR ANY PRESENT OR FORESEEABLE PUBLIC USE, APPROVING THE SALE OF SUCH PROPERTY TO MYISHA JOHNSON FOR THE SUM OF \$225,000, AND AUTHORIZING THE MAYOR AND THE CITY MANAGER, OR SUCH OTHER CITY OFFICIALS AS MAY BE APPROPRIATE UNDER THE CIRCUMSTANCES, TO EXECUTE ALL DOCUMENTS AND TAKE ANY AND ALL OTHER ACTION NECESSARY TO EFFECTUATE SUCH SALE; PROVIDING THAT THE TITLE OF THIS ORDINANCE SHALL BE DEEMED A FAIR SUMMARY AND GENERALLY RELATING TO THE SALE OF SURPLUS REAL PROPERTY IN THE CITY OF CAMBRIDGE

Ordinance No. 1259 was read for Second Reading by City Attorney Patrick Thomas.

Commissioner Lewis-Sisco made a motion to enter into a public hearing, which was seconded by Commission President Spuddy Cephas. The motion carried with a 5–0 vote.

No one from the public commented.

Commission President Sputty Cephas made a motion to close the public hearing, which was seconded by Commissioner Stout. The motion carried with a 5–0 vote.

Before Council proceeded with action, Housing Programs Manager Eddie Crosby provided remarks regarding a promissory note. He explained that he has been working with the City Attorney following guidance from the State, which provided instructions and a template for the note. The State recommended using an unsecured promissory note, similar to what is used in the City of Baltimore, and the City Attorney adapted the template accordingly. Mr. Crosby emphasized that Council has an updated copy and noted that there is no substantial change to how the program operates. City Attorney Patrick Thomas confirmed that a promissory note was previously included and clarified that the only change is that the note is now unsecured. He explained that securing the note against the property could create complications. Mr. Thomas and Mr. Crosby continued to clarify this matter for Council.

Commissioner Lewis-Sisco made a motion to adopt Ordinance No. 1259 with one amendment to include the adoption of the unsecured promissory note. The motion was seconded by Commission President Sputty Cephas, who expressed excitement about finalizing the first contract and moving forward, and congratulated Ms. Johnson. Mayor Lajan Cephas Bey and Commissioner Lewis-Sisco also offered their congratulations. The motion passed with a 5-0 vote.

Old Business
New Business

RESOLUTION NO. 25-14 A RESOLUTION OF THE COMMISSIONERS OF CAMBRIDGE, MARYLAND REQUESTING THE COUNTY COUNCIL OF DORCHESTER COUNTY TO ESTABLISH A PROPERTY TAX SETOFF FOR TAXPAYERS WITHIN THE CITY OF CAMBRIDGE TO ADDRESS DUPLICATION OF SERVICES AND PROGRAMS BETWEEN THE CITY AND DORCHESTER COUNTY, MARYLAND.

Resolution 25-14 was read by City Attorney Patrick Thomas.

Commissioner Lewis-Sisco moved to adopt Resolution 25-14. Commission President Sputty Cephas seconded the motion. The Council opened the floor for discussion. Commissioner Summers stated that, as noted in his prior comments, he would like to remove percent boundaries. He said that, based on remarks from Finance Director Perry Peregoy, additional work remains to be done. Commissioner Summers noted he would not want to provide the County with parameters that may need to be exceeded. Otherwise, he indicated his agreement with the resolution. Commissioner Lewis-Sisco stated that, after hearing Commissioner Summers' perspective, she would like to thank Mayor Lajan Cephas Bey for taking the lead in implementing this resolution. Commissioner Lewis-Sisco requested to withdraw her original motion and amend it to include the removal of the percentage. Mayor Lajan Cephas Bey provided an explanation regarding why the percentage was initially included.

Commission President Sputty Cephas seconded the motion for discussion. He asked for clarification on whether the language should be removed from the last sentence of Item One while keeping it in the recitals, rather than the other way around. City Attorney Patrick Thomas responded to the question. Commissioner Stout stated that, from his perspective, he agrees with the Mayor's comments about approaching this in partnership. The motion carried with a 5-0 vote.

Commission President Sputty Cephas made a motion to adopt Resolution 25-14 as amended, which was seconded by Commissioner Lewis-Sisco. The motion carried with a 5-0 vote.

Meetings

-  Strategic Planning Meeting – Monday, December 1, 2025, 5:30 p.m. at Council Chambers, 305 Gay Street, Cambridge, Maryland 21613
-  Planning & Zoning meeting will be held on Tuesday, December 2, 2025, at 6 p.m. at Council Chambers, 305 Gay Street, Cambridge, MD 21613
-  Mayors Accessibility Committee Meeting will be held on Thursday, December 4, 2025, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613
-  City Council Regular Meeting – Monday, December 8, 2025, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613
-  Historic Preservation meeting will be held on Wednesday, December 17, 2025, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613
-  Traffic & Safety meeting will be held on Thursday, December 18, 2025, at 1 p.m. (Virtual Meeting) [Join the meeting now](#) Open to the Public.
-  CWDI Board Meeting will be held on Thursday, December 18, 2025, at 4 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613
-  Special Meeting will be held on Monday, December 22, 2025, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613

Public Comment

Morgan Cephas (Cambridge, MD) expressed concerns regarding bullying in Dorchester County schools. She stated that her daughters experienced bullying for three years in middle school. Despite filing bullying reports, contacting the police, and taking other steps to prevent harassment at school and at home, she reported that no effective action was taken. Ms. Cephas urged that stronger measures be implemented to address bullying among students in the county.

LaKeisha Graves (Cambridge, MD) On October 22, she and her daughters were attacked by several middle school students under the direction of a high school student. Ms. Graves emphasized that they are not the only victims of this group, as additional community members have come forward with similar reports. She also expressed concern that emergency responders took more than ten minutes to arrive, which she stated is unacceptable. Ms. Graves stressed that action must be taken to address this issue and prevent future incidents.

Ray Dowling (Stone Boundary Rd.) prepared and read a letter concerning Resolution 25-13, which was passed at the previous meeting. In the letter, he referenced a statement made by the Mayor. He noted that he was unable to attend the public hearing due to being away and also missed the October 27 meeting. He expressed a desire for greater visibility of such resolutions and encouraged more opportunities for public input in the future.

Resident (Cambridge MD) calling in about the recent incident and requested information on the measures being implemented to prevent a recurrence.

Donald Simon (Leonards Lane) shared that he moved to the area two years ago to be closer to his granddaughters in Easton. After reading about the recent assault incident, he expressed concern about safety in the community. He stated that his family had considered relocating to Cambridge but questioned whether he would want his grandchildren in this type of environment. Mr. Simon, who is active in the community, emphasized his deep concern regarding this matter.

LaShon Foster (Terrapin Circle) spoke about a local youth football group and their recent achievements. She noted that the 13-U team won the Bayside Conference and then traveled to New Jersey, where they captured the East Region title. The team will now compete in the National Championship in Florida from December 6–13 against teams from across the United States. Mrs. Foster shared that other cities, such as those in New Jersey, have recognized similar accomplishments by presenting citations to coaches and players. She requested that the City consider issuing citations to the 13-U team and their coaches for their hard work and positive contributions to the community. Additionally, she shared a personal story about her grandson, who has special needs and is unable to play sports, but was included by the coach this year as part of the team, which she described as a meaningful and inclusive gesture.

Laurel Atkiss (High Street) invited everyone to visit the Train Garden, noting that it now features a new layout, and wished everyone a Happy Thanksgiving week. She expressed concern about the ongoing difficulty in getting information out in time for all interested parties to participate in meetings. Ms. Atkiss stated that it is disheartening to hear conversations, particularly those involving religion when individuals who are not present are assumed to have certain opinions, emphasizing that such discussions are dangerous, disrespectful, and unacceptable. She noted that the most significant takeaway from the last meeting was a call for unity; however, she observed that unity was not demonstrated on a particular subject because proposed amendments were ignored. She stressed that individuals had every right to make those amendments and that such dialogue was welcomed and deserved. Ms. Atkiss acknowledged the difficulty of sitting at the table and being the target of anger from others, sharing that she has experienced this herself. Nevertheless, she emphasized that it is the responsibility of elected officials to stand up to such behavior and to represent their constituents especially when those constituents cannot be present to speak for themselves.

Kishma Brown (Audubon Court) is new to Cambridge and has been living here for just over a year after previously residing in the District of Columbia. She was deeply saddened to hear about the recent attack that took place. Ms. Brown would like to know what resources are available for children in the schools. She is considering becoming a substitute teacher at the

middle school and noted that she realizes the world has changed, emphasizing the need for more guidance and support for today's youth. She thanked Council as she believes they are doing a wonderful job.

Lauren Mross (Belvedere Avenue) expressed her appreciation for the Council's hard work and dedication to improving Cambridge. She noted her involvement in several local nonprofits, including Blackwater Rising, which presented earlier in the meeting. Cambridge is very important to her, and she actively participates in local politics and attends Council meetings. Ms. Mross shared that the invocation at the beginning of meetings discourages her from attending regularly. She echoed Ms. Atkiss's comments that these meetings are for all citizens and should not create barriers to participation or comfort. She emphasized that the principle of separation of church and state is not intended as a statement against faith, but rather as a commitment to inclusion, fairness, and ensuring everyone feels welcome and comfortable being involved.

Christine LaMonica (Cambridge, MD) speaking as a community member and parent, expressed concerns about recent events in our community. She emphasized that consequences and accountability are necessary. After watching the video, she felt the same concern and outrage that many others likely experienced, but also a deep sense of sadness that preteens and teens continue to resort to violence.

City Manager Comments

City Manager Glenn Steckman stated that he would ask Dale Price, I.T. Manager, to present his report first. Mr. Price provided updates on cameras, fiber connections, building access control, Active Directory, OneDrive, and SharePoint. Council members posed a few questions regarding audio quality when attending meetings virtually.

City Manager Glenn Steckman stated that he distributed to Council a list of capital projects currently in progress, as well as projects for which the City is seeking grant funding. He noted that this list does not include certain grants, such as those related to the Police Department. Mr. Steckman recognized the Police Department for preparing Thanksgiving dinners for the community and asked Chief Todd to provide a brief report. Chief Todd shared that the Cambridge Police Department (CPD) met with Ms. Graves to listen to and better understand what occurred. Additionally, the Mayor and Chief Todd met with Superintendent Dr. Thompson to discuss the possibility of installing monitors on school buses. Mr. Steckman clarified that the public schools are a County responsibility under the way government works in Maryland. He also noted that the City currently funds a School Resource Officer at a cost of over \$100,000 annually. Mr. Steckman emphasized that both he and Police Chief Todd maintain an open-door policy for anyone wishing to speak with them. He added that he is in the office on some Saturdays to be available to the public.

Mayor and Commissioners' Comments

Commissioner Summers, Ward One, reported that he recently attended the National League of Cities (NLC) City Summit in Salt Lake City along with Commissioner Lewis-Sisco and

Commission President Sputty Cephas. He stated that these conferences are valuable for Commissioners to learn what other cities are doing. Commissioner Summers highlighted two key takeaways from the event. First, he attended a homelessness seminar and obtained useful resources, which he plans to share with Valerie Davis and Eric Sanner, who lead the temporary shelter initiative in Cambridge. Second, while visiting vendor exhibits, he learned about a company that offers survey services for municipalities. For approximately \$10,000, the vendor provides an app that residents can download to participate in surveys, allowing the City to conduct six or seven surveys per year. Commissioner Summers suggested that this technology would be a great way to gather community feedback on important issues.

Commissioner Lewis-Sisco, Ward Two, congratulated the 13-U team on their accomplishment as they prepare to head to Florida. She also recognized the 13-U cheer team, who recently won their competition in Baltimore and will be heading to Ocean City on December 6th. She echoed Commissioner Summers' remarks about their recent trip to National League of Cities in Salt Lake City, noting that she attended several sessions focused on community building and inclusion. Commissioner Lewis-Sisco shared that every time she attends conferences, her goal is to bring back valuable resources for the community. She emphasized that when she ran for office, it was not as a politician but as a community leader with a heart to help. Commissioner Lewis-Sisco highlighted one session that impressed her at the NLC conference called "Just Served." This initiative is designed to bring the community together through service. She also congratulated Mrs. Johnson on becoming a homeowner. Lastly, she asked everyone to keep the Cole and Brook families in their prayers. The community lost a beloved Dorchester County educator and Union President today who made incredible contributions to this community.

Commissioner Stout, Ward Three, stated that Commissioner Lewis-Sisco's comments were spot-on and expressed that she delivered them very well. He wholeheartedly echoed her remarks.

Commission President Sputty Cephas, Ward Four, reported that he also attended the National League of Cities (NLC) Conference and brought back valuable information. However, due to technical issues with his computer, he was unable to present all the materials he had prepared. He echoed Commissioner Lewis-Sisco's comments regarding community building. As the youngest member of the Council, President Cephas noted that he spends significant time in local schools engaging with youth. He participates in career day at the high school each year, representing his employer, and has real-life conversations with students about their future. Commission President Sputty Cephas stated that the community should work together to find a solution. He expressed appreciation for individuals coming together but encouraged everyone to attend County Council meetings and voice similar concerns, as well as participate in Board of Education meetings. He emphasized that the City could collaborate with the County Council. He noted that when the recent situation occurred, Mayor Lajan Cephas Bey responded immediately by contacting him, the Police Chief, and others to work toward a solution. She also reached out to state-level officials to request additional support. Mayor Lajan Cephas Bey was very proactive in helping as much as she could. Commission President Sputty Cephas also wished everyone a Happy Thanksgiving.

Commissioner Roche, representing Ward Five, extended Thanksgiving wishes to everyone and apologized for not being able to attend the meeting in person.

Mayor Lajan Cephas Bey stated that the invocation at Commission meetings is open to everyone in the community. Any member of the public may lead the moment of silence, meditation, or any personal reflection, even if it is simply a moment of doing nothing. This approach is intended to be inclusive and not show allegiance to any particular faith, with the purpose of bringing communities together. Mayor Cephas Bey expressed that what happened to the Graves family is extremely heartbreaking and acknowledged that state legislators are working to provide opportunities for young people rather than criminalizing them. However, she emphasized that a key component is missing, parental accountability. She referenced legislation introduced last year by Senator Benson in Prince George's County, known as the Parental Accountability Act, which failed in committee. The bill aimed to hold parents financially accountable through restitution or community service, without criminalizing them. Mayor Cephas Bey also noted that a last-minute meeting took place on Sunday with the City Manager, Assistant City Manager, Superintendent of Schools Dr. Thompson, Commissioner Lewis-Sisco, and others, where they met with Fund2Foundation, a nationally funded organization supported by billionaire Robert Smith, who earned his income in the tech industry and has chosen Cambridge for initiatives. This is not the first time Fund2Foundation has worked in the community.

Commission President Spuddy Cephas made a motion to enter into Closed Session pursuant to Md. Code Ann. §3-305(b)(1) to discuss personnel matters affecting specific individuals over whom the City Council has jurisdiction; §3-305(b)(2) to protect the privacy or reputation of individuals regarding a matter not related to public business; §3-305(b)(4) to consider a matter concerning a business to locate, expand, or remain in the City; and §3-305(b)(14) to discuss matters directly related to negotiating strategy or the contents of a bid or proposal before a contract is awarded or bids are opened, where public disclosure would adversely impact the public body's ability to participate in the competitive bidding process. The motion was seconded by Commissioner Lewis-Sisco and approved by a vote of 5-0.

Council went into closed session at approximately 7:47 p.m.

Closed Session

The Mayor, Commissioners, City Manager Glenn Steckman, Assistant City Manager Brandon Hesson, and the City Attorney were present for the entirety of the closed session. Commissioner Roche attended virtually for the entire session. A department head whose participation was essential to the discussion was also present during the session. *The name and title have been omitted to maintain confidentiality regarding personnel matters.*

The following were discussed during the closed session:

1. Discussion regarding threats made against identifiable personnel. *Specific details are omitted to protect privacy.*

2. Discussion of security concerns involving private and reputational matters. *Specific details of the personal information are omitted from this summary to protect the privacy and safety of the individual(s) involved, consistent with the statutory exception cited*
3. Discussion regarding a prospective business entity to locate, expand, or remain in the City.
4. Discussion regarding a contract and related negotiating strategy for a potential purchase of a building. *Confidential details are omitted to protect the public interest.*

Action Taken:

None

Reconvene in Open Session

Council reconvened in open session at approximately 8:16 pm.

Mayor Lajan Cephas Bey stated that Council was in closed session pursuant to Md. Code Ann. §3-305(b)(1) to discuss personnel matters affecting specific individuals over whom the City Council has jurisdiction; §3-305(b)(2) to protect the privacy or reputation of individuals regarding a matter not related to public business; §3-305(b)(4) to consider a matter concerning a business to locate, expand, or remain in the City; and §3-305(b)(14) to discuss matters directly related to negotiating strategy or the contents of a bid or proposal before a contract is awarded or bids are opened, where public disclosure would adversely impact the public body's ability to participate in the competitive bidding process.

Adjourn

On a motion by Commission President Spuddy Cephas and a second by Commissioner Lewis-Sisco, the meeting was adjourned at approximately 8:18 p.m. Approved by a 5-0 vote.

With no further business, Mayor Lajan Cephas Bey adjourned the meeting at 8:18 p.m.

I hereby certify that the foregoing is a true and accurate account of the Council Meeting on Monday, November 24, 2025, insofar as I am personally aware.

Mayor
Lajan Cephas Bey



**City of Cambridge
Council Meeting Minutes, Regular Session
Council Chambers – 305 Gay Street
December 8, 2025, 6:00 PM**

Council Present: Mayor Lajan Cephas Bey
Commissioner Brett Summers – Ward One
Commissioner Shay Lewis-Sisco – Ward Two
Commissioner Frank Stout- Ward Three
Commissioner Spuddy Cephas, Commission President, Ward Four, Virtual
Commissioner Brian Roche- Ward Five

Also Present: City Manager Glenn Steckman
Assistant City Manager Brandon Hesson
City Attorney Patrick Thomas
Chief of Police of Police Justin Todd
Finance Director Perry Peregoy
Director of Planning Brian Herrmann
Director of Human Resources Ina Holden, Virtual
I.T. Manager Dale Price

Pastor Shane Walker, representing Overflow Café Ministries, delivered the invocation.

Commissioner Roche led the Pledge of Allegiance.

Mayor Lajan Cephas Bey noted for the record that Commission President Spuddy Cephas was attending virtually.

Agenda

Commissioner Lewis-Sisco made a motion to amend the agenda to include a closed session under Md. Code Ann. §3-305(b)(14), which allows discussion prior to awarding a contract or opening bids on matters directly related to negotiating strategy or the contents of a bid or proposal, if public disclosure would adversely affect the public body's ability to participate in the competitive bidding process. The motion was seconded by Commissioner Summers and approved by a vote of 5-0.

Commissioner Lewis-Sisco then made a motion to adopt the agenda as amended. The motion was seconded by Commissioner Stout and approved by a vote of 5-0.

Presentations from the Approved Guests

PKS & Company P.A., Presentation Topic: Auditor's Report, Fiscal Year 2024-2025

Ryan Taylor, Audit Manager with PKS & Company, presented an overview of the City's finances. Council expressed appreciation to the Finance Department for their work and thanked Mr. Taylor for the presentation. It was noted that the audit contained no findings and no compliance issues. Finance Director Perry Peregoy added remarks, expressing gratitude for PKS and commending their outstanding communication throughout the process. City Manager Glenn Steckman also acknowledged the dedication of staff, noting that some employees worked weekends and late nights to ensure the audit was completed successfully, demonstrating their commitment to the City.

Consent Agenda

3. Meeting Minutes, October 6, 2025, Executive Session
4. Meeting Minutes, October 6, 2025, Regular Session
5. Meeting Minutes, October 27, 2025, Regular Session

Commissioner Lewis-Sisco made a motion to adopt the consent agenda as presented. The motion was seconded by Commissioner Summers and was approved with a 5-0 vote. The consent agenda was adopted as presented.

Ordinances for First Reading

Ordinances for Second Reading

ORDINANCE NO. 1260 AN ORDINANCE OF THE COMMISSIONERS OF CAMBRIDGE, MARYLAND AMENDING CHAPTER 8 (HEALTH AND SANITATION) OF THE CODE OF THE CITY OF CAMBRIDGE, MARYLAND FOR THE PURPOSES OF ENACTING A NEW § 8-25, ENTITLED "BRUSH, WEEDS, AND OBNOXIOUS GROWTH" AND AMENDING OTHER PROVISIONS THEREOF FOR CONSISTENCY THEREWITH; PROVIDING THAT THE TITLE OF THIS ORDINANCE SHALL BE DEEMED A FAIR SUMMARY AND GENERALLY RELATING TO HEALTH AND SANITATION IN THE CITY OF CAMBRIDGE.

City Attorney Patrick Thomas read Ordinance No. 1260 for its second reading. Commissioner Lewis-Sisco moved to enter into a public hearing, seconded by Commissioner Stout. The motion was approved with 5-0 vote. No public comments were received. Commissioner Lewis-Sisco then moved to close the public hearing, seconded by Commissioner Stout. The motion was approved with 5-0 vote. Commissioner Lewis-Sisco moved to adopt Ordinance No. 1260, seconded by Commissioner Summers. The Council opened the floor for discussion; no questions were raised. The motion was approved with 5-0 vote. Ordinance No. 1260 was adopted by the Council with a 5-0 vote.

ORDINANCE NO. 1261 AN ORDINANCE OF THE COMMISSIONERS OF CAMBRIDGE, MARYLAND TO AMEND THE CITY'S UNIFIED DEVELOPMENT CODE FOR THE PURPOSES OF PROVIDING THAT CAFES AND COFFEE SHOPS,

COMMERCIAL RETAIL SALES, SERVICE, AND REPAIR, AND PERSONAL SERVICES, SUCH AS SALONS AND BARBERSHOPS, SHALL BE PERMITTED USES SUBJECT TO CONDITIONS IN THE DOWNTOWN/WATERFRONT DEVELOPMENT DISTRICT – GATEWAY SUBDISTRICT AND DEFINING TERMS ASSOCIATED THEREWITH; PROVIDING THAT THE TITLE OF THIS ORDINANCE SHALL BE DEEMED A FAIR SUMMARY AND GENERALLY RELATING TO LAND USES IN THE GATEWAY SUBDISTRICT IN THE CITY OF CAMBRIDGE.

City Attorney Patrick Thomas read Ordinance No. 1261 for second reading. Commissioner Lewis-Sisco made a motion to enter into a public hearing, seconded by Commissioner Roche. The motion was approved with a 5-0 vote. No public comments were received. Commissioner Stout made a motion to close the public hearing, seconded by Commissioner Lewis-Sisco. The motion was approved with a 5-0 vote. Motion made by Commissioner Lewis-Sisco to adopt Ordinance No. 1261. The motion was seconded by Commissioner Stout. The floor was open for discussion.

Commissioner Summers stated that when the ordinance was first introduced, he had concerns regarding commercial encroachment in single-family residential neighborhoods. He noted that he discussed these concerns with Commissioner Roche, as it affects his ward, and also spoke with Planning Director Brian Herrmann. After further review and discussion, Commissioner Summers indicated he is willing to support the ordinance at this time. Commissioner Lewis-Sisco asked about the procedural process for amending the ordinance once the Comprehensive Plan is completed. City Attorney Patrick Thomas provided clarification. Commissioner Roche expressed appreciation for Commissioner Summers reaching out to inquire whether any constituents in his ward had raised concerns. Commissioner Roche stated that no one from his ward had contacted him regarding the ordinance. Commissioner Summers asked questions about property postings and resident notifications. Planning Director Brian Herrmann explained the process. Commissioner Summers requested that postings be required for all text amendments, rezonings, and similar actions, similar to how Historic Preservation Commission (HPC) properties are posted. Mayor Lajan Cephas Bey asked about the possibility of notifying residents through the City's water bill system, allowing residents to check a box if they would like to receive notifications. City Manager Glenn Steckman stated that he would need to consult with Finance Director Perry Peregoy regarding this matter. Assistant City Manager Brandon Hesson also provided additional remarks.

The motion was approved with a 5–0 vote. Ordinance No. 1261 was adopted as presented.

Old Business
New Business
Meetings

-  Board of Appeals meeting will be held on December 16, 2025, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613. *(This meeting has been rescheduled to the third Tuesday in observance of the holiday, rather than its usual fourth Tuesday.)*

- 🗣️ Historic Preservation meeting will be held on Wednesday December 17, 2025, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613
- 🗣️ Traffic & Safety meeting will be held on Thursday December 18, 2025, at 1 p.m. (Virtual Meeting) [Join the meeting now](#) Open to the Public.
- 🗣️ CWDI Board Meeting will be held on Thursday December 18, 2025, at 4 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613
- 🗣️ Special Meeting will be held on Monday, December 22, 2025, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613
- 🗣️ Planning & Zoning meeting will be held on Tuesday, January 6, 2026, at 6 p.m. at Council Chambers, 305 Gay Street, Cambridge, MD 21613
- ~~🗣️ Mayors Accessibility Committee Meeting will be held on Thursday January 8, 2026, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613 (Due to the first Thursday in January being a holiday, please note that this date is tentative and subject to adjustment or canceled based on the committee review)~~
- 🗣️ City Council Regular Meeting – January 12, 2026, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613

Public Comment

Ray Dowling (Stone Boundary Road) attended the November 24th meeting to object to the inclusion of an invocation during council sessions. He argued that offering a moment of silence as a compromise is not truly equitable because it still favors religious practices over non-religious perspectives. The real compromise should be between having an invocation and not having one. Mr. Dowling criticized the first invocation, which was claimed to be neutral but ended “in the name of Jesus,” making it exclusively Christian. References to God as a male father figure excluded non-Abrahamic faiths and polytheistic beliefs, while mentioning any deity excluded atheists and anti-theists. Statistically, about 62% of Americans are Christian, 29% are non-believers, and 9% follow other religions, meaning the invocation excluded nearly 40% of attendees. Many non-religious individuals likely pretended to pray to avoid social consequences. While the practice may be legal, he argued it is not inclusive or fair. Mr. Dowling proposed that the only universally inclusive option is personal meditation or a moment of silence, a compromise in place since 1919. He concluded with a quote from Matthew 6:5 and extended holiday greetings to the council.

Laurel Atkiss (High Street) expressed her gratitude to Commissioner Lewis-Sisco for attending the New Beginning event this past Saturday. She also thanked the Commissioners who participated in the parade and marched through the city, noting that their presence at these traditions means a great deal to community members. Ms. Atkiss then spoke about the train garden, emphasizing its importance to her and many others in the community. She shared that during a recent visit to the train garden with City Manager Glenn Steckman and Special Projects Coordinator Cheryl Hannan, she felt a sense of discouragement, as though the train garden was being overlooked. While she understands that the train garden may not hold the same significance for everyone, it remains a valued tradition for many residents. According to Holly and Susan from the Tourism Department, nearly 5,000 people visit the train garden each year. Ms. Atkiss pointed out that, similar to CWDI, the train garden relies entirely on volunteer efforts. She stressed that the same small group of fewer than 200 people consistently organizes

and supports community events, and their time and commitment deserves respect. As plans move forward to renovate the old City Hall, she urged decision-makers to consider the train garden's role in the community and ensure that, if relocation becomes necessary, a suitable space is provided so it can be reestablished immediately. She recalled the challenges faced when the train garden was dismantled in 2019 and hopes to avoid a similar situation. Ms. Atkiss concluded by thanking Chief Todd for the work of the Cambridge Police Department and extended blessings and enlightenment to everyone as Hanukkah begins on Sunday.

City Manager Comments

Administrative Report from City Manager Glenn Steckman

City Manager Glenn Steckman expressed appreciation to everyone who attended the parade. Although he did not march, he walked the route in reverse to observe the event and identify ways the City could assist in improving future parades. He suggested including one or two major City vehicles, such as a dump truck or bucket truck, in future parades. This would allow the community to see some of the City's heavy equipment and understand that preparations, such as snow removal, are already underway. Mr. Steckman noted the impressive turnout, with several thousand people along the parade route, and commented on its length. He reported that a rough draft of the payroll and classification study has been received; however, it is not ready for public discussion at this time. Mr. Steckman also briefly spoke about the Train Garden and discussed progress regarding the old City Hall building.

Departmental Update, Human Resources Department

Director of Human Resources Ina Holden reported that the city initiated the payroll and classification study to ensure pay structures and job classifications remain competitive, equitable, and aligned with market standards and internal organizational needs. The purpose of the study is to provide data-driven recommendations that strengthen recruitment, retention, and fiscal responsibility. To date, job descriptions have been reviewed and validated with department leadership, and employee input sessions have confirmed the accuracy of roles and responsibilities. A market analysis was conducted using compensation benchmarks from comparable municipalities, and an internal equity review addressed job families and pay compression issues. Consultants have drafted preliminary recommendations on pay ranges, classification adjustments, and potential budget impacts. The next step will be the review of the comprehensive draft report by the City Manager, Director of Human Resources, and Director of Finance. This report will include an assessment of external competitiveness, internal equity considerations, recommended adjustments to classifications and pay ranges, and potential fiscal impacts and policy implications. The study positions the City to make informed, strategic decisions about compensation policies that promote fairness, support workforce sustainability, and enhance the City's ability to attract and retain talent.

Mayor and Commissioners' Comments

Commissioner Summers (Ward One) stated that the Christmas Parade was a wonderful event. He and Commissioner Roche participated by handing out candy along with his wife and two

children. The City Manager mentioned a banner and had sent an email to the rest of the Council. No one knew who the Commissioners were in the parade. Commissioner Summers suggested that a banner identifying the Council would be helpful. He also plans to reach out to Bruce McWilliams to explore grouping City Council, County Council, State officials, and other elected representatives together for future parades. Commissioner Summers reported ongoing discussions with Mr. Bradshaw re the train garden and noted his advocacy for hiring a hazmat contractor. Once a contractor is selected, he recommended that all parties meet on-site to review remediation needs. He asked whether the train garden could remain in place until construction begins or if remediation could occur around it without removal. He reviewed the current plans and believes they need updating but suggested waiting until work is ready to begin. At that time, office space needs for the City and potential community space, including the train garden, should be considered. Commissioner Summers also addressed shoreline resiliency. He spoke with Larry White and expressed concern that it has been about a month since the last update. He requested monthly progress reports on the waterfront projects and easements, as well as an updated budget for the current work.

Commissioner Lewis-Sisco (Ward Two) shared that she would like to implement some of the effective meeting strategies learned at the MML Fall Conference in October. She noted that while the City has branded items, name badges would be helpful for official events. For example, she attended a Chamber luncheon with the state delegation on December 3, along with Mr. Steckman, and felt a badge would have been useful. She also attended an SHA District 1 meeting on the same day. Commissioner Lewis-Sisco mentioned that Mr. Steckman's report included updates from the State Highway Administration (SHA), which offers an interactive website for public updates. She reported that the state delegation anticipates a challenging legislative session due to the need to balance the budget amid a structural deficit. Commissioner Lewis-Sisco expressed disappointment that funding had been secured for a traffic light at Route 16 and Stone Boundary.. Additionally, she shared that she attended the New Beginning Learning Academy fundraiser, describing it as a beautiful event and a wonderful tribute to Dr. Theresa Stafford. Volunteers are needed to support the Academy's ongoing work. Commissioner Lewis-Sisco concluded by wishing everyone Happy Holidays. Commissioner Lewis-Sisco would like to highlight the work the Public Information Officer Talibah Chikwendu is doing.

Commissioner Stout (Ward Three) shared positive news from the Cambridge Police Department's social media, noting that social media often does not highlight good news. He congratulated Chief Todd and expressed appreciation for the efforts of the Cambridge Police Department in serving the community. Commissioner Stout also looks forward to the positive impact of additional funding. Commissioner Stout echoed Commissioner Lewis-Sisco's sentiments, thanked Mr. Steckman for his briefing, and expressed excitement about the Maryland Municipal League's legislative priorities, including the tax differential. He also noted that his wife is a proud member of the Maces Lane staff and she shared that the local 13-U football team, currently competing in Florida, had a big lead late in their first game and will play three games in total. He wished the team good luck.

Commission President Spuddy Cephas (Ward Four) stated that he did not have any reports at this time.

Commissioner Roche (Ward Five) noted that the Christmas Parade is one of the few events that brings the entire community together, both young and old. He commented that the event reminded him of what downtown Cambridge used to look like on a Saturday night. Commissioner Roche also highlighted that this year was the first time the City installed wreaths on the light poles, a task previously managed by volunteers. He expressed pride in the collaborative effort that made the parade successful and enhanced the appearance of downtown.

Mayor Lajan Cephys Bey reported that she received the notification regarding the Tenant Advocate position. She commended Commissioner Summers for his outstanding work representing Ward 1, noting that this level of engagement has not been seen since Commissioner Roche previously held the seat. The Mayor publicly thanked Commissioner Summers for his efforts to make Ward 1 the best it can be and for his representation of the City as a whole. The Mayor also extended an apology to the City Manager for any disrespect shown by members of the public, emphasizing that he works diligently to represent and be a voice for all residents. Mayor Cephys Bey shared that she was born and raised in Cambridge and recalled visiting the Train Garden as a child with her brother, expressing the value and significance of this community feature. She stated that excessive individual ownership of community projects can lead to divisiveness and negativity. The Mayor expressed hope that the community will move toward unity and understanding that these resources belong to everyone.

Commission President Spatty Cephys moved to enter into Closed Session pursuant to Md. Code Ann. §3-305(b)(1) to discuss personnel matters affecting specific individuals over whom the City Council has jurisdiction; §3-305(b)(7) to obtain legal advice from the City Attorney; and §3-305(b)(14) to discuss matters directly related to negotiating strategy or the contents of a bid or proposal prior to contract award or bid opening, where public disclosure would adversely impact the public body's ability to participate in the competitive bidding process. The motion was seconded by Commissioner Lewis-Sisco and approved with a vote of 5-0.

Council went into closed session at approximately 7:45 p.m.

Closed Session

The Mayor, Commissioners, City Manager Glenn Steckman, Assistant City Manager Brandon Hesson, and the City Attorney were present for the entirety of the closed session. Commission President Spatty Cephys participated virtually. *Commissioner Roche stepped out during a portion of the discussion due to a potential conflict.*

The following were discussed during the closed session:

1. Discussion regarding the potential appointment of member(s) to specific boards or commissions.
2. Discussion regarding matter related to a franchise agreement. *The name of the entity involved in the franchise agreement discussion is omitted from these minutes to protect the integrity of ongoing negotiations and to prevent any adverse impact on the City's ability to secure favorable terms.*

3. Discussion regarding negotiation strategy and the contents of a proposal contact related to a potential building acquisition. *Specific details have been intentionally omitted from these minutes to safeguard the integrity of ongoing negotiations and protect sensitive proposal information,*
4. Obtain legal advice from the City Attorney regarding a legal matter.

Action Taken:

None

Reconvene in Open Session

Council reconvened in open session at approximately 8:59 p.m.

Mayor Lajan Cephas Bey stated that the Council met in Closed Session pursuant to Md. Code Ann. §3-305(b)(1) to discuss personnel matters affecting specific individuals over whom the City Council has jurisdiction; §3-305(b)(7) to obtain legal advice from the City Attorney; and §3-305(b)(14) to discuss matters directly related to negotiating strategy or the contents of a bid or proposal prior to contract award or bid opening, where public disclosure would adversely impact the public body's ability to participate in the competitive bidding process.

Mayor Lajan Cephas Bey further stated that there will be no action taken on the next agenda item: Potential Appointment/Reappointment of Member(s) to One or More City Boards and Commissions.

Adjourn

On a motion by Commissioner Lewis-Sisco and a second by Commission President Spuffy Cephas, the meeting was adjourned at approximately 9:00 p.m. Approved by a 5-0 vote.

With no further business, Mayor Lajan Cephas Bey adjourned the meeting at 9:00 p.m.

I hereby certify that the foregoing is a true and accurate account of the Council Meeting on Monday, December 8, 2025, insofar as I am personally aware.

Mayor
Lajan Cephas Bey



**City of Cambridge
Council Meeting Minutes, Regular Session
Council Chambers – 305 Gay Street
January 12, 2026, 6:00 PM**

Council Present: Mayor Lajan Cephas Bey – Virtual
Commissioner Brett Summers – Ward One
Commissioner Shay Lewis-Sisco – Ward Two
Commissioner Frank Stout- Ward Three
Commissioner Sputty Cephas, Commission President, Ward Four
Commissioner Brian Roche- Ward Five

Also Present: City Manager Glenn Steckman
Assistant City Manager Brandon Hesson
City Attorney Patrick Thomas
Chief of Police of Police Justin Todd
Finance Director Perry Peregoy
Director of Planning Brian Herrmann
I.T. Manager Dale Price
Grants Coordinator Tara Felts
Housing Programs Manager Ed Crosby

The invocation was led by Rabbi Jordan Goldson, followed by the Pledge of Allegiance led by Jaree Brooks. Commission President Sputty Cephas noted for the record that Mayor Lajan Cephas Bey was attending virtually as she was representing the City at another event. He also stated that Commissioner Lewis-Sisco would be joining the meeting later.

Agenda

Commissioner Summers made a motion to approve the agenda as presented, which was seconded by Commissioner Roche. The agenda was approved as presented with a vote of 4-0.

Presentations from the Approved Guests

Presentation of Citations to the 13U Vikings Football Team

Commission President Sputty Cephas read the names of the individuals from the 13U football team and presented citations to the coach. The coaches expressed their gratitude to the Council for its support. A photo was taken to commemorate the occasion.

Presentation of Citations and Key to the City Honoring:

Commission President Sputty Cephas presented Citations and the Key to the City to Cambridge Main Street, Dorchester Elks Lodge #223, and Ironman/Eagleman in recognition of their outstanding contributions to the community. Representatives from each organization expressed appreciation and reaffirmed their commitment to continued service. A photo session with the Council followed the presentations.

~~LaKesha Graves: Presentation Topic: Violence in Dorchester County Public Schools~~

There was no presentation from Ms. Graves. Mr. Steckman noted that this was an error originating from his office.

Chase Powell, Green Street: PowerPoint Presentation Topic: Hearn Building Update

Chase Powell from Green Street delivered a PowerPoint presentation on the Hearn Building. Following the presentation, the Council engaged in an extensive discussion, raising several questions and concerns. Commission President Sputty Cephas thanked Mr. Powell for his presentation and suggested that if there were any additional comments or questions, a work session should be scheduled.

Consent Agenda

Chuck Davis, Director of Skilled Trades at Chesapeake College, is seeking to hold “Mobile Welding Lab Training” from Friday, February 20, 2026, through Friday, March 20, 2026. The training will take place behind the Chesapeake College Cambridge Center in the designated city parking lot. Please refer to the attached application and map for the specific parking spaces to be utilized.

Amanda Fenstermaker, MERGE Community Manager for Cross Street Partners, is seeking to hold the “Explore the Shore Outdoor Expo” on Saturday, February 21, 2026, from 10:00 a.m. to 5:00 p.m. at The Packing House, located at 411 Dorchester Avenue. The request includes a noise variance, city services, and use of the Cannery Park Event Pavilion. Please refer to the attached application for additional details.

Christina Wingate-Spence, Executive Director of Main Street, is seeking to hold the Cambridge Farmers Market every Thursday from April 23 through November 19 at Long Wharf, from 3 p.m. to 6 p.m. The request includes a noise variance to allow occasional music amplification during the market. Please refer to the attached application and map for additional details.

Old City Hall Update and Easement Document

Commissioner Roche moved to approve the consent agenda as presented, and Commissioner Stout seconded the motion. The motion passed with a 5-0 vote.

Commission President Sputty Cephas noted for the record that Commissioner Lewis-Sisco joined the meeting at approximately 6:30 p.m.

Ordinances for First Reading

ORDINANCE NO. 1262 AN ORDINANCE OF THE COMMISSIONERS OF CAMBRIDGE, MARYLAND AMENDING CHAPTER 4 (BUILDINGS AND HOUSING) OF THE CODE OF THE CITY OF CAMBRIDGE, MARYLAND FOR THE PURPOSE OF ENACTING A NEW ARTICLE VIII ENTITLED “VACANT COMMERCIAL STOREFRONT REGISTRATION” PROVIDING FOR THE REGISTRATION OF VACANT COMMERCIAL STOREFRONTS IN THE CITY OF CAMBRIDGE, FEES ASSOCIATED WITH SUCH REGISTRATION, AND DEFINING TERMS ASSOCIATED THEREWITH; PROVIDING THAT THE TITLE OF THIS ORDINANCE SHALL BE DEEMED A FAIR SUMMARY AND GENERALLY RELATING TO VACANT COMMERCIAL STOREFRONTS IN THE CITY OF CAMBRIDGE.

Ordinance No. 1262 was read for First Reading by City Attorney Patrick Thomas. The Second Reading and Public Hearing were scheduled for February 9, 2026.

ORDINANCE NO. 1263 AN ORDINANCE OF THE COMMISSIONERS OF CAMBRIDGE, MARYLAND FOR THE PURPOSES OF AMENDING §§ 1-2 AND 1-15 OF CHAPTER 1 (GENERAL PROVISIONS) OF THE CODE OF THE CITY OF CAMBRIDGE, MARYLAND REGARDING TERMS DEFINED IN THE CITY CODE AND THE CITY COUNCIL’S RULES OF PROCEDURE, RESPECTIVELY, FOR CLARITY, CONSISTENCY WITH CURRENT PRACTICE, AND FOR MORE EFFICIENT ADMINISTRATION OF THE CITY GOVERNMENT; PROVIDING THAT THE TITLE OF THIS ORDINANCE SHALL BE DEEMED A FAIR SUMMARY AND GENERALLY RELATING TO GENERAL PROVISIONS OF THE CITY CODE.

Ordinance No. 1263 was read for First Reading by City Attorney Patrick Thomas. The Second Reading and Public Hearing were scheduled for February 9, 2026.

**Ordinances for Second Reading- None
Old Business- None**

New Business

Land Bank Update

The Housing Department reported continued work with Land Bank Consultant Brian White of eProperty Innovations, LLC. Since his October 2025 visit, Mr. White has met with Legal Counsel, Code Enforcement, GIS, and Planning staff, and provided recommended operational parameters for the City’s Land Bank. Staff have developed a Land Bank Housing Priority Dashboard to classify and rank parcels for remediation, improvement, or redevelopment, along with a methodology for identifying potential Land Bank properties valued at \$30,000 or below. Mr. White also provided a best practices review of successful land banks nationwide and, joining virtually, presented a PowerPoint overview to the Council. Council Members asked several questions following his presentation. City Manager Glenn Steckman and Assistant City Manager Brandon Hesson also provided additional remarks.

MOA, CPD and Dorchester County Health Department, FY25 LEMHWA Implementation Projects, Embedded Clinician Services

Chief of Police Justin Todd provided a Council agenda report on the partnership with the Dorchester County Health Department to deliver Embedded Clinician Services for Police Department personnel through the wellness grant. The draft Memorandum of Agreement outlines the clinician's duties, support for building the wellness program, and payment terms. The agreement extends through September 30, 2027, consistent with the grant spending timeline. Chief Todd noted that the Maryland Police Training and Standards Commission now requires agencies to implement wellness programs, and this grant positions the City to meet those requirements and demonstrate its commitment to officers' wellbeing.

Commissioner Stout made a motion to approve the Memorandum of Agreement between the Cambridge Police Department and the Dorchester County Health Department for the FY25 LEMHWA Implementation Projects, Embedded Clinician Services. The motion was seconded by Commissioner Roche. The floor was opened for discussion, during which Council expressed that they were pleased to see this initiative move forward and recognized the importance of providing the needed resources. The motion passed with a 5–0 vote.

Selection of 2026 Commission President

City Attorney Patrick Thomas explained that the Council amended the City Charter last year to provide that the Commission President is now elected on an annual basis. He noted that this election occurs at the first meeting of each calendar year.

Commissioner Stout made a motion to nominate Council President Spuddy Cephas to retain his position as Council President for 2026. The floor was opened for discussion Commissioner Lewis-Sisco stated that the intent of the Council in considering changes to leadership was to make space for any member who wished to serve as Council President. Members of the Council commended Council President Cephas for his excellent leadership and the work he has done in the role. The motion passed with a vote of 5–0.

Meetings

-  Traffic & Safety meeting will be held on Thursday January 15, 2026, at 1 p.m. (Virtual Meeting) [Join the meeting now](#) Open to the Public.
-  Planning & Zoning Work Session will be held on Tuesday, January 20, 2026, at 5 p.m. at Council Chambers, 305 Gay Street, Cambridge, MD 21613
-  Historic Preservation meeting will be held on Wednesday January 21, 2026, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613
-  CWDI Board Meeting will be held on Thursday January 22, 2026, at 4 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613
-  City Council Regular Meeting – January 26, 2026, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613
-  Planning & Zoning Work Session will be held on Thursday, January 29, 2026, at 5 p.m. at Council Chambers, 305 Gay Street, Cambridge, MD 21613
-  Planning & Zoning meeting will be held on Tuesday, February 3, 2026, at 6 p.m. at Council Chambers, 305 Gay Street, Cambridge, MD 21613

 Mayor's Accessibility Committee Meeting will be held on Thursday February 5, 2026, 6 p.m. at Council Chambers, 305 Gay Street Cambridge, Maryland 21613

Public Comment

Ms. Floretta Williams-Johnson (School House Lane) addressed the Council regarding two matters. She stated that she had recently experienced significant plumbing issues at her residence on School House Lane. After hiring a plumber to assess the situation, she learned that all homes on her side of the street are connected through a shared plumbing line. Because her property and her neighbor's property are the first two homes on School House Lane, a backup in the line caused damage to both residences. Ms. Williams-Johnson reported that she has incurred substantial costs to repair plumbing fixtures both above and below ground. She explained that water is still not flowing properly and that the piping behind the homes appears to be interconnected. The City's Water and Sewer Division inspected the area and was able to clear a blockage in the street; however, a separate blockage remains at the rear of the properties. Quality Plumbing was required to dig in each yard to identify and address the issue. Ms. Williams-Johnson requested assistance from the City and asked whether any funds or programs are available to help residents with issues of this nature. Ms. Williams-Johnson's second concern involved an encounter with a police officer who refused to assist her after she accidentally locked her keys in her car. She stated that the officer would not provide his name or explain why he could not help. She then continued to briefly describe the incident in more detail.

Alison Kennedy (Garden Lane) commended the Council for meeting with Green Street to discuss the Hearn Building project. She noted that one member of the CAN Board, a local architect who has previously worked with prior owners of the Hearn Building, has expressed concerns and has been in communication with the City Manager and Commissioners. He has also prepared a presentation for CAN's review; however, CAN has not yet had the opportunity to review it due to the holidays. Ms. Kennedy stated that the community has concerns and would appreciate additional information. She thanked the Council again for agreeing to hold this meeting.

Ms. Ann Daminos (Williams Street) stated that she attended the Council meeting to hear the discussion on the vacant properties ordinance. She expressed that the ordinance appears vague and requested an opportunity to meet with her ward representative, Commissioner Stout, to obtain additional information.

City Manager Comments

Administrative Report from City Manager Glenn Steckman

City Manager Glenn Steckman noted that his written report was included in the meeting packet. Mr. Steckman reported that he, the Mayor, and Mr. Hesson recently met with the Assistant Secretary of Commerce. During the visit, they provided an extensive tour of the City to highlight opportunities for potential business relocation to Cambridge. He also attended the ESAM meeting held this past Thursday, where several Delegates were present. One of the main topics of discussion was tax differentials. Mr. Steckman responded to Ms. Williams-

Johnson's concerns regarding plumbing issues on School House Lane. He stated that he had been informed earlier today of a sewer problem in the area. Director of Public Works Wayne Suggs is aware, and the City is actively investigating whether the issue is related to recent improvements or due to the age of the existing infrastructure. Mr. Steckman also addressed the matter involving the police officer. He stated publicly that the incident is currently under investigation.

Tara Felts, Grants Coordinator, provided a report in the meeting packet and stated she was available to answer any questions. Council had no questions regarding the report.

Assistant City Manager Brandon Hesson stated that he had no additional comments beyond the report included in the meeting packet. He also provided an update on the registration program and outlined the path forward.

Mayor and Commissioners' Comments

Commissioner Summers (Ward One) stated that this item is a discussion topic regarding the Council's voting process for issuing Mayoral and Commissioner citations. He noted that he was not familiar with the established procedure for these approvals and wanted to get clarification.

Commissioner Lewis-Sisco (Ward Two) thanked the public for attending and expressed appreciation to those who provided public comment. She noted that it was encouraging to see the priorities outlined in the staff report aligning with both ongoing discussions and the needs of the community. Referencing the City Manager's Report, Commissioner Lewis-Sisco highlighted the updates regarding the wastewater capital fee and interceptor, as well as the continued mental health support partnership with the Cambridge Police Department. She also acknowledged the focus on enforcement related to non-owner-occupied properties. Commissioner Lewis-Sisco addressed Mr. Hesson, noting that while the City is currently advertising for the Tenant Advocate position, she would like to see consideration given to developing an approach and clear path forward for addressing issues within rental units. She shared that complaints have been received about various rental properties in the Greenwood Avenue neighborhood and emphasized the importance of accountability for landlords and property management companies. Commissioner Lewis-Sisco reported that she attended the ESAM meeting this past Thursday. She also stated that she is excited about the upcoming mobile welding training that will be offered in Cambridge. She announced that the Department of Public Works' Annual Spring-Cleaning Program will begin in March, with Second Ward collection scheduled for March 23–26. Commissioner Lewis-Sisco clarified that at the December 22 meeting, she voted in favor of the Chesapeake Waste amendment to the agreement. However, she voted against the increase, as she personally felt that residents should have been afforded additional time. She concluded by wishing everyone a Happy New Year.

Commissioner Stout (Ward Three) thanked Mr. Herrmann and Mr. Gunderson for facilitating the recent Comprehensive Plan subgroup meeting held in Council Chambers. He also stated that Council made an excellent decision in reelecting Commissioner Spuddy Cephas as Commission President. Commissioner Stout commended both President Cephas and Mayor

Cephas Bey for doing an extraordinary job serving as ambassadors and leaders at the ESAM meeting. He further thanked City Manager Glenn Steckman for his strong and well-articulated remarks regarding the tax differential. Commissioner Stout reported that he has been in communication with Chief Todd concerning youth-related criminal activity occurring across the region. He expressed his appreciation for the Cambridge Police Department, noting what appears to be their 24-hour efforts to address and contain the situation. He encouraged community members to assist in any way possible, whether by sharing camera footage or providing information that could support ongoing investigations. He added that it was difficult hearing a resident describe a recent incident. The resident expressed many positive feelings about Cambridge; however, due to these concerns, they are now considering relocating.

Commissioner Roche (Ward Five) stated that although he did not attend the ESAM meeting, he appreciated Mr. Steckman's efforts in advocating for the tax differential. He reported receiving his property assessment in the mail and expressed concern that, as a middleclass family with two children, it is extremely difficult to absorb a 64% increase in assessed value over the past three years. Commissioner Roche stated that he believes the situation created by the State is unfair. He added that the financial strain is no longer limited to lower income residents, particularly in Cambridge, where households are subject to double taxation. He noted that this level of pressure is something his own family will have to seriously consider moving forward. Commissioner Roche continued to express his concerns regarding the overall impact of rising assessments and the need for relief for Cambridge residents.

Commission President Spuddy Cephas (Ward Four) expressed his appreciation for the ESAM Legislative Meeting and noted that he was grateful it was hosted in Cambridge, as many attendees spoke highly of the event. He also thanked City Manager Glenn Steckman for keeping the tax differential issue at the forefront. Commission President Cephas reiterated that the Spring-Cleaning event for Ward Four is scheduled for March 9–12. He addressed recent social media discussions regarding trash collection services, acknowledging that Chesapeake Waste is not his preferred provider, nor is it the preferred choice of many residents. He clarified comments suggesting he supported bringing trash collection back in-house. Through information provided by Mr. Steckman, he reported that returning the service in-house would require approximately \$1.5 million in upfront costs, and over a five-year period the total cost is estimated at \$9.1 million. Commission President Cephas noted that while he has concerns about the service provided by Chesapeake Waste, it is difficult to justify a \$9.1 million investment that the City does not currently have, especially when compared to the present cost of contracted services. Commission President Spuddy Cephas continued to speak on this matter.

Mayor Lajan Cephas Bey commended Mr. Steckman and Mr. Hesson for conducting an excellent four hour tour on Friday. She noted that they provided substantial information to Deputy Secretary Rice, who in turn offered valuable guidance. The Mayor emphasized the importance of the City maintaining strong relationships with its counterparts, including ESAM. She highlighted that Mr. Steckman did a phenomenal job conveying the significance of the tax differential and stressed that active engagement with other municipalities strengthens the City's position. The Mayor also remarked that ESAM has more representation than any other chapter within MML, underscoring the value of those connections.

Commissioner Lewis-Sisco made a motion to enter into Closed Session pursuant to Md. Code Ann. §3305(b)(1) to discuss personnel matters involving specific individuals under the City Council's jurisdiction; §3305(b)(7) to obtain legal advice from the City Attorney; and §3305(b)(14) to discuss matters directly related to negotiating strategy or the contents of a bid or proposal prior to contract award or bid opening, where public disclosure would adversely affect the public body's ability to participate in the competitive bidding process. The motion was seconded by Commissioner Roche and approved by a vote of 5–0.

Council went into closed session at approximately 9:19 p.m.

Closed Session

The Mayor, the Commissioners, City Manager Glenn Steckman, Assistant City Manager Brandon Hesson, and City Attorney Patrick Thomas were present for the entirety of the closed session. The Mayor participated virtually.

The following were discussed during the closed session:

1. Discussion regarding a personnel matter affecting identifiable personnel.
2. Consulted with the City Attorney to obtain legal advice regarding legal matters.
3. Discussion regarding negotiating strategy for a draft agreement prepared for an individual(s) prior to contract award, where public disclosure would have adversely affected the public body's competitive position.

Action Taken:

None

Reconvene in Open Session

Council reconvened in open session at approximately 9:57 p.m.

Commission President Spotty Cephas stated that Council was in Closed Session pursuant to Md. Code Ann. §3305(b)(1) to discuss personnel matters involving specific individuals under the City Council's jurisdiction; §3305(b)(7) to obtain legal advice from the City Attorney; and §3305(b)(14) to discuss matters directly related to negotiating strategy or the contents of a bid or proposal prior to contract award or bid opening, where public disclosure would adversely affect the public body's ability to participate in the competitive bidding process

Adjourn

On a motion by Commissioner Lewis-Sisco and a second by Commissioner Stout, the meeting was adjourned at approximately 10:00 p.m. Approved by a 5-0 vote.

With no further business, Commission President Spotty Cephas adjourned the meeting at 10:00 p.m.

I hereby certify that the foregoing is a true and accurate account of the Council Meeting on Monday, January 12, 2026, insofar as I am personally aware.

Commission President
Sputty Cephas



**City of Cambridge
Council Meeting Minutes, Special Meeting
Council Chambers – 305 Gay Street
January 28, 2026, 5:15 PM**

Council Present: Mayor Lajan Cephas Bey – Virtual
Commissioner Brett Summers – Ward One
Commissioner Shay Lewis-Sisco – Ward Two, Virtual
Commissioner Frank Stout- Ward Three
Commissioner Sputty Cephas, Commission President, Ward Four, Virtual
Commissioner Brian Roche- Ward Five, Virtual

Also Present: City Manager Glenn Steckman
City Attorney Patrick Thomas

Agenda

Mayor Lajan Cephas-Bey convened the Commission in a Special Work Session. For the record, Mayor Cephas-Bey, Commissioner Lewis-Sisco, Commission President Sputty Cephas, and Commissioner Roche were present virtually. Commissioner Summers and Commissioner Stout were present in person.

Commissioner Lewis-Sisco made a motion to enter Closed Session pursuant to Md. Code Ann., § 3305(b)(7) and (8) to obtain legal advice from, and consult with, the City Attorney regarding pending or potential litigation. The motion was seconded by Commission President Sputty Cephas. The motion was approved by a vote of 5–0.

The Council entered Closed Session at approximately 5:20 p.m.

Closed Session

The Mayor, Commissioners, City Manager Glenn Steckman, and City Attorney Patrick Thomas were present for the entirety of the meeting. Mayor Cephas-Bey, Commissioner Lewis-Sisco, Commission President Sputty Cephas, and Commissioner Roche participated virtually.

The following were discussed during closed session:

1. Consulted with the City Attorney to obtain legal advice regarding a legal matter.
2. Consulted with the City Attorney regarding pending litigation.

Action Taken:

Approval of a settlement agreement involving an identified individual. *The individual's name is not disclosed in these minutes to protect personal privacy and because the matter involves confidential legal and personnel-related information.*

Reconvene in Open Session

Council reconvenes in Open Session at approximately 5:55 p.m.

Mayor Lajan Cephias Bey stated that Council was in closed session pursuant to Md. Code Ann., § 3-305(b)(7) and (8) to obtain legal advice from, and consult with, the City Attorney regarding pending or potential litigation.

Adjourn

On a motion by Commission President Sputty Cephias and a second by Commissioner Stout, the meeting was adjourned at approximately 5:55 p.m. Approved by a 5-0 vote.

With no further business, Mayor Lajan Cephias Bey adjourned the meeting at 5:55 p.m.

I hereby certify that the foregoing is a true and accurate account of the Special Meeting on Wednesday, January 28, 2026, insofar as I am personally aware.

Mayor Lajan Cephias Bey



APPLICATION FOR A SPECIAL EVENT PERMIT

Special event application must be typed or printed clearly and legibly. In order for the event to be considered the form must be submitted no less than sixty (60) days prior to the planned event. If this is a new event, the application should be submitted 120 days in advance.

Date of Application: 2/12/2026

Event Title or Type: Cambridge Police Easter Egg Hunt

Location of Event: Great Marsh

Date(s) of Event: 3/28/2026

Hours of Event (Actual): 11-1 Rain Date: 4/4/2026

Name of Applicant: Captain Antoine Patton Title: _____

If representing an organization or company, name(s): Cambridge Police

Signature of Applicant: [Signature]

If application is presented on or behalf of 1 or 2 businesses only, list names of business(es):

Address of Applicant: 8 Washington st Cambridge, MA 02143

Telephone: 410 228 3333 Email: [Redacted]

Expected attendance: 250 - 300

Is a street closing being requested? Yes No
(show on map)

If yes, what street(s) _____

If yes, indicate street closure & reopen times (include set up and breakdown time): _____

Is staging or a platform required? Yes (show on map) No Amplification: Yes No

If event is on private property, name of Property Owner: _____

Will trash barrels be needed by the City? Yes No

Will police officers be needed during the entire event? Yes How Many _____ No

Will portable toilets be provided? Yes (show on map) No



APPLICATION FOR A SPECIAL EVENT PERMIT

- Will tent be erected? Yes (show on map) No
- Will food be prepared on the premises? Yes No
- Will alcohol be served? Yes No

ROAD RACE, WALK-A-THON, ETC.

- On Roadway? Yes No
- On Sidewalk? Yes No
- Will temporary signs be posted? Yes No

*****Signs must be removed by the following business day; no paint is allowed on streets or sidewalks.*****

Specific Route: _____

- I attached a map showing locations of street closures, vehicles, and temporary structures,
- For new events, I have attached documentation of notification of the application to all affected businesses and residents and attest that a majority have supported and/or not objected to this event.
- I have read & agree to the City's Street Closures Policy.

FOR OFFICE USE ONLY

Conditions of Special Event Permission: _____

Police Costs: \$ _____ DPW Costs: \$ _____ Other Costs: \$ _____

TOTAL COSTS REQUIRED BY CITY COUNCIL: \$ _____

Recommendations:

- | | | | |
|-----------------------------|-----------------------------------|---------------------------------|-----------|
| Cambridge Police Department | Approval <input type="checkbox"/> | Denial <input type="checkbox"/> | _____ |
| | | | Signature |
| Rescue Fire Department | Approval <input type="checkbox"/> | Denial <input type="checkbox"/> | _____ |
| | | | Signature |
| Public Works Department | Approval <input type="checkbox"/> | Denial <input type="checkbox"/> | _____ |
| | | | Signature |



APPLICATION FOR A SPECIAL EVENT PERMIT

Special event application must be typed or printed clearly and legibly. In order for the event to be considered the form must be submitted no less than sixty (60) days prior to the planned event. If this is a new event, the application should be submitted 120 days in advance.

Date of Application: Feb 10, 2026

Event Title or Type: Six Pillars Century - Bike Ride

Location of Event: Gerry Boyle Park, 0 Somerset Avenue, Cambridge, MD

Date(s) of Event: May 9th, 2026

Hours of Event (Actual): 0700am to 400pm Rain Date: N/A

Name of Applicant: Jason Chance Title: Owner

If representing an organization or company,
name(s): Revolution3

Signature of Applicant: 

If application is presented on or behalf of 1 or 2 businesses only, list names of business(es):

Address of Applicant: 

Telephone:  Email: 

Expected attendance: 500 cyclists

Is a street closing being requested? Yes No
(show on map)

If yes, what street(s) _____

If yes, indicate street closure & reopen
times (include set up and breakdown time): _____

Is staging or a platform required? Yes (show on map) No Amplification: Yes No

If event is on private property, name of Property Owner: City of Cambridge

Will trash barrels be needed by the City? Yes No

Will police officers be needed during the entire event? Yes How Many _____ No

Will portable toilets be provided? Yes (show on map) No



APPLICATION FOR A SPECIAL EVENT PERMIT

Will tent be erected? Yes (show on map) No

Will food be prepared on the premises? Yes No

Will alcohol be served? Yes No

ROAD RACE, WALK-A-THON, ETC.

On Roadway? Yes No

On Sidewalk? Yes No

Will temporary signs be posted? Yes No

*****Signs must be removed by the following business day; no paint is allowed on streets or sidewalks.*****

Specific Route: See attached course maps

- I attached a map showing locations of street closures, vehicles, and temporary structures,
- For new events, I have attached documentation of notification of the application to all affected businesses and residents and attest that a majority have supported and/or not objected to this event.
- I have read & agree to the City's Street Closures Policy.

FOR OFFICE USE ONLY

Conditions of Special Event Permission: _____

Police Costs: \$ _____ DPW Costs: \$ _____ Other Costs: \$ _____

TOTAL COSTS REQUIRED BY CITY COUNCIL: \$ _____

Recommendations:

Cambridge Police Department Approval Denial _____
Signature

Rescue Fire Department Approval Denial _____
Signature

Public Works Department Approval Denial _____
Signature



Maryland State Highway Administration Special Event Permit – Data Sheet

Event: Six Pillars Century Bike Ride

Start Date: May 9 2026 End Date: May 9, 2026

Start Time: 0730 End Time: 1430

Purpose/Type: Cycling Event

Organizer: TCR Event Management

Contact Person Jason Chance Daytime Phone: [REDACTED]

and Address: [REDACTED] Evening Phone: [REDACTED]

Email Address: [REDACTED]

No. of Participants: 300 No. of Vehicles/Units: 0 Rain/Snow Date: _____

Proposed Route: Please see attached race course and affected streets
(Written Description)

Will you be occupying all or part of a highway travel lane? No Yes _____

Will you be closing all or part of a roadway? No Yes _____

If Yes to either of the above, where? _____

Have you requested Local Police assistance?* No Yes _____ Number _____

Have you requested Maryland State Police assistance?* No Yes _____ Number _____

*** THE EVENT ORGANIZER IS RESPONSIBLE FOR OBTAINING LOCAL AND/OR STATE POLICE ASSISTANCE ***

CIRCLE THE DISTRICT(S) AND COUNTY(S) YOUR EVENT WILL TAKE PLACE IN

- DISTRICT 1 Dorchester / Somerset / Wicomico / Worcester
- DISTRICT 2 Caroline / Cecil / Kent / Queen Anne's / Talbot
- DISTRICT 3 Montgomery / Prince George's
- DISTRICT 4 Baltimore / Harford
- DISTRICT 5 Anne Arundel / Calvert / Charles / St. Mary's
- DISTRICT 6 Allegany / Garrett / Washington
- DISTRICT 7 Carroll / Howard / Frederick

ATTACH THE FOLLOWING

- Map of affected routes
- Traffic Control Plan (including details on how intersections will be controlled, a detour plan, locations of police officers/volunteers and locations of all traffic control devices, as appropriate)
- Other event details _____

(Contact the District Office to determine what, if any, additional information will be required for your event.)

*** Submit completed Data Sheet and Signature Sheet to SHA no later than 60 DAYS prior to your event ***
<http://www.marylandroads.com/Index.aspx?PagelD=59>



Maryland State Highway Administration Special Event Permit - Signature Sheet

EVENT: Cambridge Crab Run

ORGANIZER'S ACKNOWLEDGEMENT

I/We hereby affirm that the **ORGANIZER** of this **EVENT** and all **PARTICIPANTS** will comply with the Laws of the State of Maryland and any applicable county and municipal statutes and ordinances and will adhere to the terms and conditions set forth in this **PERMIT**. My/Our signature(s) below confirm that the **ORGANIZER** and all **PARTICIPANTS** agree to hold harmless from any liability, incurred by them or to others associated with this **EVENT**, the various governmental agencies providing assistance for this **EVENT**. The **ORGANIZER** may be required to obtain Liability and Property Damage Insurance with limits of at least \$300,000 per incident/\$1,000,000 aggregate.

ORGANIZER: TCR Event Management
PLEASE PRINT NAME

REPRESENTATIVE: Jason T Chance
PLEASE PRINT NAME

SIGNATURE: *Jason Chance*
PLEASE SIGN

TERMS AND CONDITIONS

- 1) This **EVENT** shall adhere to the route, number of participants and vehicles (not more than 10% higher than the numbers on this Permit), date(s) and times shown on the attached _____ sheet(s).
- 2) The **ORGANIZER** shall ensure that the approved **TRAFFIC CONTROL PLAN** is followed.
- 3) In the event of winter weather during the event, SHA will require access to all State Highways for weather related operations. This may require cancellation of the event.
- 4) Immediately following the event, the **ORGANIZER** shall clean up all litter, temporary signs and other event materials and return the roadway to a condition equal to or better than its condition before the event.
- 5) Additional stipulations: _____

AGENCY APPROVALS

Before signing and giving approval for your agency, consider the following:

- 1) Ensure you have the approval authority to sign for your agency to commit manpower and resources.
- 2) Ensure you have looked over the entire application package, including the Route Map and Traffic Control Plan. If you identify any problems, have the event organizer address them prior to signing.
- 3) If reimbursement is required, ensure you have mutually agreed upon the amount (in writing) and terms under which payment will be made.

Local Government (_____): _____
AGENCY SIGNATURE PRINTED NAME DATE

Local Government (_____): _____
AGENCY SIGNATURE PRINTED NAME DATE

Local Government (_____): _____
AGENCY SIGNATURE PRINTED NAME DATE

Maryland State Police: _____
SIGNATURE PRINTED NAME DATE

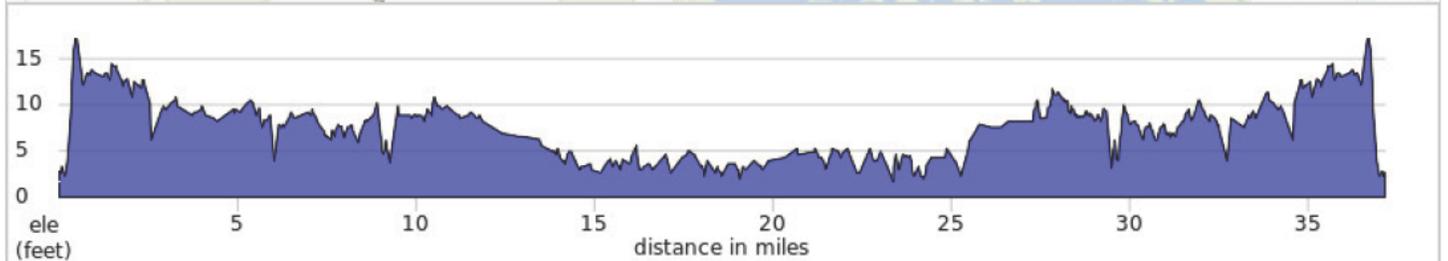
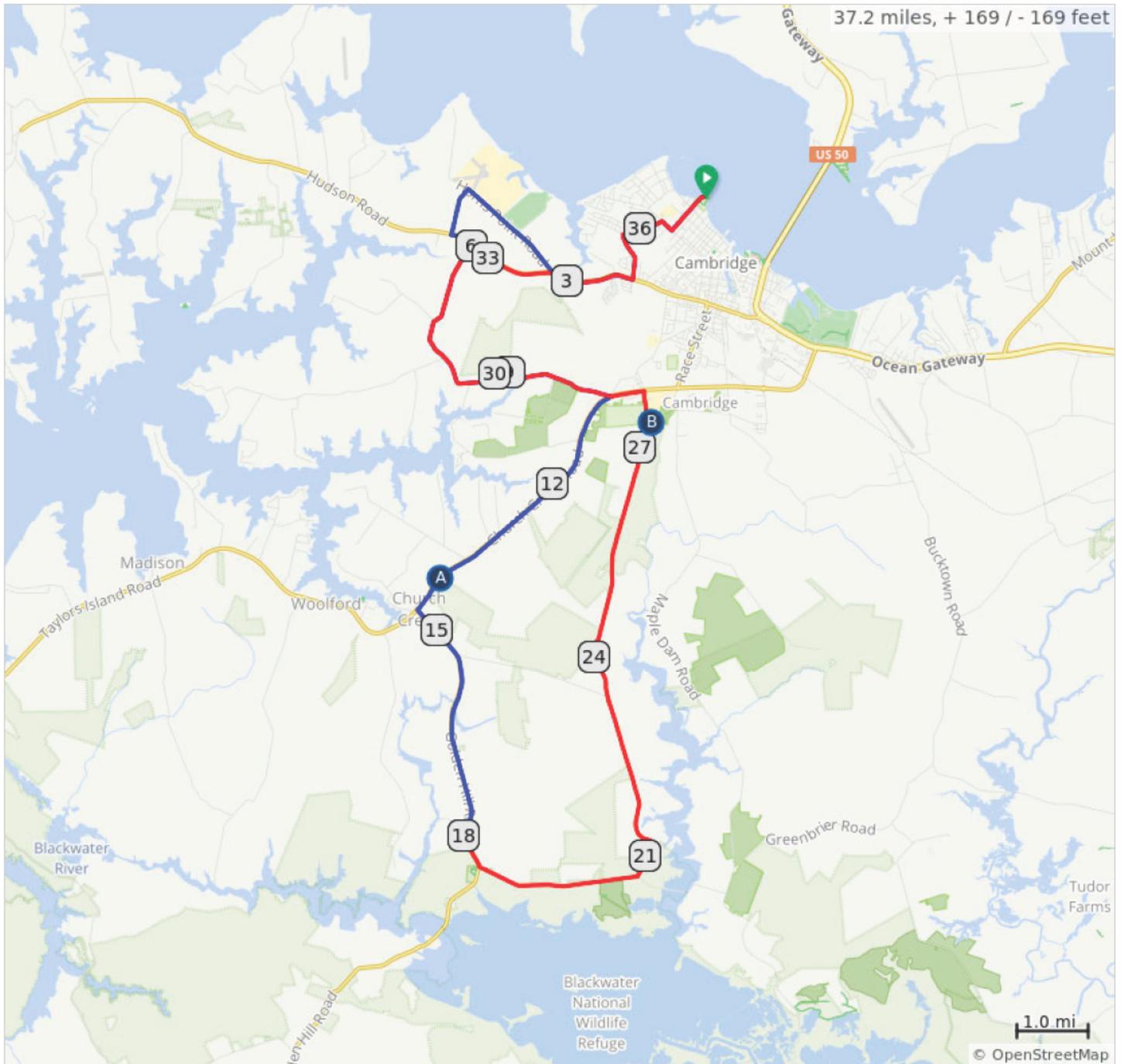
State Highway Administration: _____
SIGNATURE PRINTED NAME DATE

Six Pillars (37) Pink Route



Six Pillars 37 Mile Fun and Fitness: Pink Course Start/
Finish location: HWMC+VQ Cambridge, Maryland

- A. REST STOP: Trustworthy
- B. REST STOP: Fairness



Six Pillars 37 Mile Fun and Fitness: Pink Course

Six Pillars (37) Pink Route

0.0		Start of route
0.7		R onto Glasgow Street
0.9		L onto Jenkins Creek Road
1.4		L onto West Side Bypass
2.1		R onto Hudson Rd
3.3		Keep R onto Horns Point Road
4.9		L onto Lovers Lane
5.6		L onto Hudson Rd
6.0		R onto Town Point Road
7.8		Continue onto Dailsville Road

7.8 miles. +35/-31 feet

10.5		Sharp R onto Church Creek Rd
14.0		REST STOP: Trustworthy Rest Stop at Park on Right Open 7:00 AM - 10:00 AM
14.6		L onto Golden Hill Road, MD 335
14.6		Continue onto Golden Hill Road, MD 335
18.5		L onto Key Wallace Drive
20.7		L onto Egypt Road
27.4		REST STOP: Fairness Open 8:00 AM - 2:00 PM
27.8		L onto Church Creek Rd

20.0 miles. +44/-44 feet

28.3		Slight R onto Dailsville Rd
31.0		Continue straight onto Town Point Rd
32.7		R onto Hudson Rd
35.1		L onto West Side Bypass
35.7		R onto Jenkins Creek Road
36.3		R onto Glasgow Street
36.5		L onto Somerset Avenue
37.2		End of route

9.3 miles. +44/-51 feet

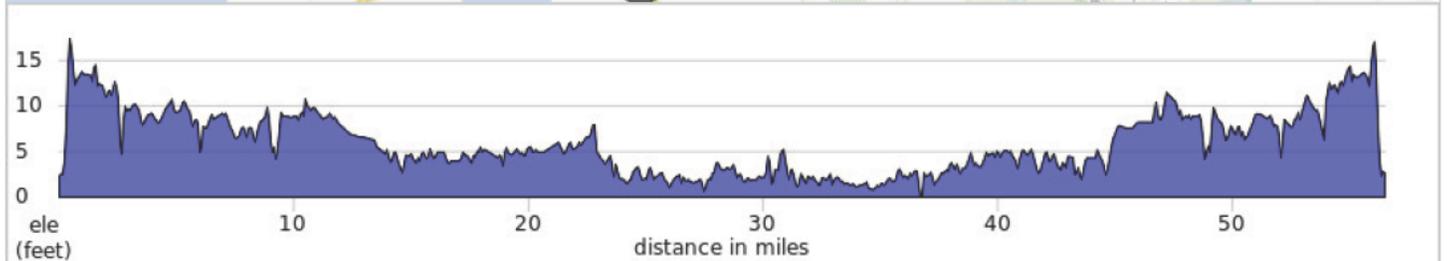
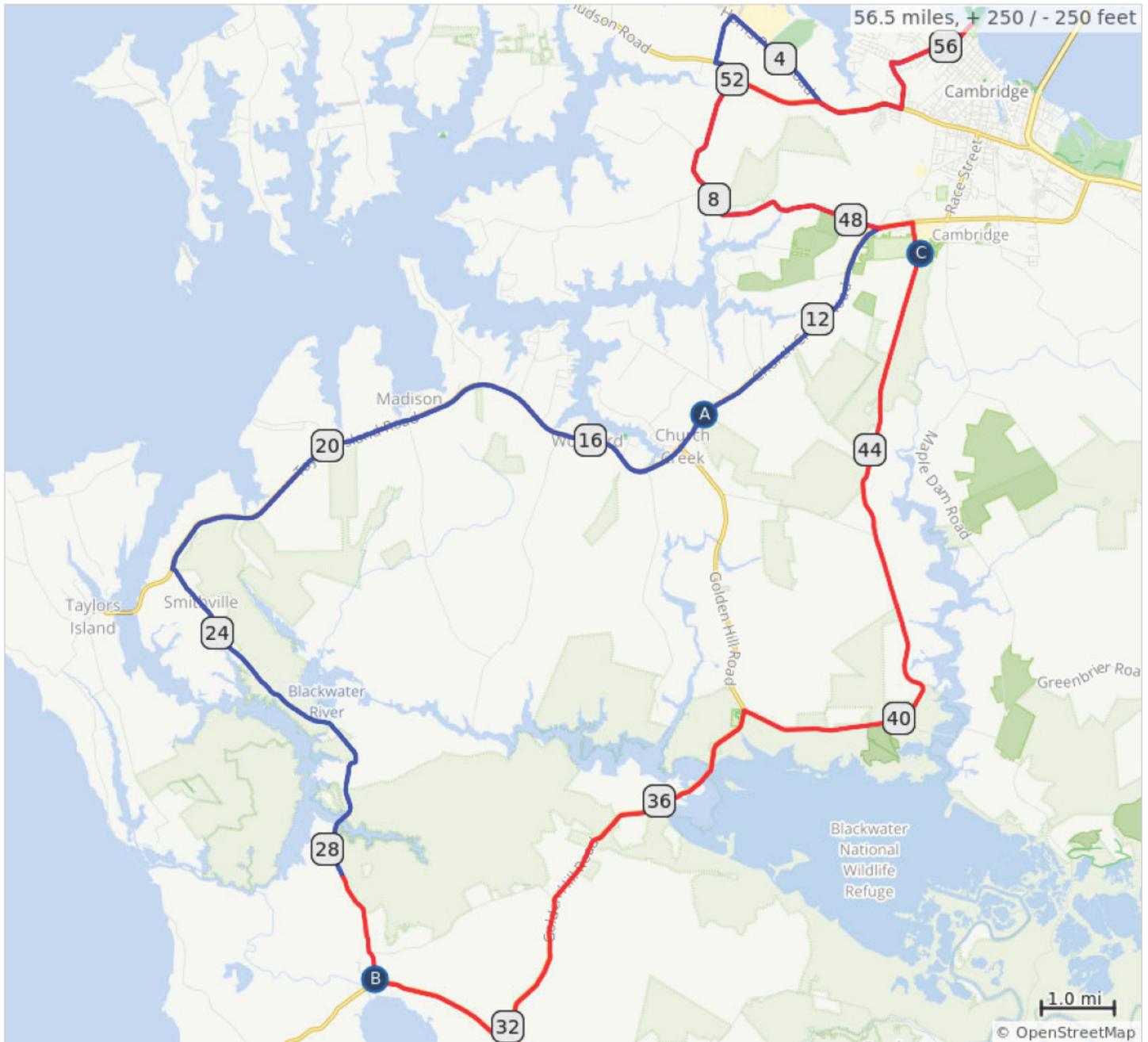
Six Pillars (56) Orange Route



Eagleman Ironman Route

Start/Finish Location: HWMC+VQ Cambridge, Maryland

- A. REST STOP: Trustworthy
- B. REST STOP: Respect
- C. REST STOP: Fairness



Six Pillars 56 Mile Eagleman Ironman: Orange Route

Six Pillars (56) Orange Route

0.0		Start of route
0.7		R onto Glasgow St
0.8		L onto Jenkins Creek Rd
1.4		L onto West Side Bypass
2.1		R onto Hudson Rd
3.2		Stay R onto Horn Point Rd.
4.9		L onto Lovers Ln
5.6		L onto Hudson Rd
6.0		R onto Town Point Road
7.8		Continue onto Dailsville Road

7.8 miles. +41/-36 feet

10.5		Sharp R onto Church Creek Rd.
14.0		REST STOP: Trustworthy Open at Park on Right: Open 7:00 AM - 10:00 AM
22.9		L onto Smithville Rd.
29.9		L toward Hoopers Island Rd.
29.9		REST STOP: Respect
30.0		L onto Hoopers Island Rd.
31.9		L onto Golden Hill Rd/MD-335 N
37.8		R onto Key Wallace Dr
40.1		L onto Egypt Rd

32.3 miles. +72/-78 feet

46.7		REST STOP: Fairness Open 8:00 AM - 2:00 PM
47.2		Sharp L onto Church Creek Rd.
47.6		Keep R onto Dailsville Road
50.3		Continue onto Town Point Road
52.1		R onto Hudson Rd
54.4		L onto West Side Bypass
55.1		R onto Jenkins Creek Road
55.7		R onto Glasgow Street
55.8		L onto Somerset Avenue
56.5		End of route

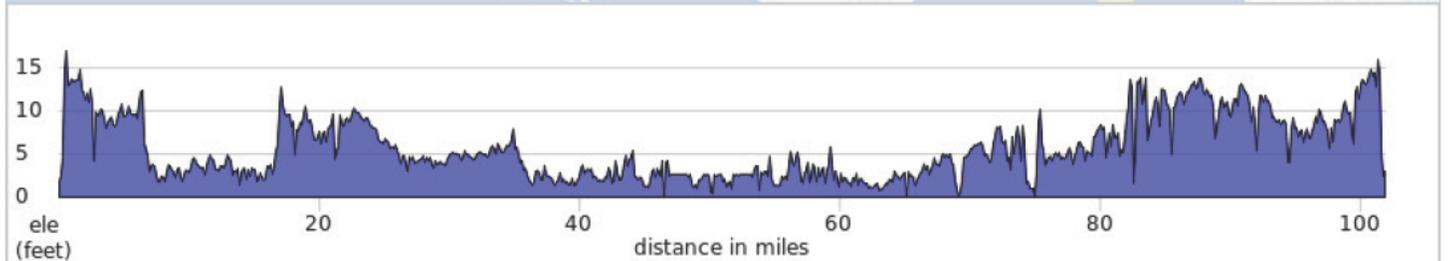
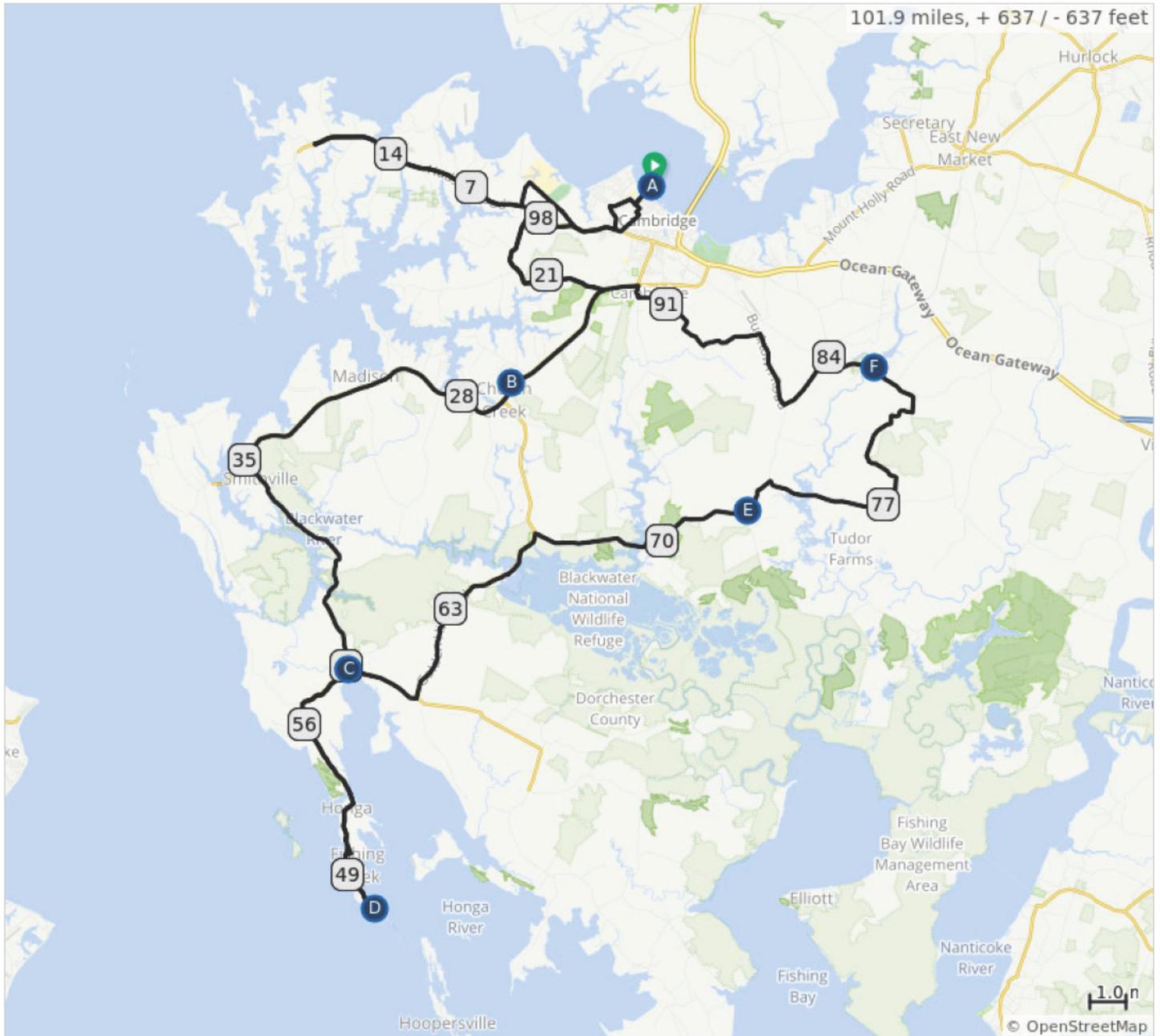
16.4 miles. +42/-50 feet

Six Pillars (100) Yellow Route



Six Pillars 100 Mile Century: Yellow Route

A.	Finish: Great Marsh Point	D.	REST STOP: Responsibility
B.	REST STOP: Trustworthy	E.	REST STOP: Caring
C.	REST STOP: Respect	F.	REST STOP: Citizenship



Six Pillars Century - 2021-0501

Six Pillars (100) Yellow Route

0.0	Start of route
0.7	R onto Glasgow St.
0.9	L onto Jenkins Creek Rd
1.4	L onto West Side Bypass
2.1	R onto Hudson Rd.
3.3	Slight R onto Horns Point Rd
4.9	L onto Lovers Ln
5.6	R onto MD-343 W
11.6	Slight R onto Cook Point Rd
11.7	L onto Cook Point Rd.
11.7	L onto Hudson Rd.
18.1	R onto Town Point Rd
19.9	Continue onto Dailsville Rd
22.6	Sharp R onto Church Creek Rd
26.2	REST STOP: Trustworthy Open 7:00 AM - 10: AM
35.0	L onto Smithville Rd

35.0 miles. +130/-124 feet

42.0	REST STOP: Respect Open 8:15 AM - 1:00 PM
42.1	Slight R onto Hoopers Island Rd.
43.6	Slight L to stay on Hoopers Island Rd.
47.8	L to stay on Hoopers Island Rd
48.2	R to stay on Hoopers Island Rd
50.2	REST STOP: Responsibility U turn at this point.
52.1	L onto Creighton Rd
52.3	Slight L onto Hoopers Island Rd
52.5	R to stay on Hoopers Island Rd
58.1	Slight L onto Smithville Rd to rest stop.
58.2	U-Turn after rest stop back on Smithville Rd.
58.3	Sharp L onto Hoopers Island Rd
60.3	L onto Golden Hill Rd.
66.3	R onto Key Wallace Dr

31.2 miles. +92/-91 feet

69.9	L onto Maple Dam Rd
70.2	Slight R onto Greenbrier Rd
72.7	REST STOP: CARING
72.7	Continue onto Bucktown Rd
73.7	R onto Decoursey Bridge Rd
77.2	L onto Fork Neck Rd
81.0	L onto Drawbridge Rd
81.4	Slight L to stay on Drawbridge Rd
82.6	REST STOP: Citizenship Open 10:00 AM - 4:00 PM. At Ross Creek Boat Launch
82.9	Continue onto Aireys Rd
84.0	L onto Indian Bone Rd
85.8	R onto Bucktown Rd
87.8	L onto Stone Boundary Rd
89.4	R to stay on Stone Boundary Rd
91.2	L onto Southside Ave
92.0	R onto Maple Dam Rd

25.7 miles. +136/-133 feet

92.3	L onto Church Creek Rd
93.2	Slight R onto Dailsville Rd
95.9	Continue straight onto Town Point Rd
97.7	R onto Hudson Rd.
100.2	L onto Leonards Ln
100.8	L onto Glover Ave
100.9	R onto Glenburn Ave
101.0	L onto Glasgow St
101.2	R onto Somerset Ave
101.9	End of route

9.9 miles. +51/-60 feet



APPLICATION FOR A SPECIAL EVENT PERMIT

Special event application must be typed or printed clearly and legibly. In order for the event to be considered the form must be submitted no less than sixty (60) days prior to the planned event. If this is a new event, the application should be submitted 120 days in advance.

Date of Application: Feb 10, 2026

Event Title or Type: Cambridge Crab Run

Location of Event: Gerry Boyle Park, 0 Somerset Avenue, Cambridge, MD

Date(s) of Event: May 10, 2026

Hours of Event (Actual): 0700 - 1100 Rain Date: N/A

Name of Applicant: Jason Chance Title: Owner

If representing an organization or company,
name(s): Revolution3

Signature of Applicant: 

If application is presented on or behalf of 1 or 2 businesses only, list names of business(es):

Address of Applicant: 

Telephone:  Email: 

Expected attendance: 300

Is a street closing being requested? Yes No
(show on map)

If yes, what street(s) _____

If yes, indicate street closure & reopen
times (include set up and breakdown time): _____

Is staging or a platform required? Yes (show on map) No Amplification: Yes No

If event is on private property, name of Property Owner: City of Cambridge

Will trash barrels be needed by the City? Yes No

Will police officers be needed during the entire event? Yes How Many 2? No

Will portable toilets be provided? Yes (show on map) No



APPLICATION FOR A SPECIAL EVENT PERMIT

Will tent be erected? Yes (show on map) No

Will food be prepared on the premises? Yes No

Will alcohol be served? Yes No

ROAD RACE, WALK-A-THON, ETC.

On Roadway? Yes No

On Sidewalk? Yes No

Will temporary signs be posted? Yes No

*****Signs must be removed by the following business day; no paint is allowed on streets or sidewalks.*****

Specific Route: Please see attached race course and affected streets

- I attached a map showing locations of street closures, vehicles, and temporary structures,
- For new events, I have attached documentation of notification of the application to all affected businesses and residents and attest that a majority have supported and/or not objected to this event.
- I have read & agree to the City's Street Closures Policy.

FOR OFFICE USE ONLY

Conditions of Special Event Permission: _____

Police Costs: \$ _____ DPW Costs: \$ _____ Other Costs: \$ _____

TOTAL COSTS REQUIRED BY CITY COUNCIL: \$ _____

Recommendations:

Cambridge Police Department Approval Denial _____
Signature

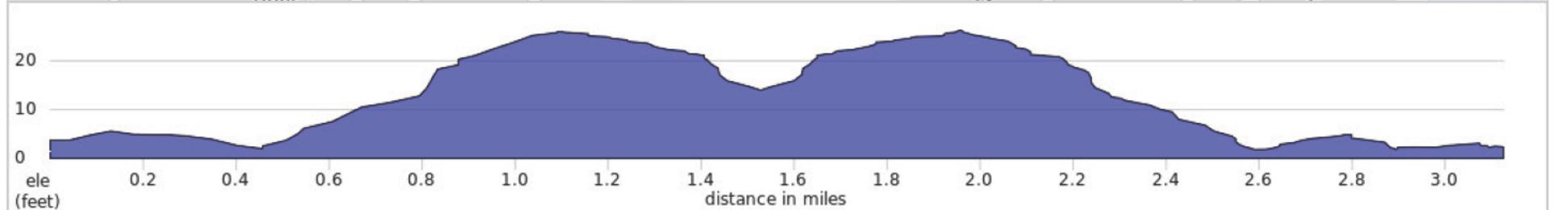
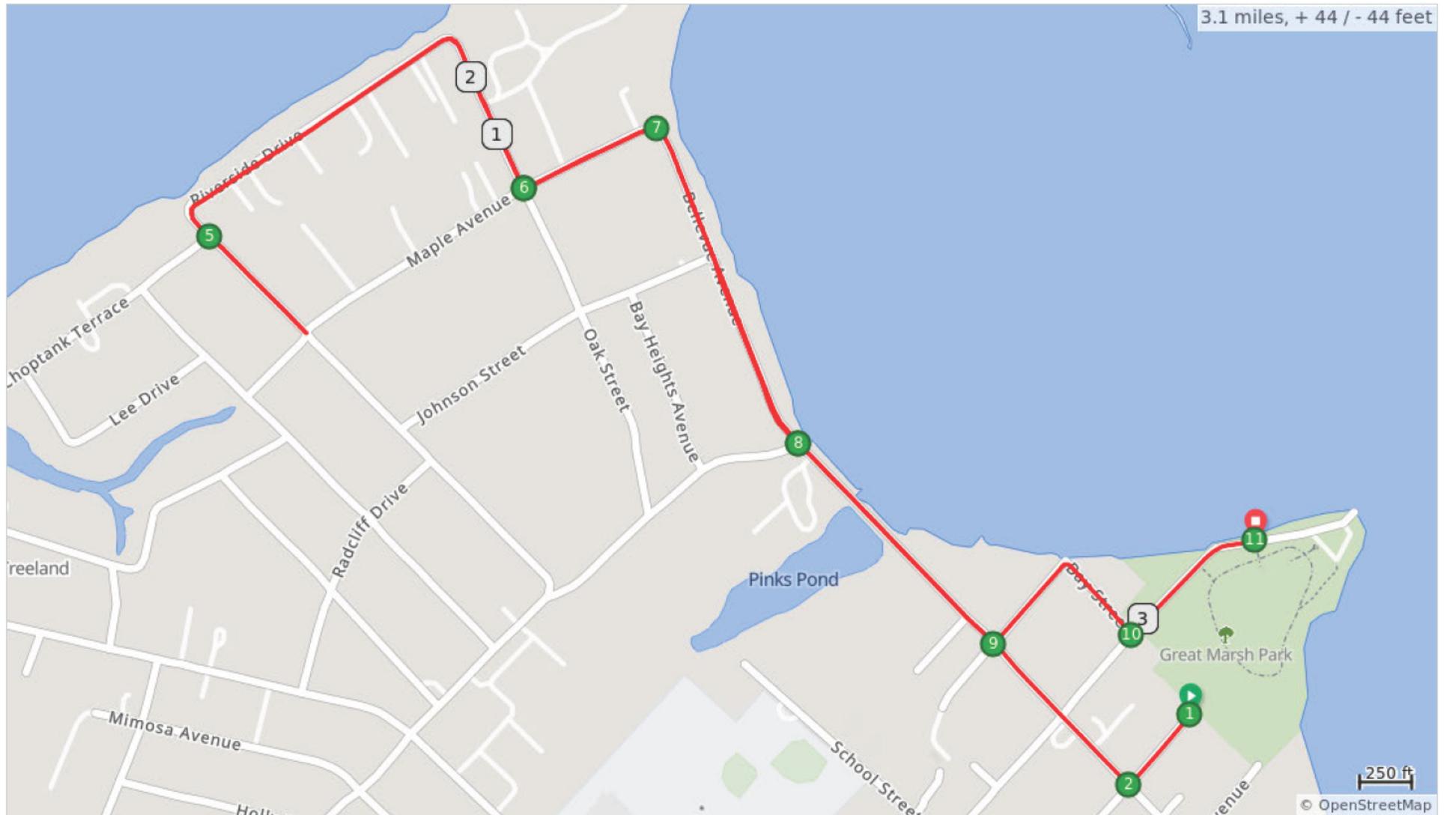
Rescue Fire Department Approval Denial _____
Signature

Public Works Department Approval Denial _____
Signature

Cambridge Crab Run 5k



3.1 miles, + 44 / - 44 feet



Cambridge Crab Run 5k

Num	Dist	Prev	Type	Note	Next
1.	0.0	0.0	📍	Start of route	0.1
2.	0.1	0.1	➔	R onto Hambro oks Boulevard	0.4
3.	0.5	0.4	⬆	Continue onto Bellevue Avenue	0.4
4.	0.9	0.4	➔	R onto Oak Street	0.5
5.	1.4	0.5	⬆	Continue onto Bay View Ave	0.7

1.4 miles. +25/-7 feet

Num	Dist	Prev	Type	Note	Next
6.	2.1	0.7	⬅	L onto Maple Ave	0.1
7.	2.2	0.1	➔	Maple Ave turns R and becomes Bellevue Ave	0.3
8.	2.5	0.3	⬆	Continue onto Hambro oks Blvd	0.2
9.	2.8	0.2	⬅	L onto Bay St/ Queen Anne Ave	0.2

1.4 miles. +2/-19 feet

Num	Dist	Prev	Type	Note	Next
10.	3.0	0.2	⬅	L onto Somerset Ave	0.1
11.	3.1	0.1	📍	End of route	0.0

0.3 miles. +0/-0 feet

Cambridge Crab Run



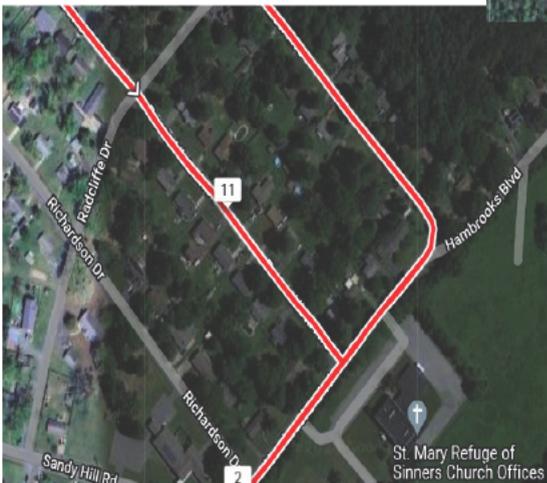
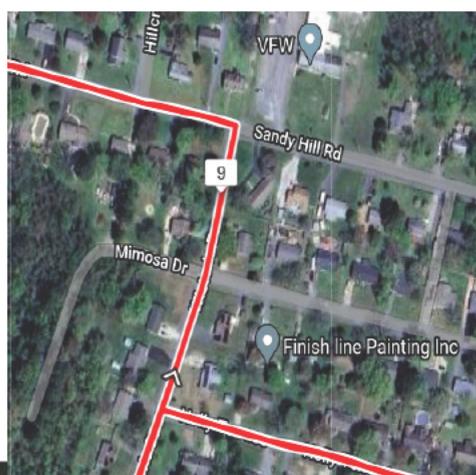
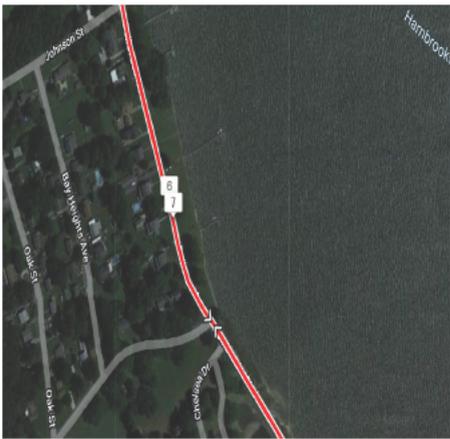
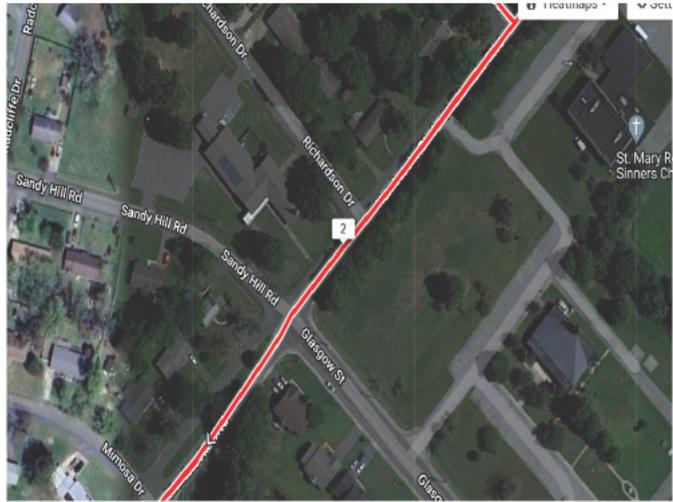
13.1 miles, + 169 / - 170 feet



- Start on Talbot
- Right on Hambrooks
- Right on Oak Street
- Oak becomes Riverside becomes BayView
- Bayview veers right to Hambrooks
- STRAIGHT on Hambrooks at Sandy Hill/Glasgow
- Right on Holly Terrace
- Left on Wisteria
- TA at end
- Left on Sandy Hill Rd
- Left on Algonquin Rd
- Loop around to Manito Dr
- Left on Hawsawap to Sandy Hill
- Left on Hillcrest to Linthicum
- Right on Buena Vista
- Left on Hambrooks
- Left on Queen Ann to Bay
- Right on Somerset (1st Loop Right, 2nd Loop Left)

SIGNS PACKED

- 12 turn signs
- 1 straight
- Regular Turnaround
- 5k Turnaround





Maryland State Highway Administration Special Event Permit – Data Sheet

Event: Cambridge Crab Run

Start Date: May 10, 2026 End Date: May 10, 2026

Start Time: 0730 End Time: 1130

Purpose/Type: Running Event

Organizer: TCR Event Management

Contact Person Jason Chance Daytime Phone: [REDACTED]

and Address: [REDACTED] Evening Phone: [REDACTED]

Email Address: [REDACTED]

No. of Participants: 200 No. of Vehicles/Units: 0 Rain/Snow Date: _____

Proposed Route: Please see attached race course and affected streets
(Written Description)

Will you be occupying all or part of a highway travel lane? No Yes _____

Will you be closing all or part of a roadway? No Yes _____

If Yes to either of the above, where? _____

Have you requested Local Police assistance?* No _____ Yes Number _____

Have you requested Maryland State Police assistance?* No Yes _____ Number _____

*** THE EVENT ORGANIZER IS RESPONSIBLE FOR OBTAINING LOCAL AND/OR STATE POLICE ASSISTANCE ***

CIRCLE THE DISTRICT(S) AND COUNTY(S) YOUR EVENT WILL TAKE PLACE IN

DISTRICT 1 Dorchester / Somerset / Wicomico / Worcester

DISTRICT 2 Caroline / Cecil / Kent / Queen Anne's / Talbot

DISTRICT 3 Montgomery / Prince George's

DISTRICT 4 Baltimore / Harford

DISTRICT 5 Anne Arundel / Calvert / Charles / St. Mary's

DISTRICT 6 Allegany / Garrett / Washington

DISTRICT 7 Carroll / Howard / Frederick

ATTACH THE FOLLOWING

Map of affected routes

Traffic Control Plan (including details on how intersections will be controlled, a detour plan, locations of police officers/volunteers and locations of all traffic control devices, as appropriate)

Other event details _____

(Contact the District Office to determine what, if any, additional information will be required for your event.)

*** Submit completed Data Sheet and Signature Sheet to SHA no later than 60 DAYS prior to your event ***

<http://www.marylandroads.com/Index.aspx?PagelD=59>



Maryland State Highway Administration Special Event Permit - Signature Sheet

EVENT: Cambridge Crab Run

ORGANIZER'S ACKNOWLEDGEMENT

I/We hereby affirm that the **ORGANIZER** of this **EVENT** and all **PARTICIPANTS** will comply with the Laws of the State of Maryland and any applicable county and municipal statutes and ordinances and will adhere to the terms and conditions set forth in this **PERMIT**. My/Our signature(s) below confirm that the **ORGANIZER** and all **PARTICIPANTS** agree to hold harmless from any liability, incurred by them or to others associated with this **EVENT**, the various governmental agencies providing assistance for this **EVENT**. The **ORGANIZER** may be required to obtain Liability and Property Damage Insurance with limits of at least \$300,000 per incident/\$1,000,000 aggregate.

ORGANIZER: TCR Event Management
PLEASE PRINT NAME

REPRESENTATIVE: Jason T Chance
PLEASE PRINT NAME

SIGNATURE: *Jason Chance*
PLEASE SIGN

TERMS AND CONDITIONS

- 1) This **EVENT** shall adhere to the route, number of participants and vehicles (not more than 10% higher than the numbers on this Permit), date(s) and times shown on the attached _____ sheet(s).
- 2) The **ORGANIZER** shall ensure that the approved **TRAFFIC CONTROL PLAN** is followed.
- 3) In the event of winter weather during the event, SHA will require access to all State Highways for weather related operations. This may require cancellation of the event.
- 4) Immediately following the event, the **ORGANIZER** shall clean up all litter, temporary signs and other event materials and return the roadway to a condition equal to or better than its condition before the event.
- 5) Additional stipulations: _____

AGENCY APPROVALS

Before signing and giving approval for your agency, consider the following:

- 1) Ensure you have the approval authority to sign for your agency to commit manpower and resources.
- 2) Ensure you have looked over the entire application package, including the Route Map and Traffic Control Plan. If you identify any problems, have the event organizer address them prior to signing.
- 3) If reimbursement is required, ensure you have mutually agreed upon the amount (in writing) and terms under which payment will be made.

Local Government (_____): _____
AGENCY SIGNATURE PRINTED NAME DATE

Local Government (_____): _____
AGENCY SIGNATURE PRINTED NAME DATE

Local Government (_____): _____
AGENCY SIGNATURE PRINTED NAME DATE

Maryland State Police: _____
SIGNATURE PRINTED NAME DATE

State Highway Administration: _____
SIGNATURE PRINTED NAME DATE



APPLICATION FOR A SPECIAL EVENT PERMIT

Special event application must be typed or printed clearly and legibly. In order for the event to be considered, the form must be submitted no less than 30 days prior to the planned event.

Date of Application: 1/29/26

Event Title or Type: GFNY Maryland Cambridge 2026

Location of Event: The green space at Cedar & Race. Race course travels on Race Street to Bayly Rd to 16. Then a loop through Dorchester acounty. Returning from the loop back to Cedar & Race via same route on Bayly Rd to Race.

Date(s) of Event: 9/30/26 - 10/4/26

Hours of Event (Actual): 10/4/26 7am - 2pm Rain Date: None

Name of Applicant: Lidia Fluhme Title: President

If representing an organization or company, name(s): Gran Fondo New York

Signature of Applicant: *L Fluhme*

If application is presented on or behalf of 1 or 2 businesses only, list names of business(es):

Address of Applicant: [REDACTED]

Telephone: [REDACTED] Email: [REDACTED]

Expected attendance: 800 participants, 1200 supporters

Is a street closing being requested? Yes (show on map) No

If yes, what street(s) Race street between Cedar and Washington

If yes, indicate street closure & reopen times (include set up and breakdown time): 3:30am to 3pm

Is staging or a platform required? Yes (show on map) No Amplification: Yes No

If event is on private property, name of Property Owner: N/A

Will trash barrels be needed by the City? Yes No

Will police officers be needed during the entire event? Yes No

Will portable toilets be provided? Yes (show on map) No

Will Tent be erected? Yes (show on map) No



APPLICATION FOR A SPECIAL EVENT PERMIT

Will food be prepared on the premises? Yes No

Will alcohol be served? Yes No

ROAD RACE, WALK-A-THON, ETC.

On Roadway? Yes No

On Sidewalk? Yes No

Will temporary signs be posted? Yes No

***** Signs must be removed by the following business day; no paint is allowed on streets or sidewalks. *****

Specific Route:

As per attached Course Operations PDF.

I attached a map showing locations of street closures, vehicles, and temporary structures.

For new events, I have attached documentation of notification of the application to all affected businesses and residents and attest that a majority have supported and/or not objected to this event.

I have read & agree to the City's Street Closures Policy.

FOR OFFICE USE ONLY

Conditions of Special Event Permission: _____

Police Costs: \$ _____ DPW Costs: \$ _____ Other Costs: \$ _____

TOTAL COSTS REQUIRED BY CITY COUNCIL: \$ _____

Recommendations:

Cambridge Police Department Approval Denial

Signature

Rescue Fire Department Approval Denial

Signature

Public Works Department Approval Denial

Signature

Return to: Special Events
410 Academy Street
Cambridge, Maryland 21613

Or

Email a scanned copy to: Tyasia Johnson
tjohnson@choosecambridge.com

GFNY Cambridge 2026 - Course Operations

Race date: Sunday, October 4, 2026

Start time: 7:30am

Course closes: 2:00pm

Start location: Cambridge, MD

Long Course: 92.4 mi / 481 ft

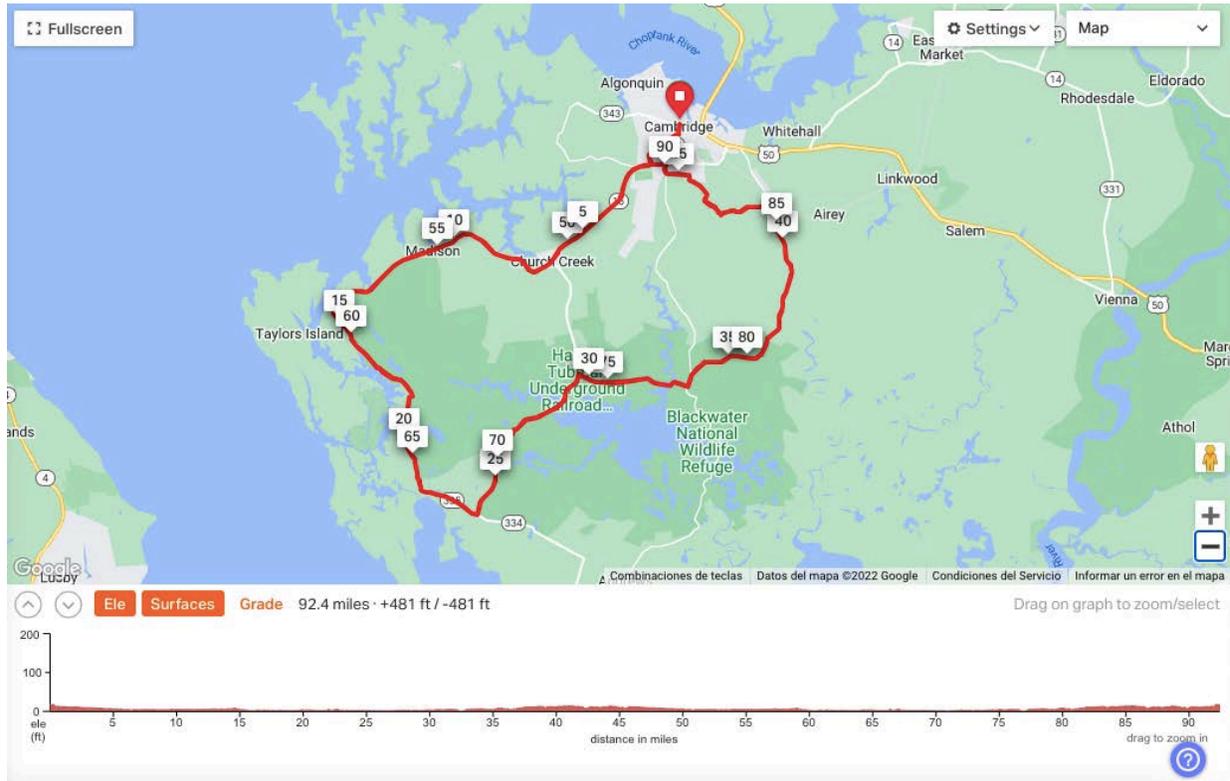
<https://ridewithgps.com/routes/37714783>

Medium Course: 48 mi / 254 ft

<https://ridewithgps.com/routes/35238865>

Fastest cyclist (first): 26 mph

Slowest cyclist (last): 14.5 mph



Be alert of approaching cyclists AT ALL TIMES.

Cyclists have priority at all intersections (as per the post detail).

Hold all vehicles at your intersection as soon as you see cyclists approaching the intersection.

GFNY Cambridge 2026 - Course Operations

START & FINISH

Address: Race Street between Cedar St & Washington St

Address for GPS:

<https://www.google.com/maps/place/38°33'51.9%22N+76°04'42.1%22W/@38.564424,-76.0794439,443m/data=!3m2!1e3!4b1!4m1!1m7!3m6!1s0x89b84a024b480aef:0x440eb0c37bbb4e7c12sCedar+St+%26+Race+St,+Cambridge,+MD+21613,+USA!3b1!8m2!3d38.5656829!4d-76.0780733!3m5!1s0x0:0x0!7e2!8m2!3d38.5644239!4d-76.0783476>

Schedule

Begin road closure	3:30am
Start of set up	4:00am
Corrals open	6:30am
Race start	7:30am
Course closes / race ends	2:00pm
Start of break down	2:00pm
End of break down	2:50pm
Reopening of the road	3:00pm

Race site managers

Race organizer: Lidia Fluhme 917-656-2005

Race judge in the lead car: Santiago Sevilla: 646-689-0761

On-course support van: Kris Koziel 646-812-1696

Joanna is answering the Athlete Hotline, the number to the hotline is 212-500-0566

If athletes ask your deputies for assistance like mechanical or van pickup, please direct the athletes to call the hotline phone number that is on their wristband, the 212-500-0566

End of Race car: Mike Upwind Systems 703-919-5829

There are two aid stations, they are noted in the attached Course Operations PDF.

Aid station 1 (Madison Fire): Daniel Bartosiewicz 862-440-5682

Aid station 2 (Bucktown Store): Michael Nowicki 201-509-9408

Course split manager: Ewelina Zalewski 862-571-6993

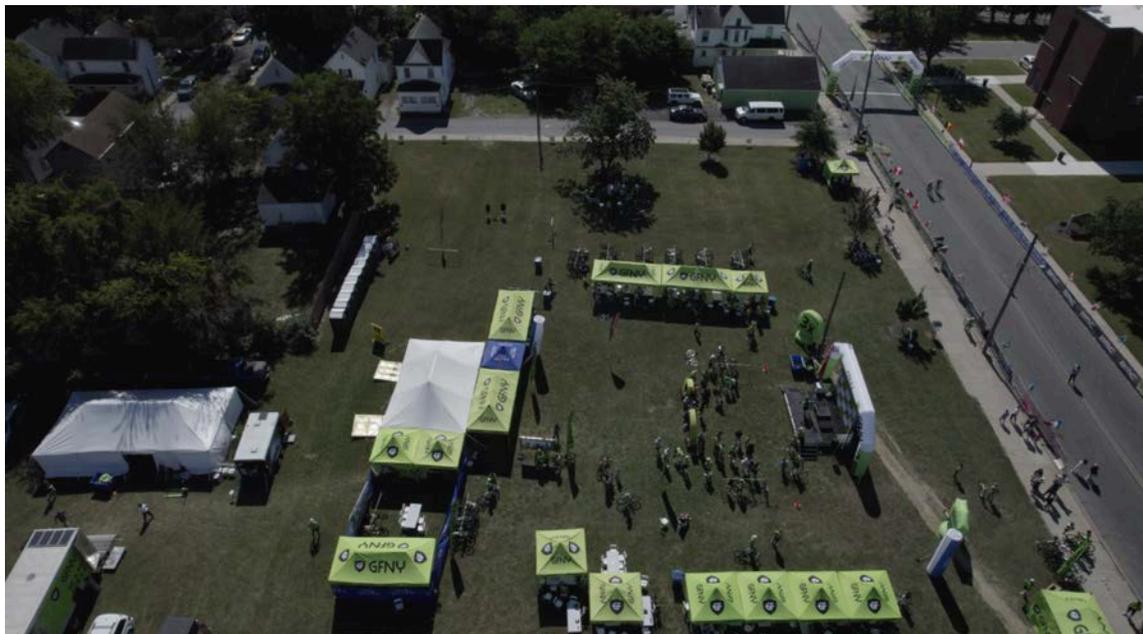
We've instructed the end-of-race moto to follow the last riders and wait for them if they stop at an aid station. The moto is instructed to honk his horn as he passes any PD posts or aid station staff to notify that the last rider has passed.

Alcohol permit obtained by

Dorchester Chamber of Commerce - Bill Christopher

GFNY Cambridge 2026 - Course Operations

GFNY Village - site plan



GFNY Cambridge 2026 - Course Operations

MDOT: Maryland Department of Transportation Roads

The state roadways that the GFNY race covers and on the way to race start/finish line from hotels are as follows.

Hotels - event

MD 750 (Old Route 50)

US 50 (Ocean Gateway)

Racecourse

MD 341 (Race Street) between the MD 343 intersection to MD 16.

MD 16 (Church Creek Rd & Taylors Island Rd) between MD 341 to Smithville Road.

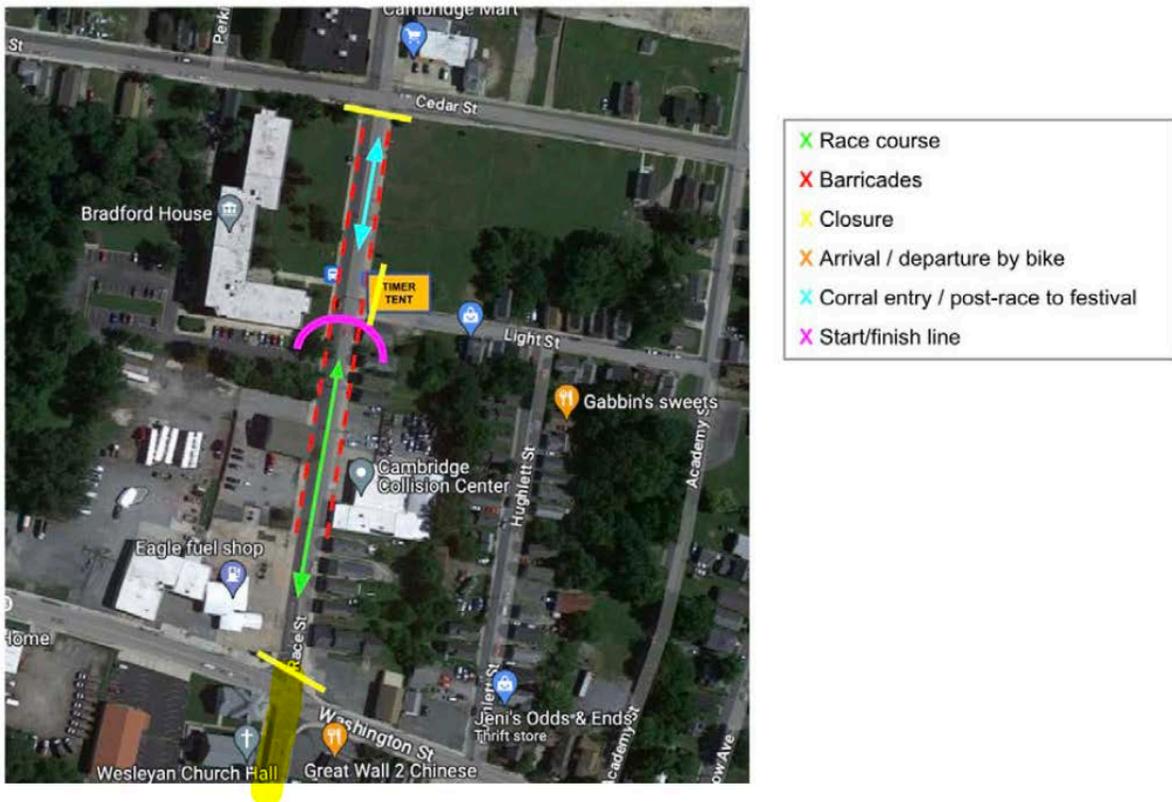
MD 335 (Hoopers Island Rd) between Smithville Rd to MD 336.

MD 335 (Golden Hill Rd) between MD 336 to Key Wallace Rd.

The MDOT roads in this document are highlighted in **yellow**.

GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Continue on Race Street Cross Washington St / MD 343 Race St / MD-341 from Washington St to Bayly Ave	0.1	7:30am	7:32am	Traffic light / Road closed	2



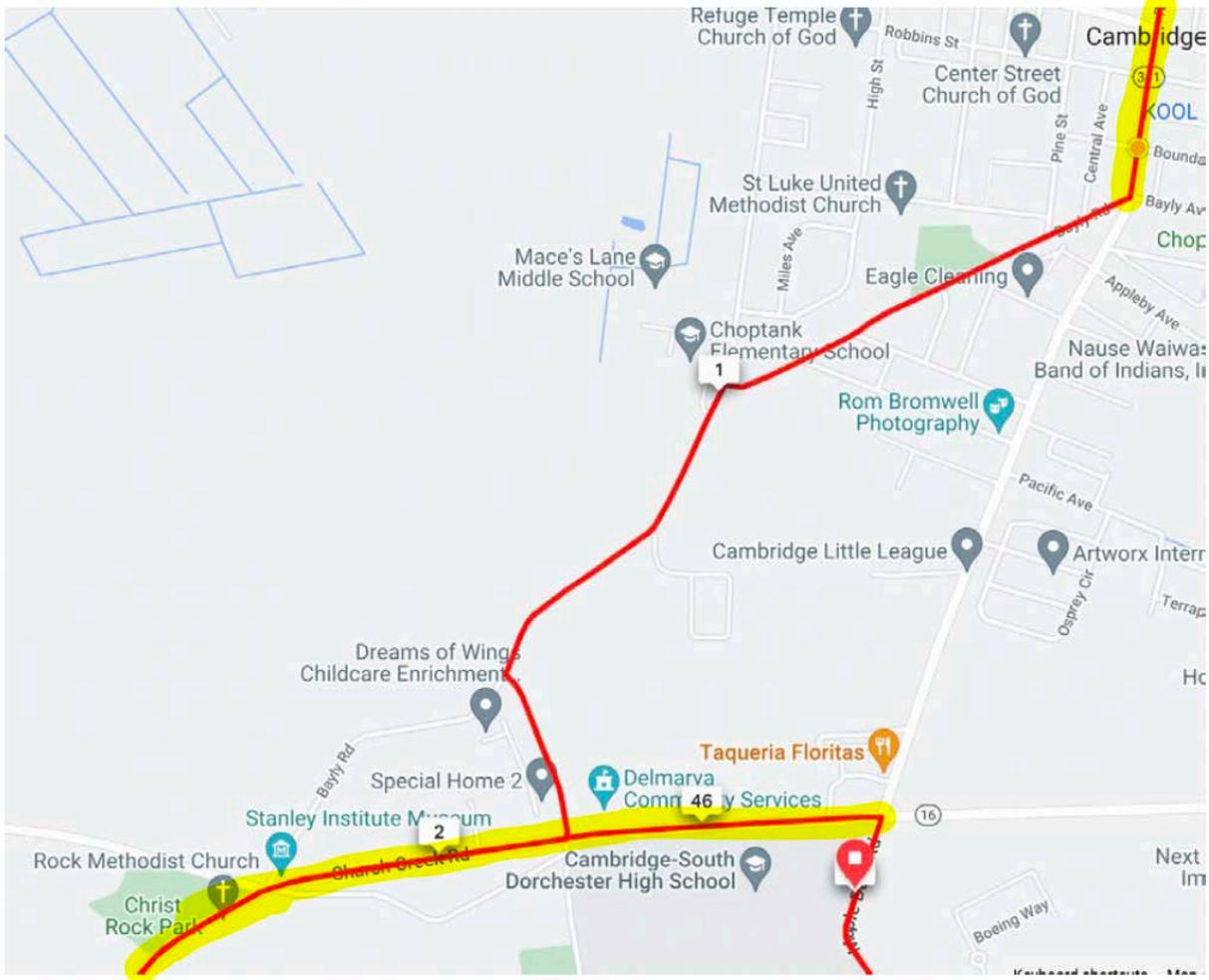
Be alert of approaching cyclists AT ALL TIMES.

Cyclists have priority at all intersections (as per the post detail).

Hold all vehicles at your intersection as soon as you see cyclists approaching the intersection.

GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Turn right onto Bayly Ave	0.3	7:30am	7:33am	Right of way	
Turn left onto Bayly Rd	1	7:32am	7:36am	Stop sign	1
Turn left onto Chesapeake St	1.5	7:33am	7:38am	Yield to oncoming traffic	1
Turn right onto MD-16	1.8	7:34am	7:39 am	Stop sign	1



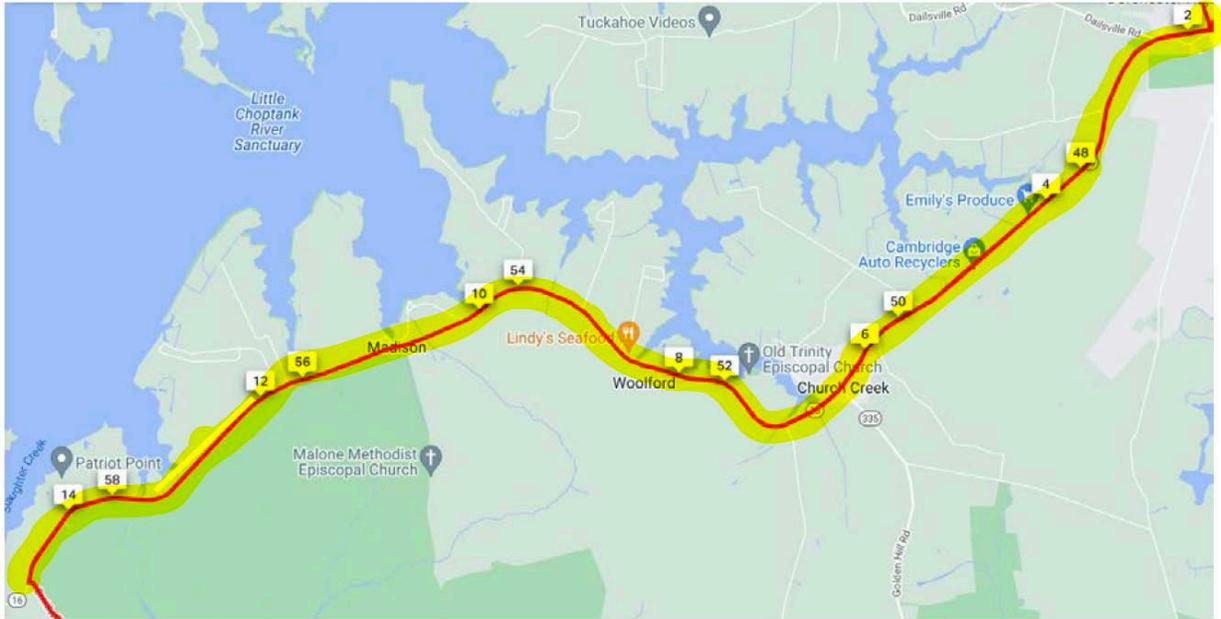
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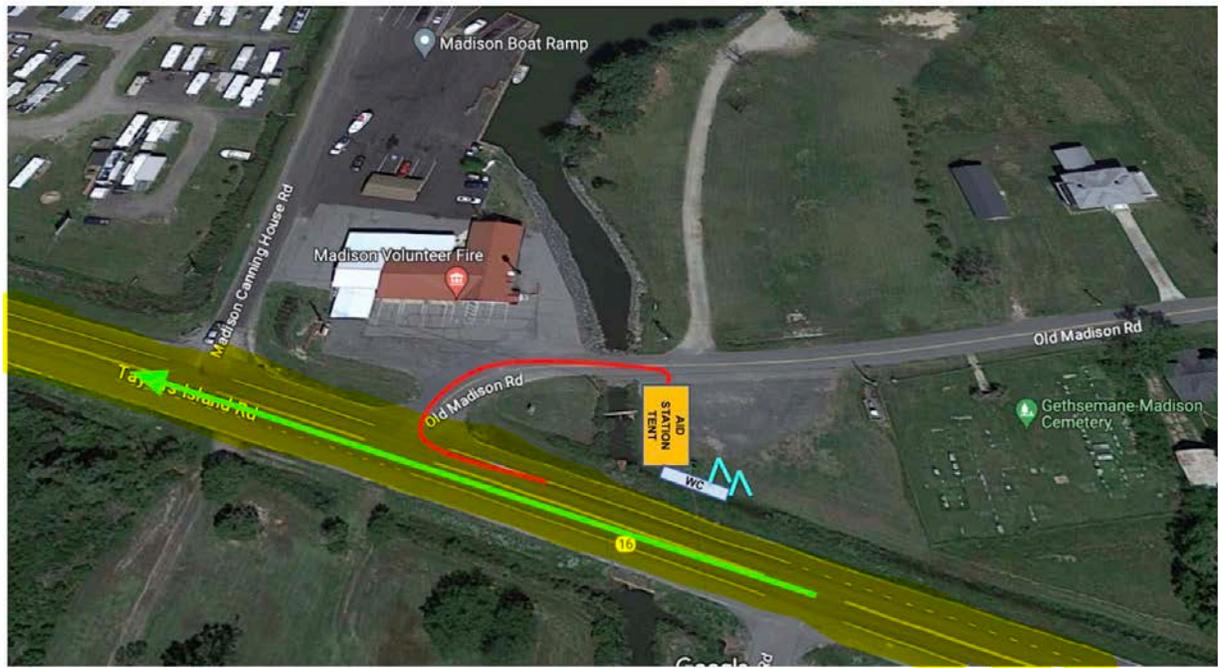
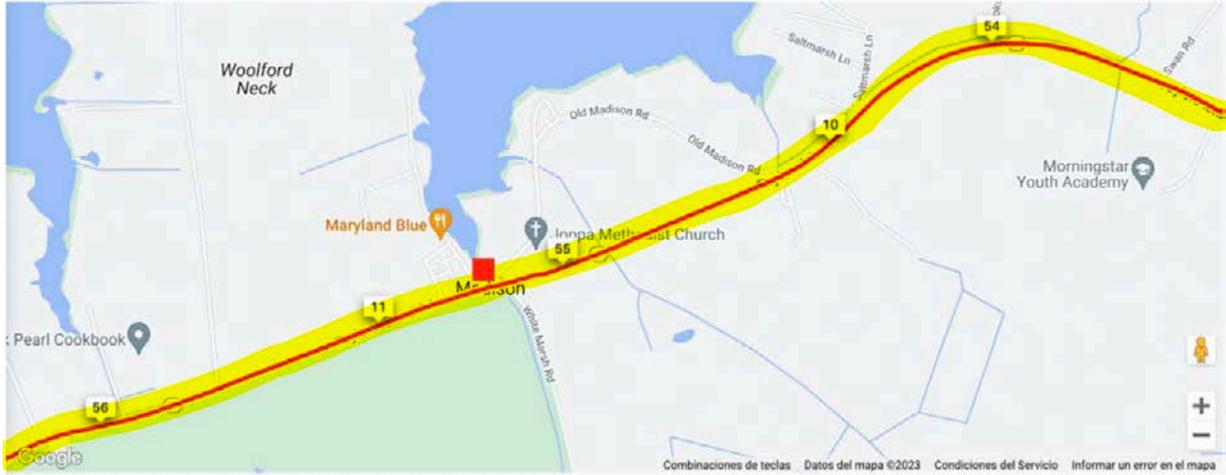
GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Follow MD-16 straight on Taylors Island Rd	6.4 50.7	7:44am 9:27am	7:58am 11:01am	Right of way	



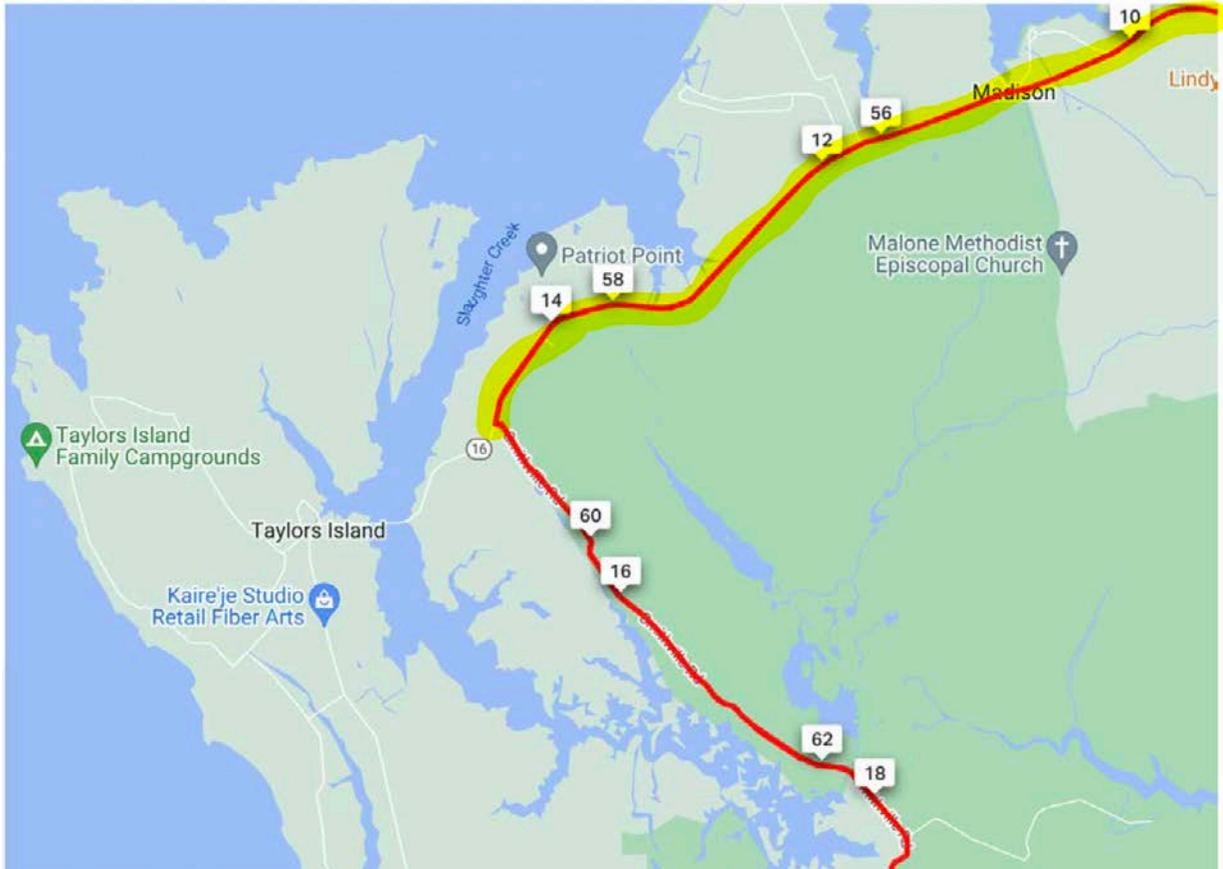
GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Aid Station 1 / 3 - Madison Volunteer Fire Co	10.8 55.2	7:54am 9:37am	8:16am 11:20am		



GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Turn left onto Smithville Rd	14.6 59.1	8:03am 9:46am	8:32am 11:36am	Yield to oncoming traffic	1



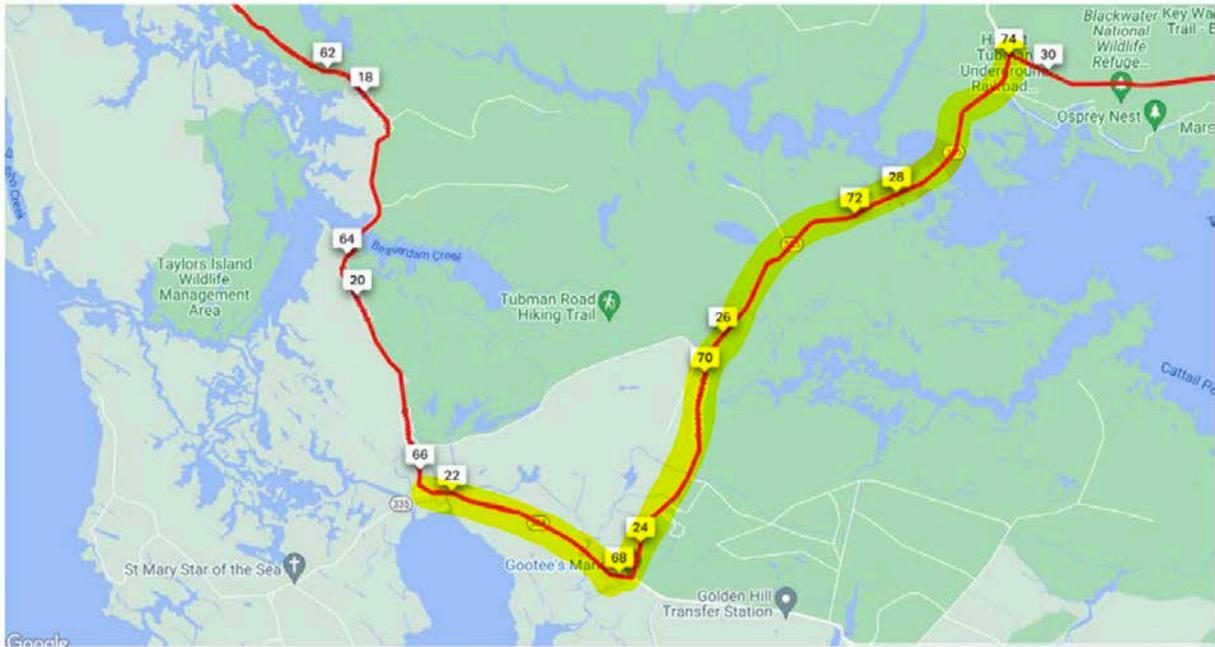
Be alert of approaching cyclists AT ALL TIMES.

Cyclists have priority at all intersections (as per the post detail).

Hold all vehicles at your intersection as soon as you see cyclists approaching the intersection.

GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Turn left	21.7 66.1	8:20am 10:02am	9:01am 12:05pm	Stop sign	1
Turn left onto Hoopers Island Rd / MD-335	21.8 66.2	8:20am 10:02am	9:02am 12:05pm	Stop sign	2
Turn left on Golden Hill Rd / MD-335	23.7 68.1	8:24am 10:07am	9:10am 12:13pm	Yield to oncoming traffic	1



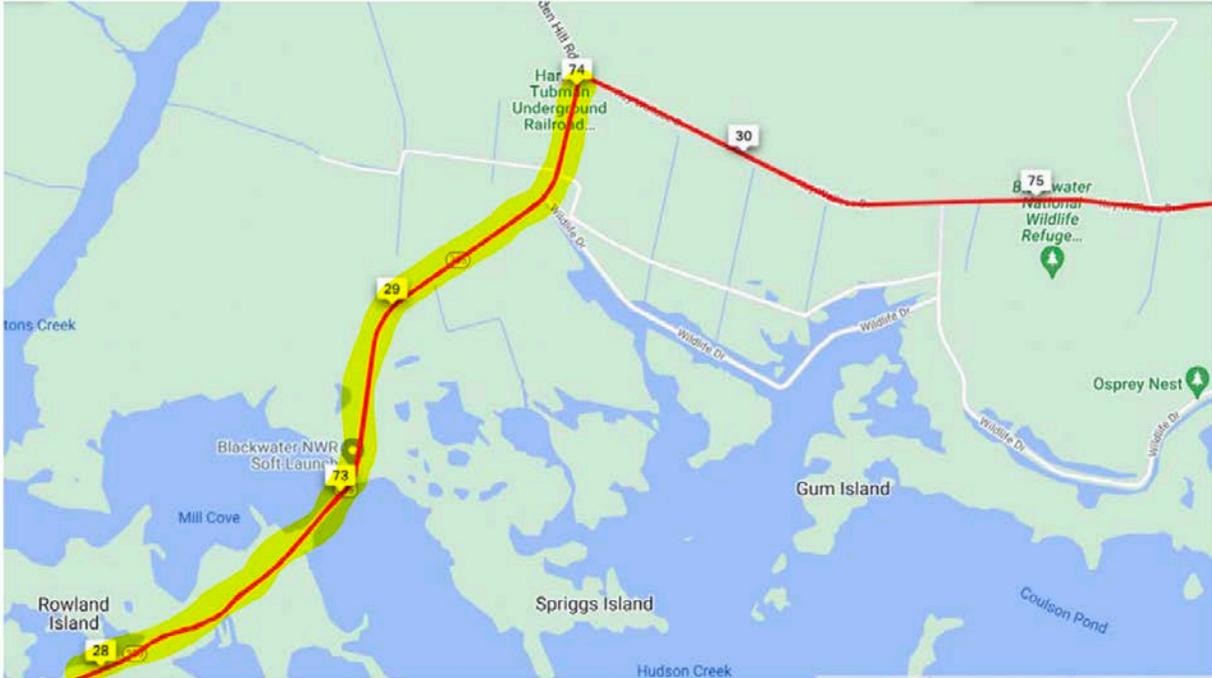
Be alert of approaching cyclists AT ALL TIMES.

Cyclists have priority at all intersections (as per the post detail).

Hold all vehicles at your intersection as soon as you see cyclists approaching the intersection.

GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Turn right onto Key Wallace Dr	29.6 74	8:38am 10:20am	9:34am 12:38pm	Right of way	



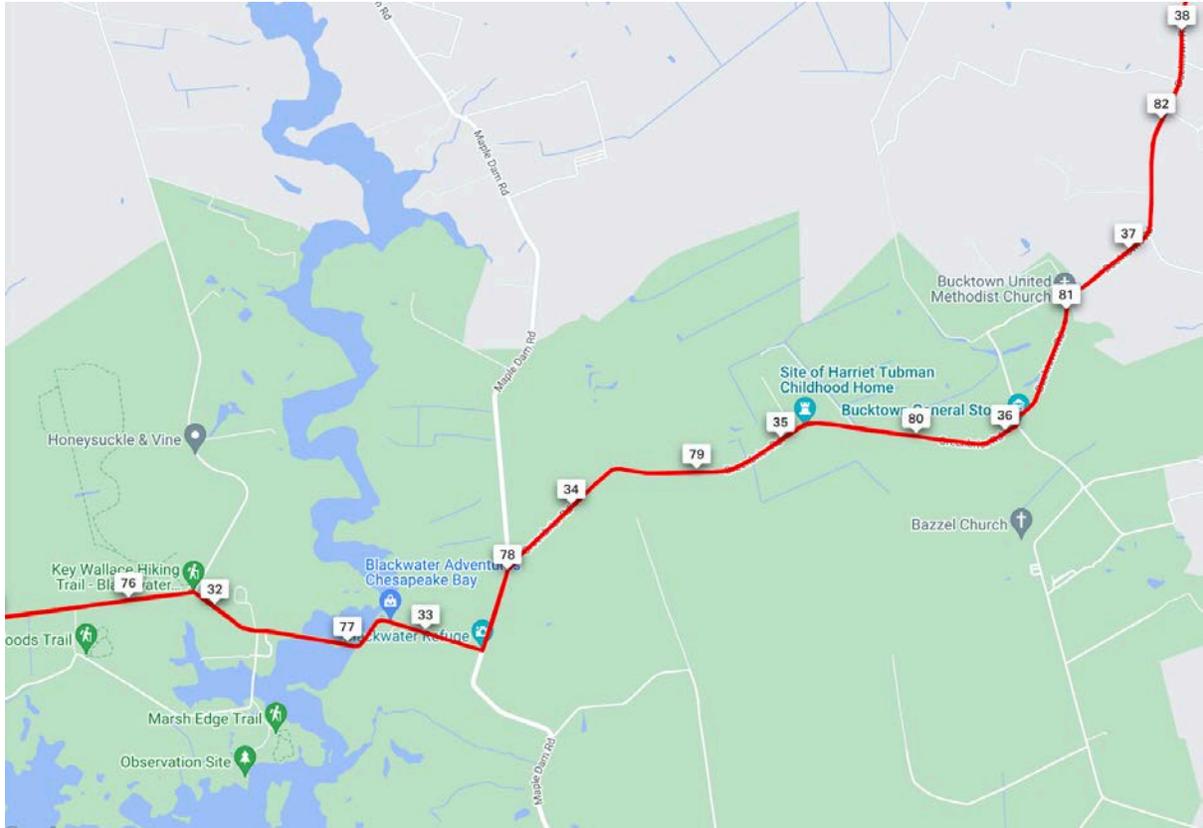
Be alert of approaching cyclists AT ALL TIMES.

Cyclists have priority at all intersections (as per the post detail).

Hold all vehicles at your intersection as soon as you see cyclists approaching the intersection.

GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Turn left onto Maple Dam Rd	33.2 77.7	8:46am 10:29am	9:49am 12:53pm	Stop sign	1
Turn right onto Greenbrier Rd	33.6 78	8:47am 10:30am	9:51am 12:54pm	Right of way	
Turn left onto Bucktown Rd	36.1 80.4	8:53am 10:35am	10:01am 1:04pm	Stop sign	1



Be alert of approaching cyclists AT ALL TIMES.

Cyclists have priority at all intersections (as per the post detail).

Hold all vehicles at your intersection as soon as you see cyclists approaching the intersection.

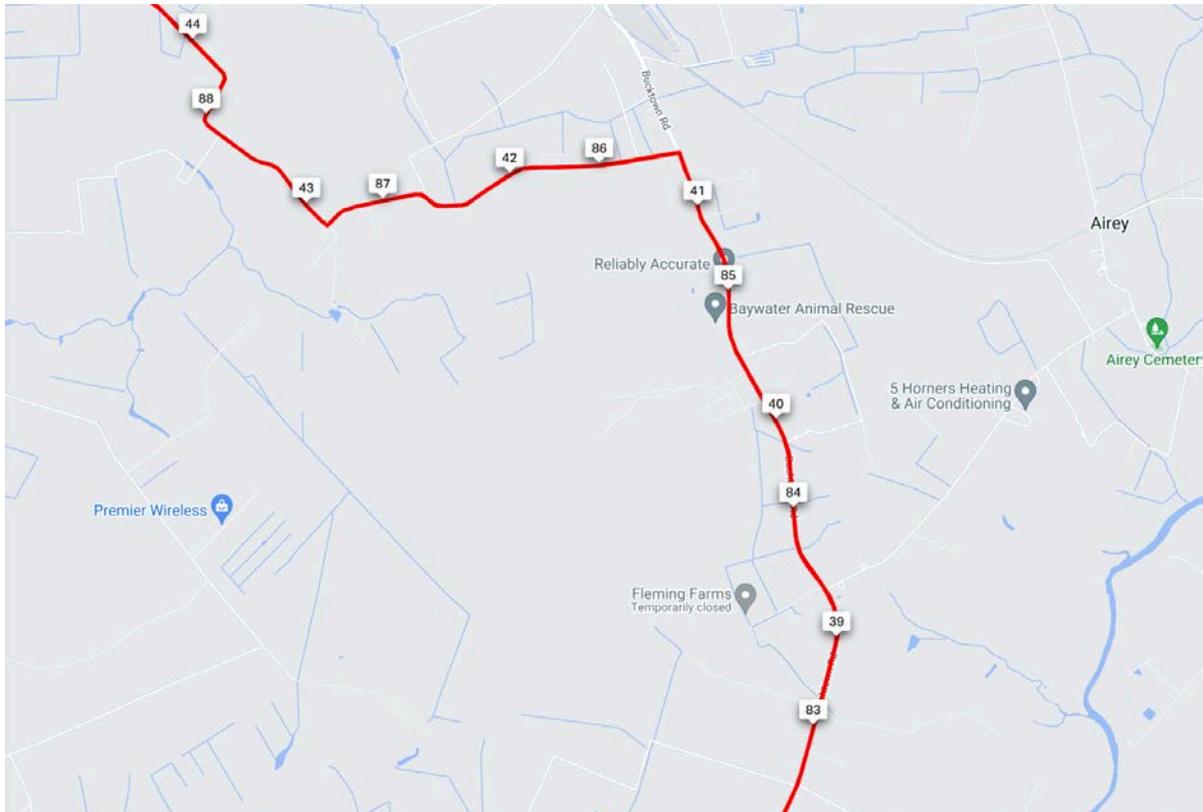
GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Aid Station 2 / 4 - Bucktown General Store	36.1 80.4	8:53am 10:35am	10:01am 1:04pm		



GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Turn left onto Stone Boundary Rd	41.3 85.6	9:05am 10:47am	10:22am 1:26pm	Right of way	
Turn right and follow Stone Boundary Rd	42.9 87.4	9:09am 10:21am	10:29am 1:33pm	Right of way	



Be alert of approaching cyclists AT ALL TIMES.

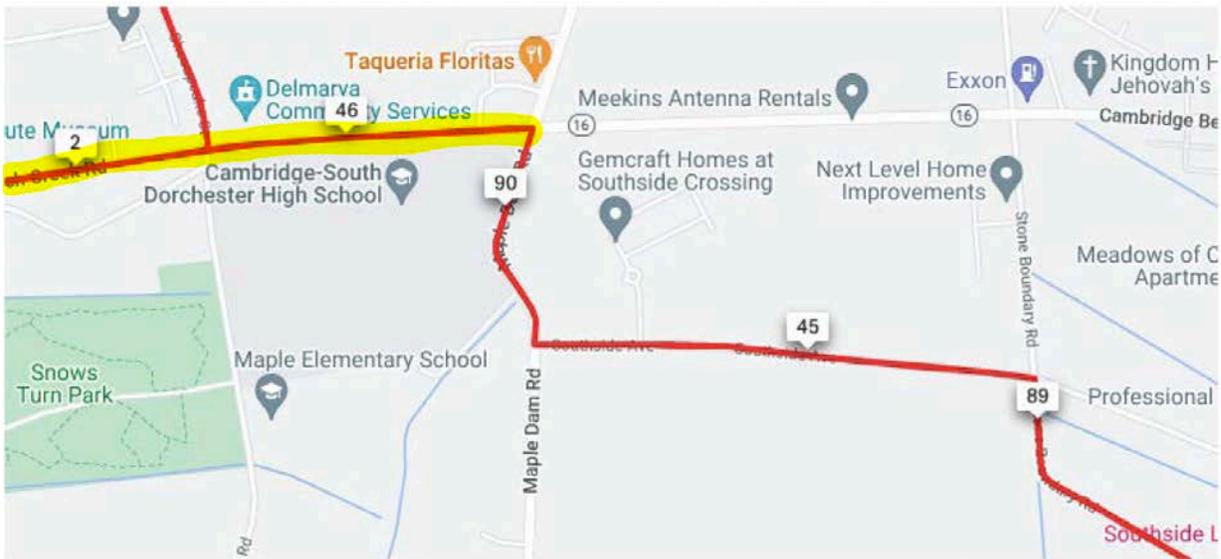
Cyclists have priority at all intersections (as per the post detail).

Hold all vehicles at your intersection as soon as you see cyclists approaching the intersection.

GFNY to put up extra signs: Cycling race on Sunday & Caution: Stone Boundary at the ends - Bucktown Rd & Southside Ave, and also at Maple Dam Rd & Southside Ave.

GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Turn right on Southside Ave	44.6 89.1	9:12am 10:55am	10:36am 1:40pm	Right of way	
Turn right on Maple Dam Rd	45.4 89.8	9:14am 10:57am	10:39am 1:43pm	Stop sign	1
Turn left on Church Creek Rd / MD-16	45.7 90.1	9:15am 10:57am	10:41am 1:44pm	Traffic light	1
(Second loop for long route) Continue straight on Church Creek Rd / MD-16	46.2	9:16am	10:43am	Traffic light	1
Turn right on Chesapeake St	46.2 90.6	9:16am 10:59am	10:43am 1:48pm	Traffic light	



Be alert of approaching cyclists AT ALL TIMES.

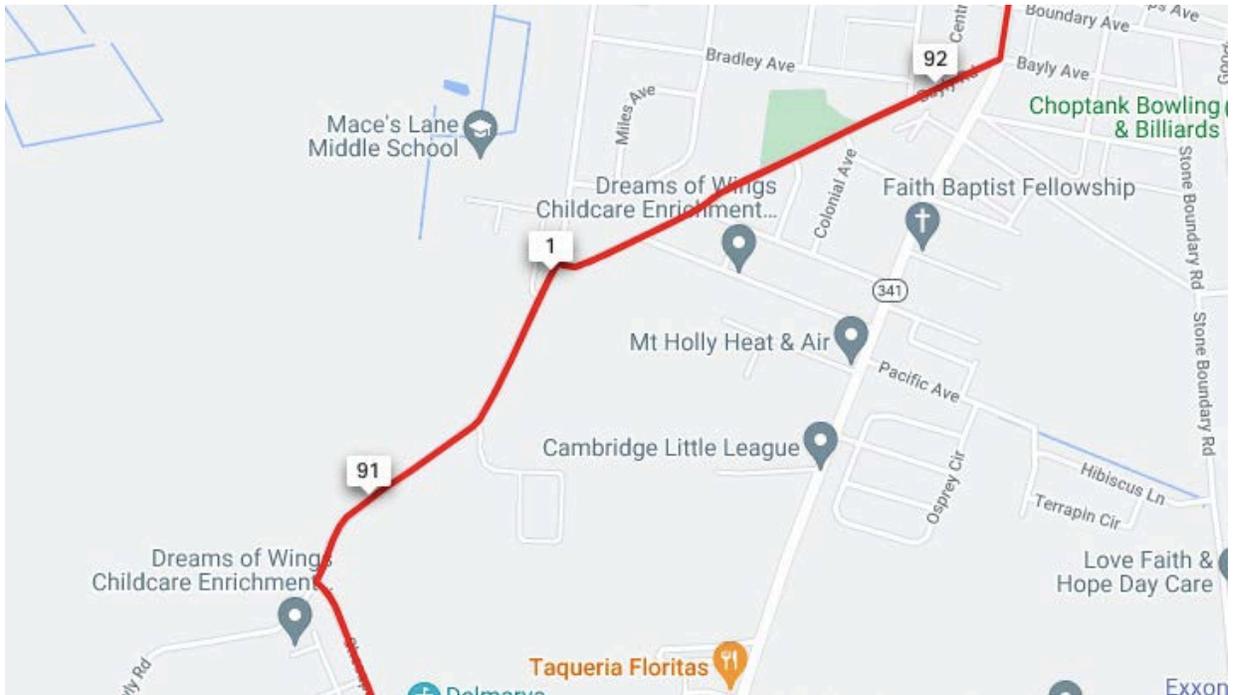
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GFNY to put up extra signs: Cycling race on Sunday & Caution: Stone Boundary at the ends - Bucktown Rd & Southside Ave, and also at Maple Dam Rd & Southside Ave.

GFNY Cambridge 2026 - Course Operations

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Turn right on Bayly Rd	46.5 90.9	9:17am 10:59am	10:44am 1:48pm		
Turn right to continue on Bayly Rd	47 91.4	9:18am 11:00am	10:46am 1:50pm	Stop sign	1
Turn left on Race St	47.7 92.1	9:20am 11:02am	10:49am 1:53pm	Stop sign	1



Be alert of approaching cyclists AT ALL TIMES.

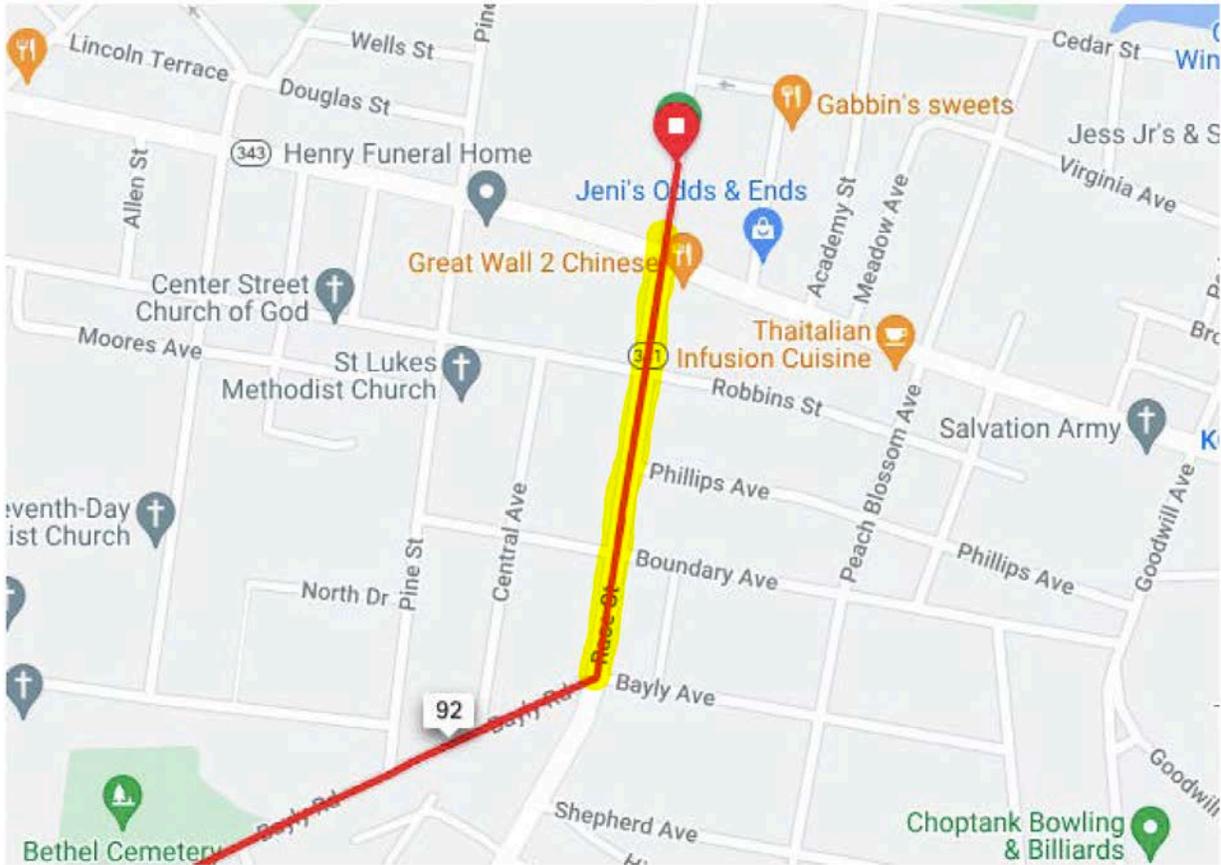
Cyclists have priority at all intersections (as per the post detail).

Hold all vehicles at your intersection as soon as you see cyclists approaching the intersection.

GFNY Cambridge 2026 - Course Operations

Cambridge PD

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL
Go straight on Race St / MD-341	48 92.3	9:20am 11:03am	10:50am 1:53pm	Traffic light	1
Finish Line Medium Course	48	9:20am	10:50am		
Finish Line Long Course	92.4	11:03am	1:54pm		



Be alert of approaching cyclists AT ALL TIMES.

Cyclists have priority at all intersections (as per the post detail).

Hold all vehicles at your intersection as soon as you see cyclists approaching the intersection.

Approx 11am-11:05am, a temporary closure of Cedar St to allow the safe finish sprint slow-down of the lead group of riders traveling NB on Race Street through Cedar St. SB vehicles routed to Elm St or Pleasant St. No cars allowed to enter Cedar St intersection as the leaders approach the finish line.

GFNY Cambridge 2026 - Course Operations

Arriving to the GFNY expo / start by bike from Cambridge hotels

The below instructions are provided to athletes

H1: Hyatt

To get from your hotel to the race expo & start by bike, follow Heron Blvd, and before getting on US-50 / Ocean Gateway Highway, there is a beautifully paved sidewalk that is also a designated bike path. Follow the bike path until it ends at Crusader Rd, make a right onto Crusader, make the first left, onto Meteor Ave. Then continue straight and follow Cedar Street until Race Street, where you'll find the GFNY village.

[MAP](#)

Reminder: Cycling on sidewalks in Downtown Cambridge is not allowed, you must ride your bike on the road when you are visiting Downtown Cambridge.

H2: Holiday Inn

To get from your hotel to the race expo & start by bike, utilize the back alley behind the hotel, do not ride on US-50 / Ocean Gateway Highway, the big busy road in front of the hotel. After exiting to the back alley of the hotel, make a right / head west towards Woods Road. Make a right onto Woods Road and cross US-50 / Ocean Gateway when you have the green light. Shortly after the large intersection, you will find a sidewalk that is also a designated bike path. Ride on the bike path until it ends at Crusader Rd, make a right onto Crusader, make the first left, onto Meteor Ave. Then continue straight and follow Cedar Street until Race Street, where you'll find the GFNY village.

[MAP](#)

Another option is to travel via Hardee's and Denny's parking lots and access Washington Street and follow Washington Street until Race Street, make a right onto Race Street, two blocks later you'll find the GFNY village.

Or, as you travel along Washington Street, at Dorchester Ave, there is a former rail trail that was beautifully paved, you can also use that between Washington St to Cedar Street and then make a left onto Cedar Street, then follow Cedar Street until Race Street, where you'll find the GFNY village.

[MAP](#)

Reminder: Cycling on sidewalks in Downtown Cambridge is not allowed, you must ride your bike on the road when you are visiting Downtown Cambridge.

H3: Days Inn - route uses US-50

To get from your hotel to the race expo & start by bike, get to Bucktown Road, either by going behind the hotel on Ram Road (go around the fence), or **US-50** briefly and make a right onto N Skip Jack Dr. Follow Bucktown Road north and cross US-50 / Ocean Gateway Highway. Shortly after the large intersection, you will find a sidewalk that is also a designated bike path. Ride on the bike path until it ends at Crusader Rd, make a right onto Crusader, make the first left, onto Meteor Ave. Then continue straight and follow Cedar Street until Race Street, where you'll find the GFNY village.

[MAP](#)

Reminder: Cycling on sidewalks in Downtown Cambridge is not allowed, you must ride your bike on the road when you are visiting Downtown Cambridge.

H4: Comfort Inn - route uses MDOT Road: Old Route 50

To get from your hotel to the race expo & start by bike, exit via the back of the hotel, onto **Old Route 50**. Make a left onto **Old Route 50**, and follow **Old Route 50** until it ends at US-50 / Ocean Gateway Highway. At the end of it, join the beautifully paved sidewalk that is also a designated bike path. Follow the bike path until it ends at Crusader Rd, make a right onto Crusader, make the first left, onto Meteor Ave. Then continue straight and follow Cedar Street until Race Street, where you'll find the GFNY village.

[MAP](#)

Reminder: Cycling on sidewalks in Downtown Cambridge is not allowed, you must ride your bike on the road when you are visiting Downtown Cambridge.

GFNY Cambridge 2026 - Course Operations

TIMESHEET

Route	Mile #	First Cyclist	Last Cyclist	Existing Control	PD / VOL	Notes
Start: 130 Race St, Cambridge	0	7:30	7:32			
Go straight on Race St / MD-341	0.1	7:30	7:32	Traffic light	2	
Turn right on Bayly Ave	0.3	7:30	7:33			
Turn left on Bayly Rd	1	7:32	7:36	Stop sign	1	
Turn left on Chesapeake St	1.5	7:33	7:38		1	
Turn right on MD-16	1.8	7:34	7:39	Stop sign	1	
Go straight on Taylors Island Rd / MD-16	6.4	7:44	7:58			
	50.7	9:27	11:01			
Aid Station 1 / 3 - Madison Volunteer Fire Co	10.8	7:54	8:16			
	55.2	9:37	11:20			
Turn left on Smithville Rd	14.6	8:03	8:32	Yield to oncoming traffic	1	
	59.1	9:46	11:36			
Turn left	21.7	8:20	9:01		1	
	66.1	10:02	12:05			
Turn left on Hoopers Island Rd / MD-335	21.8	8:20	9:02	Stop sign	2	
	66.2	10:02	12:05			
Turn left on Golden Hill Rd / MD-335	23.7	8:24	9:10		1	
	68.1	10:07	12:13			
Turn right on Key Wallace Dr	29.6	8:38	9:34			
	74	10:20	12:38			
Turn left on Maple Dam Rd	33.2	8:46	9:49	Stop sign	1	
	77.7	10:29	12:53			
Turn right on Greenbrier Rd	33.6	8:47	9:51			
	78	10:30	12:54			
Turn left on Bucktown Rd	36.1	8:53	10:01	Stop sign	1	
	80.4	10:35	13:04			
Aid Station 2 / 4 - Bucktown General Store	36.1	8:53	10:01			
	80.4	10:35	13:04			
Turn left on Stone Boundary Rd	41.3	9:05	10:22			
	85.6	10:47	13:26			
Turn right and follow Stone Boundary Rd	42.9	9:09	10:29			
	87.4	10:51	13:33			

GFNY Cambridge 2026 - Course Operations

Turn right on Southside Ave	44.6	9:12	10:36			
	89.1	10:55	13:40			
Turn right on Maple Dam Rd	45.4	9:14	10:39	Stop sign	1	
	89.8	10:57	13:43			
Turn left on Church Creek Rd / MD-16	45.7	9:15	10:41	Traffic light	1	
	90.1	10:57	13:44			
Turn right on Chesapeake St	46.2	9:16	10:43	Traffic light		
	90.6	10:59	13:46			
(Second loop for long route) Continue straight on Church Creek Rd	46.2	9:16	10:43	Traffic light	1	
Turn right on Bayly Rd	46.5	9:17	10:44			
	90.9	10:59	13:48			
Turn right to continue on Bayly Rd	47	9:18	10:46	Stop sign	1	
	91.4	11:00	13:50			
Turn left on Race St / MD-341	47.7	9:20	10:49	Stop sign	1	
	92.1	11:02	13:53			
Go straight on Race St / MD-341	48	9:20	10:50	Traffic lights	1	
	92.3	11:03	13:53			
Finish line medium course	48	9:20	10:50			
Finis line long course	92.4	11:03	13:54			

GFNY Cambridge 2026 - Course Operations

RACE INFORMATION

RAILROAD CROSSINGS

GFNY does not cross any train tracks.

COORDINATION

Before the race, GFNY works with every relevant authority in planning the race course. GFNY meets with each town and county's officials to review race course planning, emergency planning, traffic control. GFNY files any necessary permits and provides Certificates of Insurance to every affected entity.

RACE DAY OPERATIONS COMMUNICATION

Event personnel, marshals and volunteers use their cell phones. In addition, GFNY is working with Kenny Thomas and the Harbor Haven amateur radio comm team. Harbor Haven will set up a small comms trailer at the GFNY village at the Green Space at Cedar & Race. The radio communication will be on an amateur radio frequency, which will be advised in the week before the race.

- 4 persons at aid stations: 2 persons will be posted at each aid station (Station 1/3 is at Madison Volunteer Fire Co and Station 2/4 is at the Bucktown General Store)
- 2 persons at the finish line
- 1 person at course split
- 3 persons rolling (2 together, 1 with End of Race Car)
- 2 persons at the no-cell-reception area

When there is an accident, staff, volunteers, participants and marshals are instructed to call 911.

Athletes get a wristband attached to their wrist, which has the GFNY Athlete Hotline phone number on it. Athletes are instructed to call the hotline in case they need assistance on the course, like mechanical support or if they need GFNY to pick them up because they cannot continue cycling. The athlete hotline number (only active on race day) is 212-500-0566.

Dorchester County OEM will have a comms staff member who is located in the Comms Trailer.

GFNY has a command staff member who is overseeing: medical, mechanical, sweep wagons, product and coordination with the Finish Village. The command staff is stationed at the race office at the GFNY Finish Village.

Local authorities are provided a list of GFNY race day contacts responsible for various sites, as well as the Command Center and Race Director.

Command Center

During the race, all communication is done with GFNY Command Center.

- GFNY Command center is the behind-the-scenes race-day office, including staff for coordination of: stationary medical & mechanical, rolling mechanical assistance, on-course security crew, and site managers.
- GFNY Command has real-time tracking of the leaders & last riders (lead car, end of race car), sweep vans and rolling mechanical.
- GFNY Command Center has the complete contact list of every GFNY staff, vendor, vehicle and support agency.
- GFNY Command Center is located at the GFNY Finish Village.
- The pre-race and race-day contact for all agencies at the start area is: Lidia Fluhme, Race Organizer, 917-656-2005. A detailed contact list with any specific points of contact is emailed out to all agencies the week preceding the race.

GFNY Cambridge 2026 - Course Operations

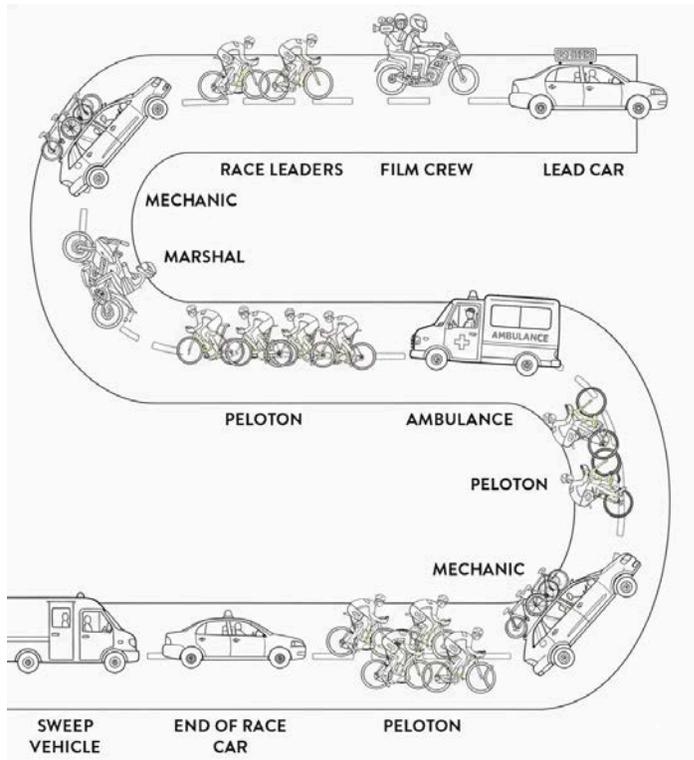
EMERGENCY SERVICES

Each GFNY aid station has a first aid kit for assistance with basic medical support like cleaning wounds. GFNY coordinates local EMS units to be stationed along the course as necessary. For any accident that occurs along the route, staff, volunteers, participants, marshals are instructed to call 911. The call is routed to the nearest dispatch center and the nearest ambulance unit responds.

OFFICIAL RACE VEHICLES

GFNY has several types of Official Vehicles on the course throughout race day.

1. The GFNY Lead Vehicle will be driving 500ft in front of the lead cyclists. The vehicle will be for the Race Judge.
2. "End of Race" vehicle that travels at the determined "Last Cyclist" time and signifies the cutoff time for the event. All cyclists passed by the "End of Race" car have the option to get into a sweep van or continue on their own outside of the event. If there are hard cut-off times for vacating a race course, GFNY sets up SAG vans at designated cut-off locations to ensure timely vacating of an area.
3. Two SAG wagons that collect participants who are unable to complete the event from along the course and drop them at the nearest aid station or the finish area.
4. One rolling mechanical service car.
5. One mechanical service motorcycle.
6. Video filming motorcycle that is carrying media/photographers/video.
7. Two motorcycle marshals.
8. Aid station equipment trucks driven by GFNY staff. Each aid station has its own truck with all the needed equipment. These vehicles are part of GFNY race operations but travel to an aid station before the race, and return after the aid station is closed, they do not travel on the race course during the race.



GFNY Cambridge 2026 - Course Operations

CREDENTIALS

Vehicle Credentials

All vehicles are marked with yellow windshield stickers "GFNY OFFICIAL VEHICLE". All motos have a yellow "GFNY MOTO" windshield stickers. All vehicles have a yellow number sticker on the rear of the vehicle to identify which vehicle number they are. GFNY Command has a list of which number is assigned to which vehicle, and contact phone numbers of each vehicle. Some designated vehicles have GPS devices.



Staff Credentials

All GFNY Staff are wearing GFNY Crew t-shirts. They also have GFNY Vendor/Staff Access Passes. Depending on the role, some staff are wearing GFNY OFFICIAL safety vests.



GFNY Cambridge 2026 - Course Operations

Athlete Credentials

Each athlete is easily identified as an official participant.

1. Official jersey
2. Official bike number, attached to the front of the bike, with the participant race number.
3. Official bib number, attached to the back of the jersey, with the participant race number.
4. Official wristband, attached to the wrist, with the participant race number. Wristband has the hotline # to reach GFNY Command Center.



PLACE NUMBERS LIKE THIS



GFNY Cambridge 2026 - Course Operations

PRE-EVENT PUBLIC NOTIFICATION

GFNY works with local authorities to fulfill any notification requirements based on road type and road use. For example, a road closure requires more advance warning and have several ways of communicating and road use is less impactful and has other ways of being communicated.

GFNY posts fliers & posters with route information & call for volunteers & fan zones at local delis and grocery stores.

GFNY works with local County Emergency Management office to coordinate reverse-911 call to local residents to advise them about the event.

The GFNY race website has a /info page that lists the course and the first cyclist / last cyclist times for various points along the race course to advise type of & hours of impact to the public.

Local Sheriff and Police Departments post about the race taking place on their pages to notify their followers.

One week before the race, GFNY posts yellow “GFNY RACE THIS SUNDAY” signs along or near sections of the race course.

RACE DAY PUBLIC NOTIFICATION

1. GFNY posts over 200 road signs along the race course, which advise cyclists but also regular road users of the race course.
2. GFNY works with Police and Sheriff to monitor major intersections to provide the cyclists a safe race course and right-of-way at intersections.
3. GFNY has many GFNY-identified (with stickers) vehicles on the race course that also help general road users there is a race in progress
4. In case of a road closure, there are VMS that announce this, plus detour signs show the alternate route.
5. GFNY posts yellow “GFNY RACE THIS SUNDAY” signs along or near sections of the race course.



GFNY Cambridge 2026 - Course Operations

COURSE SIGNAGE FOR EVENT PARTICIPANTS

GFNY uses a variety of race day signage to instruct participants to follow the designated course or give them information on distance left until the next aid station or until the finish line.

1. "TO GO" signs posted to show distance to the finish: 40km, 20km, 10km, 3km, 500m, 100m.
2. Yellow Caution signs are posted in areas with steep descents, areas with rough road conditions, areas in the course with a sharp turn.
3. Turn signs are placed to mark where cyclists should turn.
4. Straight arrows are used as confidence markers after turns or during longer straight road sections that don't use other signage.

GFNY uses more than 200 signs to mark each race course. Signs are 24in x 36in (60cm x 90cm) yellow 5mm corrugated plastic. Signs are posted to existing roadside poles, and do not obstruct the field of vision for people who are utilizing the roadway.

GFNY may sometimes use water-based paint for some pavement marking, for example important turns or for marking of uneven roads / potholes to advise the cyclists. The ingredients are biodegradable and the markings disappear within 2 weeks. Water-based paint route marking. Arrow is about 10" long and letters are 2" high.



SPECTATOR CONTROL

GFNY are participatory events.

1. GFNY athletes are forbidden from having support cars following them on any part of the race course. If you see a private support car, take a photo and report it to GFNY for sanctioning the athlete.
2. GFNY athletes have their family and friends who eagerly await them at the Finish Line or Finish Village.
3. Where possible, GFNY sets up Spectator Zones, and also provides the roads to use to access each Spectator Zone (so spectators do not drive on the race course to get to a Spectator Zone).
4. All Spectator information is included in the official Race Guide that is distributed to all GFNY athletes & mandatory reading for each participant.
5. At the start/finish location, the start/finish chute is lined with barricades to create a defined, safe cycling route and separate the fans from the cyclists.
6. GFNY has the Finish Village facilities open shortly after the start of the race, so spectators can also relax and enjoy the race atmosphere while the athletes are out on the race course.

ORDINANCE NO. 1262

AN ORDINANCE OF THE COMMISSIONERS OF CAMBRIDGE, MARYLAND AMENDING CHAPTER 4 (BUILDINGS AND HOUSING) OF THE CODE OF THE CITY OF CAMBRIDGE, MARYLAND FOR THE PURPOSE OF ENACTING A NEW ARTICLE VIII ENTITLED “VACANT COMMERCIAL STOREFRONT REGISTRATION” PROVIDING FOR THE REGISTRATION OF VACANT COMMERCIAL STOREFRONTS IN THE CITY OF CAMBRIDGE, FEES ASSOCIATED WITH SUCH REGISTRATION, AND DEFINING TERMS ASSOCIATED THEREWITH; PROVIDING THAT THE TITLE OF THIS ORDINANCE SHALL BE DEEMED A FAIR SUMMARY AND GENERALLY RELATING TO VACANT COMMERCIAL STOREFRONTS IN THE CITY OF CAMBRIDGE.

WHEREAS, pursuant to Md. Code Ann., Local Gov’t § 5-202 and § 3-27(1) of the Charter of the City of Cambridge (the “Charter”), the Commissioners of Cambridge are authorized and empowered to pass all such ordinances not contrary to the Constitution and laws of the State of Maryland or the Charter as they may deem necessary for the good government of the City of Cambridge (the “City”); for the protection and preservation of the City's property, rights, and privileges; for the preservation of peace and good order; to secure persons and property from danger and destruction; and for the protection and promotion of the health, safety, comfort, convenience, welfare, and happiness of the residents of the City and visitors thereto and sojourners therein; and

WHEREAS, pursuant to Md. Code Ann., Local Gov’t § 5-205(d)(1)(i), the Commissioners of Cambridge are authorized and empowered to establish and collect reasonable fees and charges for franchises, permits, or licenses granted by the City; and

WHEREAS, pursuant to § 3-27(35) of the Charter, the Commissioners of Cambridge are authorized and empowered to generally require permits or licenses to be obtained where necessary for regulatory purposes in the interest of the public health, safety, or morals and to establish and collect fees and charges for all licenses and permits issued under such authority; and

WHEREAS, the Commissioners of Cambridge are desirous of amending Chapter 4 (Buildings and Housing) of the Code of the City of Cambridge, Maryland for the purpose of enacting a new Article VIII entitled “Vacant Commercial Storefront Registration” providing for the registration of vacant commercial storefronts in the City, fees associated with such registration, and defining terms associated therewith; and

WHEREAS, the Commissioners of Cambridge find that the amendments set forth herein are necessary to promote and protect the public health, safety, and welfare.

NOW, THEREFORE, BE IT ORDAINED by the Commissioners of Cambridge, that:

SECTION 1. Chapter 4 (Buildings and Housing) of the Code of the City of Cambridge, Maryland is hereby amended to include a new Article VIII, entitled “Vacant Commercial Storefront Registration,” as follows:

ARTICLE VIII
Vacant Commercial Storefront Registration

Sec. 4-106. Definitions.

For the purposes of this article, the following terms have the meanings given below:

Active use. A business, gallery, nonprofit, or other publicly accessible use operating regularly, with signage, staffing, and posted hours of operation.

Commercial property. A building or structure or part thereof located within the corporate limits of the city that is intended for retail, service, restaurant, or other commercial activity.

Owner. Any individual, partnership, corporation, trust, or other legal entity holding legal title to a property containing a vacant storefront.

Vacant storefront. A ground-floor commercial property that is unoccupied, unused, or not actively open to the public for business or other permitted activity. For purposes of determining whether such a property qualifies as a vacant storefront, the city may consider, in conjunction with the property being vacant, factors such as whether:

- (a) Water, electric, and gas service are being supplied to, and used by, the property;
- (b) There is an accumulation of mail on the property;
- (c) The windows and doorways are covered or boarded;
- (d) There is improper or inadequate sanitation, such as an infestation of rodents, insects, or vermin;
- (e) Hazardous materials are stored on the property that pose a danger to the public health, safety, and welfare;
- (f) There are disconnected, inadequate, or nonfunctioning safety features, such as smoke alarms, fire sprinkler systems, or electrical systems;
- (g) There are structural hazards, such as deteriorating or collapsing ceilings, foundations, and supports; or
- (h) The exterior of the property is otherwise not being maintained in accordance with the city's property maintenance code or other applicable regulations.

Sec. 4-107. Vacant storefront registry.

- (a) The City shall establish and maintain a vacant storefront registry for vacant storefronts as set forth in this article.

- (b) Owners of vacant storefronts shall register the same within 30 days after the same qualifies as a vacant storefront under this article without notice from the city. If the City Manager or their designee determines that an unregistered vacant storefront exists, they shall issue a notice directing the owner to register the same as required by this article. Failure to register the vacant storefront within 30 days from the date of such notice shall constitute a violation of this article and shall be subject to the penalties set forth in section 4-109 of this Code.
- (c) Registration of vacant storefronts shall be on a form provided by the city and include, at a minimum, the following:
 - (1) Street address, tax identification number, and tax map and parcel number;
 - (2) Name, address, telephone number, and e-mail address of all owners of the property as well as any local agent or representative;
 - (3) Date the commercial property first became vacant;
 - (4) The reason(s) for the vacancy;
 - (5) Current marketing efforts or renovation plans (if any); and
 - (6) Any other information required by the City Manager.
- (d) It is the owner's responsibility to annually renew the vacant storefront registration, within one year from the date of filing of the previous year's registration. If, at any time, the information contained in the registration is no longer valid, including any change in ownership of the vacant storefront, the owner shall notify the city of such change within 15 days thereof.

Sec. 4-108. Vacant storefront fee and inspection; exemptions.

- (a) *Vacant storefront fee.* Each annual renewal of the vacant storefront registration shall be subject to a vacant storefront fee as adopted and amended from time to time by resolution of the Commissioners of Cambridge.
 - (1) The vacant storefront fee shall be due and payable at the time of filing the registration, commencing with the first annual renewal and continuing annually thereafter, subject to the provisions of this article.
 - (2) If a vacant storefront becomes actively occupied before the next registration and annual fee are due such that it no longer meets the definition thereof as set forth in this article, the owner shall submit documentation of the same, which shall be subject to the City Manager's approval, to avoid such registration and fee.
 - (3) Vacant storefronts shall be subject to interior inspections by the city to ensure compliance with applicable city regulations. Such inspections shall commence with the first annual renewal and continue annually thereafter, subject to the provisions of this article. Written

notice shall be provided to the owner at the address provided on the registration and the address set forth on the State Department of Assessments and Taxation website at least 15 days prior to the inspection. The owner and/or the owner's representative shall have the right to be present during the inspection; provided, however, that the city may proceed with entering and inspecting the property if the owner fails to respond to the city's notice of inspection.

- (b) Exemptions. The following vacant storefronts shall be required to register as such under section 4-107 of this Code but shall not be required to pay the vacant storefront fee nor be subject to the annual inspection under subsection (a) above:
 - (1) Vacant storefronts under active construction or renovation, with valid permits issued by the City;
 - (2) Vacant storefronts for which the vacancy was caused by fire or natural disaster and for which the owner is actively pursuing renovation or repair; and/or
 - (3) Vacant storefronts subject to an active land use, zoning, or site plan review application pending with the City.
 - (4) Requests for exemption must be filed with, and subject to approval by, the City Manager or their designee and include supporting documentation. In the event of a material change of the circumstances under which an exemption is granted, the City Manager may revoke the exemption and require the vacant storefront to pay the vacant storefront fee.
- (c) Nothing in this section shall be deemed to limit the city's authority to conduct inspections of the vacant storefront in the same manner as other properties within the corporate limits of the city. Additionally, a vacant storefront is subject to the provisions of the city's property maintenance code, building code, and all other local laws and regulations to the same extent as other properties and may be subject to the penalties set forth in such regulations.

Sec. 4-109. Enforcement; violations and penalties.

- (a) The City Manager or their designee shall be responsible for enforcing this article.
- (b) Any violation of the provisions of this article shall constitute a municipal infraction, the fine for which shall be \$250.00 for the first infraction and \$500.00 for each and every subsequent infraction. Every day that a violation continues shall be deemed a separate offense and shall be subject to a separate fine without further action required by the city. Any owner of a vacant storefront who shall fail to register the same as required by this article shall be liable for said fine without notice. Notwithstanding any other available legal or equitable remedies, the City shall withhold the issuance of any permits and approvals required for the use and occupancy of the commercial property until any such fees and fines have been paid in full.

Sec. 4-110. Effective date.

The provisions of this article shall take effect immediately upon the passage of Ordinance No. 1262; provided, however, that owners of vacant storefronts existing as of such date shall have 30 days therefrom to register the same in accordance with this article regardless of when the same first became a vacant storefront as defined herein.

SECTION 2. The recitals to this Ordinance are incorporated herein and deemed a substantive part of this Ordinance.

SECTION 3. In this Ordinance, unless a new chapter or article of the City Code is enacted or section of the City Code is expressly repealed in its entirety and reenacted, new or added language is underlined and in boldface type, and deleted text is crossed out with a single strikethrough. With respect to the substantive provisions of this Ordinance set forth in Section 1, language added after the date of introduction is in bold, italicized font and language deleted after the date of introduction is crossed out with a double strikethrough.

SECTION 4. If any section, subsection, sentence, clause, phrase, or portion of this Ordinance is for any reason held invalid or unconstitutional by any court or competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portions of this Ordinance, it being the intent of the Commissioners of Cambridge that this Ordinance shall stand, notwithstanding the invalidity of any section, subsection, sentence, clause, phrase, or portion hereof.

SECTION 5. All ordinances or parts of ordinances inconsistent with the provisions of this Ordinance are hereby repealed to the extent of such inconsistency.

SECTION 6. The title of this Ordinance, or a condensed version thereof, shall be deemed to be, and is, a fair summary of this Ordinance for publication and all other purposes.

AND BE IT FURTHER enacted and ordained that this Ordinance shall become effective immediately upon passage.

ATTEST:

THE COMMISSIONERS OF CAMBRIDGE

Glenn Steckman, III, City Manager

By: _____
Lajan Cephas Bey, Mayor

**Introduced the 12th day of January, 2026
Passed the 9th day of January, 2026
Effective the 9th day of January, 2026**

RESOLUTION NO. 26-02

A RESOLUTION OF THE COMMISSIONERS OF CAMBRIDGE, MARYLAND TO AUTHORIZE THE APPLICATION FOR AND RECEIPT OF FISCAL YEAR 2027 CONGRESSIONALLY DIRECTED SPENDING AND/OR COMMUNITY PROJECT FUNDING FOR THE CAMBRIDGE CREEK INTERCEPTOR, CEDAR STREET CULVERT REPLACEMENT, AND PUBLIC SAFETY BUILDING HVAC REPLACEMENT.

WHEREAS, the Commissioners of Cambridge recognize that there is a significant need for reinvestment and revitalization of the communities in the City of Cambridge (the “City”); and

WHEREAS, Congressionally Directed Spending (“CDS”) and Community Project Funding (“CPF”) are available from the United States Congress to provide grant funding for local community projects; and

WHEREAS, City staff have identified three projects that would benefit from CDS and/or CPF funding, as follows: 1) \$3,000,000 to continue rehabilitation efforts for the Cambridge Creek Interceptor, a vital conduit for wastewater, channeling effluent for approximately one-third of City residents, including the City’s downtown business core (the “Interceptor Project”); 2) \$1,000,000 for the replacement of four (4) metal culverts that cross under Cedar Street and connection of Peachblossom Stream to Cambridge Creek (the “Cedar Street Culvert Project”); and 3) \$1,250,000 to replace the failing heating and air system at the Public Safety Building located at 8 Washington Street (the “Public Safety Building HVAC Project”) (collectively, the “Projects”); and

WHEREAS, the Commissioners of Cambridge are desirous of authorizing the application for, and receipt of, CDS and/or CPF funding for the Projects, each of which will provide a material benefit to the City and its residents, upon the terms and conditions set forth in this Resolution.

NOW, THEREFORE, BE IT RESOLVED BY THE COMMISSIONERS OF CAMBRIDGE, that the Commissioners of Cambridge hereby endorse the Projects and authorize the submittal of applications for CDS and/or CPF funding therefor in the amounts of \$3,000,000 for the Interceptor Project, \$1,000,000 for the Cedar Street Culvert Project, and \$1,250,000 for the Public Safety Building HVAC Project.

AND BE IT FURTHER RESOLVED THAT the Mayor is hereby authorized and empowered to execute any and all documents required for the submission of the applications for CDS and/or CPF funding and to take any further action necessary to carry out the intent of this Resolution.

AND BE IT FURTHER RESOLVED THAT this Resolution shall become effective immediately upon adoption.

AND BE IT FURTHER RESOLVED THAT, upon adoption, copies of this Resolution shall be enclosed with the applications for CDS and/or CPF funding.

AND BE IT FURTHER RESOLVED THAT, in executing this Resolution, the Mayor hereby certifies that this Resolution is true and correct and duly adopted by the Commissioners of Cambridge.

ATTEST:

THE COMMISSIONERS OF CAMBRIDGE

W. Glenn Steckman, III, City Manager

BY: _____
Lajan Cephas, Mayor

Adopted the 23rd day of February, 2026
Effective the 23rd day of February, 2026



City of Cambridge

410 Academy Street, Cambridge, MD – P.O. Box 255

Phone: 410-228-4020 Fax: 410-228-4554

E-Mail: info@choosecambridge.com

COUNCIL AGENDA REPORT

To: The Honorable Mayor Cephas Bey and the Commissioners of Cambridge

From: Tara Felts, Grants Coordinator

Date: February 18, 2026

Subject: FY 2027 Congressional Delegation Funding Requests

Recommendation: Approve Resolution 26-02

Introduction

The Grants Coordinator, in collaboration with Engineering and Public Works staff, is preparing Congressionally Directed Spending (Senate) and Community Project Funding (House) requests on behalf of the Commissioners of Cambridge for the Cambridge Creek Interceptor Project, Cedar Street Culvert Replacement Project, and Public Safety Building HVAC Replacement Project. Although a formal Resolution is not required for submission, adoption demonstrates the Commissioners' support and commitment to these much-needed infrastructure upgrades.

Background

CDS and CPF are federal funding programs that allow Members of Congress to direct resources to eligible community capital projects. Funding is intended for one-time projects that can be completed within the federal budget year. City staff have identified three projects that meet eligibility criteria and align with Council and Staff priorities:

1. Cambridge Creek Interceptor – \$3,000,000

The Interceptor is a major wastewater conveyance line serving approximately one-third of City residents, including the downtown business district. Portions of the system require continued rehabilitation to prevent failure, protect water quality in Cambridge Creek, and maintain regulatory compliance.

2. Cedar Street Culvert Replacement – \$1,000,000

This project will replace four deteriorating metal culverts beneath Cedar Street that connect Peachblossom Stream to Cambridge Creek. Cedar Street serves as a key gateway from U.S. Route 50 into downtown. The culverts are in poor condition and pose a risk of roadway failure,

traffic disruption, and emergency access issues. Replacement will improve stormwater flow, roadway stability, and resilience.

3. Public Safety Building HVAC Replacement – \$1,250,000

The HVAC system at the Public Safety Building (8 Washington Street) has exceeded its useful life and is failing. The facility houses police and emergency operations. Replacement is necessary to maintain continuous operations, provide safe working conditions, and protect critical equipment.

Staff will submit each project application to Senator Alsobrooks (CDS), Senator Van Hollen (CDS), and Congressman Harris (CPF), in accordance with each office’s submission process and eligibility requirements. Following submission, members of the Maryland Congressional Delegation will coordinate internally to determine which projects will be advanced and which Member will formally submit a selected project to the appropriate Appropriations Committee for consideration in the federal budget. Projects selected by a Member for submission must then undergo review at the federal appropriations committee level.

It is important to note that even if a project advances through these stages, final inclusion is not guaranteed. Funding decisions remain subject to the broader federal budget negotiation and approval process, during which projects may be reduced or removed prior to enactment. Projects included in the enacted budget are expected to be funded by in **Spring 2027**.

Fiscal Impact

Non-federal match requirements vary by Appropriations Committee. The Congressional Delegation has advised that regardless of specific committee requirements, including a non-federal contribution is best practice and strengthens the competitiveness of applications. Consistent with this guidance, staff will include a non-federal match in each application either to meet specific committee requirements, where applicable, or to demonstrate the City’s financial commitment and strengthen the overall competitiveness of the request. Staff will pursue available State funding opportunities to help meet required non-federal share and reduce the direct impact on City funds.

Federal Funding Requests:

\$3,000,000	Cambridge Creek Interceptor
\$1,000,000	Cedar Street Culvert Replacement
<u>\$1,250,000</u>	Public Safety Building HVAC Replacement
\$5,250,000	Total Federal Request

Proposed Non-Federal Match Allocations:

\$ 600,000	Cambridge Creek Interceptor
\$ 200,000	Cedar Street Culvert Replacement
<u>\$ 250,000</u>	Public Safety Building HVAC Replacement
\$1,050,000	Total Non-Federal Funding

Recommendation

Staff recommends adoption of Resolution No. 26-02 authorizing submission of FY2027 CDS and CPF applications and authorizing the Mayor to execute all required documentation. Approval positions the City to compete for federal funding to address critical infrastructure needs, protect public health and safety, and support continued reinvestment in the community.

Approved by: City Manager, Glenn Steckman



COUNCIL AGENDA REPORT

To: The Honorable Mayor Cephas and the Commissioners of Cambridge
From: Wayne Suggs, Director of Public Works
Date: February 23, 2026
Subject: HVAC Replacement Update for the Public Safety Building

Mr. Jamie Raithel, Associate Principal, of EBL Engineers, LLC will be presenting his findings on the lifetime costs for the Enhanced Ground Source Heat Pump System (commonly referred to as Geothermal) vs. the Variable Refrigerant Flow System City Staff are recommending. The initial report with recommendations from EBL and the Cycle Analysis are attached to this report.

Staff are currently seeking funding to move forward with Option 2 found within the HVAC System Evaluation Report dated September 11, 2024 (along with accepting the Bunk Room and UPS Room options); presentation on possible funding options from Tara Felts, Grants Coordinator, prior to this presentation.

Attachment: HVAC System Evaluation Report dated September 11, 2024, Enhance Ground Source Heat Pump System (GSHP) vs. Variable Refrigerant Flow (VRF) System Life Cycle Analysis dated December 11, 2025

**City of Cambridge - Public Safety Building
8 Washington St.
Cambridge, MD 21613**

HVAC System Evaluation Report

By EBL Engineers, LLC
in cooperation with Jeremy Fletcher Design

September 11, 2024



EBL Project #24054.000

Prepared By:

EBL Engineers, LLC
8005 Harford Road
Baltimore, Maryland 21234
410.668.8000

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Abbreviations and References

Abbreviations

AHU	Air Handling Unit
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
Btu	British Thermal Unit
Btuh	British Thermal Units per Hour
COP	Coefficient Of Performance
DDC	Direct Digital Control
EER	Energy Efficiency Ratio
FCU	Fan Coil Unit
Ft	Foot
GLHX	Ground Loop Heat Exchanger (Geothermal System)
WHPU	Water Source Heat Pump Unit
HPWS	Heat Pump Water Supply
HPWR	Heat Pump Water Return
Hr	Hour
HVAC	Heating, Ventilation, & Air Conditioning
HX	Heat Exchanger
MBh	Thousand British Thermal Units per Hour
RPM	Revolutions Per Minute
TAB	Testing, Adjusting and Balancing
Ton	12,000 Btuh
VFD	Variable Frequency Drive
VRF	Variable Refrigerant Flow

Applicable Codes, Standards, & Resources

Version/Date

- | | |
|---|------|
| • ASHRAE 90.1 (Applicable at time of building construction) | 2000 |
| • ASHRAE Equipment Life Expectancy | 2021 |
| • ASHRAE HVAC Applications | 2015 |

Executive Summary

On July 25, 2024 EBL Engineers, LLC performed a site survey of the existing heating, ventilation, and air conditioning (HVAC) systems at the City of Cambridge Public Safety Building located in Cambridge, MD. The following description of existing conditions, and subsequent evaluation, is based on the data collected during the site survey.

Evaluated equipment and system conditions range from “poor” to “Good”. Several deficiencies including failed and repaired GLHX system pipe components, WSHPUs, inadequate cooling and insufficient ventilation were observed during our investigation. Our engineering efforts have concluded that the existing GLHX bore field is undersized for the building load and will need to be supplemented or the system replaced with an alternate technology. We offer the following evaluations and recommendations for the Cambridge Public Safety Building.

Existing Conditions & Evaluation

General

The existing HVAC system, including the GLHX was installed in 2005. Comfort heating and cooling for office and a majority of the occupied spaces throughout the facility is predominantly by water source heat pump units. Truck bays, maintenance bays, wash bays, shop areas and storage 110 conditioned with split system DX AHUs and a mix of gas fired furnaces and gas fired infrared heaters. Stairwells, exterior exit doors and toilet rooms are equipped with electric resistance heaters or duct coils. Several areas, including the Fire Department Bunk Room-123 and Computer/Server Room-146 have been retrofitted with VRF heat pump systems, which currently provide all heating and cooling for the spaces.

Water Source Heat Pump Units (WSHPUs)

Existing Conditions:

Existing water-to-water heat pump units are original, with 2005 manufacturer date codes. In total there are 28 units, 25 located in the attic mechanical mezzanines and 3 located in mechanical Room-140. All units are Model GEVB, self-contained, water source heat pumps as manufactured by Trane. All heat pumps utilize R-22 refrigerant.

Evaluation:

In general, the units appear to be on “fair” condition. Facilities personnel indicated that most of the 2-way isolation valves in the hydronic system have failed and have been locked in their open positions. Several heat pump units were observed to inoperable due to varying issues including a broken fan mounting plate, malfunctioning circuit boards and failed compressors. The existing heat pump units are at the end of ASHRAE’s published expected life cycle of 19 years.

Ground Loop Heat Exchanger System (GLHX)

Existing Conditions:



As indicated on the provided as-built design documents and well permit documents the existing GLHX is comprised of 60 Bores each 300 Feet in depth (each) for a total of 18,000 feet of bore. The bore field is divided into twelve (12) groups of five (5) bores. Each group is piped to the mechanical room via. 2” Polyethylene supply and return mains. Bore piping is 1¼” polyethylene tube connected in a reverse return configuration. The well permit document indicates each bore is fully cased in PVC conduit to the full 300 foot depth. Permit application document indicates PL, which we assume to be 6” SCH40 PVC.

Evaluation:

GLHX system sizing calculations were performed using data from the provided as-built documents, well permits and HVAC load calculations performed by our office. The GLHX calculation was modeled to match the existing field’s 60 bore count. The solution to our GLHX system calculation results in a field consisting of 60 bores, each 451 feet deep for a total bore depth requirement of 27,072 feet. Comparison of the as-built to calculated GLHX reveals the existing bore field to be undersized by approximately 33%.

Observed Operating Conditions

When on site, we observed the GLHX operating at elevated HPWR and HPWS temperatures of 100 °F and 95 °F, respectively. The elevated operating temperatures are indicative of an undersized GLHX bore field and/or significant imbalance between heating and cooling load hours. The as-built system was designed to operate at 10°F ΔT. The observed 5°F ΔT is likely the result of WSHPU isolation valves being manually locked open, causing the control system to increase pump speed to maintain system differential setpoint.

The VFD for Pump-1 was observed operating at 41.5 Hz. Differential pressure across the pump suction/discharge was not able to be verified due to inoperable pressure gauges at the pump discharge header. System differential pressure was calculated to be 75 Ft-Hd based on available system gauges and anticipated pressure loss thru building piping and WSHPU. System head and pump operating frequency were plotted on the pump manufacturer’s curve, determining the system flow rate to be 250 GPM.

Based on the above operating parameters, and assuming the minimum flow bypass valve was closed, heat rejection to the GLHX can be calculated at 625,000 Btuh (approx.). Utilizing the WSHPU nameplate EER of 10.66 , we can correlate the calculated building operating load at the time of our field visit to be 473,000 Btuh (40 Tons) (approx.), or approximately 46% of the calculated building peak load. The operating load condition reasonably aligns with observed occupancy and weather conditions.

GLHX system operating conditions during our July 25, 2024 site visit follows:

<u>Parameter</u>	<u>Value</u>	<u>Unit</u>
------------------	--------------	-------------

HPWR (To GLHX field)	100	°F
HPWS (From GLHX field)	95	°F
Outdoor Air Temp. (Dry Bulb)	80	°F
Outdoor Air Dewpoint	74	°F
Atmospheric Condition	Overcast/Rain	

Building HVAC Load Calculations

HVAC load calculations were performed using Carrier HAP Software (version 6.2). Calculations were performed on a room by room basis, utilizing as-built construction, indicated occupancies, system configurations and ASHRAE 90.1-2002 ventilation, lighting and miscellaneous interior load values. Building load calculations results as follows:

<u>Load</u>	<u>Value</u>	<u>Unit</u>
Cooling Load	1,020,312	Btuh
Heating Load	896,619	Btuh

GLHX System Calculations

Ground loop heat exchanger system calculations were performed utilizing a customized calculation based on ASHRAE methodology. Calculation input variables include value obtained from as-built documents, field data and ASHRAE Applications, Chapter 34 published data. Several parameters expected to have been included in the existing system design or as-built document package were missing, including ground thermal conductivity, ground thermal diffusivity, grout conductivity and bore diameter. Values for the aforementioned parameters have been assumed based on typical values for the system type and geographical region. Variables utilized in the GLHX calculation as follows:

<u>Variable Name</u>	<u>Value</u>	<u>Unit</u>	<u>Source</u>
Quantity of Bores	60	Bores	As-built documents
Bore Spacing	15	Ft.	As-built documents
Safety Factor	0%	unitless	
Part-Load Factor	.314	unitless	Calculated from HVAC Load Calculation & Energy Simulation
COP	3.4	unitless	Existing Equipment Data
EER	10.66		Existing Equipment Data
Equivalent Full-Load Hours (cooling season)	885	Hr	ASHRAE, Table 8

Equivalent Full-Load Hours (heating season)	805	Hr	ASHRAE, Table 8
Undisturbed Ground Temp.	57	°F	ASHRAE, Fig. 18
Approach Temp (Cool/Heat)	33/12	°F	Field Operating Condition
Temperature Penalty for Adjacent Bores	-3.4	°F	ASHRAE, Table 7
Short Circuit Heat Loss Factor	1.04	n/a	ASHRAE, 34.17
Ground Conductivity	0.9	Btuh*Ft*°F	ASHRAE, Table 4
Ground Thermal Diffusivity	0.55	Ft ² /Day	ASHRAE, Table 4
Grout Thermal Conductivity	0.5	Btuh*Ft*°F	ASHRAE, Table 4 (avg. value assumed)
Bore Diameter	6	Inches	Assumed
G-Factor (10 Year)	0.51	unitless	ASHRAE Fig. 16
G-Factor (1 Month)	0.16	unitless	ASHRAE Fig. 16
G-Factor (4 Hour)	0.70	unitless	ASHRAE Fig. 16

GLHX System Fluid

Existing Conditions:

Existing GLHX fluid appears to be untreated water. It is noteworthy to mention that it is unusual for a GLHX system to not be filled with an inhibited alcohol or glycol mixture for low temperature operation freeze protection. Although the system is equipped with a bypass type chemical shot feeder, we could find no evidence of a chemical treatment maintenance plan.

Evaluation:

Given the extent of corrosion related failures, we can infer proper water chemistry has not been maintained for a significant period of time. Integrity of the existing steel piping in contact with the GLHX water should be considered suspect. Additional information and maintenance records related to the facility's water treatment and testing program would be required for us to assess further.

GLHX System Pumps

Existing Conditions:

Two (2) pumps configured in duty/standby variable primary configuration serve the GLHX hydronic system. Each pump is equipped with a Square D, S-Flex Variable Frequency Drive (VFD). Existing pumps are Armstrong model 4030, 3x2x13, base mounted, end suction, resiliently coupled type. Pumps are fit with 20 Hp, 3-phase motors operating at 1,800 RPM. Pump nameplate performance ratings are 350 GPM at 145 Ft-Hd, each. Pumps are mounted on spring isolated inertia bases, which are sitting directly on the mechanical room floor. Concrete housekeeping pads were not provided under pump bases.

Pump P-1 has had the discharge pipe increaser fitting re-welded due to what facilities personnel describe as corrosion related degradation of the existing weld joint.

Existing discharge pressure gauges were found inoperable, hindering our ability to verify current pump operating point.

Evaluation:

In general, the pumps exterior conditions appear to be “fair” assuming impeller degradation has not occurred. Minor corrosion was observed on the volute and base of Pump P-1, presumably the result of previously mentioned reducer fitting leak. Mineral staining observed on the pump motor, frame and base indicate the leak was left unchecked for a period of time. The pumps are approaching their expected life cycle of 20 years.

Air separator

Existing Condition:

The existing air separator is a tangential, volume, vessel type unit with side access flanged handhole, presumably an ASME vessel. The unit has had a weld patch applied to the bottom adjacent to the bottom drain/blowdown threadolet. Facility maintenance personnel indicate the patch was required to repair a leak due to corrosion.

Evaluation:

The condition of the air separator should be classified as, “poor”. The unit is at risk of recurring failure.

Chemical Feed System

A single, 5-gallon bypass type chemical shot feeder is installed. The unit is piped across the pump suction and discharge headers. The chemical feed unit condition should be classified as “good” to “fair”.

Fire House Bunkroom

Due to inadequate space temperature/humidity control, the facility has installed a VRF system consisting of a 3-Ton Mitsubishi MXZ heat pump and de-energized and six (6) wall mounted ductless fan coils. The VRF systems appears to be relatively new and is in “very good” condition.

The existing water source heat pump (WSHPU-13A according to the provided as-builts) has been de-energized and abandoned. With the unit being de-energized, ventilation air is not currently being supplied to the space.

UPS Room (Room-141)

Room 141 is currently filled with two (2) large UPS systems and as a result is quite hot, estimated in the mid to upper 80 °F range. As-built documents indicate the room was to be an office served by branch supply/return ducts from GSHP-4, located in Mechanical Room-140. GSHP-4 also serves Communications Room-140, which



serves as a redundant 911 call center. The space temperature sensor for GSHP-4 is located in Room-140. As configured the current HVAC system cannot support the load or properly control temperature in Room-14. It is our understanding that the larger UPS system (Chloride/Power Battery System) is not in use and has been permanently de-energized. A smaller Toshiba unit (Model 440F3F10KXA) located in the room was energized and appeared to be the primary heat load for the space. Per the manufacturer's data sheet, the unit has a capacity of 100 kVA/90 KW and rejects 30,372 Btuh to the space.

Recommendations

General:

Based on historical and observed conditions, calculated building loads and GLHX sizing calculations, it can be concluded that the as-built GLHX bore field is significantly undersized. Although the field is capable of sinking and sourcing energy, the shortfall in total bore length will continue to result in elevated HPWS temperatures if nothing is done to increase capacity. Given the disruption to emergency services and lack of unestablished site area, installing additional GLHX bores and interconnecting piping would appear to be a non-viable option.

It is worth noting that the existing WSHPU's have been in service for 19 years and are approaching the end of their expected 20 years life cycle. Additionally, the units R-22 refrigerant, which is no longer produced or imported and only available in recycled form. Currently, R-22 refrigerant costs an average of \$150 per pound, with prices expected to increase dramatically in coming years making repairs to units an expensive future endeavor. It is our recommendation, should a water source solution remain in the building, that all WSHPU's be replaced rather than repaired when failures occur.

HVAC System:

Option-1: Supplemental Fluid Cooler

Estimated Cost To Construct: \$770,007

Demolition:

Demolish existing Pump-1, Pump-2, Pump Accessories, VFDs, Air Separator and chemical shot feeder.

Drain entire HPWS/HPWR system then chemically clean and flush to remove deposits, scale and sediment.

Demolish twenty-eight (28) electrically actuated, 2-position isolation valves at each of the twenty-eight (28) WSHPU's.

New Work:

Install a 60 Ton (nominal) supplemental evaporative closed circuit fluid cooler sized to flow 130 GPM of condenser water at 95°F/85°F (HPWR/HPWS) and 91.5°F/78.1 (Dry Bulb/Wet Bulb). The fluid cooler should include an integral circulating pump, sump heaters, sump water filtration unit Fan VFDs and pre-programmed digital controller. Install a structural concrete equipment pad with turndown footings and necessary structural steel dunnage to support the fluid cooler.

Ideally, the fluid cooler should be located directly adjacent to Mechanical Room 140. Route HPWS, HPWR, CW and drain above grade from mechanical room to the fluid cooler. Provide electric heat trace for all exterior piping for freeze protection. Relocation of one of the existing K-9 houses and pen will

be required.

Replace existing Pump-1 & Pump-2 with new, resiliently coupled, base mounted, end suction pumps capable of overcoming increased pump head. Pumps should be self-sensing type with manufacturer's pre-programmed VFD and pressure sensors. Pumps are estimated to require 25 Hp. Motors. Install new braided stainless steel flexible pipe connectors and shutoff valves in piping to pump suction and discharge connections. Install new suction diffusers with screens and blowdown connections at pump suction connections. Install new check valves in each pump's discharge piping. Install new pressure gauges at suction and discharge flanges for each pump.

Install a line size combination air/dirt separator, Spirotherm VDN/VDH series or equal.

Fill HPWS/HPWS system with 20-30% inhibited Ethanol solution (Environol) for freeze protection.

Install an automatic feed unit, complete with spill containment skid and filled with 20-30% inhibited Ethanol (Environol) solution.

Modify controls to incorporate fluid cooler points and allow optimization of GLHX loop temperature. Controls should include ability to allow the fluid cooler to supplement the GLHX field during the cooling cycle as well as reject excess stored heat energy from the GLHX field during the winter-spring/summer shoulder season.

Install line size, full port, 2-position electrically actuated isolation valves at each of the twenty-eight (28) existing WSHPUs. Re-connect valves to existing WSHPU control i/o.

Re-balance HPWS/HPWR system, including pumps, WSHPUs, Fluid cooler and GLHX runouts. Note that pumps shall be balanced via VFD adjustment not through triple duty or balance valves at pump discharge connections. Adjust HPWS/HPWR minimum flow pressure control bypass valve in mechanical room. HPWS/HPWR Control system pressure and temperature sensors should be calibrated or replaced. Balancing to be performed by an AABC or NEBB certified and licensed TAB contractor.

Provide independent 3rd party commissioning the water source heat pump system including pumps, pump VFDs, minimum flow bypass valve, fluid cooler, WSHPU isolation valves, GLHX system temperature control and DDC plant controls.

Add Alternate-1 for Option-1: Replace Water Source Heat Pumps

Estimated Cost To Construct: \$585,344

Demolition:

Demolish all twenty-eight (28) WSHPUs and associated pipe mounted 2-position

isolation valves and existing room thermostats.

New Work:

Install twenty-eight (28) replacement units, Axiom high efficiency models from Trane. Utilize DXHV 2-stage units for 2 thru 6-Ton applications and GEHV dual compressor units for 7 thru 10 Ton applications. Provide manufacturer's integral 2-position automatic isolation valves.

Minor modifications to existing ductwork will be required in order to connect replacement WSHPUs.

Replacement unit electrical requirements align with existing WSHPUs and should allow disconnect/reconnect with minimal re-work required.

Balance airflow including supply, return and outdoor air at all WSHPUs. Balancing to be performed by an AABC or NEBB certified and licensed TAB contractor.

Provide independent 3rd party commissioning the water source heat pump and DDC plant controls.

Option-2: Variable Refrigerant Flow (VRF) Retrofit

Estimated Cost To Construct: \$1,330,826

Demolition:

Demolish all twenty-eight (28) WSHPUs

Drain, blow-out piping system and abandon GLHX piping, pumps and accessories in Mechanical Room 140. Water in GLHX underground pipping and bore field to remain. Demolish and cap HPWS & HPWR piping from WSHPUs to mains. Cap and abandon mains.

Abandon two (2) GLHX pumps, VFDs, piping, pipe accessories in Mechanical Room 140. Cap and abandon twelve (12) HPWS and twelve (12) HPWR pipes to GLHX. Demolish and cap HPWS & HPWR piping from three (3) WSHPUs to mains in Mechanical Room 140. Cap and abandon mains.

Demolish and cap HPWS & HPWR piping from WSHPUs to mains in both Attic Mezzanine mechanical spaces. Cap and abandon mains.

New Work:

Install twenty-eight (28) VRF Fan Coil Units (FCUs) and connect to existing ductwork where WSHPUs were demolished. Installation of FCUs will modification of ductwork at points of connection, auxiliary drain pans and condensate overflow sensors for automatic unit shutdown.

Install three (3), 32 Ton (nominal) VRF HPU systems and extend refrigerant piping to FCUs located in Mechanical Room 140 and Attic Mezzanine mechanical spaces. Locate WSHPUs in grass area between the west parking area and building, adjacent to Mechanical Room 140. Relocation of one



existing K-9 house and pen will be required.

Balance airflow, including supply, return and outdoor air at all VRF FCUs.
Balancing to be performed by an AABC or NEBB certified and licensed TAB contractor.

Provide independent 3rd party commissioning VRF system and DDC control system.

Bunk Room-129 WSHPU:

Repair or replace the existing WSHPU-1A serving the Main Bunk Room 129. The unit should be re-energized and utilized, as it is the source for ventilation air to the Bunk Room, as well as a source for transfer air to adjacent toilet/locker rooms.

UPS Room (Room-141):

Estimated Cost To Construct: \$20,115

Install a 3-Ton Mini-Split system air conditioner for cooling of UPS Room-141. Installation of a ductless wall hung evaporator with integrated condensate lift pump, wall mounted programmable thermostat and ACCU. System must have low ambient cooling capability, able to provide 100% rated cooling capacity down to 0°F outdoor air temperature. We recommend locating the ACCU on the manufacturer's wall mounting bracket at the exterior wall of Fitness Room 137, adjacent to Mechanical Room 140. Route refrigerant piping above the ceilings of the corridor and Fitness Room 137. Route pumped A/C condensate from the Evaporator to a splash block at grade in a lawn or landscaped area or floor drain in Mechanical Room-140.

Appendix A: Cost Estimates

PROJECT		EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR			EBL Project No.: 24054.000 SUBMISSION DATE: 9/11/2024 STATUS OF PROJECT Report Submission		
ITEM DESCRIPTION	UNIT	QUANTITY	MATERIAL		LABOR		TOTAL COST
			UNIT COST	AMOUNT	UNIT COST	AMOUNT	
RAW SUBTOTAL				\$299,611		\$139,273	\$438,884
MATERIAL MULTIPLIER	1.00			\$299,611			\$299,611
LABOR MULTIPLIER	1.00					\$139,272.50	\$139,273
						SUBTOTAL =	\$438,884
MATERIAL TAX	6%			\$17,977			\$17,977
LABOR TAX	23%					\$32,033	\$32,033
						SUBTOTAL =	\$488,893
OVERHEAD	10%						\$48,889
PROFIT	15%						\$73,334
						SUBTOTAL =	\$611,116
CONSTRUCTION MANAGEMENT	3.5%						\$21,389
ENGINEERING	6%						\$36,667
CONTINGENCY	15%						\$91,667
COMMISSIONING	1.5%						\$9,167
						ECM TOTAL =	\$770,007

PROJECT		EBL ENGINEERS, LLC.			EBL Project No.: 24054.000		
Public Safety Building, Cambridge, MD Option-1 Supplemental Fluid Cooler		The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR			SUBMISSION DATE:		
					9/11/2024		
					STATUS OF PROJECT		
			Report Submission				
ITEM DESCRIPTION	UNIT	QUANTITY	MATERIAL		LABOR		TOTAL COST
			UNIT COST	AMOUNT	UNIT COST	AMOUNT	
MECHANICAL							
<u>DEMOLITION</u>							
Pumps & Piping	LS	1	2,500.00	\$2,500.00	6,400.00	\$6,400.00	\$8,900.00
<u>NEW WORK</u>							
<u>Equipment</u>							
Pumps, HW, 25 HP, VFD, inc. shutoff valves, check valve, flex connectors, gauges & VFD.	EA	2	27,000.00	\$54,000.00	5,000.00	\$10,000.00	\$64,000.00
Closed Circuit Fluid Cooler, 60 Ton, Evaporative, w/ Pump, Filters, VFD Fans, PLC Controller	EA	1	100,000.00	\$100,000.00	11,200.00	\$11,200.00	\$111,200.00
Air Separator, 6" Connection, Air Vent, Blowdown, ASME	EA	1	6,500.00	\$6,500.00	800.00	\$800.00	\$7,300.00
Glycol Feed Unit, 55 gallon, inc. leak containment skid &	EA	1	5,000.00	\$5,000.00	500.00	\$500.00	\$5,500.00
<u>Piping</u>							
Copper, 1", Type L, Soldered, w/ Clevis Hangers	LF	50	7.80	\$390.00	8.80	\$440.00	\$830.00
Copper, 1 1/2", Type L, Soldered, w/ Clevis Hangers	LF	50	13.75	\$687.50	11.50	\$575.00	\$1,262.50
Copper, 2", Type L, Soldered, w/ Clevis Hangers	LF		22.00		14.20		
Copper, 3", Type L, Soldered, w/ Clevis Hangers	LF		47.50		19.20		
Steel, 4", SCH 40, Insulated, w/ Roller Hangers	LF	100	60.00	\$6,000.00	32.00	\$3,200.00	\$9,200.00
Steel, 6", SCH 40, Welded, w/ Roller Hangers	LF	200	100.00	\$20,000.00	50.00	\$10,000.00	\$30,000.00
Valves, Fittings, & Accessories	%	50%		\$13,538.75		\$7,107.50	\$20,646.25
<u>Insulation</u>							
<u>Pipe Insulation</u>							
1" on 1" Pipe, Fiberglas w/ ASJ	LF	50	3.00	\$150.00	5.00	\$250.00	\$400.00
1" on 1 1/2" Pipe, Fiberglas w/ ASJ	LF	50	3.50	\$175.00	5.00	\$250.00	\$425.00
1 1/2" on 2" Pipe, Fiberglas w/ ASJ	LF		4.50		5.00		
1 1/2" on 3" Pipe, Fiberglas w/ ASJ	LF		5.50		5.00		
2" on 4" Pipe, Fiberglas w/ ASJ	LF	100	11.00	\$1,100.00	7.50	\$750.00	\$1,850.00
2" on 6" Pipe, Fiberglas w/ ASJ	LF	200	15.00	\$3,000.00	10.00	\$2,000.00	\$5,000.00
Valves, Fittings, & Accessories	%	25%		\$1,106.25		\$812.50	\$1,918.75
Aluminum Jacket, Anodized, SS Hardware	%	15%		\$663.75		\$487.50	\$1,151.25
<u>Duct Insulation</u>							
2", R-6, Fiberglass, FSK	SF		1.00		3.50		
3", R-8, Fiberglass, FSK	SF		1.50		3.75		
Fittings & Accessories	%	25%					

PROJECT		EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR			EBL Project No.: 24054.000 SUBMISSION DATE: 9/11/2024 STATUS OF PROJECT Report Submission		
ITEM DESCRIPTION	UNIT	QUANTITY	MATERIAL		LABOR		TOTAL COST
			UNIT COST	AMOUNT	UNIT COST	AMOUNT	
RAW SUBTOTAL				\$188,010		\$140,128	\$328,137
MATERIAL MULTIPLIER	1.00			\$188,010			\$188,010
LABOR MULTIPLIER	1.00					\$140,127.50	\$140,128
						SUBTOTAL =	\$328,137
MATERIAL TAX	6%			\$11,281			\$11,281
LABOR TAX	23%					\$32,229	\$32,229
						SUBTOTAL =	\$371,647
OVERHEAD	10%						\$37,165
PROFIT	15%						\$55,747
						SUBTOTAL =	\$464,559
CONSTRUCTION MANAGEMENT	3.5%						\$16,260
ENGINEERING	6%						\$27,874
CONTINGENCY	15%						\$69,684
COMMISSIONING	1.5%						\$6,968
						ECM TOTAL =	\$585,344

PROJECT		EBL ENGINEERS, LLC.			EBL Project No.: 24054.000			
Public Safety Building, Cambridge, MD Add Alternate-1 For Option -1 Replace Water Source Heat Pump Units (WSHPUs)		The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701			SUBMISSION DATE: 9/11/2024			
		PREPARED BY: JSR			STATUS OF PROJECT Report Submission			
		ITEM DESCRIPTION		UNIT	QUANTITY	MATERIAL		LABOR
				UNIT COST	AMOUNT	UNIT COST	AMOUNT	
MECHANICAL								
<u>DEMOLITION</u>								
WSHPUs		EA	28	50.00	\$1,400.00	500.00	\$14,000.00	\$15,400.00
<u>NEW WORK</u>								
<u>Equipment</u>								
WSHPU, 2-Ton, Ducted, High Static, w/ drain pan & leak detection		EA	1	3,250.00	\$3,250.00	\$1,000.00	\$1,000.00	\$4,250.00
WSHPU, 3-Ton, Ducted, High Static, w/ drain pan & leak detection		EA	8	3,750.00	\$30,000.00	\$1,000.00	\$8,000.00	\$38,000.00
WSHPU FCU, 4-Ton, Ducted, High Static, w/ drain pan & leak detection		EA	2	4,000.00	\$8,000.00	\$1,000.00	\$2,000.00	\$10,000.00
WSHPU FCU, 5-Ton, Ducted, High Static, w/ drain pan & leak detection		EA	8	4,250.00	\$34,000.00	\$2,000.00	\$16,000.00	\$50,000.00
WSHPU FCU, 6-Ton, Ducted, High Static, w/ drain pan & leak detection		EA	8	5,500.00	\$44,000.00	\$2,000.00	\$16,000.00	\$60,000.00
WSHPU FCU, 8-Ton, Ducted, High Static, w/ drain pan & leak detection		EA		7,500.00		\$2,000.00		
WSHPU FCU, 10-Ton, Ducted, High Static, w/ drain pan & leak detection		EA	1	8,000.00	\$8,000.00	\$2,000.00	\$2,000.00	\$10,000.00
Space Thermostats/Controllers		EA	28	500.00	\$14,000.00	300.00	\$8,400.00	\$22,400.00
<u>Piping</u>								
Copper, 1", Type L, Soldered, w/ Clevis Hangers		LF	140	7.80	\$1,092.00	8.80	\$1,232.00	\$2,324.00
Copper, 1 1/2", Type L, Soldered, w/ Clevis Hangers		LF	140	13.75	\$1,925.00	11.50	\$1,610.00	\$3,535.00
Copper, 2", Type L, Soldered, w/ Clevis Hangers		LF		22.00		14.20		
Copper, 3", Type L, Soldered, w/ Clevis Hangers		LF		47.50		19.20		
Steel, 4", SCH 40, Insulated, w/ Roller Hangers		LF		60.00		32.00		
Steel, 6", SCH 40, Welded, w/ Roller Hangers		LF		100.00		50.00		
Valves, Fittings, & Accessories		%	50%		\$1,508.50		\$1,421.00	\$2,929.50
<u>Ductwork</u>								
Galvanized Duct, 1" Pressure Class,		SF	1,344	6.00	\$8,064.00	6.90	\$9,273.60	\$17,337.60
Fittings, & Accessories		%	25%		\$2,016.00		\$2,318.40	\$4,334.40

PROJECT		EBL ENGINEERS, LLC.			EBL Project No.: 24054.000		
Public Safety Building, Cambridge, MD Add Alternate-1 For Option -1 Replace Water Source Heat Pump Units (WSHPUs)		The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701			SUBMISSION DATE: 9/11/2024		
		PREPARED BY: JSR			STATUS OF PROJECT Report Submission		
		ITEM DESCRIPTION		MATERIAL		LABOR	
UNIT	QUANTITY	UNIT COST	AMOUNT	UNIT COST	AMOUNT		
Inuslation							
Pipe Insulation							
1" on 1" Pipe, Fiberglas w/ ASJ	LF	140	3.00	\$420.00	5.00	\$700.00	\$1,120.00
1" on 1 1/2" Pipe, Fiberglas w/ ASJ	LF	140	3.50	\$490.00	5.00	\$700.00	\$1,190.00
1 1/2" on 2" Pipe, Fiberglas w/ ASJ	LF		4.50		5.00		
1 1/2" on 3" Pipe, Fiberglas w/ ASJ	LF		5.50		5.00		
2" on 4" Pipe, Fiberglas w/ ASJ	LF		11.00		7.50		
2" on 6" Pipe, Fiberglas w/ ASJ	LF		15.00		10.00		
Valves, Fittings, & Accessories	%	25%		\$227.50		\$350.00	\$577.50
Aluminum Jacket, Anodized, SS Hardware	%	15%		\$136.50		\$210.00	\$346.50
Duct Insulation							
2", R-6, Fiberglass, FSK	SF	1,344	1.00	\$1,344.00	3.50	\$4,704.00	\$6,048.00
3", R-8, Fiberglass, FSK	SF		1.50		3.75		
Fittings & Accessories	%	25%		\$336.00		\$1,176.00	\$1,512.00
Controls							
DDC Controls and Programming	POINTS	28	250.00	\$7,000.00	1,000.00	\$28,000.00	\$35,000.00
Control Valves & Actuators	EA	28	400.00	\$11,200.00	150.00	\$4,200.00	\$15,400.00
Miscellaneous							
Testing Adjusting and Balancing (TAB)	%	5.0%				\$9,732.50	\$9,732.50
Concrete Equipment Pad 6", Reinforced, Turndown Footings	SF		35.00		15.00		
Miscellaneous Excavation & Site Repair	SF		5.00		15.00		
Electric Heat Trace for Piping	LF		15.00		5.50		
Exterior Pipe Supports, 18" Reinforced Concrete Pier, Galv. Steel Structure	EA		1,500.00		500.00		
20% Environol Solution	Gallons		2.85		0.35		

PROJECT		EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR			EBL Project No.: 24054.000 SUBMISSION DATE: 9/11/2024 STATUS OF PROJECT Report Submission		
ITEM DESCRIPTION	UNIT	QUANTITY	MATERIAL		LABOR		TOTAL COST
			UNIT COST	AMOUNT	UNIT COST	AMOUNT	
MECHANICAL							
<u>DEMOLITION</u>							
WSHPUs	EA	28	50.00	\$1,400.00	500.00	\$14,000.00	\$15,400.00
<u>NEW WORK</u>							
<u>Equipment</u>							
VRF HPU, 32 Ton (Nominal), Heat Recovery, Low Ambient, DDC i/o	EA	3	48,000.00	\$144,000.00	9,650.00	\$28,950.00	\$172,950.00
VRF FCU, 2-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	1	3,000.00	\$3,000.00	850.00	\$850.00	\$3,850.00
VRF FCU, 3-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	8	4,000.00	\$32,000.00	840.00	\$6,720.00	\$38,720.00
VRF FCU, 4-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	2	4,500.00	\$9,000.00	840.00	\$1,680.00	\$10,680.00
VRF FCU, 5-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	8	6,000.00	\$48,000.00	840.00	\$6,720.00	\$54,720.00
VRF FCU, 6-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	8	6,500.00	\$52,000.00	840.00	\$6,720.00	\$58,720.00
VRF FCU, 8-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	1	7,000.00	\$7,000.00	840.00	\$840.00	\$7,840.00
VRF System Branc Controllers, Thermostats, Web-Enabled Controls	EA	28	1,500.00	\$42,000.00	300.00	\$8,400.00	\$50,400.00
<u>Piping</u>							
Refrigerant Pipe, 3/8", Type-L ACR, Brazed, w/ Hangers	LF		2.75		6.85		
Refrigerant Pipe, 1/2", Type-L ACR, Brazed, w/ Hangers	LF	900	3.00	\$2,700.00	7.10	\$6,390.00	\$9,090.00
Refrigerant Pipe, 5/8", Type-L ACR, Brazed, w/ Hangers	LF	900	4.00	\$3,600.00	7.35	\$6,615.00	\$10,215.00
Refrigerant Pipe, 7/8", Type-L AC, Brazed, w/ Hangers	LF		6.00		8.55		
Refrigerant Pipe, 1 1/8", Type-L AC, Brazed, w/ Hangers	LF	900	8.00	\$7,200.00	9.95	\$8,955.00	\$16,155.00
Refrigerant Pipe, 1 1/4", Type-L AC, Brazed, w/ Hangers	LF		14.00		9.95		
Refrigerant Pipe, 1 3/8", Type-L AC, Brazed, w/ Hangers	LF		16.00		11.05		
Refrigerant Pipe, 1 5/8", Type-L AC, Brazed, w/ Hangers	LF	600	18.00		11.05	\$6,630.00	\$6,630.00
Refrigerant Pipe, 2 5/8", Type-L AC, Brazed, w/ Hangers	LF	600	30.00		17.00		
Valves, Fittings, & Accessories	%	25%		\$3,375.00		\$7,147.50	\$10,522.50

PROJECT		EBL ENGINEERS, LLC.			EBL Project No.: 24054.000		
Public Safety Building, Cambridge, MD Option-2 VRF System		The Professional Engineering Center			SUBMISSION DATE:		
		8005 Harford Road			9/11/2024		
		Baltimore, Maryland 21234-5701			STATUS OF PROJECT		
		PREPARED BY: JSR			Report Submission		
ITEM DESCRIPTION	UNIT	QUANTITY	MATERIAL		LABOR		TOTAL COST
			UNIT COST	AMOUNT	UNIT COST	AMOUNT	
Ductwork							
Galvanized Duct, 1" Pressure Class,	SF	1,344	6.00	\$8,064.00	6.90	\$9,273.60	\$17,337.60
Fittings, & Accessories	%	50%		\$4,032.00		\$4,636.80	\$8,668.80
Insulation							
<u>Pipe Insulation</u>							
1/2" Thickness, 1 1/2" and Smaller Pipe, Closed Cell Foam	LF	3300	1.35	\$4,455.00	2.00	\$6,600.00	\$11,055.00
1" Thickness, 2" and Larger Pipe, Closed Cell Foam	LF	600	10.85	\$6,510.00	6.40	\$3,840.00	\$10,350.00
Valves, Fittings, & Accessories	%	25%		\$2,741.25		\$2,610.00	\$5,351.25
Aluminum Jacket, Anodized, SS Hardware	%	15%		\$1,644.75		\$1,566.00	\$3,210.75
<u>Duct Insulation</u>							
2", R-6, Fiberglass, FSK	SF	1,344	1.00	\$1,344.00	3.50	\$4,704.00	\$6,048.00
3", R-8, Fiberglass, FSK	SF		1.50		3.75		
Fittings & Accessories	%	25%		\$336.00		\$1,176.00	\$1,512.00
Controls							
DDC Controls and Programming	POINTS	12	250.00	\$3,000.00	1,000.00	\$12,000.00	\$15,000.00
Control Valves & Actuators	EA	2	2,000.00	\$4,000.00	2,500.00	\$5,000.00	\$9,000.00
Refrigerant Detection Ssystem	LS						
Miscellaneous							
Testing Adjusting and Balancing (TAB)	%	2.0%				\$7,957.60	\$7,957.60
Concrete Equipment Turndown Pad, 6", Reinforced	SF	200	35.00	\$7,000.00	15.00	\$3,000.00	\$10,000.00
Miscellaneous Excavation	SF						
Micellaneous Mechanical	LS						

PROJECT		EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR			EBL Project No.: 24054.000 SUBMISSION DATE: 9/11/2024 STATUS OF PROJECT Report Submission		
ITEM DESCRIPTION	UNIT	QUANTITY	MATERIAL		LABOR		TOTAL COST
			UNIT COST	AMOUNT	UNIT COST	AMOUNT	
MECHANICAL							
NEW WORK							
<u>Equipment</u>							
Ductless Split System, 3-Ton	EA	1	5,000.00	\$5,000.00	2,000.00	\$2,000.00	\$7,000.00
<u>Piping</u>							
Refrigerant Pipe, 3/8", Type-L ACR, Brazed, w/ Hangers	LF	150	2.75	\$412.50	2.25	\$337.50	\$750.00
Valves, Fittings, & Accessories	%	25%		\$103.13		\$84.38	\$187.50
<u>Insulation</u>							
<u>Pipe Insulation</u>							
1/2" Thickness, 1 1/2" and Smaller Pipe, Closed Cell Foam	LF	150	1.35	\$202.50	2.00	\$300.00	\$502.50
1" Thickness, 2" and Larger Pipe, Closed Cell Foam	LF		10.85		6.40		
Valves, Fittings, & Accessories	%	25%		\$50.63		\$75.00	\$125.63
Aluminum Jacket, Anodized, SS Hardware	%	15%		\$30.38		\$45.00	\$75.38
<u>Miscellaneous</u>							
Miscellaneous Mechanical	LS	1			500.00	\$500.00	\$500.00



Appendix B: GLHX Calculations – EBL Load Calculation Sizing

GLHX Calculation - EBL Load Calculation Sizing

Reference: ASHRAE Handbook - HVAC Applications 2015, Chapter 34 Geothermal Energy, Equations 4 & 5 & Example 1.

Cooling	Heating	Variable	Description	Notes	
	0%	0%	SF	safety factor	The calculation is already inherently conservative (e.g. equation only accounts for conduction so no benefit from water movement assumed, SF already applied to load calc, using sum of peak load or equipment capacities instead of block load, estimates of bore thermal resistance (Rb) coefficients from avg BC tube location in bore, lower approach temperatures, etc.)
(27,072)	25,804	Lc,Lh	required total bore length for cooling or heating, ft	Design for larger of lengths between cooling and heating. See equations 4 & 5 on p.34.15	
60	60	Qty	quantity of vertical bores	Typical bore separation distance is 15-25 ft. Designer must select a reasonable separation distance to minimize required land area without causing large increases in the required bore length (Lc,Lh). Separation distance affects tp below.	
(451)	430	depth	depth of each bore, ft/bore	Typically 50-400 ft. Adjust quantity of bores until depth is reasonable, or vice-versa. (e.g. Mining Act requires drilling permits deeper than 330 ft, drilling costs can increase significantly deeper than 500 ft)	
318	345	ft/ton	feet of bore depth per ton of capacity	Use in condenser water pump sizing calculation in other tab. Calc based on block load here but should be based on equipment capacity.	
Following is used to calculate Lc & Lh above					
1,020,312	896,619	qLc,qLh	building design cooling or heating block load, Btu/h	Get from load calculation. Positive for heating and negative for cooling (counter intuitive since cooling transfers heat to the ground, but that's how equations 4 & 5 work, in cooling numerator and denominator are both negative and in heating numerator and denominator are both positive, resulting in positive bore length solution).	
0.341	0.341	PLFm	part-load factor during design month, unitless	Office. Get from energy calculation. Ratio of actual monthly load to maximum theoretical monthly load if the building operated continuously at the block load (i.e. Monthly Btu/(block load Btu/h * days in month * 24 hours). Steady load makes higher load factor.	
	3.4	CDP	coefficient of performance, kW/kW	IECC. Ratio of heat output from condenser to power input to compressor. Depends on energy code minimum requirements and heat pump units specified.	
10.66		EER	energy efficiency ratio, Btu/Wh	IECC. Ratio of output cooling energy to input electrical energy. Depends on energy code minimum requirements and heat pump units specified.	
885		EFLHc	equivalent full-load hours cooling, hrs/season	Avg. Baltimore, MD values for office. Examples in Table 8 for preliminary values. Get final values from energy calculation. Equal to annual cooling load divided by heat pump capacity. Affected by location, building type, and internal loads. Higher occupancy hours can increase EFLH without increasing peak loads.	
	805	EFLHh	equivalent full-load hours heating, hrs/season	Avg. Baltimore, MD values for office. Examples in Table 8 for preliminary values. Get final values from energy calculation. Equal to annual heating load divided by heat pump capacity. Affected by location, building type, and internal loads. Higher occupancy hours can increase EFLH without increasing peak loads.	
		Wc,Wh	system power input at design cooling or heating load, W	Example 1 replaces (qLc - 3.41Wc) and (qLh - 3.41Wh) in equations 4 & 5 with qcond and qevap calculated below.	
1,346,888		qcond	heat pump condenser heat rejection rate to ground, Btu/h	In cooling mode the heat of compression and auxiliary equipment (e.g. fans, pumps) is delivered to the ground. See equation 2 on p.34.15.	
	632,908	qevap	heat pump evaporator heat extraction rate from ground, Btu/h	In heating mode the heat of compression and auxiliary equipment (e.g. fans, pumps) is delivered to the building. See equation 3 on p.34.15.	
194,234	194,234	qo	net annual average heat transfer to ground, Btu/h	Dependent on block loads, equipment efficiency, & equivalent full-load hours (EFLH). Positive for heating dominant load (higher AFLHh) and negative for cooling dominant load (higher AFLHc).	
0.5	0.5	kb,kg,rt,kg	bore grout/fill conductivity, Btu/h*ft**F	Typically 0.4-1.6 Btu/h*ft**F. Get from grout/backfill design specifications. See Table 4 for examples (used with Table 6 to find bore thermal resistance Rb below)	
0.3474	0.3474148	Rb	thermal resistance of bore, ft**F/Btu	1" HDPE, 5/8" bore, avg BC location, transition flow, kgrou=1.0 Btu/h*ft**F. Typically 0.1-0.47 ft**F/Btu. See Table 6 for example. Get from site thermal conductivity test (TCT) if available. Dependent on nominal tube diameter, tube location in bore (Fig. 15 Coefficients), bore diameter, flow Reynolds number, and grout conductivity (kgrou). See equations 6, 7, & 8 on p.34.16.	
57	57	tg	undisturbed ground temperature, °F	Baltimore, MD. See Fig. 18 for example. Local deep ground temperatures can be obtained from local water well logs and geological surveys. A less accurate source is a temperature contour map prepared by state geological surveys.	
33	-12	twi-tg	approach temperature, °F	Use 20-30°F > tg cooling and 10-20°F < tg heating for good compromise (p.34.18). Selecting twi closer to tg makes more efficient but larger ground coil, farther from tg smaller ground coil. Approach temperature is technically defined as (two-twi)/2-tg, so the phrase is being used loosely here.	
90	45	twi	liquid temperature of heat pump inlet, °F	Typically about 10°F > twi for cooling and 5°F < twi for heating (in cooling mode the heat of compression is delivered to the ground while in heating it is delivered to the building). Depends on heat pump units	
100	40	two	liquid temperature of heat pump outlet, °F		
	-3.4	-3.4	tp	temperature penalty for interference of adjacent bores, °F	See Table 7 for example (sign of tp values seem incorrectly reversed in table, see example 1 where positive tp value due to cooling dominant load decreased bore length when it should have increased). Table 7 is anecdotal and is not intended for application to actual design. Use positive value for heating dominant net load (positive qo) and negative for cooling dominant load (negative qo). Ground temperature should increase from cooling but it's a double negative in equation 4 & 5 denominator. Represents long term change in ground temperature. Typical bore separation distance is 15-25 ft. Penalty is increased for unbalanced heating & cooling loads, nonporous soils, smaller bore separation distances, and shorter bore lengths. Actual temperature change is usually mitigated by groundwater recharge.
1.04	1.04	Fsc	short-circuit heat loss factor, unitless	1 bore per loop at 3 gpm/ton. Typically 1.01-1.06. See table on page 34.17. Heat loss between upward & downward flowing legs of U-bend loop. Lower for shorter bores in series vs longer bores in parallel.	
Following is used to calculate effective ground thermal resistances (Rga, Rgm, & Rgst)					
0.900		kg	ground conductivity, Btu/h*ft**F	Limestone, heavy sand, 5% water. Typically 0.3-2.2 Btu/h*ft**F. Get from geotechnical site surveys or state geological surveys. See Table 4 for examples (used in effective thermal resistance calculations below)	
0.55		ag	thermal diffusivity of the ground, ft²/day	Limestone, heavy sand, 5% water. Typically 0.35-1.5 ft²/day. Get from geotechnical site surveys or state geological surveys. See Table 4 for examples (used in Fourier calculations below). Higher for more sand and less clay. Equal to thermal conductivity divided by volumetric heat capacity. Reflects both the soil ability to transfer heat and its ability to change temperature when heat is supplied or withdrawn.	
6		db	bore diameter, in	Typically 4-6 in. Get from design specifications (used in Fourier calculations below)	
3650		qa	10 year (3650 day) heat pulse	See p.34.17. Pulse of heat to account for long-term heat imbalances.	
30		qam	1 month (30 day) heat pulse	See p.34.17. Pulse of heat to account for average monthly heat rates during design month.	
0.167		qst	4 hr (0.167 day) heat pulse	See p.34.17. Pulse of heat to account for maximum heat rates for a short-term period during design day.	
3650		t1	time of operation for 10 year (3650 day) heat pulse, days	See p.34.17 (used in Fourier calculations below)	
3680		t2	time of operation for 1 month (30 day) heat pulse, days	See p.34.17 (used in Fourier calculations below)	
3680.167		tf	time of operation for short term (4 hr or 0.167 day) heat pulse, days	See p.34.17 (used in Fourier calculations below)	
265		Fo1	Fourier number for 10 year (3650 day) heat pulse	Dependent on time of operation, bore diameter, and thermal diffusivity of the ground. See p.34.17 (use with chart in Fig. 16 to get G-factor below)	
1.47		Fo2	Fourier number for 1 month (30 day) heat pulse	Dependent on time of operation, bore diameter, and thermal diffusivity of the ground. See p.34.17 (use with chart in Fig. 16 to get G-factor below)	
32,385		Fof	Fourier number for short term (4 hr or 0.167 day) heat pulse	Dependent on time of operation, bore diameter, and thermal diffusivity of the ground. See p.34.17 (use with chart in Fig. 16 to get G-factor below)	
0.51		G1	G-factor for 10 year (3650 day) heat pulse	Use Fourier number & chart in Fig. 16 to obtain G-factor. Used in equations 10 & 11 to calculate Rga & Rgm	
0.16		G2	G-factor for 1 month (30 day) heat pulse	Use Fourier number & chart in Fig. 16 to obtain G-factor. Used in equations 11 & 12 to calculate Rgm & Rgst	
0.7		Gf	G-factor for short term (4 hr or 0.167 day) heat pulse	Use Fourier number & chart in Fig. 16 to obtain G-factor. Used in equation 10 to calculate Rga	
0.211	0.211	Rga	effective thermal resistance of ground (annual pulse), ft**F/Btu	Dependent on ground properties (i.e. conductivity & diffusivity), bore diameter, and operating periods of the representative heat pulse	
0.389	0.389	Rgm	effective thermal resistance of ground (monthly pulse), ft**F/Btu	Dependent on ground properties (i.e. conductivity & diffusivity), bore diameter, and operating periods of the representative heat pulse	
0.17777778	0.17777778	Rgst,Rgd	effective thermal resistance of ground (peak short term: 1-6 hr recommended), ft**F/Btu	Rgst & Rgd (peak daily pulse) are used interchangeably	

Equation 5: Lh = (qaRga + (qLc - 3.41Wc) (Rb + PLFmRgm + RgdFsc)) / (tg - (twi + two) / 2 - tp)

Equation 5 Modified (see note for Wh): Lh = (qaRga + qevap (Rb + PLFmRgm + RgdFsc)) / (tg - (twi + two) / 2 - tp)

Equation 4: Lc = (qaRga + (qLc - 3.41Wc) (Rb + PLFmRgm + RgdFsc)) / (tg - (twi + two) / 2 - tp)

Equation 4 Modified (see note for Wc): Lc = (qaRga + qcond (Rb + PLFmRgm + RgdFsc)) / (tg - (twi + two) / 2 - tp)

Equation 4 bore length numerator = net annual average heat transfer to ground * annual effective thermal resistance of ground + heat pump condenser heat rejection rate to ground * (thermal resistance of bore + part-load factor during design month * monthly effective thermal resistance of ground + short term effective thermal resistance of ground * short-circuit heat loss factor)

Equation 4 bore length denominator = undisturbed ground temperature - (liquid temperature of heat pump inlet + liquid temperature of heat pump outlet) / 2 - temperature penalty for interference of adjacent bores

Cell Format/Infill Key

calculated by cell formula

copied from cooling

N/A

pending user input of updated value for project, remove infill after updating

Description of project specific input value

JSR Modified

Appendix C: GLHX Calculations – Existing System Capacity Calculation

GLHX Calculation - Existing System Capacity

Reference: ASHRAE Handbook - HVAC Applications 2015, Chapter 34 Geothermal Energy, Equations 4 & 5 & Example 1.

Cooling	Heating	Variable	Description	Notes	
	0%	0%	SF	safety factor	The calculation is already inherently conservative (e.g. equation only accounts for conduction so no benefit from water movement assumed, SF already applied to load calc, using sum of peak load or equipment capacities instead of block load, estimates of bore thermal resistance (Rb) coefficients from avg BC tube location in bore, lower approach temperatures, etc.)
(18,043)	15,090	Lc,Lh	required total bore length for cooling or heating, ft	Design for larger of lengths between cooling and heating. See equations 4 & 5 on p.34.15	
60	60	Qty	quantity of vertical bores	Typical bore separation distance is 15-25 ft. Designer must select a reasonable separation distance to minimize required land area without causing large increases in the required bore length (Lc,Lh). Separation distance affects <i>tp</i> below.	
(301)	252	depth	depth of each bore, ft/bore	Typically 50-400 ft. Adjust quantity of bores until depth is reasonable, or vice-versa. (e.g. Mining Act requires drilling permits deeper than 330 ft, drilling costs can increase significantly deeper than 500 ft)	
318	303	ft/ton	feet of bore depth per ton of capacity	Use in condenser water pump sizing calculation in other tab. Calc based on block load here but should be based on equipment capacity.	
Following is used to calculate Lc & Lh above					
Estimated Operating Load					
100.0%					
680,000	597,563	qC,qH	building design cooling or heating block load, Btu/h	Get from load calculation. Positive for heating and negative for cooling (counter intuitive since cooling transfers heat to the ground, but that's how equations 4 & 5 work, in cooling numerator and denominator are both negative and in heating numerator and denominator are both positive, resulting in positive bore length solution).	
0.341	0.341	PLFm	part-load factor during design month, unitless	Office. Get from energy calculation. Ratio of actual monthly load to maximum theoretical monthly load if the building operated continuously at the block load (i.e. Monthly Btu/(block load Btu/h * days in month * 24 hours). Steady load makes higher load factor.	
	3.4	CDP	coefficient of performance, kW/kW	IECC. Ratio of heat output from condenser to power input to compressor. Depends on energy code minimum requirements and heat pump units specified.	
10.66		EER	energy efficiency ratio, Btu/Wh	IECC. Ratio of output cooling energy to input electrical energy. Depends on energy code minimum requirements and heat pump units specified.	
885		EFLHc	equivalent full-load hours cooling, hrs/season	Avg. Baltimore, MD values for office. Examples in Table 8 for preliminary values. Get final values from energy calculation. Equal to annual cooling load divided by heat pump capacity. Affected by location, building type, and internal loads. Higher occupancy hours can increase EFLH without increasing peak loads.	
	805	EFLHh	equivalent full-load hours heating, hrs/season	Avg. Baltimore, MD values for office. Examples in Table 8 for preliminary values. Get final values from energy calculation. Equal to annual heating load divided by heat pump capacity. Affected by location, building type, and internal loads. Higher occupancy hours can increase EFLH without increasing peak loads.	
		Wc,Wh	system power input at design cooling or heating load, W	Example 1 replaces (qC-3.41Wc) and (qH-3.41Wh) in equations 4 & 5 with qcond and qevap calculated below.	
897,651		qcond	heat pump condenser heat rejection rate to ground, Btu/h	In cooling mode the heat of compression and auxiliary equipment (e.g. fans, pumps) is delivered to the ground. See equation 2 on p.34.15.	
	421,809	qevap	heat pump evaporator heat extraction rate from ground, Btu/h	In heating mode the heat of compression and auxiliary equipment (e.g. fans, pumps) is delivered to the building. See equation 3 on p.34.15.	
129,450	129,450	qo	net annual average heat transfer to ground, Btu/h	Dependent on block loads, equipment efficiency, & equivalent full-load hours (EFLH). Positive for heating dominant load (higher AFLH) and negative for cooling dominant load (higher AFLHc).	
0.5	0.5	kB,kgrt,kp	bore grout/fill conductivity, Btu/h*ft*F	Typically 0.4-1.6 Btu/h*ft*F. Get from grout/backfill design specifications. See Table 4 for examples (used with Table 6 to find bore thermal resistance Rb below)	
0.3474	0.3474148	Rb	thermal resistance of bore, ft*H*F/Btu	1" HDPE, 5/8" bore, avg BC location, transition flow, kgrout=1.0 Btu/h*ft*F. Typically 0.1-0.47 ft*H*F/Btu. See Table 6 for example. Get from site thermal conductivity test (TCT) if available. Dependent on nominal tube diameter, tube location in bore (Fig. 15 Coefficients), bore diameter, wear Reynolds number, and grout conductivity (kgrout). See equations 6, 7, & 8 on p.34.16.	
57	57	tg	undisturbed ground temperature, °F	Baltimore, MD. See Fig. 18 for example. Local deep ground temperatures can be obtained from local water well logs and geological surveys. A less accurate source is a temperature contour map prepared by state geological surveys.	
33	-12	twi-tg	approach temperature, °F	Use 20-30°F > tg cooling and 10-20°F < tg heating for good compromise (p.34.18). Selecting twi closer to tg makes more efficient but larger ground coil, farther from tg smaller ground coil. Approach temperature is technically defined as (two-twi)/2-tg, so the phrase is being used loosely here.	
90	45	twi	liquid temperature of heat pump inlet, °F	Typically about 10°F > twi for cooling and 5°F < twi for heating (in cooling mode the heat of compression is delivered to the ground while in heating it is delivered to the building). Depends on heat pump units	
100	35	two	liquid temperature of heat pump outlet, °F		
	-3.4	-3.4	tp	temperature penalty for interference of adjacent bores, °F	See Table 7 for example (sign of tp values seem incorrectly reversed in table, see example 1 where positive tp value due to cooling dominant load decreased bore length when it should have increased). Table 7 is anecdotal and is not intended for application to actual design. Use positive value for heating dominant net load (positive qo) and negative for cooling dominant load (negative qo). Ground temperature should increase from cooling but it's a double negative in equation 4 & 5 denominator. Represents long term change in ground temperature. Typical bore separation distance is 15-25 ft. Penalty is increased for unbalanced heating & cooling loads, nonporous soils, smaller bore separation distances, and shorter bore lengths. Actual temperature change is usually mitigated by groundwater recharge.
1.04	1.04	Fsc	short-circuit heat loss factor, unitless	1 bore per loop at 3 gpm/ton. Typically 1.01-1.06. See table on page 34.17 . Heat loss between upward & downward flowing legs of U-bend loop. Lower for shorter bores in series vs longer bores in parallel.	
Following is used to calculate effective ground thermal resistances (Rga, Rgm, & Rgst)					
0.900		kg	ground conductivity, Btu/h*ft*F	Limestone, heavy sand, 5% water. Typically 0.3-2.2 Btu/h*ft*F. Get from geotechnical site surveys or state geological surveys. See Table 4 for examples (used in effective thermal resistance calculations below)	
0.55		og	thermal diffusivity of the ground, ft ² /day	Limestone, heavy sand, 5% water. Typically 0.35-1.5 ft ² /day. Get from geotechnical site surveys or state geological surveys. See Table 4 for examples (used in Fourier calculations below). Higher for more sand and less clay. Equal to thermal conductivity divided by volumetric heat capacity. Reflects both the soil ability to transfer heat and its ability to change temperature when heat is supplied or withdrawn.	
6		db	bore diameter, in	Typically 4-6 in. Get from design specifications (used in Fourier calculations below)	
3650		qa	10 year (3650 day) heat pulse	See p.34.17. Pulse of heat to account for long-term heat imbalances.	
30		qm	1 month (30 day) heat pulse	See p.34.17. Pulse of heat to account for average monthly heat rates during design month.	
0.167		qst	4 hr (0.167 day) heat pulse	See p.34.17. Pulse of heat to account for maximum heat rates for a short-term period during design day.	
3650		t1	time of operation for 10 year (3650 day) heat pulse, days	See p.34.17 (used in Fourier calculations below)	
3680		t2	time of operation for 1 month (30 day) heat pulse, days	See p.34.17 (used in Fourier calculations below)	
3680.167		tf	time of operation for short term (4 hr or 0.167 day) heat pulse, days	See p.34.17 (used in Fourier calculations below)	
265		Fo1	Fourier number for 10 year (3650 day) heat pulse	Dependent on time of operation, bore diameter, and thermal diffusivity of the ground. See p.34.17 (use with chart in Fig. 16 to get G-factor below)	
1.47		Fo2	Fourier number for 1 month (30 day) heat pulse	Dependent on time of operation, bore diameter, and thermal diffusivity of the ground. See p.34.17 (use with chart in Fig. 16 to get G-factor below)	
32,385		Fof	Fourier number for short term (4 hr or 0.167 day) heat pulse	Dependent on time of operation, bore diameter, and thermal diffusivity of the ground. See p.34.17 (use with chart in Fig. 16 to get G-factor below)	
0.51		G1	G-factor for 10 year (3650 day) heat pulse	Use Fourier number & chart in Fig. 16 to obtain G-factor. Used in equations 10 & 11 to calculate Rga & Rgm	
0.16		G2	G-factor for 1 month (30 day) heat pulse	Use Fourier number & chart in Fig. 16 to obtain G-factor. Used in equations 11 & 12 to calculate Rgm & Rgst	
0.7		Gf	G-factor for short term (4 hr or 0.167 day) heat pulse	Use Fourier number & chart in Fig. 16 to obtain G-factor. Used in equation 10 to calculate Rga	
0.211	0.211	Rga	effective thermal resistance of ground (annual pulse), ft*H*F/Btu	Dependent on ground properties (i.e. conductivity & diffusivity), bore diameter, and operating periods of the representative heat pulse	
0.389	0.389	Rgm	effective thermal resistance of ground (monthly pulse), ft*H*F/Btu	Dependent on ground properties (i.e. conductivity & diffusivity), bore diameter, and operating periods of the representative heat pulse	
0.17777778	0.17777778	Rgst,Rgd	effective thermal resistance of ground (peak short term: 1-6 hr recommended), ft*H*F/Btu	Rgst & Rgd (peak daily pulse) are used interchangeably	

Equation 5: Lh = (qaRga + (qC - 3.41Wc) (Rb + PLFmRgm + RgdFsc)) / (tg - (twi + two) / 2 - tp)

Equation 5 Modified (see note for Wh): Lh = (qaRga + qevap (Rb + PLFmRgm + RgdFsc)) / (tg - (twi + two) / 2 - tp)

Equation 4: Lc = (qaRga + (qC - 3.41Wc) (Rb + PLFmRgm + RgdFsc)) / (tg - (twi + two) / 2 - tp)

Equation 4 Modified (see note for Wc): Lc = (qaRga + qcond (Rb + PLFmRgm + RgdFsc)) / (tg - (twi + two) / 2 - tp)

Equation 4 bore length numerator = net annual average heat transfer to ground * annual effective thermal resistance of ground + heat pump condenser heat rejection rate to ground * (thermal resistance of bore + part-load factor during design month * monthly effective thermal resistance of ground + short term effective thermal resistance of ground * short-circuit heat loss factor)

Equation 4 bore length denominator = undisturbed ground temperature - (liquid temperature of heat pump inlet + liquid temperature of heat pump outlet) / 2 - temperature penalty for interference of adjacent bores

Cell Format/Infill Key

calculated by cell formula

copied from cooling

N/A

pending user input of updated value for project, remove infill after updating

Description of project specific input value

JSR Modified

Appendix D: Building Load Calculations

Monthly Simulation Results for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

09/10/2024
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Air System Simulation Results (Table 1) :

Month	WSHP Cooling Coil Load (kBTU)	WSHP Clg Compressor (kWh)	WSHP Heating Coil Load (kBTU)	WSHP Htg Compressor (kWh)	WSHP Aux Htg Load (kBTU)	WSHP Aux Htg Input (kWh)	Terminal Fan (kWh)
January	1263	69	410461	46899	4	1	2093
February	1275	68	309619	35838	4	1	1788
March	1763	94	240356	28666	5	1	1862
April	4176	234	109571	13443	2	1	2215
May	39871	2287	18054	2295	1	0	3151
June	206494	11532	91	12	0	0	3292
July	259053	14165	0	0	0	0	3402
August	248552	13696	41	5	0	0	3402
September	137391	7620	863	111	0	0	3284
October	13085	759	39816	4977	2	0	2922
November	2758	149	144099	17561	3	1	2026
December	1507	81	302852	35647	4	1	1873
Total	917187	50755	1575824	185453	24	7	31310

Air System Simulation Results (Table 2) :

Month	WSHP Loop Water Pump (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	3597	5560	9093
February	3215	5056	8267
March	3408	5735	9381
April	2261	5186	8474
May	1217	5736	9383
June	2740	5509	9011
July	3199	5412	8846
August	3075	5736	9383
September	2002	5361	8763
October	1302	5560	9093
November	2689	5510	9013
December	3570	5412	8846
Total	32275	65773	107551

DOAS Sizing Summary for GSHP
(In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

09/10/2024
10:47 AM

Air System Information

Air System Name	GSHP	Number of zones	26
Equipment Class	TERM	Floor Area	33777.6 sqft
Air System Type	GSHP	Location	Patuxent River Nas, MD, USA

Sizing Calculation Information

Calculation Months	Jan to Dec	Zone CFM Sizing	Peak zone sensible load
Sizing Data	Calculated	Space CFM Sizing	Individual peak space loads

NOTE: No other data is applicable for a Terminal Units air system without a Dedicated Outdoor Air System (DOAS).

Zone Sizing Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

09/10/2024
10:47 AM

Air System Information

Air System Name GSHP	Number of zones 26
Equipment Class TERM	Floor Area 33777.6 sqft
Air System Type GSHP	Location Patuxent River Nas, MD, USA

Sizing Calculation Information

Calculation Months Jan to Dec	Zone CFM Sizing Peak zone sensible load
Sizing Data Calculated	Space CFM Sizing Individual peak space loads

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (MBH)	Sens Coil Load (MBH)	Coil Entering DB / WB (F)	Coil Leaving DB / WB (F)	Water Flow @ 10.0 F (gpm)	Time of Peak Coil Load	Zone CFM/sqft
GSHP-01B - EMS Bunk 118	82.8	43.8	93.3 / 76.3	48.7 / 47.1	-	August 16:00	0.34
GSHP-02A - Lounge 131 / Dining 130	46.6	30.2	80.0 / 66.2	54.8 / 51.8	-	July 16:00	0.96
GSHP-02B - Gameroom 132 / EMS Office 114	102.1	54.0	93.3 / 76.3	55.3 / 52.6	-	July 16:00	0.67
GSHP-03 - Fitness 137	25.4	15.1	81.2 / 68.4	56.0 / 53.2	-	July 16:00	0.55
GSHP-04 - Office 141 / Comm. 144	12.1	6.5	91.8 / 75.2	56.3 / 53.3	-	July 16:00	0.26
GSHP-05 - Public Lobby 134 / Control Lobby 135	15.3	10.1	79.7 / 65.7	58.1 / 53.7	-	July 15:00	0.63
GSHP-07 - Int. 153 / Int. 154	19.9	11.6	84.2 / 69.9	57.0 / 53.6	-	July 16:00	0.25
GSHP-08 - Office 155 / Role Call 170	42.9	26.4	79.6 / 66.8	57.2 / 53.6	-	August 12:00	0.73
GSHP-09A - Men's Locker 163 / Women's Locker 166	120.0	63.4	93.3 / 76.3	56.2 / 53.4	-	July 16:00	0.66
GSHP-09B - Copy Room 161	23.9	13.3	85.7 / 71.5	49.4 / 48.0	-	July 17:00	0.41
GSHP-10 - Evidence Storage 256	37.7	22.8	81.1 / 68.0	56.1 / 53.2	-	July 16:00	0.47
GSHP-11 - Processing 176	47.1	25.4	89.1 / 73.9	48.2 / 46.8	-	July 16:00	0.34
GSHP-12 - Server 205	16.1	15.4	75.7 / 57.1	55.4 / 48.2	-	August 18:00	2.31
GSHP-13A - Fire Chief 210	32.3	22.4	78.8 / 64.4	58.2 / 53.3	-	July 16:00	0.45
GSHP-13B - Pres. / V.P. 217	45.1	27.4	81.5 / 68.0	52.3 / 50.3	-	July 17:00	0.51
GSHP-13C - Old Meeting Room 201	61.7	35.5	82.8 / 69.6	56.0 / 53.2	-	August 16:00	0.97
GSHP-14 - Library 213	15.0	9.4	81.9 / 67.4	56.4 / 52.7	-	July 15:00	0.61
GSHP-15A - Lobby 222 / Gallery 223	12.5	8.3	79.8 / 65.7	56.7 / 52.7	-	August 16:00	0.55
GSHP-15B - Lobby 226 / Gallery 223	41.6	26.4	80.1 / 66.6	54.4 / 51.7	-	July 16:00	0.58
GSHP-16 - Training Room 224	74.8	42.8	81.6 / 69.3	56.1 / 53.6	-	August 15:00	0.82
GSHP-17A - Police Commis. 233	20.7	15.0	77.7 / 63.1	56.6 / 52.0	-	June 17:00	0.68
GSHP-17B - Admin. Assist. 241	31.5	19.1	84.8 / 69.3	55.4 / 51.9	-	July 16:00	0.53
GSHP-18A - Detectives 258	28.4	19.4	78.4 / 64.5	56.5 / 52.4	-	June 17:00	0.59
GSHP-18B - Narc. 260	18.8	10.2	90.2 / 74.1	56.7 / 53.5	-	July 16:00	0.35
GSHP-19A - Chief 248	34.2	21.1	79.3 / 66.6	56.6 / 53.2	-	August 12:00	0.95
GSHP-19B - Office 249 / 250	16.4	11.3	79.5 / 64.5	57.7 / 52.8	-	August 16:00	0.37

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (MBH)	Heating Coil Ent/Lvg DB (F)	Htg Coil Water Flow @20.0 F (gpm)	Fan Design Airflow (CFM)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (CFM)
GSHP-01B - EMS Bunk 118	70.7	19.1 / 93.3	-	880	0.260	0.206	880
GSHP-02A - Lounge 131 / Dining 130	27.2	58.0 / 81.1	-	1088	0.322	0.255	249
GSHP-02B - Gameroom 132 / EMS Office 114	82.3	19.1 / 78.9	-	1270	0.376	0.298	1270
GSHP-03 - Fitness 137	19.1	54.3 / 87.0	-	539	0.160	0.127	167
GSHP-04 - Office 141 / Comm. 144	9.4	23.2 / 76.3	-	164	0.048	0.038	150
GSHP-05 - Public Lobby 134 / Control Lobby 135	14.0	58.7 / 89.4	-	422	0.125	0.099	94
GSHP-07 - Int. 153 / Int. 154	20.6	45.5 / 95.1	-	384	0.114	0.090	185
GSHP-08 - Office 155 / Role Call 170	30.5	56.5 / 83.0	-	1066	0.315	0.250	287

Zone Sizing Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

09/10/2024

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Zone Name	Heating Coil Load (MBH)	Heating Coil Ent/Lvg DB (F)	Htg Coil Water Flow @20.0 F (gpm)	Fan Design Airflow (CFM)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (CFM)
GSHP-09A - Men's Locker 163 / Women's Locker 166	122.9	19.1 / 93.3	-	1530	0.453	0.359	1530
GSHP-09B - Copy Room 161	25.1	40.0 / 110.2	-	331	0.098	0.078	191
GSHP-10 - Evidence Storage 256	43.8	54.8 / 103.9	-	824	0.244	0.193	239
GSHP-11 - Processing 176	44.8	30.3 / 104.5	-	558	0.165	0.131	419
GSHP-12 - Server 205	4.4	70.1 / 76.0	-	694	0.205	0.163	0
GSHP-13A - Fire Chief 210	36.8	61.5 / 96.1	-	982	0.290	0.230	171
GSHP-13B - Pres. / V.P. 217	47.6	52.8 / 104.6	-	848	0.251	0.199	275
GSHP-13C - Old Meeting Room 201	44.4	49.8 / 84.2	-	1193	0.353	0.280	479
GSHP-14 - Library 213	14.3	52.3 / 91.7	-	335	0.099	0.079	117
GSHP-15A - Lobby 222 / Gallery 223	11.5	58.4 / 91.3	-	324	0.096	0.076	74
GSHP-15B - Lobby 226 / Gallery 223	38.2	57.7 / 95.6	-	930	0.275	0.218	220
GSHP-16 - Training Room 224	53.3	53.6 / 86.2	-	1515	0.448	0.355	499
GSHP-17A - Police Commis. 233	19.4	63.8 / 91.7	-	644	0.190	0.151	80
GSHP-17B - Admin. Assist. 241	26.5	43.8 / 85.6	-	586	0.173	0.137	301
GSHP-18A - Detectives 258	27.4	61.5 / 93.0	-	804	0.238	0.189	138
GSHP-18B - Narc. 260	18.7	28.1 / 91.3	-	273	0.081	0.064	225
GSHP-19A - Chief 248	25.0	57.3 / 84.9	-	838	0.248	0.197	212
GSHP-19B - Office 249 / 250	18.7	59.4 / 95.9	-	472	0.140	0.111	99

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
GSHP-01B - EMS Bunk 118	15.3	August 15:00	14.0	2589.6
GSHP-02A - Lounge 131 / Dining 130	23.5	June 15:00	7.0	1129.9
GSHP-02B - Gameroom 132 / EMS Office 114	27.2	June 16:00	7.6	1893.8
GSHP-03 - Fitness 137	11.6	July 17:00	9.5	984.1
GSHP-04 - Office 141 / Comm. 144	3.5	July 19:00	0.7	637.7
GSHP-05 - Public Lobby 134 / Control Lobby 135	9.1	July 8:00	8.6	673.4
GSHP-07 - Int. 153 / Int. 154	8.3	July 16:00	10.1	1522.3
GSHP-08 - Office 155 / Role Call 170	23.0	September 12:00	13.3	1466.0
GSHP-09A - Men's Locker 163 / Women's Locker 166	14.5	July 16:00	13.5	2315.4
GSHP-09B - Copy Room 161	7.1	June 18:00	2.9	807.3
GSHP-10 - Evidence Storage 256	15.0	July 16:00	22.2	1768.8
GSHP-11 - Processing 176	12.0	July 16:00	10.5	1628.9
GSHP-12 - Server 205	15.0	August 17:00	3.9	300.7
GSHP-13A - Fire Chief 210	18.8	July 16:00	26.5	2187.8
GSHP-13B - Pres. / V.P. 217	18.3	July 18:00	19.8	1671.1
GSHP-13C - Old Meeting Room 201	25.7	August 16:00	16.8	1235.5
GSHP-14 - Library 213	7.2	July 15:00	7.6	548.8
GSHP-15A - Lobby 222 / Gallery 223	7.0	August 16:00	6.9	592.8
GSHP-15B - Lobby 226 / Gallery 223	20.1	July 17:00	19.2	1604.0
GSHP-16 - Training Room 224	32.7	August 15:00	25.1	1842.6
GSHP-17A - Police Commis. 233	13.9	June 18:00	14.7	950.6
GSHP-17B - Admin. Assist. 241	12.6	July 18:00	8.0	1105.7
GSHP-18A - Detectives 258	17.3	June 18:00	19.3	1361.7
GSHP-18B - Narc. 260	5.9	July 18:00	5.6	783.7
GSHP-19A - Chief 248	18.1	September 11:00	12.7	883.7
GSHP-19B - Office 249 / 250	9.3	August 13:00	12.7	1292.0

Zone Sizing Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

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Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
GSHP-01B - EMS Bunk 118						
115 Corridor	2.0	July 15:00	126	3.2	535.5	0.24
117 Radio	2.6	August 16:00	130	2.0	216.7	0.60
118 EMS Bunk	2.4	July 19:00	120	0.3	337.9	0.36
119 Corridor	1.2	September 12:00	75	1.9	287.2	0.26
120 Toil.	0.6	August 13:00	44	1.1	89.1	0.49
121 Toil.	0.6	August 13:00	45	1.1	90.5	0.49
122 Toil.	0.6	August 12:00	43	1.1	85.8	0.50
123 Toil.	0.7	August 15:00	58	1.5	82.1	0.71
124 Toil.	0.3	July 22:00	13	0.1	81.0	0.16
125 Toil.	0.2	July 22:00	12	0.1	74.4	0.16
126 Toil.	0.3	May 21:00	12	0.1	74.4	0.17
127 Toil.	0.6	August 13:00	40	1.0	74.6	0.54
128 Lockers	3.3	July 20:00	161	0.5	560.2	0.29
GSHP-02A - Lounge 131 / Dining 130						
130 Dining	7.5	June 15:00	347	2.8	458.0	0.76
131 Lounge	8.7	June 10:00	405	4.0	495.3	0.82
188 Kitchen	7.4	July 21:00	342	0.2	176.6	1.93
GSHP-02B - Gameroom 132 / EMS Office 114						
111 EMS Storage	0.3	July 22:00	17	0.2	220.7	0.08
112 Toil.	0.2	July 22:00	11	0.1	65.1	0.17
114 EMS Office	0.9	July 21:00	40	0.1	128.6	0.31
116 Corridor	1.3	June 21:00	62	0.4	380.0	0.16
132 Game Room	12.1	June 15:00	563	5.7	678.9	0.83
148 Air Bench	12.0	July 19:00	554	0.8	157.4	3.52
152 Corridor	0.5	July 22:00	23	0.3	263.1	0.09
GSHP-03 - Fitness 137						
131 Fitness	8.3	July 18:00	384	4.4	441.2	0.87
136 Corridor	3.4	July 16:00	190	5.1	542.8	0.35
GSHP-04 - Office 141 / Comm. 144						
142 Toil.	0.2	July 22:00	10	0.1	60.8	0.17
143 Toil.	0.2	July 22:00	9	0.1	58.5	0.16
144 Comm	3.1	July 19:00	144	0.6	518.4	0.28
GSHP-05 - Public Lobby 134 / Control Lobby 135						
134 Public Lobby	7.6	May 8:00	354	8.2	462.3	0.76
135 Control Lobby	1.6	July 21:00	75	0.4	211.1	0.36
GSHP-07 - Int. 153 / Int. 154						
145 Waiting	1.4	July 19:00	66	0.2	209.1	0.31
147 Corridor	1.2	July 16:00	96	2.6	196.6	0.49
149 Corridor	0.8	July 15:00	74	2.0	206.6	0.36
150 Record Storage	1.6	July 15:00	179	4.8	432.4	0.41
151 Records	1.5	July 21:00	71	0.2	261.8	0.27
153 Int.	0.8	August 18:00	38	0.1	105.6	0.36
154 Int.	0.8	August 17:00	39	0.1	110.3	0.36
GSHP-08 - Office 155 / Role Call 170						
155 Officers	8.6	September 12:00	400	6.9	645.5	0.62
169 Super	5.3	September 12:00	247	3.8	364.4	0.68
170 Roll Call	9.1	October 13:00	420	2.6	456.1	0.92
GSHP-09A - Men's Locker 163 / Women's Locker 166						
163 Men's Locker	9.9	July 16:00	958	8.1	1467.1	0.65
164 Men's Toil.	1.7	July 15:00	230	3.0	306.1	0.75
165 Wom. Toil.	1.2	July 15:00	170	2.2	231.0	0.73
166 Women's Locker	1.8	July 22:00	172	0.3	311.1	0.55

Zone Sizing Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

09/10/2024

Prepared by: EBL Engineers, LLC

10:47 AM

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
GSHP-09B - Copy Room 161						
156 Coffee	3.8	June 18:00	178	2.2	184.4	0.96
159 Men	0.2	July 22:00	10	0.1	54.1	0.18
160 Wom.	0.2	July 22:00	9	0.1	54.0	0.16
161 Copy Rm.	1.9	July 21:00	88	0.1	82.1	1.08
162 Corridor	1.0	September 17:00	48	0.5	432.7	0.11
GSHP-10 - Evidence Storage 256						
253 Weapons	0.7	August 16:00	52	1.4	98.5	0.53
254 Uniforms Storage	2.5	July 16:00	175	4.7	378.6	0.46
255 Lab	5.5	July 17:00	257	3.3	204.8	1.25
256 Evidence Storage	6.3	July 16:00	474	12.8	1086.9	0.44
GSHP-11 - Processing 176						
171 Corridor	1.0	August 16:00	46	1.2	267.8	0.17
175 Radio	0.6	July 20:00	29	0.1	56.7	0.51
175 Weapons	0.1	July 22:00	5	0.1	57.3	0.09
176 Processing	2.7	July 21:00	123	0.4	474.3	0.26
177 Decon.	0.6	July 15:00	39	1.1	91.3	0.43
178 Int.	1.0	July 16:00	44	1.0	89.4	0.50
179 Int.	1.0	July 16:00	45	1.0	91.9	0.49
180,181 Passage	0.7	July 16:00	48	1.3	184.2	0.26
182 Men	1.0	July 16:00	48	0.9	75.4	0.64
183 Men	1.1	August 16:00	52	1.0	79.1	0.65
184 Wom.	1.1	August 16:00	52	1.0	79.0	0.66
185 Juv.	1.3	July 18:00	59	1.5	82.6	0.71
GSHP-12 - Server 205						
205 Server	15.0	August 17:00	694	3.9	300.7	2.31
GSHP-13A - Fire Chief 210						
202,204,208 Corridor	3.7	July 16:00	288	7.8	658.5	0.44
203 CEMS	3.2	July 16:00	158	4.3	318.8	0.50
207 Coffee	1.4	July 17:00	67	0.7	95.3	0.70
209 Assitant Fire Chiefs	5.2	July 15:00	248	6.7	497.1	0.50
210 Fire Chief	4.2	June 9:00	194	4.9	345.1	0.56
215 Corridor	1.2	July 18:00	78	2.1	273.0	0.29
GSHP-13B - Pres. / V.P. 217						
206 Storage	1.6	July 18:00	105	2.8	406.2	0.26
211 Copy	6.7	July 17:00	310	3.2	250.2	1.24
213 Men	0.4	July 19:00	16	0.4	72.8	0.23
214 Wom.	0.3	July 18:00	16	0.4	76.6	0.20
216 Sec./Treas.	4.4	July 18:00	231	6.2	354.6	0.65
217 Pres/VP	4.6	July 17:00	215	5.4	431.7	0.50
218 Stor.	0.3	July 20:00	45	1.2	78.9	0.58
GSHP-13C - Old Meeting Room 201						
201 "Old" Meeting	25.7	August 16:00	1193	16.8	1235.5	0.97
GSHP-14 - Library 213						
219 Library	7.2	July 15:00	335	7.6	548.8	0.61
GSHP-15A - Lobby 222 / Gallery 223						
220 Wait	1.9	July 18:00	89	1.6	218.5	0.41
221 Sec.	2.5	September 16:00	118	2.4	131.7	0.89
222 Lobby	2.6	July 16:00	119	3.0	242.6	0.49
GSHP-15B - Lobby 226 / Gallery 223						
223 Gallery	6.9	July 10:00	318	6.7	423.9	0.75
226 Lobby	3.6	July 16:00	165	3.9	344.2	0.48
227 Men	0.3	July 19:00	12	0.3	50.1	0.24
228 Wom.	0.3	July 19:00	12	0.3	52.1	0.23
229 Lounge (1)	5.5	June 18:00	253	4.0	264.0	0.96
229 Lounge Kitchen	2.1	July 17:00	99	1.8	121.4	0.81
230,231 Sec. Wait.	2.4	July 17:00	111	1.9	278.5	0.40

Zone Sizing Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

09/10/2024

Prepared by: EBL Engineers, LLC

10:47 AM

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
232 Storage	0.2	July 19:00	14	0.4	69.7	0.20
GSHP-16 - Training Room 224						
224 Training Room	31.8	August 15:00	1476	23.2	1727.7	0.85
225 Storage	0.8	July 16:00	71	1.9	114.8	0.62
GSHP-17A - Police Commis. 233						
233 Police Commis.	3.7	June 18:00	171	4.5	271.5	0.63
235 Office	3.2	June 18:00	148	3.4	235.2	0.63
236 Office	3.1	June 18:00	144	3.3	222.3	0.65
237 Office	3.9	June 18:00	182	3.5	221.7	0.82
GSHP-17B - Admin. Assist. 241						
234,244,245 Corridor	2.1	July 18:00	133	3.6	458.1	0.29
238 Copy	7.5	July 17:00	346	2.1	302.4	1.14
240 Coff.	1.1	July 18:00	50	0.4	67.8	0.73
241 Admin Assist.	1.6	July 17:00	73	1.3	169.8	0.43
242 Men	0.2	July 18:00	11	0.3	54.2	0.21
243 Wom.	0.2	July 18:00	11	0.3	53.5	0.21
GSHP-18A - Detectives 258						
257 Super	4.2	June 18:00	197	4.3	237.7	0.83
258 Detectives	11.3	June 18:00	523	12.5	948.5	0.55
265 Int.	1.8	July 17:00	94	2.5	175.5	0.53
GSHP-18B - Narc. 260						
259 Temp. Evidence	0.7	July 18:00	50	1.3	188.4	0.26
260 Narc.	0.3	July 19:00	27	0.7	98.7	0.27
261 Wait	1.0	July 17:00	47	0.8	116.6	0.40
262 Radio	1.4	July 17:00	65	0.8	107.7	0.60
263 Int.	1.4	July 18:00	65	1.2	170.8	0.38
264 Observ.	1.1	July 18:00	50	0.7	101.4	0.49
GSHP-19A - Chief 248						
247 Main Conf.	12.8	September 11:00	594	7.5	518.1	1.15
248 Chief	5.3	September 11:00	244	5.2	365.6	0.67
GSHP-19B - Office 249 / 250						
246,252 Corridor	2.4	July 17:00	150	4.1	543.5	0.28
249 Office	3.3	September 12:00	155	3.6	255.8	0.61
250 Office	3.2	September 12:00	149	3.5	259.5	0.57
251 Storage	0.9	August 17:00	60	1.6	233.1	0.26

Ventilation Sizing Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

09/10/2024
10:47 AM

1. Summary

Ventilation Sizing Method ASHRAE Standard 62.1-2019
Design Condition Heating operation

Zone Name	Zone Outdoor Airflow (CFM) (Voz)	Uncorrected Outdoor Air Intake (CFM) (Vou)	Ventilation Efficiency (Ev)	Outdoor Air Intake (CFM) (Vot)	Zone Direct Exhaust Air (CFM)	Design Ventilation Air Flow (CFM)
GSHP-01B - EMS Bunk 118		105	0.732	143	880	880
GSHP-02A - Lounge 131 / Dining 130		224	0.899	249	124	249
GSHP-02B - Gameroom 132 / EMS Office 114		250	0.197	1270	75	1270
GSHP-03 - Fitness 137		147	0.883	167	0	167
GSHP-04 - Office 141 / Comm. 144		44	0.887	50	150	150
GSHP-05 - Public Lobby 134 / Control Lobby 135		74	0.788	94	0	94
GSHP-07 - Int. 153 / Int. 154		128	0.693	185	0	185
GSHP-08 - Office 155 / Role Call 170		227	0.792	287	0	287
GSHP-09A - Men's Locker 163 / Women's Locker 166		0	1.000	0	1530	1530
GSHP-09B - Copy Room 161		46	0.470	98	191	191
GSHP-10 - Evidence Storage 256		182	0.761	239	200	239
GSHP-11 - Processing 176		184	0.439	419	391	419
GSHP-12 - Server 205	0		1.000	0	0	0
GSHP-13A - Fire Chief 210		151	0.885	171	0	171
GSHP-13B - Pres. / V.P. 217		86	0.803	107	275	275
GSHP-13C - Old Meeting Room 201	479		1.000	479	0	479
GSHP-14 - Library 213	117		1.000	117	0	117
GSHP-15A - Lobby 222 / Gallery 223		64	0.859	74	0	74
GSHP-15B - Lobby 226 / Gallery 223		175	0.795	220	150	220
GSHP-16 - Training Room 224		456	0.914	499	0	499
GSHP-17A - Police Commis. 233		77	0.958	80	0	80
GSHP-17B - Admin. Assist. 241		50	0.819	61	301	301
GSHP-18A - Detectives 258		120	0.874	138	0	138
GSHP-18B - Narc. 260		76	0.844	90	225	225
GSHP-19A - Chief 248		188	0.886	212	0	212
GSHP-19B - Office 249 / 250		88	0.880	99	0	99
System Total				5547	4492	8550

Note: For terminal systems using direct ventilation or DOAS delivering air direct to terminal inlets, Standard 62.1 considers each zone terminal to be a "ventilation system". Standard 62.1 calculations are performed separately for each zone terminal unit. Outdoor air intake flow rates for all terminal zones are summed to determine the total system outdoor air flow rate.

2. Space Ventilation Analysis

2.1 Zone: GSHP-01B - EMS Bunk 118

Ventilation Sizing Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

09/10/2024
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Zone Name / Space Name	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)	
GSHP-01B - EMS Bunk 118									
115 Corridor	126	535.5	0.06	0.0	0.00	0.80	40	32	0.801
117 Radio	130	216.7	0.06	1.1	5.00	0.80	23	18	0.942
118 EMS Bunk	120	337.9	0.06	3.4	5.00	0.80	46	37	0.732
119 Corridor	75	287.2	0.06	0.0	0.00	0.80	22	17	0.832
120 Toil.	44	89.1	0.00	0.0	0.00	0.80	0	0	1.119
121 Toil.	45	90.5	0.00	0.0	0.00	0.80	0	0	1.119
122 Toil.	43	85.8	0.00	0.0	0.00	0.80	0	0	1.119
123 Toil.	58	82.1	0.00	0.0	0.00	0.80	0	0	1.119
124 Toil.	13	81.0	0.00	0.0	0.00	0.80	0	0	1.119
125 Toil.	12	74.4	0.00	0.0	0.00	0.80	0	0	1.119
126 Toil.	12	74.4	0.00	0.0	0.00	0.80	0	0	1.119
127 Toil.	40	74.6	0.00	0.0	0.00	0.80	0	0	1.119
128 Lockers	161	560.2	0.00	5.6	0.00	0.80	0	0	1.119
Totals	880							105	0.732

2.2 Zone: GSHP-02A - Lounge 131 / Dining 130

Zone Name / Space Name	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)	
GSHP-02A - Lounge 131 / Dining 130									
130 Dining	347	458.0	0.06	11.5	5.00	0.80	106	85	0.899
131 Lounge	405	495.3	0.06	12.4	5.00	0.80	115	92	0.922
188 Kitchen	342	176.6	0.12	3.5	7.50	0.80	60	48	1.031
Totals	1093							224	0.899

Ventilation Sizing Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

09/10/2024
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2.3 Zone: GSHP-02B - Gameroom 132 / EMS Office 114

	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
Zone Name / Space Name	(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)
GSHP-02B - Gameroom 132 / EMS Office 114									
111 EMS Storage	17	220.7	0.06	0.0	5.00	0.80	17	13	0.197
112 Toil.	11	65.1	0.00	0.0	0.00	0.80	0	0	1.197
114 EMS Office	40	128.6	0.06	1.0	5.00	0.80	16	13	0.796
116 Corridor	62	380.0	0.06	0.0	0.00	0.80	29	23	0.739
132 Game Room	563	678.9	0.06	17.0	5.00	0.80	157	126	0.918
148 Air Bench	554	157.4	0.18	3.1	10.00	0.80	75	60	1.062
152 Corridor	23	263.1	0.06	0.0	0.00	0.80	20	16	0.350
Totals	1270							250	0.197

2.4 Zone: GSHP-03 - Fitness 137

	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
Zone Name / Space Name	(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)
GSHP-03 - Fitness 137									
131 Fitness	384	441.2	0.06	4.4	20.00	0.80	143	115	0.883
136 Corridor	190	542.8	0.06	0.0	0.00	0.80	41	33	1.043
Totals	574							147	0.883

2.5 Zone: GSHP-04 - Office 141 / Comm. 144

	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
Zone Name / Space Name	(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)
GSHP-04 - Office 141 / Comm. 144									
142 Toil.	10	60.8	0.00	0.0	0.00	0.80	0	0	1.269
143 Toil.	9	58.5	0.00	0.0	0.00	0.80	0	0	1.269
144 Comm	144	518.4	0.06	2.6	5.00	0.80	55	44	0.887
Totals	164							44	0.887

Ventilation Sizing Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

09/10/2024
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2.6 Zone: GSHP-05 - Public Lobby 134 / Control Lobby 135

	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
Zone Name / Space Name	(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)
GSHP-05 - Public Lobby 134 / Control Lobby 135									
134 Public Lobby	354	462.3	0.06	4.6	5.00	0.80	64	51	0.993
135 Control Lobby	75	211.1	0.06	2.1	5.00	0.80	29	23	0.788
Totals	429							74	0.788

2.7 Zone: GSHP-07 - Int. 153 / Int. 154

	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
Zone Name / Space Name	(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)
GSHP-07 - Int. 153 / Int. 154									
145 Waiting	66	209.1	0.06	2.1	5.00	0.80	29	23	0.791
147 Corridor	96	196.6	0.06	0.0	0.00	0.80	15	12	1.074
149 Corridor	74	206.6	0.06	0.0	0.00	0.80	15	12	1.019
150 Record Storage	179	432.4	0.06	0.0	5.00	0.80	32	26	1.047
151 Records	71	261.8	0.06	1.3	5.00	0.80	28	22	0.836
153 Int.	38	105.6	0.06	2.0	5.00	0.80	20	16	0.693
154 Int.	39	110.3	0.06	2.0	5.00	0.80	21	17	0.698
Totals	563							128	0.693

2.8 Zone: GSHP-08 - Office 155 / Role Call 170

	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
Zone Name / Space Name	(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)
GSHP-08 - Office 155 / Role Call 170									
155 Officers	400	645.5	0.06	3.2	5.00	0.80	69	55	1.042
169 Super	247	364.4	0.06	1.8	5.00	0.80	39	31	1.056
170 Roll Call	420	456.1	0.06	22.8	5.00	0.80	177	141	0.792
Totals	1067							227	0.792

Ventilation Sizing Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

09/10/2024
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2.9 Zone: GSHP-09A - Men's Locker 163 / Women's Locker 166

	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
Zone Name / Space Name	(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)
GSHP-09A - Men's Locker 163 / Women's Locker 166									
163 Men's Locker	958	1467.1	0.00	14.7	0.00	1.00	0	0	1.000
164 Men's Toil.	230	306.1	0.00	0.0	0.00	1.00	0	0	1.000
165 Wom. Toil.	170	231.0	0.00	0.0	0.00	1.00	0	0	1.000
166 Women's Locker	172	311.1	0.00	3.1	0.00	1.00	0	0	1.000
Totals	1530							0	1.000

2.10 Zone: GSHP-09B - Copy Room 161

	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
Zone Name / Space Name	(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)
GSHP-09B - Copy Room 161									
156 Coffee	178	184.4	0.06	1.8	5.00	0.80	25	20	0.996
159 Men	10	54.1	0.00	0.0	0.00	0.80	0	0	1.139
160 Wom.	9	54.0	0.00	0.0	0.00	0.80	0	0	1.139
161 Copy Rm.	88	82.1	0.00	0.4	0.00	0.80	0	0	1.139
162 Corridor	48	432.7	0.06	0.0	0.00	0.80	32	26	0.470
Totals	332							46	0.470

2.11 Zone: GSHP-10 - Evidence Storage 256

	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
Zone Name / Space Name	(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)
GSHP-10 - Evidence Storage 256									
253 Weapons	52	98.5	0.06	0.0	5.00	0.80	7	6	1.048
254 Uniforms Storage	175	378.6	0.06	0.0	5.00	0.80	28	23	1.027
255 Lab	257	204.8	0.18	5.1	10.00	0.80	110	88	0.761
256 Evidence Storage	474	1086.9	0.06	0.0	5.00	0.80	82	65	1.018
Totals	958							182	0.761

Ventilation Sizing Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

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2.12 Zone: GSHP-11 - Processing 176

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-11 - Processing 176									
171 Corridor	46	267.8	0.06	0.0	0.00	0.80	20	16	0.873
175 Radio	29	56.7	0.06	0.3	5.00	0.80	6	5	1.103
175 Weapons	5	57.3	0.06	0.0	5.00	0.80	4	3	0.439
176 Processing	123	474.3	0.06	2.4	5.00	0.80	50	40	0.903
177 Decon.	39	91.3	0.00	0.0	0.00	0.80	0	0	1.312
178 Int.	44	89.4	0.06	2.0	5.00	0.80	19	15	0.880
179 Int.	45	91.9	0.06	2.0	5.00	0.80	19	16	0.880
180,181 Passage	48	184.2	0.06	0.0	0.00	0.80	14	11	1.025
182 Men	48	75.4	0.12	1.9	5.00	0.80	23	18	0.835
183 Men	52	79.1	0.12	2.0	5.00	0.80	24	19	0.843
184 Wom.	52	79.0	0.12	2.0	5.00	0.80	24	19	0.845
185 Juv.	59	82.6	0.12	2.1	5.00	0.80	25	20	0.881
Totals	589							184	0.439

2.13 Zone: GSHP-12 - Server 205

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-12 - Server 205									
205 Server	694	300.7	0.00	0.0	0.00	1.00	0	0	1.000
Totals	694							0	1.000

2.14 Zone: GSHP-13A - Fire Chief 210

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-13A - Fire Chief 210									
202,204,208 Corridor	288	658.5	0.06	0.0	0.00	0.80	49	40	0.975
203 CEMS	158	318.8	0.06	1.0	5.00	0.80	30	24	0.955
207 Coffee	67	95.3	0.06	1.0	5.00	0.80	13	10	0.950
209 Assitant Fire Chiefs	248	497.1	0.06	1.0	5.00	0.80	44	35	0.971
210 Fire Chief	194	345.1	0.06	1.0	5.00	0.80	32	26	0.981
215 Corridor	78	273.0	0.06	0.0	0.00	0.80	20	16	0.885
Totals	1033							151	0.885

Ventilation Sizing Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

09/10/2024
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2.15 Zone: GSHP-13B - Pres. / V.P. 217

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-13B - Pres. / V.P. 217									
206 Storage	105	406.2	0.06	0.0	5.00	0.80	30	24	0.803
211 Copy	310	250.2	0.00	1.3	0.00	0.80	0	0	1.092
213 Men	16	72.8	0.00	0.0	0.00	0.80	0	0	1.092
214 Wom.	16	76.6	0.00	0.0	0.00	0.80	0	0	1.092
216 Sec./Treas.	231	354.6	0.06	1.0	5.00	0.80	33	26	0.950
217 Pres/VP	215	431.7	0.06	1.0	5.00	0.80	39	31	0.912
218 Stor.	45	78.9	0.06	0.0	5.00	0.80	6	5	0.962
Totals	939							86	0.803

2.16 Zone: GSHP-13C - Old Meeting Room 201

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-13C - Old Meeting Room 201									
201 "Old" Meeting	1193	1235.5	0.06	61.8	5.00	0.80	479	383	1.000
Totals	1193							383	1.000

2.17 Zone: GSHP-14 - Library 213

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-14 - Library 213									
219 Library	335	548.8	0.12	5.5	5.00	0.80	117	93	1.000
Totals	335							93	1.000

2.18 Zone: GSHP-15A - Lobby 222 / Gallery 223

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-15A - Lobby 222 / Gallery 223									
220 Wait	89	218.5	0.06	2.2	5.00	0.80	30	24	0.859
221 Sec.	118	131.7	0.06	1.0	5.00	0.80	16	13	1.058
222 Lobby	119	242.6	0.06	2.4	5.00	0.80	33	27	0.914
Totals	326							64	0.859

Ventilation Sizing Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

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2.19 Zone: GSHP-15B - Lobby 226 / Gallery 223

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-15B - Lobby 226 / Gallery 223									
223 Gallery	318	423.9	0.06	4.2	5.00	0.80	58	47	0.994
226 Lobby	165	344.2	0.06	3.4	5.00	0.80	47	38	0.891
227 Men	12	50.1	0.00	0.0	0.00	0.80	0	0	1.178
228 Wom.	12	52.1	0.00	0.0	0.00	0.80	0	0	1.178
229 Lounge (1)	253	264.0	0.06	6.6	5.00	0.80	61	49	0.936
229 Lounge Kitchen	99	121.4	0.06	1.2	5.00	0.80	17	13	1.008
230,231 Sec. Wait.	111	278.5	0.06	1.4	5.00	0.80	30	24	0.911
232 Storage	14	69.7	0.06	0.0	5.00	0.80	5	4	0.795
Totals	983							175	0.795

2.20 Zone: GSHP-16 - Training Room 224

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-16 - Training Room 224									
224 Training Room	1476	1727.7	0.06	17.3	20.00	0.80	562	449	0.914
225 Storage	71	114.8	0.06	0.0	5.00	0.80	9	7	1.174
Totals	1547							456	0.914

2.21 Zone: GSHP-17A - Police Commis. 233

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-17A - Police Commis. 233									
233 Police Commis.	171	271.5	0.06	1.0	5.00	0.80	27	21	0.964
235 Office	148	235.2	0.06	1.0	5.00	0.80	24	19	0.958
236 Office	144	222.3	0.06	1.0	5.00	0.80	23	18	0.960
237 Office	182	221.7	0.06	1.0	5.00	0.80	23	18	0.994
Totals	644							77	0.958

Ventilation Sizing Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

09/10/2024
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2.22 Zone: GSHP-17B - Admin. Assist. 241

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-17B - Admin. Assist. 241									
234,244,245 Corridor	133	458.1	0.06	0.0	0.00	0.80	34	27	0.822
238 Copy	346	302.4	0.00	1.5	0.00	0.80	0	0	1.080
240 Coff.	50	67.8	0.06	0.7	5.00	0.80	9	7	0.893
241 Admin Assist.	73	169.8	0.06	1.0	5.00	0.80	19	15	0.819
242 Men	11	54.2	0.00	0.0	0.00	0.80	0	0	1.080
243 Wom.	11	53.5	0.00	0.0	0.00	0.80	0	0	1.080
Totals	623							50	0.819

2.23 Zone: GSHP-18A - Detectives 258

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-18A - Detectives 258									
257 Super	197	237.7	0.06	1.0	5.00	0.80	24	19	1.026
258 Detectives	523	948.5	0.06	4.7	5.00	0.80	101	81	0.955
265 Int.	94	175.5	0.06	2.0	5.00	0.80	26	21	0.874
Totals	814							120	0.874

2.24 Zone: GSHP-18B - Narc. 260

Zone Name / Space Name	Supply Air (CFM) (Vpz)	Space Floor Area (sqft) (Az)	Area Outdoor Air Rate (CFM/sqft) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
GSHP-18B - Narc. 260									
259 Temp. Evidence	50	188.4	0.06	0.0	5.00	0.80	14	11	0.966
260 Narc.	27	98.7	0.06	0.0	5.00	0.80	7	6	0.973
261 Wait	47	116.6	0.06	1.2	5.00	0.80	16	13	0.908
262 Radio	65	107.7	0.06	0.5	5.00	0.80	11	9	1.073
263 Int.	65	170.8	0.06	2.0	5.00	0.80	25	20	0.857
264 Observ.	50	101.4	0.06	2.0	5.00	0.80	20	16	0.844
Totals	303							76	0.844

Ventilation Sizing Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

09/10/2024
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2.25 Zone: GSHP-19A - Chief 248

	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
Zone Name / Space Name	(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)
GSHP-19A - Chief 248									
247 Main Conf.	594	518.1	0.06	25.9	5.00	0.80	201	161	0.886
248 Chief	244	365.6	0.06	1.0	5.00	0.80	34	27	1.086
Totals	838							188	0.886

2.26 Zone: GSHP-19B - Office 249 / 250

	Supply Air (CFM)	Space Floor Area (sqft)	Area Outdoor Air Rate (CFM/sqft)	Time Averaged Occupancy (Occupants)	People Outdoor Air Rate (CFM/person)	Air Distribution Effectiveness	Space Outdoor Air (CFM)	Breathing Zone Outdoor Air (CFM)	Space Ventilation Efficiency
Zone Name / Space Name	(Vpz)	(Az)	(Ra)	(Pz)	(Rp)	(Ez)	(Voz)	(Vbz)	(Evz)
GSHP-19B - Office 249 / 250									
246,252 Corridor	150	543.5	0.06	0.0	0.00	0.80	41	33	0.899
249 Office	155	255.8	0.06	1.0	5.00	0.80	25	20	1.006
250 Office	149	259.5	0.06	1.0	5.00	0.80	26	21	0.997
251 Storage	60	233.1	0.06	0.0	5.00	0.80	17	14	0.880
Totals	514							88	0.880

Air System Heat Balance Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

Table 1. System Loads

COMPONENT LOADS	DESIGN COOLING - JULY 16:00			DESIGN HEATING		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
Zone Conditioning	-	422643	183118	-	467860	0
Plenum Load	-	0	0	-	0	0
Exhaust Fan Load	0 CFM	0	-	0 CFM	0	-
Ventilation Load	8550 CFM	156441	222716	8550 CFM	437116	0
Ventilation Fan Load	0 CFM	0	-	0 CFM	0	-
Zone Fan Coil Fans Load	-	15605	-	-	-10124	-
>> Total System Loads	-	594688	405834	-	894852	0
Terminal Unit Cooling	-	603478	416834	-	0	0
Terminal Unit Heating	-	0	-	-	896619	-
>> Total Conditioning	-	603478	416834	-	896619	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 2. Zone Heat Balance Loads

Zone Heat Balance Component	DESIGN COOLING - JULY 16:00			DESIGN HEATING		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
Exterior Wall Convection	11269 sqft	19895	-	11269 sqft	28922	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	726 sqft	4830	-	726 sqft	8342	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	224 sqft	1353	-	224 sqft	2499	-
Floor Convection	33778 sqft	50376	-	33778 sqft	50627	-
Interior Wall Convection	73552 sqft	61744	-	73552 sqft	34936	-
Ceiling Convection	33786 sqft	83669	-	33786 sqft	119469	-
Overhead Lighting Convection	14546 W	22036	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	35509 W	90870	-	0 W	0	-
People Convection	311	25740	79056	0	0	0
Infiltration	1119 CFM	21811	27978	1324 CFM	73998	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	382324	107034	-	318793	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 1. Heat Balance Loads for Zone GSHP-01B - EMS Bunk 118

Zone Heat Balance Component	DESIGN COOLING - AUGUST 15:00			DESIGN HEATING		
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	846 sqft	1008	-	846 sqft	1965	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	6 sqft	20	-	6 sqft	63	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	20 sqft	46	-	20 sqft	95	-
Floor Convection	2590 sqft	1566	-	2590 sqft	3488	-
Interior Wall Convection	7656 sqft	3258	-	7656 sqft	1575	-
Ceiling Convection	2590 sqft	2581	-	2590 sqft	2329	-
Overhead Lighting Convection	903 W	1369	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	1312 W	3358	-	0 W	0	-
People Convection	10	725	1776	0	0	0
Infiltration	68 CFM	1336	1775	81 CFM	4501	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		15266	3551	-	14017	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 2. Heat Balance Loads for Zone GSHP-02A - Lounge 131 / Dining 130

Zone Heat Balance Component	DESIGN COOLING - JUNE 15:00			DESIGN HEATING		
	OA DB / WB 91.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	268 sqft	550	-	268 sqft	558	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	45 sqft	254	-	45 sqft	515	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1130 sqft	2602	-	1130 sqft	1153	-
Interior Wall Convection	2177 sqft	3753	-	2177 sqft	601	-
Ceiling Convection	1130 sqft	3376	-	1130 sqft	1270	-
Overhead Lighting Convection	510 W	772	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	3672 W	9398	-	0 W	0	-
People Convection	27	1941	3813	0	0	0
Infiltration	44 CFM	824	1210	53 CFM	2936	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		23470	5023	-	7033	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 3. Heat Balance Loads for Zone GSHP-02B - Gameroom 132 / EMS Office 114

Zone Heat Balance Component	DESIGN COOLING - JUNE 16:00			DESIGN HEATING		
	OA DB / WB 91.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	186 sqft	488	-	186 sqft	406	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	30 sqft	171	-	30 sqft	344	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1894 sqft	2703	-	1894 sqft	1469	-
Interior Wall Convection	5451 sqft	5117	-	5451 sqft	1180	-
Ceiling Convection	1894 sqft	3511	-	1894 sqft	1624	-
Overhead Lighting Convection	731 W	1107	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	4629 W	11846	-	0 W	0	-
People Convection	21	1523	3674	0	0	0
Infiltration	39 CFM	719	1089	46 CFM	2575	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		27185	4763	-	7599	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 4. Heat Balance Loads for Zone GSHP-03 - Fitness 137

Zone Heat Balance Component	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 91.8 F / 75.9 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	557 sqft	810	-	557 sqft	1259	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	0 sqft	0	-	0 sqft	0	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	20 sqft	126	-	20 sqft	111	-
Floor Convection	984 sqft	1329	-	984 sqft	2227	-
Interior Wall Convection	1988 sqft	2994	-	1988 sqft	1475	-
Ceiling Convection	984 sqft	1999	-	984 sqft	1443	-
Overhead Lighting Convection	418 W	634	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	763 W	1953	-	0 W	0	-
People Convection	4	940	4809	0	0	0
Infiltration	46 CFM	851	1054	54 CFM	3030	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		11636	5863	-	9546	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 5. Heat Balance Loads for Zone GSHP-04 - Office 141 / Comm. 144

Zone Heat Balance Component	DESIGN COOLING - JULY 19:00			DESIGN HEATING		
	OA DB / WB 89.0 F / 75.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	0 sqft	0	-	0 sqft	0	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	0 sqft	0	-	0 sqft	0	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	638 sqft	410	-	638 sqft	78	-
Interior Wall Convection	1598 sqft	748	-	1598 sqft	276	-
Ceiling Convection	638 sqft	667	-	638 sqft	350	-
Overhead Lighting Convection	264 W	400	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	437 W	1117	-	0 W	0	-
People Convection	3	191	531	0	0	0
Infiltration	0 CFM	0	0	0 CFM	0	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		3533	531	-	705	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 6. Heat Balance Loads for Zone GSHP-05 - Public Lobby 134 / Control Lobby 135

Zone Heat Balance Component	DESIGN COOLING - JULY 8:00			DESIGN HEATING		
	OA DB / WB 78.7 F / 72.3 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	174 sqft	354	-	174 sqft	524	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	0 sqft	0	-	0 sqft	0	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	144 sqft	1574	-	144 sqft	2060	-
Floor Convection	673 sqft	1549	-	673 sqft	2090	-
Interior Wall Convection	1259 sqft	1706	-	1259 sqft	1082	-
Ceiling Convection	673 sqft	2048	-	673 sqft	1378	-
Overhead Lighting Convection	382 W	578	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	269 W	689	-	0 W	0	-
People Convection	7	495	1380	0	0	0
Infiltration	22 CFM	99	596	25 CFM	1423	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		9092	1976	-	8558	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 7. Heat Balance Loads for Zone GSHP-07 - Int. 153 / Int. 154

Zone Heat Balance Component	DESIGN COOLING - JULY 16:00			DESIGN HEATING		
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	755 sqft	680	-	755 sqft	1743	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	0 sqft	0	-	0 sqft	0	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	20 sqft	126	-	20 sqft	116	-
Floor Convection	1522 sqft	910	-	1522 sqft	3212	-
Interior Wall Convection	3812 sqft	1994	-	3812 sqft	888	-
Ceiling Convection	1522 sqft	1568	-	1522 sqft	1591	-
Overhead Lighting Convection	557 W	843	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	334 W	855	-	0 W	0	-
People Convection	7	544	1517	0	0	0
Infiltration	39 CFM	760	992	46 CFM	2573	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		8281	2508		10124	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 8. Heat Balance Loads for Zone GSHP-08 - Office 155 / Role Call 170

Zone Heat Balance Component	DESIGN COOLING - SEPTEMBER 12:00			DESIGN HEATING		
	OA DB / WB 86.3 F / 73.3 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	635 sqft	1399	-	635 sqft	1459	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	90 sqft	872	-	90 sqft	953	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1466 sqft	5087	-	1466 sqft	3383	-
Interior Wall Convection	2125 sqft	3679	-	2125 sqft	849	-
Ceiling Convection	1466 sqft	4845	-	1466 sqft	2106	-
Overhead Lighting Convection	714 W	1082	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	1213 W	3105	-	0 W	0	-
People Convection	28	2047	5710	0	0	0
Infiltration	69 CFM	873	1434	81 CFM	4514	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		22990	7144		13265	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 9. Heat Balance Loads for Zone GSHP-09A - Men's Locker 163 / Women's Locker 166

Zone Heat Balance Component	DESIGN COOLING - JULY 16:00			DESIGN HEATING		
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	559 sqft	576	-	559 sqft	1178	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	0 sqft	0	-	0 sqft	0	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	2315 sqft	1865	-	2315 sqft	3164	-
Interior Wall Convection	3336 sqft	1810	-	3336 sqft	715	-
Ceiling Convection	2315 sqft	3051	-	2315 sqft	2254	-
Overhead Lighting Convection	853 W	1292	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	1104 W	2825	-	0 W	0	-
People Convection	18	1307	3645	0	0	0
Infiltration	93 CFM	1823	2141	110 CFM	6172	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		14549	5786	-	13483	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 10. Heat Balance Loads for Zone GSHP-09B - Copy Room 161

Zone Heat Balance Component	DESIGN COOLING - JUNE 18:00			DESIGN HEATING		
	OA DB / WB 89.5 F / 75.5 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	86 sqft	187	-	86 sqft	211	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	15 sqft	151	-	15 sqft	168	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	20 sqft	168	-	20 sqft	116	-
Floor Convection	807 sqft	814	-	807 sqft	673	-
Interior Wall Convection	2959 sqft	1721	-	2959 sqft	521	-
Ceiling Convection	807 sqft	975	-	807 sqft	634	-
Overhead Lighting Convection	319 W	483	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	904 W	2315	-	0 W	0	-
People Convection	2	185	582	0	0	0
Infiltration	9 CFM	138	246	10 CFM	568	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		7137	828	-	2892	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 11. Heat Balance Loads for Zone GSHP-10 - Evidence Storage 256

Zone Heat Balance Component	DESIGN COOLING - JULY 16:00			DESIGN HEATING		
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	882 sqft	1441	-	882 sqft	2372	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	0 sqft	0	-	0 sqft	0	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1769 sqft	2018	-	1769 sqft	2639	-
Interior Wall Convection	2389 sqft	1613	-	2389 sqft	1515	-
Ceiling Convection	1769 sqft	3997	-	1769 sqft	10234	-
Overhead Lighting Convection	585 W	886	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	1186 W	3034	-	0 W	0	-
People Convection	5	384	1280	0	0	0
Infiltration	82 CFM	1603	2208	97 CFM	5447	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		14977	3488		22207	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 12. Heat Balance Loads for Zone GSHP-11 - Processing 176

Zone Heat Balance Component	DESIGN COOLING - JULY 16:00			DESIGN HEATING		
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	757 sqft	1167	-	757 sqft	1769	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	0 sqft	0	-	0 sqft	0	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1629 sqft	1138	-	1629 sqft	2874	-
Interior Wall Convection	5175 sqft	2635	-	5175 sqft	1099	-
Ceiling Convection	1629 sqft	1914	-	1629 sqft	1559	-
Overhead Lighting Convection	647 W	980	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	867 W	2219	-	0 W	0	-
People Convection	15	1034	2312	0	0	0
Infiltration	49 CFM	947	1176	57 CFM	3205	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		12034	3488		10505	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 13. Heat Balance Loads for Zone GSHP-12 - Server 205

Zone Heat Balance Component	DESIGN COOLING - AUGUST 17:00			DESIGN HEATING		
	OA DB / WB 91.8 F / 75.9 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	159 sqft	551	-	159 sqft	416	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	0 sqft	0	-	0 sqft	0	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	301 sqft	847	-	301 sqft	446	-
Interior Wall Convection	538 sqft	1398	-	538 sqft	345	-
Ceiling Convection	301 sqft	1553	-	301 sqft	1749	-
Overhead Lighting Convection	87 W	132	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	4000 W	10236	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	14 CFM	259	434	17 CFM	926	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		14977	434		3881	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 14. Heat Balance Loads for Zone GSHP-13A - Fire Chief 210

Zone Heat Balance Component	DESIGN COOLING - JULY 16:00			DESIGN HEATING		
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	646 sqft	850	-	646 sqft	1681	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	60 sqft	268	-	60 sqft	699	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	2188 sqft	2860	-	2188 sqft	3097	-
Interior Wall Convection	5211 sqft	3504	-	5211 sqft	3011	-
Ceiling Convection	2188 sqft	5360	-	2188 sqft	12377	-
Overhead Lighting Convection	845 W	1280	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	1061 W	2716	-	0 W	0	-
People Convection	4	301	872	0	0	0
Infiltration	85 CFM	1649	2324	100 CFM	5604	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		18787	3196		26471	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 15. Heat Balance Loads for Zone GSHP-13B - Pres. / V.P. 217

Zone Heat Balance Component	DESIGN COOLING - JULY 18:00			DESIGN HEATING		
	OA DB / WB 90.5 F / 75.6 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	346 sqft	591	-	346 sqft	962	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	30 sqft	230	-	30 sqft	353	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1671 sqft	2472	-	1671 sqft	2303	-
Interior Wall Convection	3934 sqft	3314	-	3934 sqft	3843	-
Ceiling Convection	1671 sqft	4209	-	1671 sqft	9123	-
Overhead Lighting Convection	598 W	905	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	2151 W	5504	-	0 W	0	-
People Convection	3	239	666	0	0	0
Infiltration	48 CFM	827	1381	57 CFM	3192	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		18291	2048		19776	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 16. Heat Balance Loads for Zone GSHP-13C - Old Meeting Room 201

Zone Heat Balance Component	DESIGN COOLING - AUGUST 16:00			DESIGN HEATING		
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	538 sqft	1839	-	538 sqft	1516	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	30 sqft	298	-	30 sqft	333	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1236 sqft	4232	-	1236 sqft	2332	-
Interior Wall Convection	852 sqft	2200	-	852 sqft	1143	-
Ceiling Convection	1236 sqft	7126	-	1236 sqft	7637	-
Overhead Lighting Convection	809 W	1226	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	1236 W	3162	-	0 W	0	-
People Convection	62	4541	12664	0	0	0
Infiltration	58 CFM	1120	1137	68 CFM	3805	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		25742	13801		16766	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 17. Heat Balance Loads for Zone GSHP-14 - Library 213

Zone Heat Balance Component	DESIGN COOLING - JULY 15:00			DESIGN HEATING		
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	199 sqft	348	-	199 sqft	543	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	30 sqft	151	-	30 sqft	348	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	549 sqft	1061	-	549 sqft	905	-
Interior Wall Convection	922 sqft	1132	-	922 sqft	822	-
Ceiling Convection	549 sqft	1858	-	549 sqft	3328	-
Overhead Lighting Convection	356 W	539	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	494 W	1264	-	0 W	0	-
People Convection	5	379	659	0	0	0
Infiltration	26 CFM	500	701	30 CFM	1690	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		7230	1360		7636	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 18. Heat Balance Loads for Zone GSHP-15A - Lobby 222 / Gallery 223

Zone Heat Balance Component	DESIGN COOLING - AUGUST 16:00			DESIGN HEATING		
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	179 sqft	375	-	179 sqft	512	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	15 sqft	175	-	15 sqft	174	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	593 sqft	1067	-	593 sqft	773	-
Interior Wall Convection	1620 sqft	1577	-	1620 sqft	1074	-
Ceiling Convection	594 sqft	1816	-	594 sqft	3242	-
Overhead Lighting Convection	327 W	496	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	283 W	725	-	0 W	0	-
People Convection	6	412	1150	0	0	0
Infiltration	17 CFM	340	456	21 CFM	1157	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		6983	1606		6932	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 19. Heat Balance Loads for Zone GSHP-15B - Lobby 226 / Gallery 223

Zone Heat Balance Component	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 91.8 F / 75.9 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	629 sqft	1325	-	629 sqft	1760	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	60 sqft	376	-	60 sqft	734	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1604 sqft	2901	-	1604 sqft	2203	-
Interior Wall Convection	3763 sqft	3647	-	3763 sqft	2195	-
Ceiling Convection	1608 sqft	4964	-	1608 sqft	8762	-
Overhead Lighting Convection	812 W	1230	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	1328 W	3398	-	0 W	0	-
People Convection	17	1224	2980	0	0	0
Infiltration	54 CFM	996	1407	64 CFM	3564	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		20063	4387	-	19218	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 20. Heat Balance Loads for Zone GSHP-16 - Training Room 224

Zone Heat Balance Component	DESIGN COOLING - AUGUST 15:00			DESIGN HEATING		
	OA DB / WB 92.7 F / 76.1 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	772 sqft	1712	-	772 sqft	2177	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	60 sqft	503	-	60 sqft	711	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1843 sqft	4801	-	1843 sqft	3315	-
Interior Wall Convection	1353 sqft	2356	-	1353 sqft	1776	-
Ceiling Convection	1844 sqft	8654	-	1844 sqft	11426	-
Overhead Lighting Convection	1079 W	1635	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	2989 W	7649	-	0 W	0	-
People Convection	17	3680	18832	0	0	0
Infiltration	86 CFM	1679	1559	102 CFM	5678	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		32669	20392	-	25083	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP (In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

Table 21. Heat Balance Loads for Zone GSHP-17A - Police Commis. 233

Zone Heat Balance Component	DESIGN COOLING - JUNE 18:00			DESIGN HEATING		
	OA DB / WB 89.5 F / 75.5 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	705 sqft	1264	-	705 sqft	2006	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	75 sqft	669	-	75 sqft	897	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	951 sqft	2542	-	951 sqft	1617	-
Interior Wall Convection	1703 sqft	2264	-	1703 sqft	1337	-
Ceiling Convection	953 sqft	3595	-	953 sqft	5920	-
Overhead Lighting Convection	475 W	719	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	713 W	1825	-	0 W	0	-
People Convection	4	294	820	0	0	0
Infiltration	45 CFM	712	1311	52 CFM	2935	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		13884	2131	-	14711	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 22. Heat Balance Loads for Zone GSHP-17B - Admin. Assist. 241

Zone Heat Balance Component	DESIGN COOLING - JULY 18:00			DESIGN HEATING		
	OA DB / WB 90.5 F / 75.6 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	0 sqft	0	-	0 sqft	0	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	0 sqft	0	-	0 sqft	0	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1106 sqft	1299	-	1106 sqft	1040	-
Interior Wall Convection	3957 sqft	2582	-	3957 sqft	2013	-
Ceiling Convection	1106 sqft	2527	-	1106 sqft	4985	-
Overhead Lighting Convection	371 W	561	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	2120 W	5426	-	0 W	0	-
People Convection	3	242	698	0	0	0
Infiltration	0 CFM	0	0	0 CFM	0	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		12637	698	-	8038	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 23. Heat Balance Loads for Zone GSHP-18A - Detectives 258

Zone Heat Balance Component	DESIGN COOLING - JUNE 18:00			DESIGN HEATING		
	OA DB / WB 89.5 F / 75.5 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	782 sqft	1424	-	782 sqft	2226	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	75 sqft	657	-	75 sqft	894	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1362 sqft	3284	-	1362 sqft	2308	-
Interior Wall Convection	1804 sqft	2158	-	1804 sqft	1366	-
Ceiling Convection	1362 sqft	4931	-	1362 sqft	8335	-
Overhead Lighting Convection	597 W	904	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	934 W	2389	-	0 W	0	-
People Convection	8	569	1587	0	0	0
Infiltration	64 CFM	1017	1805	75 CFM	4193	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		17333	3392		19323	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 24. Heat Balance Loads for Zone GSHP-18B - Narc. 260

Zone Heat Balance Component	DESIGN COOLING - JULY 18:00			DESIGN HEATING		
	OA DB / WB 90.5 F / 75.6 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	0 sqft	0	-	0 sqft	0	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	0 sqft	0	-	0 sqft	0	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	784 sqft	846	-	784 sqft	747	-
Interior Wall Convection	2823 sqft	1651	-	2823 sqft	1235	-
Ceiling Convection	784 sqft	1624	-	784 sqft	3637	-
Overhead Lighting Convection	338 W	512	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	330 W	845	-	0 W	0	-
People Convection	6	419	1170	0	0	0
Infiltration	0 CFM	0	0	0 CFM	0	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		5898	1170		5619	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP

(In Alternative: Load Calc)

Project: 24045.000_LOAD1

Prepared by: EBL Engineers, LLC

Table 25. Heat Balance Loads for Zone GSHP-19A - Chief 248

Zone Heat Balance Component	DESIGN COOLING - SEPTEMBER 11:00			DESIGN HEATING		
	OA DB / WB 84.0 F / 72.6 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	409 sqft	1256	-	409 sqft	1146	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	75 sqft	901	-	75 sqft	832	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	884 sqft	3642	-	884 sqft	1531	-
Interior Wall Convection	1245 sqft	2760	-	1245 sqft	976	-
Ceiling Convection	884 sqft	4333	-	884 sqft	5463	-
Overhead Lighting Convection	502 W	761	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	792 W	2027	-	0 W	0	-
People Convection	27	1977	5515	0	0	0
Infiltration	42 CFM	423	835	49 CFM	2721	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		18080	6350	-	12670	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Table 26. Heat Balance Loads for Zone GSHP-19B - Office 249 / 250

Zone Heat Balance Component	DESIGN COOLING - AUGUST 13:00			DESIGN HEATING		
	OA DB / WB 90.7 F / 75.6 F			OA DB / WB 18.4 F / 15.2 F		
	OCCUPIED T-STAT 75.0 F			OCCUPIED T-STAT 70.0 F		
	Details	Sensible [BTU/hr]	Latent [BTU/hr]	Details	Sensible [BTU/hr]	Latent [BTU/hr]
Exterior Wall Convection	200 sqft	350	-	200 sqft	532	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	30 sqft	200	-	30 sqft	323	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	0 sqft	0	-	0 sqft	0	-
Floor Convection	1292 sqft	1630	-	1292 sqft	1560	-
Interior Wall Convection	3902 sqft	2295	-	3902 sqft	2022	-
Ceiling Convection	1292 sqft	2511	-	1292 sqft	6711	-
Overhead Lighting Convection	468 W	708	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	387 W	989	-	0 W	0	-
People Convection	2	147	410	0	0	0
Infiltration	24 CFM	421	672	28 CFM	1587	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
		9252	1082	-	12736	0
Key:	Positive values are cooling loads Negative values are heating loads			Positive values are heating loads Negative values are cooling loads		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

Zone Heat Balance Summary for GSHP
(In Alternative: Load Calc)

Project: 24045.000_LOAD1
Prepared by: EBL Engineers, LLC

**City of Cambridge - Public Safety Building
8 Washington St.
Cambridge, MD 21613**

**Enhanced Ground Source Heat Pump System (GSHP)
vs. Variable Refrigerant Flow (VRF) System Life
Cycle Analysis**

December 11, 2025



EBL Project #25061.000

Prepared By:

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Abbreviations and References

Abbreviations

AHU	Air Handling Unit
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
BLCC5	NIST Building Life Cycle Cost Program (version 5)
Btu	British Thermal Unit
Btuh	British Thermal Units per Hour
COP	Coefficient Of Performance
DDC	Direct Digital Control
EER	Energy Efficiency Ratio
EIA	Energy Information Administration
FCU	Fan Coil Unit
Ft	Foot/Feet
GSHP	Ground Source Heat Pump System
GLHX	Ground Loop Heat Exchanger
WSHPU	Water Source Heat Pump Unit
HPWS	Heat Pump Water Supply
HPWR	Heat Pump Water Return
Hr	Hour
HVAC	Heating, Ventilation, & Air Conditioning
HX	Heat Exchanger
IR	Infrared
LCCA	Life Cycle Cost Analysis
MBh	Thousand British Thermal Units per Hour
NIST	National Institute for Standards and Technology
RPM	Revolutions Per Minute
TAB	Testing, Adjusting and Balancing
Ton	12,000 Btuh
VFD	Variable Frequency Drive
VRF	Variable Refrigerant Flow

Applicable Codes, Standards, & Resources

Version/Date

- ASHRAE 90.1 (Applicable at time of building construction) 2000
- ASHRAE Equipment Life Expectancy 2021
- ASHRAE HVAC Applications 2015

Executive Summary

The scope of this report is to perform a Life Cycle Cost Analysis (LCCA) of the enhanced Ground Source Heat Pump system (GSHP) vs. Variable Refrigerant Flow (VRF) system proposed in EBL’s HVAC System Evaluation Report dated September 11, 2024. The intended use of the LCCA is to provide the City of Cambridge comparative data as the basis for making informed financial decision to repair or replace the HVAC systems in the Public Safety Building. Building and system models were developed and analyzed in Carrier’s HAP (v6). Building envelope and existing systems were modeled as indicated in the provided as-built documents. LCCA modeling indicates that the proposed VRF system would yield \$13,000 (approx.) in annual energy savings over the proposed enhanced GSHP system with auxiliary fluid cooler. Savings are largely due to advancements in VRF heat pump compressor technology, more efficient energy recovery and eliminating pump energy consumption.

Building and System Models

General

The building energy model was developed in Carrier’s Hourly Analysis Program (HAP) v6.2. HAP v6.2 utilizes the Department Of Energy (DOE) Energy Plus calculation engine, representing the most accurate and discrete energy calculation methodology available.

Building Model

Building Envelope

Building envelope components and floor plans were modeled based on provided as-built documents. Documents contained sufficient detail from which an accurate building envelope model could be generated. See Appendix C for model input data.

Indoor Setpoints & Occupancy

- Cooling Thermostat Setpoint: 75 °F
- Heating Thermostat Setpoint: 70 °F
- Operational Profiles: Occupancy and internal load profiles vary on a space by space basis. ASHRAE 90.1 occupancy and internal load (lighting, equipment) schedule profiles were applied in within the model. See Appendix C for schedule data.

Electrical Utility Data

- Consumption Cost: 0.128 \$/kWh.
 - Based on average 2024 commercial electric commodity and delivery rates

data for Maryland.

Ventilation

Ventilation rates were calculated in accordance with ASHRAE 62.1-2019. Adjustments to modeled ventilation rates were made to reflect as-built ventilation and exhaust requirements.

Occupancy

Refer to Appendix C for building occupancy schedules.

Enhanced Ground Source Heat Pump System (GSHP)

Modeling Approach

Due to software limitations, modeling of the enhanced GSHP system had to be performed with two discrete system models. For both cases, the building envelope, internal loads, ventilation, occupancy and thermostat setpoints were identical. The first model used existing WSHP equipment performance data and closed loop GLHX as the heat sink/source for the WSHPUs. In the second model, the WSHPU equipment configurations and performance data were used but an evaporative fluid cooler was modeled for heat rejection in the summer months.

System Configuration

The following system configuration is a condensed excerpt from our December 11, 2024 HVAC System Evaluation Report. The modeled system consists of the existing WSHPUs, pumps, GLHX and the addition of a 60 Ton (nominal) supplemental evaporative closed circuit fluid cooler. Fluid cooler fan and pump horsepower and efficiency data as published in manufacturer's data sheets were entered into the model. Existing as-built pump head and efficiency were utilized in the model. The following WSHPU, heating COP, Cooling EER and fan static were entered into the model.

- Equipment Data
 - Manufacturer: Trane
 - Model:
 - Cooling EER: 14.1 (at 77 °F entering water temperature)
 - Heating COP: 3.7 (at 47 °F entering water temperature)

Variable Refrigerant Flow System (VRF)

System Configuration

The following system configuration is a condensed excerpt from our December 11, 2024 HVAC System Evaluation Report. The modeled system consists of twenty-eight (28) VRF Fan Coil Units (FCUs) and air source VRF HPUs. The HPU system is modeled as a single plant to allow heat recovery between zones. Estimated refrigerant pipe lengths and rise were input into the model. FCU static pressure and space loads are identical to those in the Enhanced GSHP system.



Install three (3), 32 Ton (nominal) VRF HPU systems and extend refrigerant piping to FCUs located in Mechanical Room 140 and Attic Mezzanine mechanical spaces.

Equipment Data

- VRF HPU:
 - Manufacturer: Mitsubishi
 - Model: City Multi TURYE4324
 - AHRI Cooling EER: 8.9
 - AHRI Heating COP: 3.2

Life Cycle Cost Analysis

Summary

Building system energy modeling concludes that the VRF system will outperform the enhanced GSHP system by consuming approximately 25% electrical energy. The net reduction in energy equates to \$13,000 (approx.) per year HVAC energy cost savings. The energy savings translates to a $\pm 16\%$ reduction in overall energy consumption for the modeled building area¹. Utilizing NIST BLCC5 life cycle analysis software and input data in the table below, the VRF system yields a life cycle savings of \$275,377 over the Enhanced GSHP system. As the result of lower capital investment cost, lower recurring maintenance costs and lower energy costs, Simple Investment Return (SIR) for the VRF system option is positive and infinite. LCCA calculations were performed using a constant dollar analysis at the indicated fixed discount rate. EIA energy escalation rates were applied in the calculation.

Input Parameter	Enhanced GSHP System	VRF System
Capital Investment (\$)²	\$ 1,355,351	\$ 1,330,826
Annual Energy Consumption (kwh)	383,513	279,849
Annual Maintenance Cost (\$)	\$ 7,500	\$ 5,000
End of Life Replacement Cost (\$)	\$ 248,873	\$ 318,830
Equipment Life Cycle (Years)	20	19
LCCA Study Period (Years)	35	
Real Discount Rate (%)	3%	

1 Only areas served by the existing WSHP system are included in the indicated energy consumption and cost values. Areas served by packaged DX systems, IR heaters were not modeled.

2 Enhanced GSHP system capital investment costs include replacement of all twenty-eight (28) WSHPUs. Total costs = Enhanced GSHP + Add Alternate-1 cost estimates.

Enhanced Ground Source Heat Pump System (GSHP)(LCCA Baseline Model)

As modeled, the enhanced GSHP system results in annual electrical consumption of 383,515 kWh, equating to \$49,241 in annual HVAC electrical utility costs. Life cycle cost and energy consumption values as indicated in the table below.

LCCA Results	Enhanced GSHP System
Life Cycle Cost (\$)	\$ 2,329,591
Life Cycle Energy Consumption (kWh)	13,423,056

It should be noted that the enhanced GSHP system would result in increased energy consumption and cost when compared to the existing building GSHP system. Increases are directly attributed to pump and fan energy required for the supplemental fluid cooler, which is required to mitigate impact of the existing undersized GLHX field. The result is an increase of 26,500 kWh (approx.) in energy consumption, equating to an annual energy cost increase of \$3,400 (approx.) over the current system.

Variable Refrigerant Flow System (VRF)

Life cycle cost and savings values as indicated in the table below.

LCCA Results	VRF System
Life Cycle Cost (\$)	\$ 2,329,591
Life Cycle Energy Consumption (kWh)	9,794,722
Life Cycle Energy Savings (kWh)	3,628,333
Life Cycle Energy Cost Savings (\$)	\$ 275,377

Primary drivers for lower energy consumption utilizing by VRF system are attributed to advancements inverter compressor technology, more efficient energy recovery and the elimination of pump energy consumption.



Appendix A:
Carrier HAP Energy Model Output Data

Annual Cost Summary

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

12/08/2025
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Table 1. Annual Costs

Component	Enhanced GSHP System (\$)	VRF System (\$)
Air System Fans	5,282	6,265
Cooling	11,302	7,772
Heating	24,329	21,895
Pumps	8,149	0
Heat Rejection Fans	179	0
HVAC Sub-Total	49,241	35,933
Lights	9,474	9,474
Electric Equipment	20,222	20,222
Misc. Electric	0	0
Misc. Fuel Use	0	0
Non-HVAC Sub-Total	29,696	29,696
Grand Total	78,937	65,629

Table 2. Annual Cost per Unit Floor Area

Component	Enhanced GSHP System (\$/sqft)	VRF System (\$/sqft)
Air System Fans	0.131	0.156
Cooling	0.281	0.193
Heating	0.604	0.544
Pumps	0.202	0.000
Heat Rejection Fans	0.004	0.000
HVAC Sub-Total	1.222	0.892
Lights	0.235	0.235
Electric Equipment	0.502	0.502
Misc. Electric	0	0.000
Misc. Fuel Use	0	0.000
Non-HVAC Sub-Total	0.737	0.737
Grand Total	1.959	1.629
Gross Floor Area (sqft)	40282.9	40282.9
Modeled Floor Area (sqft)	40282.9	40282.9

Note: Values in this table are calculated using the Gross Floor Area.

Table 3. Component Cost as a Percentage of Total Cost

Component	Enhanced GSHP System (%)	VRF System (%)
Air System Fans	6.7	9.5
Cooling	14.3	11.8
Heating	30.8	33.4
Pumps	10.3	0.0
Heat Rejection Fans	0.2	0.0
HVAC Sub-Total	62.4%	54.8
Lights	12.0	14.4
Electric Equipment	25.6	30.8
Misc. Electric	0.0	0.0
Misc. Fuel Use	0.0	0.0
Non-HVAC Sub-Total	37.6%	45.2
Grand Total	100	100.0

Annual Energy and Emissions Summary

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

12/08/2025
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Table 2. Annual Energy Consumption

Component	Enhanced GSHP System	VRF System
HVAC Components		
Electric (kWh)	383,515	279,849
Natural Gas (*)	0	0
Fuel Oil (na)	0	0
Propane (na)	0	0
Remote HW (na)	0	0
Remote Steam (na)	0	0
Remote CW (na)	0	0
Non-HVAC Components		
Electric (kWh)	231,284	231,276
Natural Gas (*)	0	0
Fuel Oil (na)	0	0
Propane (na)	0	0
Remote HW (na)	0	0
Remote Steam (na)	0	0
Totals		
Electric (kWh)	614,799	511,126
Natural Gas (*)	0	0
Fuel Oil (na)	0	0
Propane (na)	0	0
Remote HW (na)	0	0
Remote Steam (na)	0	0
Remote CW (na)	0	0

(*) Energy Units differ among Buildings.

Table 3. Annual Site Emissions

Component	Enhanced GSHP System	VRF System
CO2 Equivalent (lb)	0	0

Monthly Component Costs - Enhanced GSHP System

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

12/08/2025
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1. Enhanced GSHP System - HVAC Component Costs

Month	Air System Fans (\$)	Cooling (\$)	Heating (\$)	Pumps (\$)	Heat Rejection Fans (\$)	HVAC Total (\$)
January	375	50	6,208	916	0	7,549
February	328	48	4,707	806	0	5,889
March	352	59	3,680	835	0	4,926
April	399	84	1,708	534	0	2,725
May	511	601	435	339	8	1,894
June	519	2478	10	706	41	3,754
July	537	3031	4	819	54	4,445
August	537	2922	9	791	48	4,307
September	518	1708	48	532	28	2,834
October	485	196	727	329	0	1,737
November	373	71	2,200	639	0	3,283
December	348	54	4,593	903	0	5,898
Total	5,282	11,302	24,329	8,149	179	49,241

2. Non-HVAC Component Costs

Month	Lights (\$)	Electric Equipment (\$)	Misc. Electric (\$)	Misc. Fuel Use (\$)	Non-HVAC Total (\$)	Grand Total (\$)
January	801	1,709	0	0	2,510	10,059
February	728	1,554	0	0	2,283	8,172
March	826	1,765	0	0	2,591	7,517
April	747	1,592	0	0	2,339	5,064
May	826	1,765	0	0	2,591	4,252
June	793	1,695	0	0	2,488	5,474
July	780	1,662	0	0	2,442	5,928
August	826	1,765	0	0	2,591	5,984
September	772	1,648	0	0	2,420	4,730
October	801	1,709	0	0	2,510	4,247
November	793	1,695	0	0	2,488	5,771
December	780	1,662	0	0	2,442	8,340
Total	9,474	20,222	0	0	29,696	75,539

Monthly Component Costs - VRF System

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

12/08/2025
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1. VRF System - HVAC Component Costs

Month	Air System Fans (\$)	Cooling (\$)	Heating (\$)	Pumps (\$)	Heat Rejection Fans (\$)	HVAC Total (\$)
January	532	37	6,000	0	0	6,569
February	481	36	4,438	0	0	4,955
March	532	43	3,179	0	0	3,754
April	515	64	1,394	0	0	1,973
May	532	344	280	0	0	1,156
June	515	1,666	9	0	0	2,190
July	532	2,172	4	0	0	2,708
August	532	2,065	8	0	0	2,605
September	515	1,107	40	0	0	1,662
October	532	147	571	0	0	1,250
November	515	52	1,809	0	0	2,376
December	532	40	4,164	0	0	4,736
Total	6,265	7,772	21,895	0	0	35,933

2. Non-HVAC Component Costs

Month	Lights (\$)	Electric Equipment (\$)	Misc. Electric (\$)	Misc. Fuel Use (\$)	Non-HVAC Total (\$)	Grand Total (\$)
January	801	1,709	0	0	2,510	9,079
February	728	1,554	0	0	2,283	7,238
March	826	1,765	0	0	2,591	6,345
April	747	1,592	0	0	2,339	4,312
May	826	1,765	0	0	2,591	3,747
June	793	1,695	0	0	2,488	4,678
July	780	1,662	0	0	2,442	5,150
August	826	1,765	0	0	2,591	5,196
September	772	1,648	0	0	2,420	4,082
October	801	1,709	0	0	2,510	3,760
November	793	1,695	0	0	2,488	4,864
December	780	1,662	0	0	2,442	7,178
Total	9,474	20,222	0	0	29,696	65,629



Appendix B:
BLCC LCCA Report Data



BLCC

Report Generated: 12/11/2025 8:04:28 AM

General Information

Project Name: City of Cambridge PSB

Analyst:

Analysis Type: FEMP Analysis, Energy Project

Project Description: Enhanced GSPH vs. VRF

Study Period: 35 year(s)

Construction Period: 0 year(s)

Data Release Year:: 2025

EIA Projection Scenario: REF

Discounting:

Dollar Value: Constant

Discounting Convention: End of Year

Real Discount Rate: 3.00%

Location:

Country: United States of America

State: MD

City: cambridge

Zip: 21613

Greenhouse Gas (GHG) Emissions Assumptions:

Data Source: NIST NETL

Emissions Rate Type: Average

Alternatives

Total - 2

Alternative 1 - VRF

Baseline: No

Total Costs: 4

Cost - Energy: VRF

Cost or Savings: Cost

Fuel Type: Electricity

Customer Sector: Commercial

Annual Consumption: 279849 kWh

Cost per Unit: \$0

Location: Same as Project Location

Usage Index: 100.00%

Cost - Capital Investment Cost: VRF

Cost or Savings: Cost

Initial Cost: \$1,330,826

Expected Lifetime: 19 year(s)

Residual Value: No

Cost - Capital Replacement Cost: VRF HPU Replacement

Cost or Savings: Cost

Initial Cost: \$318,830

Initial Occurrence: 19 year(s)

Expected Lifetime: 19 year(s)

Residual Value: No

Cost - Recurring Contract: VRF O&M

Initial Occurrence: 1 year(s)

Cost or Savings: Cost

Initial Cost: \$5,000

Recurring: Yes

Rate of Recurrence: 1 year(s)

Value Rate Of Change: 0.00%

Alternative 2 - Enhanced GSHP System

Baseline: Yes

Total Costs: 4

Cost - Energy: EGSHP Electricity

Cost or Savings: Cost

Fuel Type: Electricity

Customer Sector: Commercial

Annual Consumption: 383513 kWh

Cost per Unit: \$0

Location: Same as Project Location

Usage Index: 100.00%

Cost - Capital Investment Cost: EGSHP

Cost or Savings: Cost

Initial Cost: \$1,355,351

Expected Lifetime: 19 year(s)

Residual Value: No

Cost - Capital Replacement Cost: Fluid Cooler Replacement

Cost or Savings: Cost

Initial Cost: \$248,873

Initial Occurrence: 20 year(s)

Expected Lifetime: 20 year(s)

Residual Value: No

Cost - Recurring Contract: Fluid Cooler O&M Costs

Initial Occurrence: 1 year(s)

Cost or Savings: Cost

Initial Cost: \$7,500

Recurring: Yes

Rate of Recurrence: 1 year(s)

Value Rate Of Change: 0.00%

Results

Summary

Life Cycle Results Comparison

Alternative	Base Case	Investment	Life Cycle Cost	Energy	GHG Emissions (kg CO2e)
VRF		\$1,330,826	\$2,329,591	35,261 gJ	0
Enhanced GSHP System	✓	\$1,355,351	\$2,604,968	48,323 gJ	0

Life Cycle Results Relative to Baseline Alternative

Alternative	Base Case	LCC	Investment	Net Savings	SIR	AIRR	SPP	DPP	Change in Energy	Change in GHG (kg CO2e)
VRF		\$2,329,591	\$1,330,826	\$275,377		14.05%	0	0	-13,062 gJ	NaN
Enhanced GSHP System	✓	\$2,604,968	\$1,355,351	\$0	0	0.00%	0	0	0 gJ	NaN

NPV Costs by Cost Subcategory

Cost Type		VRF	Enhanced GSHP System
Energy	Consumption	\$729,875	\$1,000,241
	Demand	\$0	\$0
	Rebates	\$0	\$0
Water	Usage	\$0	\$0
	Disposal	\$0	\$0
Capital Components	Investment	\$1,330,826	\$1,355,351
	OMR	\$0	\$0
	Replacement	\$181,824	\$137,795
	Residual Value	\$0	\$0
Contract	Non-Recurring	\$0	\$0
	Recurring	\$87,066	\$111,581
Other	Monetary	\$0	\$0
Total LCC		\$2,329,591	\$2,604,968

Life Cycle Resource Consumption and Emissions Comparison

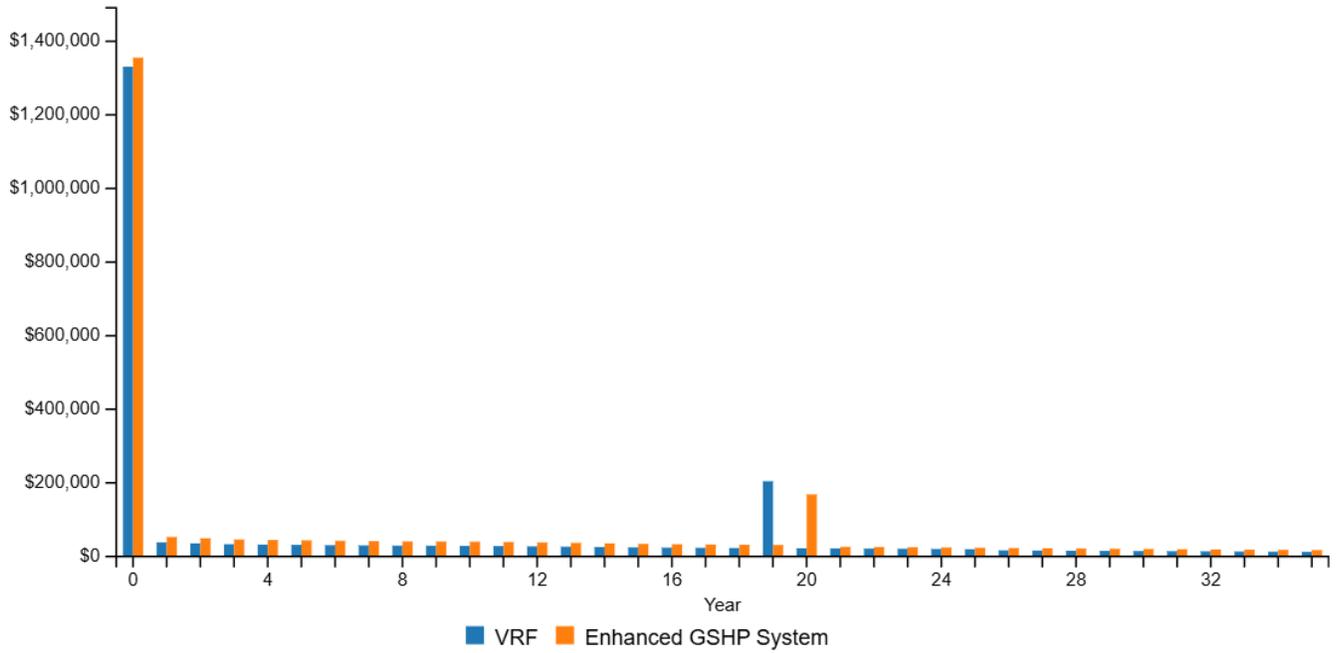
Resource Type		VRF	Enhanced GSHP System
Energy	Electricity	35,261 gJ	48,323 gJ
	Natural Gas	0 gJ	0 gJ
	Distillate Fuel Oil (#1, #2)	0 gJ	0 gJ
	Residual Fuel Oil (#4, #5, #6)	0 gJ	0 gJ
	Liquefied Petroleum Gas / Propane	0 gJ	0 gJ
	Coal	0 gJ	0 gJ
	Total	35,261 gJ	48,323 gJ
	Emissions	Electricity	0 kg CO2e
Natural Gas		0 kg CO2e	0 kg CO2e
Distillate Fuel Oil (#1, #2)		0 kg CO2e	0 kg CO2e
Residual Fuel Oil (#4, #5, #6)		0 kg CO2e	0 kg CO2e
Liquefied Petroleum Gas / Propane		0 kg CO2e	0 kg CO2e
Coal		0 kg CO2e	0 kg CO2e
Total		0 kg CO2e	0 kg CO2e
Water	Use	0 Liter(s)	0 Liter(s)
	Disposal	0 Liter(s)	0 Liter(s)

Annual Results

NPV Cash Flow Comparison

Year	VRF	Enhanced GSHP System
0	\$1,330,826	\$1,355,351
1	\$38,201	\$52,981
2	\$35,576	\$49,364
3	\$33,256	\$46,167
4	\$32,334	\$44,887
5	\$31,546	\$43,790
6	\$30,681	\$42,589
7	\$30,055	\$41,715
8	\$29,436	\$40,851
9	\$29,292	\$40,640
10	\$28,910	\$40,101
11	\$28,329	\$39,291
12	\$27,421	\$38,033
13	\$26,618	\$36,919
14	\$25,628	\$35,550
15	\$24,656	\$34,205
16	\$23,935	\$33,205
17	\$23,411	\$32,476
18	\$22,968	\$31,856
19	\$204,363	\$31,257
20	\$22,197	\$168,573
21	\$21,821	\$26,221
22	\$21,398	\$25,748
23	\$20,870	\$25,130
24	\$20,274	\$24,413
25	\$19,635	\$23,635
26	\$16,654	\$22,823
27	\$16,159	\$22,145
28	\$15,679	\$21,487
29	\$15,214	\$20,849
30	\$14,762	\$20,230
31	\$14,323	\$19,629
32	\$13,898	\$19,046
33	\$13,485	\$18,480
34	\$13,085	\$17,932
35	\$12,696	\$17,399
Total	\$0	\$0

NPV Cash Flows

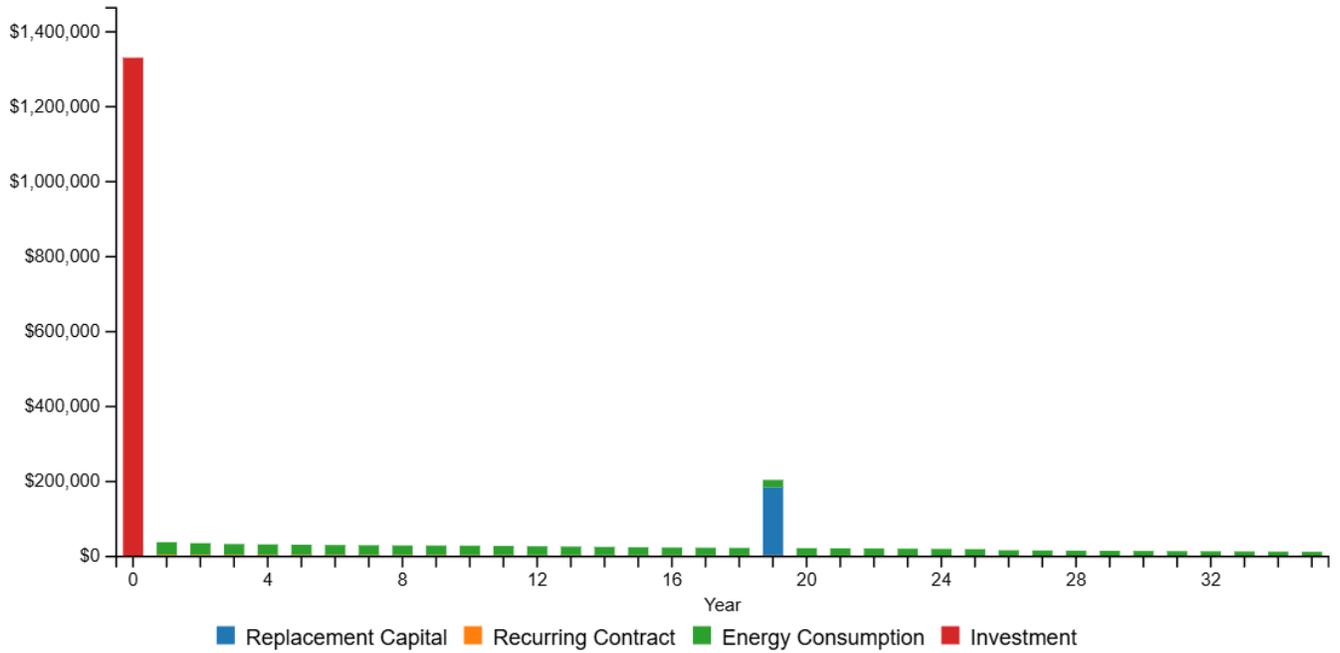


Annual Results for Alternative: VRF

Cash Flow by Cost Type

Year	Energy Con- sump- tion	Demand	Rebates	Water Use	Disposal	Capital Invest- ment	OMR	Replace	Resid- ual Value	Contract Non-Re- curring	Recur- ring	Other Mone- tary	Total
0	\$0	\$0	\$0	\$0	\$0	\$1,330,826	\$0	\$0	\$0	\$0	\$0	\$0	\$1,330,826
1	\$33,347	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,854	\$0	\$38,201
2	\$30,863	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,713	\$0	\$35,576
3	\$28,680	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,576	\$0	\$33,256
4	\$27,891	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,442	\$0	\$32,334
5	\$27,233	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,313	\$0	\$31,546
6	\$26,494	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,187	\$0	\$30,681
7	\$25,989	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,065	\$0	\$30,055
8	\$25,489	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,947	\$0	\$29,436
9	\$25,460	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,832	\$0	\$29,292
10	\$25,189	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,720	\$0	\$28,910
11	\$24,717	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,612	\$0	\$28,329
12	\$23,914	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,507	\$0	\$27,421
13	\$23,213	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,405	\$0	\$26,618
14	\$22,323	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,306	\$0	\$25,628
15	\$21,446	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,209	\$0	\$24,656
16	\$20,819	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,116	\$0	\$23,935
17	\$20,386	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,025	\$0	\$23,411
18	\$20,031	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,937	\$0	\$22,968
19	\$19,687	\$0	\$0	\$0	\$0	\$0	\$0	\$181,824	\$0	\$0	\$2,851	\$0	\$204,363
20	\$19,428	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,768	\$0	\$22,197
21	\$19,133	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,688	\$0	\$21,821
22	\$18,788	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,609	\$0	\$21,398
23	\$18,337	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,533	\$0	\$20,870
24	\$17,814	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,460	\$0	\$20,274
25	\$17,247	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,388	\$0	\$19,635
26	\$16,654	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,654
27	\$16,159	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,159
28	\$15,679	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,679
29	\$15,214	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,214
30	\$14,762	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,762
31	\$14,323	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,323
32	\$13,898	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,898
33	\$13,485	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,485
34	\$13,085	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,085
35	\$12,696	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,696

Cash Flows by Subtype

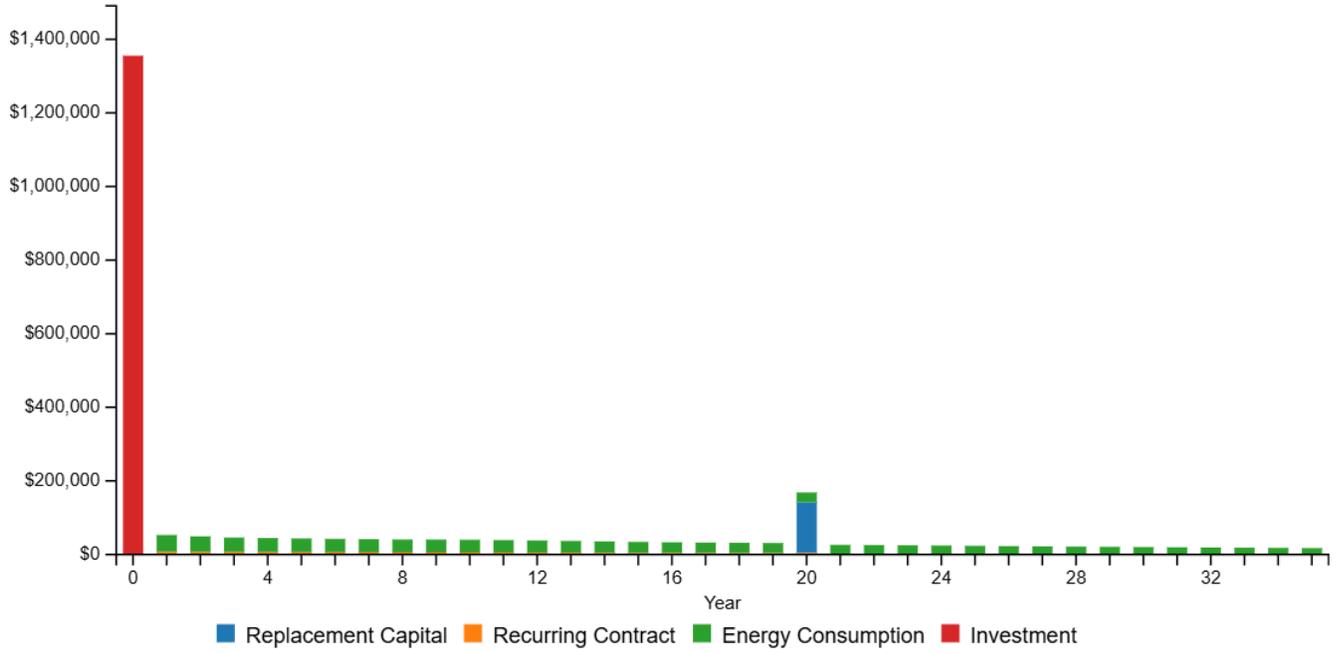


Annual Results for Alternative: Enhanced GSHP System

Cash Flow by Cost Type

Year	Energy Con- sump- tion	Demand	Rebates	Water Use	Disposal	Capital Invest- ment	OMR	Replace	Resid- ual Value	Contract Non-Re- curring	Recur- ring	Other Mone- tary	Total
0	\$0	\$0	\$0	\$0	\$0	\$1,355,351	\$0	\$0	\$0	\$0	\$0	\$0	\$1,355,351
1	\$45,699	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,282	\$0	\$52,981
2	\$42,295	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,069	\$0	\$49,364
3	\$39,304	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,864	\$0	\$46,167
4	\$38,223	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,664	\$0	\$44,887
5	\$37,320	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,470	\$0	\$43,790
6	\$36,308	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,281	\$0	\$42,589
7	\$35,617	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,098	\$0	\$41,715
8	\$34,930	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,921	\$0	\$40,851
9	\$34,891	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,748	\$0	\$40,640
10	\$34,520	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,581	\$0	\$40,101
11	\$33,873	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,418	\$0	\$39,291
12	\$32,773	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,260	\$0	\$38,033
13	\$31,812	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,107	\$0	\$36,919
14	\$30,592	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,958	\$0	\$35,550
15	\$29,391	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,814	\$0	\$34,205
16	\$28,531	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,674	\$0	\$33,205
17	\$27,938	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,538	\$0	\$32,476
18	\$27,451	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,405	\$0	\$31,856
19	\$26,980	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,277	\$0	\$31,257
20	\$26,625	\$0	\$0	\$0	\$0	\$0	\$0	\$137,795	\$0	\$0	\$4,153	\$0	\$168,573
21	\$26,221	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$26,221
22	\$25,748	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,748
23	\$25,130	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,130
24	\$24,413	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,413
25	\$23,635	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$23,635
26	\$22,823	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$22,823
27	\$22,145	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$22,145
28	\$21,487	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,487
29	\$20,849	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,849
30	\$20,230	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,230
31	\$19,629	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$19,629
32	\$19,046	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$19,046
33	\$18,480	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,480
34	\$17,932	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,932
35	\$17,399	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,399

Cash Flows by Subtype



Annual Results for Alternative

VRF

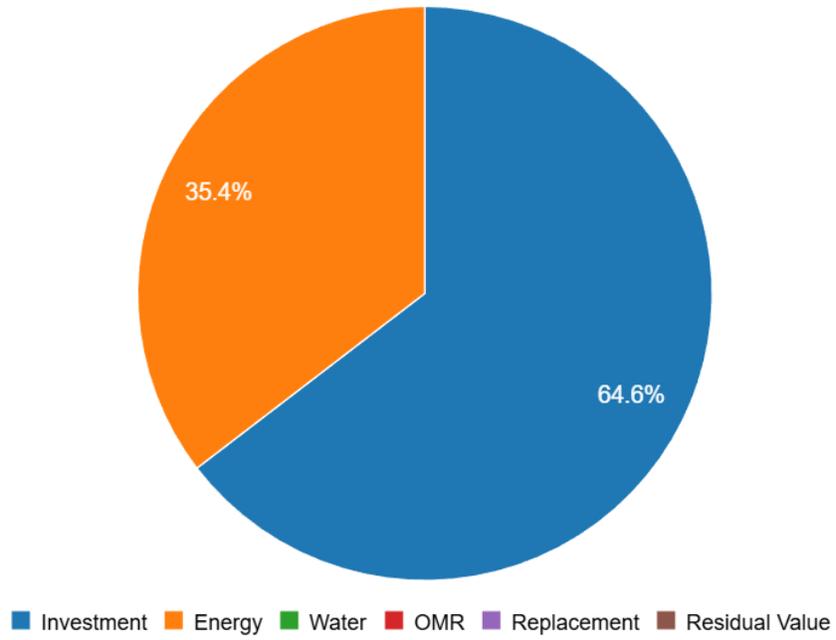
NPV by Cost Type

Cost Type		VRF
Energy	Consumption	\$729,875
	Demand	\$0
	Rebates	\$0
Water	Usage	\$0
	Disposal	\$0
Capital Components	Investment	\$1,330,826
	OMR	\$0
	Replacement	\$181,824
	Residual Value	\$0
Contract	Non-Recurring	\$0
	Recurring	\$87,066
Other	Monetary	\$0

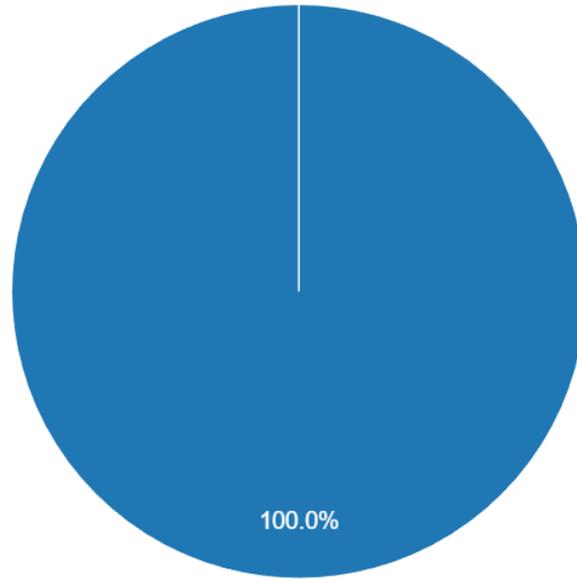
Resource Use and Emissions

Resource Type		Consumption	Emissions
Energy	Electricity	35,261 gJ	9,794,715 kg CO2e
	Natural Gas	0 gJ	0 kg CO2e
	Distillate Fuel Oil (#1, #2)	0 gJ	0 kg CO2e
	Residual Fuel Oil (#4, #5, #6)	0 gJ	0 kg CO2e
	Liquefied Petroleum Gas / Propane	0 gJ	0 kg CO2e
	Coal	0 gJ	0 kg CO2e
	Total	35,261 gJ	9,794,715 kg CO2e
Water	Use	0 gJ	0 kg CO2e

Share of LCC



Share of Energy Use



■ Electricity ■ Natural Gas ■ Distillate Fuel Oil (#1, #2) ■ Residual Fuel Oil (#4, #5, #6) ■ Liquefied Petroleum Gas / Propane

Enhanced GSHP System

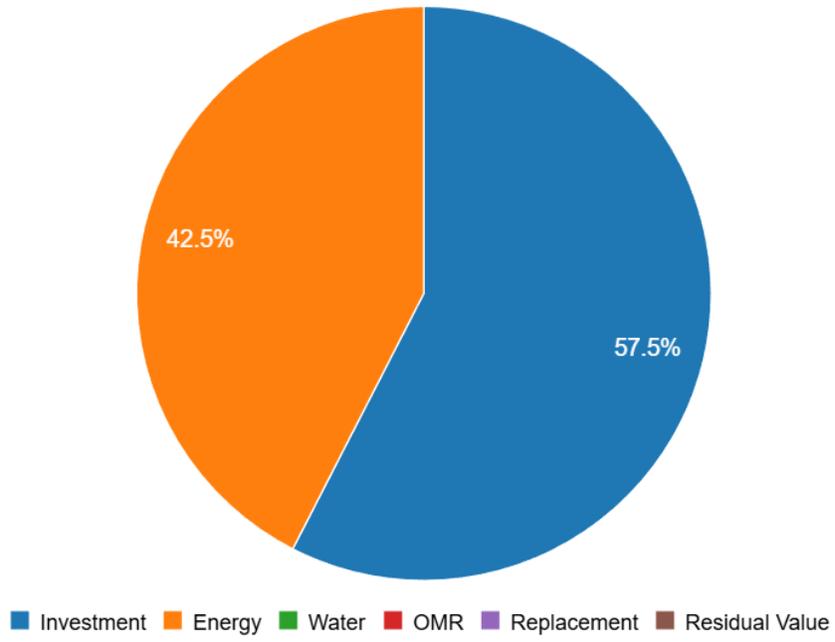
NPV by Cost Type

Cost Type		Enhanced GSHP System
Energy	Consumption	\$1,000,241
	Demand	\$0
	Rebates	\$0
Water	Usage	\$0
	Disposal	\$0
Capital Components	Investment	\$1,355,351
	OMR	\$0
	Replacement	\$137,795
	Residual Value	\$0
Contract	Non-Recurring	\$0
	Recurring	\$111,581
Other	Monetary	\$0

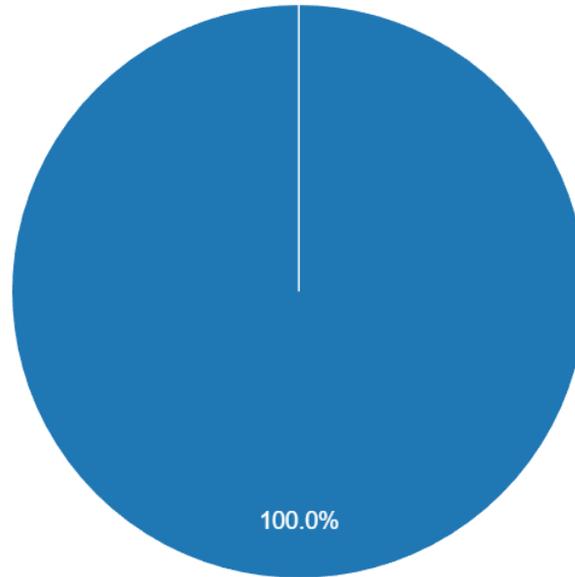
Resource Use and Emissions

Resource Type		Consumption	Emissions
Energy	Electricity	48,323 gJ	13,422,955 kg CO2e
	Natural Gas	0 gJ	0 kg CO2e
	Distillate Fuel Oil (#1, #2)	0 gJ	0 kg CO2e
	Residual Fuel Oil (#4, #5, #6)	0 gJ	0 kg CO2e
	Liquefied Petroleum Gas / Propane	0 gJ	0 kg CO2e
	Coal	0 gJ	0 kg CO2e
	Total	48,323 gJ	13,422,955 kg CO2e
Water	Use	0 gJ	0 kg CO2e

Share of LCC



Share of Energy Use



■ Electricity ■ Natural Gas ■ Distillate Fuel Oil (#1, #2) ■ Residual Fuel Oil (#4, #5, #6) ■ Liquefied Petroleum Gas / Propane

that any derivative works bear some notice that they are derived from it, and any modified versions bear some notice that they have been modified.



Appendix C:
Carrier HAP Model Input Data

Default Space Model

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

12/11/2025
 8:38 AM

1. General Information

Space Model Default Space Model
 Building Default Building
 Notes:

2. Spaces

The space model contains 143 spaces with total floor area of 40,283 sqft.

2.1. Ventilation

Index	Space	Level	Floor Area (sqft)	Space Type	Ventilation						
					ASHRAE Standard 62.1-2019 Space Usage	OA Requirement 1		OA Requirement 2		Direct Exhaust	
						Airflow	Units	Airflow	Units	Airflow	Units
1	111 EMS Storage	Level 1	220.7	Storage Room - Medium	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
2	112 Toil.	Level 1	65.1	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
3	113 Jan.	Level 1	81.7	Janitor Closet	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
4	114 EMS Office	Level 1	128.6	Office - Enclosed, Small	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
5	115 Corridor	Level 1	535.5	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
6	116 Corridor	Level 1	380.0	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
7	117 Radio	Level 1	216.7	Radio	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
8	118 EMS Bunk	Level 1	337.9	Guest Room	HOTEL / MOTEL / RESORT / DORM: Bedroom/living room	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
9	119 Corridor	Level 1	287.2	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
10	120 Toil.	Level 1	89.1	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
11	121 Toil.	Level 1	90.5	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
12	122 Toil.	Level 1	85.8	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
13	123 Toil.	Level 1	82.1	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
14	124 Toil.	Level 1	81.0	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
15	125 Toil.	Level 1	74.4	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
16	126 Toil.	Level 1	74.4	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
17	127 Toil.	Level 1	74.6	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
18	128 Lockers	Level 1	560.2	Locker Room	User Defined	0.00	CFM/sqft	0.00	CFM/sqft	280.0	CFM

Default Space Model

Project: 25061.000_LOAD1
Prepared by: EBL Engineers, LLC

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Index	Space	Level	Floor Area (sqft)	Space Type	Ventilation						
					ASHRAE Standard 62.1-2019 Space Usage	OA Requirement 1		OA Requirement 2		Direct Exhaust	
						Airflow	Units	Airflow	Units	Airflow	Units
19	129 Main Bunk	Level 1	1463.6	Guest Room	HOTEL / MOTEL / RESORT / DORM: Bedroom/living room	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
20	130 Dining	Level 1	458.0	Break Room - All Others	GENERAL: Break room	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
21	131 Fitness	Level 1	441.2	Exercise Area	SPORTS: Health club/weight room	20.0	CFM/person	0.06	CFM/sqft	0.0	CFM
22	131 Lounge	Level 1	495.3	Break Room - All Others	GENERAL: Break room	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
23	132 Game Room	Level 1	678.9	Break Room - All Others	GENERAL: Break room	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
24	133 EMR 2	Level 1	92.8	Electrical / Mechanical Room	MISCELLANEOUS: Telephone closet	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
25	134 Public Lobby	Level 1	462.3	Lobby - All Other	PUBLIC ASSEMBLY: Lobby	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
26	135 Control Lobby	Level 1	211.1	Lobby - All Other	PUBLIC ASSEMBLY: Lobby	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
27	136 Corridor	Level 1	542.8	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
28	138 Elec.	Level 1	291.5	Electrical / Mechanical Room	MISCELLANEOUS: Telephone closet	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
29	139 Generator	Level 1	384.7	Electrical / Mechanical Room	MISCELLANEOUS: Telephone closet	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
30	140 Mechanical	Level 1	526.6	Electrical / Mechanical Room	MISCELLANEOUS: Telephone closet	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
31	141 UPS	Level 1	156.2	Computer Room	MISCELLANEOUS: Computer (not printing)	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
32	142 Toil.	Level 1	60.8	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
33	143 Toil.	Level 1	58.5	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
34	144 Comm	Level 1	518.4	Office - Open Plan	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
35	145 Waiting	Level 1	209.1	Lobby - Waiting	PUBLIC ASSEMBLY: Lobby	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
36	146 Computer	Level 1	274.8	Computer Room	MISCELLANEOUS: Computer (not printing)	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
37	147 Corridor	Level 1	196.6	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
38	148 Air Bench	Level 1	157.4	Workshop	EDUCATION: Wood/metal shop	10.0	CFM/person	0.18	CFM/sqft	0.0	CFM
39	149 Corridor	Level 1	206.6	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
40	150 Record Storage	Level 1	432.4	Storage Room - Medium	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
41	151 Records	Level 1	261.8	Office - Open Plan	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
42	152 Corridor	Level 1	263.1	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
43	153 Int.	Level 1	105.6	Interrogation	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM

Default Space Model

Project: 25061.000_LOAD1
Prepared by: EBL Engineers, LLC

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Index	Space	Level	Floor Area (sqft)	Space Type	Ventilation						
					ASHRAE Standard 62.1-2019 Space Usage	OA Requirement 1		OA Requirement 2		Direct Exhaust	
						Airflow	Units	Airflow	Units	Airflow	Units
44	154 Int.	Level 1	110.3	Interrogation	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
45	155 Officers	Level 1	645.5	Office - Open Plan	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
46	156 Coffee	Level 1	184.4	Kitchenette/Coffee	GENERAL: Coffee station	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
47	158 Jan.	Level 1	41.5	Janitor Closet	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
48	159 Men	Level 1	54.1	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
49	160 Wom.	Level 1	54.0	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
50	161 Copy Rm.	Level 1	82.1	Copy / Print Room	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.50	CFM/sqft
51	162 Corridor	Level 1	432.7	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
52	163 Men's Locker	Level 1	1467.1	Locker Room	User Defined	0.00	CFM/sqft	0.06	CFM/sqft	745.0	CFM
53	164 Men's Toil.	Level 1	306.1	Restroom - Public	User Defined	0.00	CFM/sqft	0.00	CFM/sqft	400.0	CFM
54	165 Wom. Toil.	Level 1	231.0	Restroom - Public	User Defined	0.00	CFM/sqft	0.00	CFM/sqft	225.0	CFM
55	166 Women's Locker	Level 1	311.1	Locker Room	User Defined	0.00	CFM/sqft	0.06	CFM/sqft	160.0	CFM
56	169 Super	Level 1	364.4	Office - Open Plan	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
57	170 Roll Call	Level 1	456.1	Conference Room	GENERAL: Conference/meeting	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
58	171 Corridor	Level 1	267.8	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
59	172 Car Proc.	Level 1	529.1	Parking Garage	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.75	CFM/sqft
60	173 Sally Port	Level 1	526.5	Parking Garage	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.75	CFM/sqft
61	175 Radio	Level 1	56.7	Radio	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
62	175 Weapons	Level 1	57.3	Storage Room - Small	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
63	176 Processing	Level 1	474.3	Office - Open Plan	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
64	177 Decon.	Level 1	91.3	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
65	178 Int.	Level 1	89.4	Interrogation	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
66	179 Int.	Level 1	91.9	Interrogation	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
67	180,181 Passage	Level 1	184.2	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
68	182 Men	Level 1	75.4	Confinement Cells	CORRECTIONAL FACILITY: Cell	5.0	CFM/person	0.12	CFM/sqft	1.00	CFM/sqft
69	183 Men	Level 1	79.1	Confinement Cells	CORRECTIONAL FACILITY: Cell	5.0	CFM/person	0.12	CFM/sqft	1.00	CFM/sqft
70	184 Wom.	Level 1	79.0	Confinement Cells	CORRECTIONAL FACILITY: Cell	5.0	CFM/person	0.12	CFM/sqft	1.00	CFM/sqft

Default Space Model

Project: 25061.000_LOAD1
Prepared by: EBL Engineers, LLC

12/11/2025
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Index	Space	Level	Floor Area (sqft)	Space Type	Ventilation						
					ASHRAE Standard 62.1-2019 Space Usage	OA Requirement 1		OA Requirement 2		Direct Exhaust	
						Airflow	Units	Airflow	Units	Airflow	Units
71	185 Juv.	Level 1	82.6	Confinement Cells	CORRECTIONAL FACILITY: Cell	5.0	CFM/person	0.12	CFM/sqft	1.00	CFM/sqft
72	186 EMR 1	Level 1	75.8	Electrical / Mechanical Room	MISCELLANEOUS: Telephone closet	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
73	187 Jan.	Level 1	26.3	Janitor Closet	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
74	188 Kitchen	Level 1	176.6	Food Preparation Area	FOOD AND BEVERAGE SERVICE: Kitchen (cooking)	7.5	CFM/person	0.12	CFM/sqft	0.70	CFM/sqft
75	201 "Old" Meeting	Level 2	1235.5	Conference Room	GENERAL: Conference/meeting	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
76	202,204,208 Corridor	Level 2	658.5	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
77	203 CEMS	Level 2	318.8	Office - Enclosed, Large	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
78	205 Server	Level 2	300.7	Server	MISCELLANEOUS: Telephone closet	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
79	206 Storage	Level 2	406.2	Storage Room - Medium	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
80	207 Coffee	Level 2	95.3	Kitchenette/Coffee	GENERAL: Coffee station	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
81	209 Assitant Fire Chiefs	Level 2	497.1	Office - Enclosed, Large	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
82	210 Fire Chief	Level 2	345.1	Office - Enclosed, Large	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
83	211 Copy	Level 2	250.2	Copy / Print Room	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.50	CFM/sqft
84	212 Jan.	Level 2	62.4	Janitor Closet	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
85	213 Men	Level 2	72.8	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
86	214 Wom.	Level 2	76.6	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
87	215 Corridor	Level 2	273.0	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
88	216 Sec./Treas.	Level 2	354.6	Office - Enclosed, Large	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
89	217 Pres/VP	Level 2	431.7	Office - Enclosed, Large	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
90	218 Stor.	Level 2	78.9	Storage Room - Small	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
91	219 Library	Level 2	548.8	Library - Reading Area	PUBLIC ASSEMBLY: Library	5.0	CFM/person	0.12	CFM/sqft	0.0	CFM
92	220 Wait	Level 2	218.5	Lobby - Waiting	PUBLIC ASSEMBLY: Lobby	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
93	221 Sec.	Level 2	131.7	Office - Enclosed, Small	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
94	222 Lobby	Level 2	242.6	Lobby - All Other	PUBLIC ASSEMBLY: Lobby	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
95	223 Gallery	Level 2	423.9	Lobby - All Other	PUBLIC ASSEMBLY: Lobby	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM

Default Space Model

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Index	Space	Level	Floor Area (sqft)	Space Type	ASHRAE Standard 62.1-2019 Space Usage	Ventilation					
						OA Requirement 1		OA Requirement 2		Direct Exhaust	
						Airflow	Units	Airflow	Units	Airflow	Units
96	224 Training Room	Level 2	1727.7	Exercise Area	SPORTS: Health club/weight room	20.0	CFM/person	0.06	CFM/sqft	0.0	CFM
97	225 Storage	Level 2	114.8	Storage Room - Medium	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
98	226 Lobby	Level 2	344.2	Lobby - All Other	PUBLIC ASSEMBLY: Lobby	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
99	227 Men	Level 2	50.1	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
100	228 Wom.	Level 2	52.1	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
101	229 Lounge (1)	Level 2	264.0	Break Room - All Others	GENERAL: Break room	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
102	229 Lounge Kitchen	Level 2	121.4	Kitchenette/Coffee	GENERAL: Coffee station	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
103	230,231 Sec. Wait.	Level 2	278.5	Office - Open Plan	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
104	232 Storage	Level 2	69.7	Storage Room - Small	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
105	233 Police Commis.	Level 2	271.5	Office - Enclosed, Small	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
106	234,244,245 Corridor	Level 2	458.1	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
107	235 Office	Level 2	235.2	Office - Enclosed, Small	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
108	236 Office	Level 2	222.3	Office - Enclosed, Small	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
109	237 Office	Level 2	221.7	Office - Enclosed, Small	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
110	238 Copy	Level 2	302.4	Copy / Print Room	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.50	CFM/sqft
111	239 Jan.	Level 2	80.1	Janitor Closet	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
112	240 Coff.	Level 2	67.8	Kitchenette/Coffee	GENERAL: Coffee station	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
113	241 Admin Assist.	Level 2	169.8	Office - Enclosed, Small	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
114	242 Men	Level 2	54.2	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
115	243 Wom.	Level 2	53.5	Restroom - Private	User Defined	0.0	CFM/person	0.00	CFM/sqft	75.0	CFM
116	246,252 Corridor	Level 2	543.5	Corridor - All Others	GENERAL: Corridor	0.0	CFM/person	0.06	CFM/sqft	0.0	CFM
117	247 Main Conf.	Level 2	518.1	Conference Room	GENERAL: Conference/meeting	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
118	248 Chief	Level 2	365.6	Office - Enclosed, Large	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
119	249 Office	Level 2	255.8	Office - Enclosed, Small	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
120	250 Office	Level 2	259.5	Office - Enclosed, Small	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM

Default Space Model

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Index	Space	Level	Floor Area (sqft)	Space Type	Ventilation						
					ASHRAE Standard 62.1-2019 Space Usage	OA Requirement 1		OA Requirement 2		Direct Exhaust	
						Airflow	Units	Airflow	Units	Airflow	Units
121	251 Storage	Level 2	233.1	Storage Room - Medium	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
122	253 Weapons	Level 2	98.5	Storage Room - Medium	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
123	254 Uniforms Storage	Level 2	378.6	Storage Room - Large	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
124	255 Lab	Level 2	204.8	Laboratory - Commercial	EDUCATION: University/college laboratory	10.0	CFM/person	0.18	CFM/sqft	0.0	CFM
125	256 Evidence Storage	Level 2	1086.9	Storage Room - Large	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	200.0	CFM
126	257 Super	Level 2	237.7	Office - Enclosed, Small	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
127	258 Detectives	Level 2	948.5	Office - Open Plan	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
128	259 Temp. Evidence	Level 2	188.4	Storage Room - Medium	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	75.0	CFM
129	260 Narc.	Level 2	98.7	Storage Room - Small	OFFICE: Occupiable storage room for dry materials	5.0	CFM/person	0.06	CFM/sqft	150.0	CFM
130	261 Wait	Level 2	116.6	Lobby - Waiting	PUBLIC ASSEMBLY: Lobby	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
131	262 Radio	Level 2	107.7	Radio	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
132	263 Int.	Level 2	170.8	Interrogation	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
133	264 Observ.	Level 2	101.4	Interrogation	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
134	265 Int.	Level 2	175.5	Interrogation	OFFICE: Office space	5.0	CFM/person	0.06	CFM/sqft	0.0	CFM
135	Elevators 1 & 2 1st	Level 1	130.5	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
136	Elevators 1 & 2 2nd	Level 2	176.0	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
137	ST1 Stair 1st	Level 1	261.5	Stairwell	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
138	ST1 Stair 2nd	Level 2	261.2	Stairwell	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
139	ST2 Stair 1st	Level 1	256.5	Stairwell	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
140	ST2 Stair 2nd	Level 2	245.4	Stairwell	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
141	ST3 Stair 1st	Level 1	232.1	Stairwell	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
142	ST3 Stair 2nd	Level 2	234.9	Stairwell	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
143	Stair Mezz.	High Bay	93.5	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM

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2.2. Overhead Lighting and Daylighting Control

Index	Space	Overhead Lighting						Daylighting Control			
		ASHRAE Standard 90.1-2019		Power	Units	Lighting Type	Schedule	Power Multi.	Control Type	Illum. Setpoint	Units
		Lighting Method	Space Usage								
1	111 EMS Storage	Space by Space	Storage Room: >=50 ft2	0.38	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
2	112 Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
3	113 Jan.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
4	114 EMS Office	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
5	115 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
6	116 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
7	117 Radio	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
8	118 EMS Bunk	Space by Space	Guest Room	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Hotel/Motel Lights/Elec	1.00	Not Used	---	---
9	119 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
10	120 Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
11	121 Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
12	122 Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
13	123 Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
14	124 Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
15	125 Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
16	126 Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
17	127 Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
18	128 Lockers	Space by Space	Locker Room	0.52	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Assembly Lights/Elec	1.00	Not Used	---	---
19	129 Main Bunk	Space by Space	Guest Room	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Hotel/Motel Lights/Elec	1.00	Not Used	---	---
20	130 Dining	Space by Space	Lounge/Breakroom: All others	0.59	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---

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Index	Space	Overhead Lighting						Daylighting Control			
		ASHRAE Standard 90.1-2019		Power	Units	Lighting Type	Schedule	Power Multi.	Control Type	Illum. Setpoint	Units
		Lighting Method	Space Usage								
21	131 Fitness	Space by Space	Gymnasium/Fitness Center: Exercise area	0.90	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Assembly Lights/Elec	1.00	Not Used	---	---
22	131 Lounge	Space by Space	Lounge/Breakroom: All others	0.59	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
23	132 Game Room	Space by Space	Lounge/Breakroom: All others	0.59	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
24	133 EMR 2	Space by Space	Electrical/Mechanical Room	0.43	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
25	134 Public Lobby	Space by Space	Lobby: All others	0.84	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
26	135 Control Lobby	Space by Space	Lobby: All others	0.84	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
27	136 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
28	138 Elec.	Space by Space	Electrical/Mechanical Room	0.43	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
29	139 Generator	Space by Space	Electrical/Mechanical Room	0.43	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
30	140 Mechanical	Space by Space	Electrical/Mechanical Room	0.43	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
31	141 UPS	Space by Space	Computer Room	0.94	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
32	142 Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
33	143 Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
34	144 Comm	Space by Space	Office: Open plan	0.61	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
35	145 Waiting	Space by Space	Lobby: All others	0.84	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
36	146 Computer	Space by Space	Computer Room	0.94	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
37	147 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
38	148 Air Bench	Space by Space	Workshop	1.26	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 School Lights/Elec	1.00	Not Used	---	---
39	149 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
40	150 Record Storage	Space by Space	Storage Room: >=50 ft2	0.38	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
41	151 Records	Space by Space	Office: Open plan	0.61	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
42	152 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---

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Index	Space	Overhead Lighting						Daylighting Control			
		ASHRAE Standard 90.1-2019		Power	Units	Lighting Type	Schedule	Power Multi.	Control Type	Illum. Setpoint	Units
		Lighting Method	Space Usage								
43	153 Int.	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
44	154 Int.	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
45	155 Officers	Space by Space	Office: Open plan	0.61	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
46	156 Coffee	Space by Space	Food Preparation Area	1.09	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
47	158 Jan.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
48	159 Men	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
49	160 Wom.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
50	161 Copy Rm.	Space by Space	Copy/Print Room	0.31	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
51	162 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
52	163 Men's Locker	Space by Space	Locker Room	0.52	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Assembly Lights/Elec	1.00	Not Used	---	---
53	164 Men's Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
54	165 Wom. Toil.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
55	166 Women's Locker	Space by Space	Locker Room	0.52	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Assembly Lights/Elec	1.00	Not Used	---	---
56	169 Super	Space by Space	Office: Open plan	0.61	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
57	170 Roll Call	Space by Space	Conference/Meeting/Multipurpose Room	0.97	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
58	171 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
59	172 Car Proc.	Space by Space	Parking Area, Interior	0.15	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Assembly Lights/Elec	1.00	Not Used	---	---
60	173 Sally Port	Space by Space	Parking Area, Interior	0.15	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Assembly Lights/Elec	1.00	Not Used	---	---
61	175 Radio	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
62	175 Weapons	Space by Space	Storage Room: <50 ft2	0.51	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
63	176 Processing	Space by Space	Office: Open plan	0.61	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---

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Index	Space	Overhead Lighting						Daylighting Control			
		ASHRAE Standard 90.1-2019		Power	Units	Lighting Type	Schedule	Power Multi.	Control Type	Illum. Setpoint	Units
		Lighting Method	Space Usage								
64	177 Decon.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
65	178 Int.	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
66	179 Int.	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
67	180,181 Passage	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
68	182 Men	Space by Space	Confinement Cells	0.70	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Hotel/Motel Lights/Elec	1.00	Not Used	---	---
69	183 Men	Space by Space	Confinement Cells	0.70	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Hotel/Motel Lights/Elec	1.00	Not Used	---	---
70	184 Wom.	Space by Space	Confinement Cells	0.70	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Hotel/Motel Lights/Elec	1.00	Not Used	---	---
71	185 Juv.	Space by Space	Confinement Cells	0.70	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Hotel/Motel Lights/Elec	1.00	Not Used	---	---
72	186 EMR 1	Space by Space	Electrical/Mechanical Room	0.43	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
73	187 Jan.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
74	188 Kitchen	Space by Space	Food Preparation Area	1.09	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
75	201 "Old" Meeting	Space by Space	Conference/Meeting/Multipurpose Room	0.97	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
76	202,204,208 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
77	203 CEMS	Space by Space	Office: Enclosed and >250 ft2	0.66	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
78	205 Server	Space by Space	Electrical/Mechanical Room	0.43	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
79	206 Storage	Space by Space	Storage Room: >=50 ft2	0.38	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
80	207 Coffee	Space by Space	Food Preparation Area	1.09	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
81	209 Assitant Fire Chiefs	Space by Space	Office: Enclosed and >250 ft2	0.66	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
82	210 Fire Chief	Space by Space	Office: Enclosed and >250 ft2	0.66	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
83	211 Copy	Space by Space	Copy/Print Room	0.31	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
84	212 Jan.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---

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		ASHRAE Standard 90.1-2019		Power	Units	Lighting Type	Schedule	Power Multi.	Control Type	Illum. Setpoint	Units
		Lighting Method	Space Usage								
85	213 Men	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
86	214 Wom.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
87	215 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
88	216 Sec./Treas.	Space by Space	Office: Enclosed and >250 ft2	0.66	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
89	217 Pres/VP	Space by Space	Office: Enclosed and >250 ft2	0.66	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
90	218 Stor.	Space by Space	Storage Room: <50 ft2	0.51	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
91	219 Library	Space by Space	Library: Reading area	0.96	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 School Lights/Elec	1.00	Not Used	---	---
92	220 Wait	Space by Space	Lobby: All others	0.84	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
93	221 Sec.	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
94	222 Lobby	Space by Space	Lobby: All others	0.84	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
95	223 Gallery	Space by Space	Lobby: All others	0.84	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
96	224 Training Room	Space by Space	Gymnasium/Fitness Center: Exercise area	0.90	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Assembly Lights/Elec	1.00	Not Used	---	---
97	225 Storage	Space by Space	Storage Room: >=50 ft2	0.38	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
98	226 Lobby	Space by Space	Lobby: All others	0.84	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
99	227 Men	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
100	228 Wom.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
101	229 Lounge (1)	Space by Space	Lounge/Breakroom: All others	0.59	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
102	229 Lounge Kitchen	Space by Space	Food Preparation Area	1.09	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
103	230,231 Sec. Wait.	Space by Space	Office: Open plan	0.61	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
104	232 Storage	Space by Space	Storage Room: <50 ft2	0.51	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
105	233 Police Commis.	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
106	234,244,245 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---

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		ASHRAE Standard 90.1-2019		Power	Units	Lighting Type	Schedule	Power Multi.	Control Type	Illum. Setpoint	Units
		Lighting Method	Space Usage								
107	235 Office	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
108	236 Office	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
109	237 Office	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
110	238 Copy	Space by Space	Copy/Print Room	0.31	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
111	239 Jan.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
112	240 Coff.	Space by Space	Food Preparation Area	1.09	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
113	241 Admin Assist.	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
114	242 Men	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
115	243 Wom.	Space by Space	Restroom: All others	0.63	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
116	246,252 Corridor	Space by Space	Corridor: All others	0.41	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
117	247 Main Conf.	Space by Space	Conference/Meeting/Multipurpose Room	0.97	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
118	248 Chief	Space by Space	Office: Enclosed and >250 ft2	0.66	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
119	249 Office	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
120	250 Office	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
121	251 Storage	Space by Space	Storage Room: >=50 ft2	0.38	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
122	253 Weapons	Space by Space	Storage Room: >=50 ft2	0.38	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
123	254 Uniforms Storage	Space by Space	Storage Room: >=50 ft2	0.38	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
124	255 Lab	Space by Space	Laboratory: All others	1.33	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Health Lights/Elec	1.00	Not Used	---	---
125	256 Evidence Storage	Space by Space	Storage Room: >=50 ft2	0.38	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
126	257 Super	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
127	258 Detectives	Space by Space	Office: Open plan	0.61	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
128	259 Temp. Evidence	Space by Space	Storage Room: >=50 ft2	0.38	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---

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Index	Space	Overhead Lighting						Daylighting Control			
		ASHRAE Standard 90.1-2019		Power	Units	Lighting Type	Schedule	Power Multi.	Control Type	Illum. Setpoint	Units
		Lighting Method	Space Usage								
129	260 Narc.	Space by Space	Storage Room: <50 ft2	0.51	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
130	261 Wait	Space by Space	Lobby: All others	0.84	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
131	262 Radio	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
132	263 Int.	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
133	264 Observ.	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
134	265 Int.	Space by Space	Office: Enclosed and <= 250 ft2	0.74	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
135	Elevators 1 & 2 1st	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
136	Elevators 1 & 2 2nd	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
137	ST1 Stair 1st	Space by Space	Stairwell	0.49	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
138	ST1 Stair 2nd	Space by Space	Stairwell	0.49	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
139	ST2 Stair 1st	Space by Space	Stairwell	0.49	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
140	ST2 Stair 2nd	Space by Space	Stairwell	0.49	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
141	ST3 Stair 1st	Space by Space	Stairwell	0.49	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
142	ST3 Stair 2nd	Space by Space	Stairwell	0.49	W/sqft	Fluorescent: Recessed, no Lens, Unvented	90.1 Office Lights/Elec	1.00	Not Used	---	---
143	Stair Mezz.	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---

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2.3. Task Lighting, Electric Equipment and Miscellaneous Heat Gain

Index	Space	Task Lighting			Electric Equipment			Miscellaneous Heat Gain			
		Power	Units	Schedule	Power	Units	Schedule	Sens. (BTU/hr)	Schedule	Latent (BTU/hr)	Schedule
1	111 EMS Storage	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
2	112 Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
3	113 Jan.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
4	114 EMS Office	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
5	115 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
6	116 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
7	117 Radio	0.00	W/sqft	(None)	2.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
8	118 EMS Bunk	0.00	W/sqft	(None)	1.00	W/sqft	90.1 Hotel/Motel Lights/Elec	0	(None)	0	(None)
9	119 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
10	120 Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
11	121 Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
12	122 Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
13	123 Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
14	124 Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
15	125 Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
16	126 Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
17	127 Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
18	128 Lockers	0.00	W/sqft	(None)	0.50	W/sqft	90.1 Assembly Lights/Elec	0	(None)	0	(None)
19	129 Main Bunk	0.00	W/sqft	(None)	1.00	W/sqft	90.1 Hotel/Motel Lights/Elec	0	(None)	0	(None)
20	130 Dining	0.00	W/sqft	(None)	2.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
21	131 Fitness	0.00	W/sqft	(None)	1.73	W/sqft	90.1 Assembly Lights/Elec	0	(None)	0	(None)
22	131 Lounge	0.00	W/sqft	(None)	2.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)

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Index	Space	Task Lighting			Electric Equipment			Miscellaneous Heat Gain			
		Power	Units	Schedule	Power	Units	Schedule	Sens. (BTU/hr)	Schedule	Latent (BTU/hr)	Schedule
23	132 Game Room	0.00	W/sqft	(None)	2.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
24	133 EMR 2	0.00	W/sqft	(None)	5.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
25	134 Public Lobby	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
26	135 Control Lobby	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
27	136 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
28	138 Elec.	0.00	W/sqft	(None)	5.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
29	139 Generator	0.00	W/sqft	(None)	5.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
30	140 Mechanical	0.00	W/sqft	(None)	5.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
31	141 UPS	0.00	W/sqft	(None)	20.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
32	142 Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
33	143 Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
34	144 Comm	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
35	145 Waiting	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
36	146 Computer	0.00	W/sqft	(None)	20.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
37	147 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
38	148 Air Bench	0.00	W/sqft	(None)	20.00	W/sqft	90.1 School Lights/Elec	0	(None)	0	(None)
39	149 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
40	150 Record Storage	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
41	151 Records	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
42	152 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
43	153 Int.	0.00	W/sqft	(None)	0.25	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
44	154 Int.	0.00	W/sqft	(None)	0.25	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
45	155 Officers	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
46	156 Coffee	0.00	W/sqft	(None)	2.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)

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Index	Space	Task Lighting			Electric Equipment			Miscellaneous Heat Gain			
		Power	Units	Schedule	Power	Units	Schedule	Sens. (BTU/hr)	Schedule	Latent (BTU/hr)	Schedule
47	158 Jan.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
48	159 Men	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
49	160 Wom.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
50	161 Copy Rm.	0.00	W/sqft	(None)	6.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
51	162 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
52	163 Men's Locker	0.00	W/sqft	(None)	0.50	W/sqft	90.1 Assembly Lights/Elec	0	(None)	0	(None)
53	164 Men's Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
54	165 Wom. Toil.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
55	166 Women's Locker	0.00	W/sqft	(None)	0.50	W/sqft	90.1 Assembly Lights/Elec	0	(None)	0	(None)
56	169 Super	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
57	170 Roll Call	0.00	W/sqft	(None)	1.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
58	171 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
59	172 Car Proc.	0.00	W/sqft	(None)	0.01	W/sqft	90.1 Light Mfg Lights/Elec	0	(None)	0	(None)
60	173 Sally Port	0.00	W/sqft	(None)	0.01	W/sqft	90.1 Light Mfg Lights/Elec	0	(None)	0	(None)
61	175 Radio	0.00	W/sqft	(None)	2.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
62	175 Weapons	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
63	176 Processing	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
64	177 Decon.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
65	178 Int.	0.00	W/sqft	(None)	0.25	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
66	179 Int.	0.00	W/sqft	(None)	0.25	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
67	180,181 Passage	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
68	182 Men	0.00	W/sqft	(None)	1.00	W/sqft	90.1 Hotel/Motel Lights/Elec	0	(None)	0	(None)
69	183 Men	0.00	W/sqft	(None)	1.00	W/sqft	90.1 Hotel/Motel Lights/Elec	0	(None)	0	(None)
70	184 Wom.	0.00	W/sqft	(None)	1.00	W/sqft	90.1 Hotel/Motel Lights/Elec	0	(None)	0	(None)

Default Space Model

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

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Index	Space	Task Lighting			Electric Equipment			Miscellaneous Heat Gain			
		Power	Units	Schedule	Power	Units	Schedule	Sens. (BTU/hr)	Schedule	Latent (BTU/hr)	Schedule
71	185 Juv.	0.00	W/sqft	(None)	1.00	W/sqft	90.1 Hotel/Motel Lights/Elec	0	(None)	0	(None)
72	186 EMR 1	0.00	W/sqft	(None)	5.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
73	187 Jan.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
74	188 Kitchen	0.00	W/sqft	(None)	10.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
75	201 "Old" Meeting	0.00	W/sqft	(None)	1.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
76	202,204,208 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
77	203 CEMS	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
78	205 Server	0.00	W/sqft	(None)	4,000.0	Watts	90.1 Office Lights/Elec	0	(None)	0	(None)
79	206 Storage	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
80	207 Coffee	0.00	W/sqft	(None)	2.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
81	209 Assitant Fire Chiefs	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
82	210 Fire Chief	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
83	211 Copy	0.00	W/sqft	(None)	6.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
84	212 Jan.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
85	213 Men	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
86	214 Wom.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
87	215 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
88	216 Sec./Treas.	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
89	217 Pres/VP	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
90	218 Stor.	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
91	219 Library	0.00	W/sqft	(None)	0.90	W/sqft	90.1 School Lights/Elec	0	(None)	0	(None)
92	220 Wait	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
93	221 Sec.	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
94	222 Lobby	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)

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Index	Space	Task Lighting			Electric Equipment			Miscellaneous Heat Gain			
		Power	Units	Schedule	Power	Units	Schedule	Sens. (BTU/hr)	Schedule	Latent (BTU/hr)	Schedule
95	223 Gallery	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
96	224 Training Room	0.00	W/sqft	(None)	1.73	W/sqft	90.1 Assembly Lights/Elec	0	(None)	0	(None)
97	225 Storage	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
98	226 Lobby	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
99	227 Men	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
100	228 Wom.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
101	229 Lounge (1)	0.00	W/sqft	(None)	2.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
102	229 Lounge Kitchen	0.00	W/sqft	(None)	2.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
103	230,231 Sec. Wait.	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
104	232 Storage	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
105	233 Police Commis.	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
106	234,244,245 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
107	235 Office	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
108	236 Office	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
109	237 Office	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
110	238 Copy	0.00	W/sqft	(None)	6.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
111	239 Jan.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
112	240 Coff.	0.00	W/sqft	(None)	2.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
113	241 Admin Assist.	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
114	242 Men	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
115	243 Wom.	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
116	246,252 Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
117	247 Main Conf.	0.00	W/sqft	(None)	1.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
118	248 Chief	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)

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Index	Space	Task Lighting			Electric Equipment			Miscellaneous Heat Gain			
		Power	Units	Schedule	Power	Units	Schedule	Sens. (BTU/hr)	Schedule	Latent (BTU/hr)	Schedule
119	249 Office	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
120	250 Office	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
121	251 Storage	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
122	253 Weapons	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
123	254 Uniforms Storage	0.00	W/sqft	(None)	0.25	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
124	255 Lab	0.00	W/sqft	(None)	4.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
125	256 Evidence Storage	0.00	W/sqft	(None)	0.25	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
126	257 Super	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
127	258 Detectives	0.00	W/sqft	(None)	0.75	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
128	259 Temp. Evidence	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
129	260 Narc.	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
130	261 Wait	0.00	W/sqft	(None)	0.40	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
131	262 Radio	0.00	W/sqft	(None)	2.00	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
132	263 Int.	0.00	W/sqft	(None)	0.25	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
133	264 Observ.	0.00	W/sqft	(None)	0.25	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
134	265 Int.	0.00	W/sqft	(None)	0.25	W/sqft	90.1 Office Lights/Elec	0	(None)	0	(None)
135	Elevators 1 & 2 1st	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
136	Elevators 1 & 2 2nd	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
137	ST1 Stair 1st	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
138	ST1 Stair 2nd	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
139	ST2 Stair 1st	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
140	ST2 Stair 2nd	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
141	ST3 Stair 1st	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
142	ST3 Stair 2nd	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
143	Stair Mezz.	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)

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2.4. Occupancy and Infiltration

Index	Space	Occupants						Infiltration				
		Occupancy	Units	Schedule	Activity Level	Sens. (BTU/hr/person)	Latent (BTU/hr/person)	Cooling Airflow	Heating Airflow	Simulation Airflow	Units	Occurs
1	111 EMS Storage	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
2	112 Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
3	113 Jan.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
4	114 EMS Office	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
5	115 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
6	116 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
7	117 Radio	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
8	118 EMS Bunk	100.0	sqft/person	90.1 Hotel/Motel Occupancy	Seated at Rest	230.0	120.0	0.30	0.30	0.30	ACH	All Hours
9	119 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
10	120 Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
11	121 Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
12	122 Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
13	123 Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
14	124 Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
15	125 Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
16	126 Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
17	127 Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
18	128 Lockers	100.0	sqft/person	90.1 Assembly Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
19	129 Main Bunk	100.0	sqft/person	90.1 Hotel/Motel Occupancy	Seated at Rest	230.0	120.0	0.30	0.30	0.30	ACH	All Hours
20	130 Dining	40.0	sqft/person	90.1 Office Occupancy	Seated at Rest	230.0	120.0	0.30	0.30	0.30	ACH	All Hours
21	131 Fitness	100.0	sqft/person	90.1 Assembly Occupancy	Athletics	710.0	1,090.0	0.30	0.30	0.30	ACH	All Hours
22	131 Lounge	40.0	sqft/person	90.1 Office Occupancy	Seated at Rest	230.0	120.0	0.30	0.30	0.30	ACH	All Hours
23	132 Game Room	40.0	sqft/person	90.1 Office Occupancy	Seated at Rest	230.0	120.0	0.30	0.30	0.30	ACH	All Hours
24	133 EMR 2	0	People	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours

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Index	Space	Occupants					Infiltration					
		Occupancy	Units	Schedule	Activity Level	Sens. (BTU/hr/person)	Latent (BTU/hr/person)	Cooling Airflow	Heating Airflow	Simulation Airflow	Units	Occurs
25	134 Public Lobby	100.0	sqft/person	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
26	135 Control Lobby	100.0	sqft/person	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
27	136 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
28	138 Elec.	0	People	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
29	139 Generator	0	People	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
30	140 Mechanical	0	People	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
31	141 UPS	250.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
32	142 Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
33	143 Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
34	144 Comm	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
35	145 Waiting	100.0	sqft/person	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
36	146 Computer	250.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
37	147 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
38	148 Air Bench	50.0	sqft/person	90.1 School Occupancy	Medium Work	295.0	455.0	0.30	0.30	0.30	ACH	All Hours
39	149 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
40	150 Record Storage	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
41	151 Records	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
42	152 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
43	153 Int.	2	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
44	154 Int.	2	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
45	155 Officers	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
46	156 Coffee	100.0	sqft/person	90.1 Office Occupancy	Sedentary Work	280.0	270.0	0.30	0.30	0.30	ACH	All Hours
47	158 Jan.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
48	159 Men	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
49	160 Wom.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours

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Index	Space	Occupants						Infiltration				
		Occupancy	Units	Schedule	Activity Level	Sens. (BTU/hr/person)	Latent (BTU/hr/person)	Cooling Airflow	Heating Airflow	Simulation Airflow	Units	Occurs
50	161 Copy Rm.	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
51	162 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
52	163 Men's Locker	100.0	sqft/person	90.1 Assembly Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
53	164 Men's Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
54	165 Wom. Toil.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
55	166 Women's Locker	100.0	sqft/person	90.1 Assembly Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
56	169 Super	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
57	170 Roll Call	20.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
58	171 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
59	172 Car Proc.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
60	173 Sally Port	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
61	175 Radio	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
62	175 Weapons	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
63	176 Processing	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
64	177 Decon.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
65	178 Int.	2	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
66	179 Int.	2	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
67	180,181 Passage	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
68	182 Men	40.0	sqft/person	90.1 Hotel/Motel Occupancy	Seated at Rest	230.0	120.0	0.30	0.30	0.30	ACH	All Hours
69	183 Men	40.0	sqft/person	90.1 Hotel/Motel Occupancy	Seated at Rest	230.0	120.0	0.30	0.30	0.30	ACH	All Hours
70	184 Wom.	40.0	sqft/person	90.1 Hotel/Motel Occupancy	Seated at Rest	230.0	120.0	0.30	0.30	0.30	ACH	All Hours
71	185 Juv.	40.0	sqft/person	90.1 Hotel/Motel Occupancy	Seated at Rest	230.0	120.0	0.30	0.30	0.30	ACH	All Hours
72	186 EMR 1	0	People	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
73	187 Jan.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
74	188 Kitchen	50.0	sqft/person	90.1 Office Occupancy	Sedentary Work	280.0	270.0	0.30	0.30	0.30	ACH	All Hours

Default Space Model

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Index	Space	Occupants					Infiltration					
		Occupancy	Units	Schedule	Activity Level	Sens. (BTU/hr/person)	Latent (BTU/hr/person)	Cooling Airflow	Heating Airflow	Simulation Airflow	Units	Occurs
75	201 "Old" Meeting	20.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
76	202,204,208 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
77	203 CEMS	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
78	205 Server	0	People	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
79	206 Storage	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
80	207 Coffee	100.0	sqft/person	90.1 Office Occupancy	Sedentary Work	280.0	270.0	0.30	0.30	0.30	ACH	All Hours
81	209 Assitant Fire Chiefs	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
82	210 Fire Chief	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
83	211 Copy	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
84	212 Jan.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
85	213 Men	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
86	214 Wom.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
87	215 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
88	216 Sec./Treas.	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
89	217 Pres/VP	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
90	218 Stor.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
91	219 Library	100.0	sqft/person	90.1 School Occupancy	Seated at Rest	230.0	120.0	0.30	0.30	0.30	ACH	All Hours
92	220 Wait	100.0	sqft/person	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
93	221 Sec.	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
94	222 Lobby	100.0	sqft/person	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
95	223 Gallery	100.0	sqft/person	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
96	224 Training Room	100.0	sqft/person	90.1 Assembly Occupancy	Athletics	710.0	1,090.0	0.30	0.30	0.30	ACH	All Hours
97	225 Storage	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
98	226 Lobby	100.0	sqft/person	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
99	227 Men	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours

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Index	Space	Occupants						Infiltration				
		Occupancy	Units	Schedule	Activity Level	Sens. (BTU/hr/person)	Latent (BTU/hr/person)	Cooling Airflow	Heating Airflow	Simulation Airflow	Units	Occurs
100	228 Wom.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
101	229 Lounge (1)	40.0	sqft/person	90.1 Office Occupancy	Seated at Rest	230.0	120.0	0.30	0.30	0.30	ACH	All Hours
102	229 Lounge Kitchen	100.0	sqft/person	90.1 Office Occupancy	Sedentary Work	280.0	270.0	0.30	0.30	0.30	ACH	All Hours
103	230,231 Sec. Wait.	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
104	232 Storage	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
105	233 Police Commis.	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
106	234,244,245 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
107	235 Office	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
108	236 Office	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
109	237 Office	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
110	238 Copy	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
111	239 Jan.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
112	240 Coff.	100.0	sqft/person	90.1 Office Occupancy	Sedentary Work	280.0	270.0	0.30	0.30	0.30	ACH	All Hours
113	241 Admin Assist.	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
114	242 Men	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
115	243 Wom.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
116	246,252 Corridor	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
117	247 Main Conf.	20.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
118	248 Chief	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
119	249 Office	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
120	250 Office	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
121	251 Storage	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
122	253 Weapons	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
123	254 Uniforms Storage	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
124	255 Lab	40.0	sqft/person	90.1 Office Occupancy	User Defined	250.0	250.0	0.30	0.30	0.30	ACH	All Hours

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Index	Space	Occupants					Infiltration					
		Occupancy	Units	Schedule	Activity Level	Sens. (BTU/hr/person)	Latent (BTU/hr/person)	Cooling Airflow	Heating Airflow	Simulation Airflow	Units	Occurs
125	256 Evidence Storage	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
126	257 Super	1	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
127	258 Detectives	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
128	259 Temp. Evidence	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
129	260 Narc.	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
130	261 Wait	100.0	sqft/person	90.1 Office Occupancy	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
131	262 Radio	200.0	sqft/person	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
132	263 Int.	2	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
133	264 Observ.	2	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
134	265 Int.	2	People	90.1 Office Occupancy	Office Work	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
135	Elevators 1 & 2 1st	0	People	(None)	User Defined	245.0	205.0	0.0	0.0	0.0	CFM	Unoccupied
136	Elevators 1 & 2 2nd	0	People	(None)	User Defined	245.0	205.0	0.0	0.0	0.0	CFM	Unoccupied
137	ST1 Stair 1st	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
138	ST1 Stair 2nd	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
139	ST2 Stair 1st	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
140	ST2 Stair 2nd	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
141	ST3 Stair 1st	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
142	ST3 Stair 2nd	0	People	(None)	User Defined	245.0	205.0	0.30	0.30	0.30	ACH	All Hours
143	Stair Mezz.	0	People	(None)	User Defined	245.0	205.0	0.0	0.0	0.0	CFM	Unoccupied

Default Space Model

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3. Zoning

Zone	Space	Level
AHU-07 - UPS 141		
	141 UPS	Level 1
GSHP-01A - Main Bunk 129		
	129 Main Bunk	Level 1
GSHP-01B - EMS Bunk 118		
	115 Corridor	Level 1
	117 Radio	Level 1
	118 EMS Bunk	Level 1
	119 Corridor	Level 1
	120 Toil.	Level 1
	121 Toil.	Level 1
	122 Toil.	Level 1
	123 Toil.	Level 1
	124 Toil.	Level 1
	125 Toil.	Level 1
	126 Toil.	Level 1
	127 Toil.	Level 1
	128 Lockers	Level 1
GSHP-02A - Lounge 131 / Dining 130		
	130 Dining	Level 1
	131 Lounge	Level 1
	188 Kitchen	Level 1
GSHP-02B - Gameroom 132 / EMS Office 114		
	111 EMS Storage	Level 1
	112 Toil.	Level 1
	114 EMS Office	Level 1
	116 Corridor	Level 1

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Zone	Space	Level
	132 Game Room	Level 1
	148 Air Bench	Level 1
	152 Corridor	Level 1
GSHP-03 - Fitness 137		
	131 Fitness	Level 1
	136 Corridor	Level 1
GSHP-04 - Office 141 / Comm. 144		
	142 Toil.	Level 1
	143 Toil.	Level 1
	144 Comm	Level 1
GSHP-05 - Public Lobby 134 / Control Lobby 135		
	134 Public Lobby	Level 1
	135 Control Lobby	Level 1
GSHP-06 - Computer 146		
	146 Computer	Level 1
GSHP-07 - Int. 153 / Int. 154		
	145 Waiting	Level 1
	147 Corridor	Level 1
	149 Corridor	Level 1
	150 Record Storage	Level 1
	151 Records	Level 1
	153 Int.	Level 1
	154 Int.	Level 1
GSHP-08 - Office 155 / Role Call 170		
	155 Officers	Level 1
	169 Super	Level 1
	170 Roll Call	Level 1
GSHP-09A - Men's Locker 163 / Women's Locker 166		
	163 Men's Locker	Level 1

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Zone	Space	Level
	164 Men's Toil.	Level 1
	165 Wom. Toil.	Level 1
	166 Women's Locker	Level 1
GSHP-09B - Copy Room 161		
	156 Coffee	Level 1
	159 Men	Level 1
	160 Wom.	Level 1
	161 Copy Rm.	Level 1
	162 Corridor	Level 1
GSHP-10 - Evidence Storage 256		
	253 Weapons	Level 2
	254 Uniforms Storage	Level 2
	255 Lab	Level 2
	256 Evidence Storage	Level 2
GSHP-11 - Processing 176		
	171 Corridor	Level 1
	175 Radio	Level 1
	175 Weapons	Level 1
	176 Processing	Level 1
	177 Decon.	Level 1
	178 Int.	Level 1
	179 Int.	Level 1
	180,181 Passage	Level 1
	182 Men	Level 1
	183 Men	Level 1
	184 Wom.	Level 1
	185 Juv.	Level 1
GSHP-12 - Server 205		
	205 Server	Level 2

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Zone	Space	Level
GSHP-13A - Fire Chief 210		
	202,204,208 Corridor	Level 2
	203 CEMS	Level 2
	207 Coffee	Level 2
	209 Assitant Fire Chiefs	Level 2
	210 Fire Chief	Level 2
	215 Corridor	Level 2
GSHP-13B - Pres. / V.P. 217		
	206 Storage	Level 2
	211 Copy	Level 2
	213 Men	Level 2
	214 Wom.	Level 2
	216 Sec./Treas.	Level 2
	217 Pres/VP	Level 2
	218 Stor.	Level 2
GSHP-13C - Old Meeting Room 201		
	201 "Old" Meeting	Level 2
GSHP-14 - Library 213		
	219 Library	Level 2
GSHP-15A - Lobby 222 / Gallery 223		
	220 Wait	Level 2
	221 Sec.	Level 2
	222 Lobby	Level 2
GSHP-15B - Lobby 226 / Gallery 223		
	223 Gallery	Level 2
	226 Lobby	Level 2
	227 Men	Level 2
	228 Wom.	Level 2
	229 Lounge (1)	Level 2

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Zone	Space	Level
	229 Lounge Kitchen	Level 2
	230,231 Sec. Wait.	Level 2
	232 Storage	Level 2
GSHP-16 - Training Room 224		
	224 Training Room	Level 2
	225 Storage	Level 2
GSHP-17A - Police Commis. 233		
	233 Police Commis.	Level 2
	235 Office	Level 2
	236 Office	Level 2
	237 Office	Level 2
GSHP-17B - Admin. Assist. 241		
	234,244,245 Corridor	Level 2
	238 Copy	Level 2
	240 Coff.	Level 2
	241 Admin Assist.	Level 2
	242 Men	Level 2
	243 Wom.	Level 2
GSHP-18A - Detectives 258		
	257 Super	Level 2
	258 Detectives	Level 2
	265 Int.	Level 2
GSHP-18B - Narc. 260		
	259 Temp. Evidence	Level 2
	260 Narc.	Level 2
	261 Wait	Level 2
	262 Radio	Level 2
	263 Int.	Level 2
	264 Observ.	Level 2

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Zone	Space	Level
GSHP-19A - Chief 248		
	247 Main Conf.	Level 2
	248 Chief	Level 2
GSHP-19B - Office 249 / 250		
	246,252 Corridor	Level 2
	249 Office	Level 2
	250 Office	Level 2
	251 Storage	Level 2
Heating Only		
	139 Generator	Level 1
	140 Mechanical	Level 1
	172 Car Proc.	Level 1
	173 Sally Port	Level 1
	ST1 Stair 1st	Level 1
	ST2 Stair 1st	Level 1
	ST3 Stair 1st	Level 1
	ST1 Stair 2nd	Level 2
	ST2 Stair 2nd	Level 2
	ST3 Stair 2nd	Level 2
Unconditioned		
	Stair Mezz.	High Bay
	113 Jan.	Level 1
	133 EMR 2	Level 1
	138 Elec.	Level 1
	158 Jan.	Level 1
	186 EMR 1	Level 1
	187 Jan.	Level 1
	Elevators 1 & 2 1st	Level 1
	212 Jan.	Level 2

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Zone	Space	Level
	239 Jan.	Level 2
	Elevators 1 & 2 2nd	Level 2
Unassigned (no spaces)		

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4. Assemblies

Category	Surface Group	Selected Assembly
Exterior Above Grade Wall		
	Default	Face Brick + CMU + R-10 Insulation Board + Brick
Interior Wall		
	Default	Interior Block Wall
Roof		
	Default	Built-up Roof on Steel Deck
	Roofs: Bunk East, Bunk West	Built-up Roof on Steel Deck
	Roofs: Mechanical Roof, Generator Roof	Built-up Roof on Steel Deck
	Roofs: unnamed roof (21), unnamed roof (20), unnamed roof (22), unnamed roof (26), unnamed roof (25), unnamed roof (24), unnamed roof (27), unnamed roof (28)	Built-up Roof on Steel Deck
	Roofs: unnamed roof (5), unnamed roof (6)	Built-up Roof on Steel Deck
	Roofs: unnamed roof (5), unnamed roof (9), unnamed roof (3), unnamed roof (6), unnamed roof (1), unnamed roof (7), unnamed roof (2), unnamed roof (8), unnamed roof (4)	Built-up Roof on Steel Deck
	Roofs: unnamed roof, unnamed roof (12), unnamed roof (11), unnamed roof (17), unnamed roof (15), unnamed roof (13), unnamed roof (14)	Built-up Roof on Steel Deck
Ceiling		
	Interior Ceilings	Acoustic Tile Ceiling
Floor Above Space		
	Attic Floors	Attic Floor
	Interior Floors Above Space	Mass floor above space
Slab Floor On Grade		
	At-Grade Floors	Slab-on-grade floor
Floor Above Ambient		
	Floor Above Ambient	Mass floor above ambient

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5. Windows & Doors

Category	Tag	Width x Height, Elevation	Selected Assembly
Window			
	Window 3x2	3' x 2' , 6'	Double Clear
	Window 3x5	3' x 5' , 3'	Double Clear
	Window 5x7	5' x 7' , 3'	Double Clear
Door			
	Door Bay 10x10	10' x 10'	2019 Zone 4 Opaque, swinging
	Door Bay 14x14	14' x 14'	2019 Zone 4 Opaque, swinging
	Door Metal Double	6' x 6' 8"	2019 Zone 4 Opaque, swinging
	Door Metal Single	3' x 6' 8"	2019 Zone 4 Opaque, swinging
	Door Storefront	6' x 8'	2019 Zone 4 Glass, entrance door

ASHRAE 90.1 Vertical Glazing Summary:

Total Window Opening Glazing Area 903.4 sqft
 Total Door Opening Glazing Area 144.0 sqft
 Total Gross Above Grade Wall Area 34755.6 sqft
 Window-to-wall Ratio (WWR) 3.0 %

GSHP - Evaporative Cooler Input Data

Project: 25061.000_LOAD1
Prepared by: EBL Engineers, LLC

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1. General Details:

Air System Name **GSHP - Evaporative Cooler**
Equipment Type **Terminal Units**
Air System Type **Water Source Heat Pump**
Space Model: **Default Space Model**
Ventilation **Direct Ventilation**
Notes:

2. Dedicated Outdoor Air System Components:

(Dedicated Outdoor Air System not used: no inputs)

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	GSHP-01B - EMS Bunk 118
2	GSHP-02A - Lounge 131 / Dining 130
3	GSHP-02B - Gameroom 132 / EMS Office 114
4	GSHP-03 - Fitness 137
5	GSHP-04 - Office 141 / Comm. 144
6	GSHP-05 - Public Lobby 134 / Control Lobby 135
7	GSHP-07 - Int. 153 / Int. 154
8	GSHP-08 - Office 155 / Role Call 170
9	GSHP-09A - Men's Locker 163 / Women's Locker 166
10	GSHP-09B - Copy Room 161
11	GSHP-10 - Evidence Storage 256
12	GSHP-11 - Processing 176
13	GSHP-12 - Server 205
14	GSHP-13A - Fire Chief 210
15	GSHP-13B - Pres. / V.P. 217
16	GSHP-13C - Old Meeting Room 201
17	GSHP-14 - Library 213
18	GSHP-15A - Lobby 222 / Gallery 223
19	GSHP-15B - Lobby 226 / Gallery 223
20	GSHP-16 - Training Room 224
21	GSHP-17A - Police Commis. 233
22	GSHP-17B - Admin. Assist. 241
23	GSHP-18A - Detectives 258
24	GSHP-18B - Narc. 260
25	GSHP-19A - Chief 248
26	GSHP-19B - Office 249 / 250

Number of zones **26**

GSHP - Evaporative Cooler Input Data

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Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	n/a	0.0
2	75.0	80.0	70.0	65.0	1.50	n/a	0.0
3	75.0	80.0	70.0	65.0	1.50	n/a	0.0
4	75.0	80.0	70.0	65.0	1.50	n/a	0.0
5	75.0	80.0	70.0	65.0	1.50	n/a	0.0
6	75.0	80.0	70.0	65.0	1.50	n/a	0.0
7	75.0	80.0	70.0	65.0	1.50	n/a	0.0
8	75.0	80.0	70.0	65.0	1.50	n/a	0.0
9	75.0	80.0	70.0	65.0	1.50	n/a	0.0
10	75.0	80.0	70.0	65.0	1.50	n/a	0.0
11	75.0	80.0	70.0	65.0	1.50	n/a	0.0
12	75.0	80.0	70.0	65.0	1.50	n/a	0.0
13	75.0	80.0	70.0	65.0	1.50	n/a	0.0
14	75.0	80.0	70.0	65.0	1.50	n/a	0.0
15	75.0	80.0	70.0	65.0	1.50	n/a	0.0
16	75.0	80.0	70.0	65.0	1.50	n/a	0.0
17	75.0	80.0	70.0	65.0	1.50	n/a	0.0
18	75.0	80.0	70.0	65.0	1.50	n/a	0.0
19	75.0	80.0	70.0	65.0	1.50	n/a	0.0
20	75.0	80.0	70.0	65.0	1.50	n/a	0.0
21	75.0	80.0	70.0	65.0	1.50	n/a	0.0
22	75.0	80.0	70.0	65.0	1.50	n/a	0.0
23	75.0	80.0	70.0	65.0	1.50	n/a	0.0
24	75.0	80.0	70.0	65.0	1.50	n/a	0.0
25	75.0	80.0	70.0	65.0	1.50	n/a	0.0
26	75.0	80.0	70.0	65.0	1.50	n/a	0.0

Thermostat Schedule **Default Fan/Thermostat Schedule**
 Unoccupied Cooling is **Available**

Common Terminal Unit Data:

Cooling Coil:
 Design Supply Temp. **55.0** F
 Cooling Source **Water-Cooled DX**
 Schedule *******JJA******

Heating Coil:
 Design Supply Temp. **105.0** F
 Heating Source **Water Source Heat Pump**
 Schedule **JFMAMJJASOND**

Fan Control **1-Speed Fan**
 Ventilation Sizing Method **ASHRAE Standard 62.1-2019**

GSHP - Evaporative Cooler Input Data

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Terminal Units Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
2	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
3	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
4	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
5	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
6	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
7	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
8	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
9	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
10	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
11	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
12	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
13	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
14	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
15	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
16	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
17	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
18	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
19	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
20	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
21	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
22	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
23	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
24	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
25	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
26	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:
 Cooling Supply Temperature **55.0** F
 Heating Supply Temperature **105.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature **44.0** F
 Chilled Water Delta-T **10.0** F
 Hot Water Supply Temperature **140.0** F
 Hot Water Delta-T **20.0** F

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Safety Factors:

Cooling Sensible 0 %
 Cooling Latent 0 %
 Heating 0 %

Zone Sizing Data:

Zone Airflow Sizing Method **Sum of space airflow rates**
 Space Airflow Sizing Method **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	Ventilation (CFM)
1	880.0	-	-	880.0
2	1067.8	-	-	250.6
3	1250.7	-	-	1250.7
4	543.0	-	-	163.0
5	150.1	-	-	150.0
6	421.9	-	-	95.9
7	419.6	-	-	177.3
8	1043.4	-	-	287.1
9	1530.0	-	-	1530.0
10	315.1	-	-	191.0
11	634.8	-	-	215.4
12	518.6	-	-	518.6
13	668.5	-	-	0.0
14	798.3	-	-	226.0
15	731.0	-	-	275.1
16	1155.4	-	-	478.8
17	318.4	-	-	116.6
18	302.5	-	-	75.7
19	936.9	-	-	246.6
20	1470.9	-	-	496.8
21	614.3	-	-	80.6
22	552.2	-	-	301.2
23	764.6	-	-	145.6
24	249.6	-	-	225.0
25	827.9	-	-	211.7
26	418.8	-	-	126.3

5. Equipment Data

GSHP - Evaporative Cooler Input Data

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Terminal Cooling Units - WSHP

Zone	Estimated Maximum Load (MBH)	Design EWT (F)	Design EWB (F)	Equipment Sizing	Gross Cooling Capacity (MBH)	Capacity Oversizing Factor (%)	Compressor Power (kW)	ISO / AHRI Performance Rating	Units	DX System Configuration
1	80.8	77.0	67.0	Auto-Sized	80.8	0	-	14.100	EER	1-stage
2	45.9	77.0	67.0	Auto-Sized	45.9	0	-	14.100	EER	1-stage
3	100.2	77.0	67.0	Auto-Sized	100.2	0	-	14.100	EER	1-stage
4	25.2	77.0	67.0	Auto-Sized	25.2	0	-	14.100	EER	1-stage
5	11.7	77.0	67.0	Auto-Sized	11.7	0	-	14.100	EER	1-stage
6	15.1	77.0	67.0	Auto-Sized	15.1	0	-	14.100	EER	1-stage
7	18.5	77.0	67.0	Auto-Sized	18.5	0	-	14.100	EER	1-stage
8	42.0	77.0	67.0	Auto-Sized	42.0	0	-	14.100	EER	1-stage
9	118.5	77.0	67.0	Auto-Sized	118.5	0	-	14.100	EER	1-stage
10	23.2	77.0	67.0	Auto-Sized	23.2	0	-	14.100	EER	1-stage
11	34.4	77.0	67.0	Auto-Sized	34.4	0	-	14.100	EER	1-stage
12	50.0	77.0	67.0	Auto-Sized	50.0	0	-	14.100	EER	1-stage
13	15.5	77.0	67.0	Auto-Sized	15.5	0	-	14.100	EER	1-stage
14	32.5	77.0	67.0	Auto-Sized	32.5	0	-	14.100	EER	1-stage
15	41.4	77.0	67.0	Auto-Sized	41.4	0	-	14.100	EER	1-stage
16	60.4	77.0	67.0	Auto-Sized	60.4	0	-	14.100	EER	1-stage
17	14.5	77.0	67.0	Auto-Sized	14.5	0	-	14.100	EER	1-stage
18	12.0	77.0	67.0	Auto-Sized	12.0	0	-	14.100	EER	1-stage
19	41.3	77.0	67.0	Auto-Sized	41.3	0	-	14.100	EER	1-stage
20	73.1	77.0	67.0	Auto-Sized	73.1	0	-	14.100	EER	1-stage
21	19.9	77.0	67.0	Auto-Sized	19.9	0	-	14.100	EER	1-stage
22	30.4	77.0	67.0	Auto-Sized	30.4	0	-	14.100	EER	1-stage
23	27.7	77.0	67.0	Auto-Sized	27.7	0	-	14.100	EER	1-stage
24	18.0	77.0	67.0	Auto-Sized	18.0	0	-	14.100	EER	1-stage
25	33.5	77.0	67.0	Auto-Sized	33.5	0	-	14.100	EER	1-stage
26	16.5	77.0	67.0	Auto-Sized	16.5	0	-	14.100	EER	1-stage

GSHP - Evaporative Cooler Input Data

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

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Terminal Heating Units - WSHP

Zone	Estimated Maximum Load (MBH)	Design EWT (F)	Design EDB (F)	Equipment Sizing	Gross Heating Capacity (MBH)	Capacity Oversizing Factor (%)	Compressor Power (kW)	ISO / AHRI Performance Rating	Units
1	76.5	47.0	70.0	Auto-Sized	76.5	0	-	3.700	COP
2	25.9	47.0	70.0	Auto-Sized	25.9	0	-	3.700	COP
3	78.6	47.0	70.0	Auto-Sized	78.6	0	-	3.700	COP
4	17.8	47.0	70.0	Auto-Sized	17.8	0	-	3.700	COP
5	8.7	47.0	70.0	Auto-Sized	8.7	0	-	3.700	COP
6	13.3	47.0	70.0	Auto-Sized	13.3	0	-	3.700	COP
7	18.5	47.0	70.0	Auto-Sized	18.5	0	-	3.700	COP
8	28.8	47.0	70.0	Auto-Sized	28.8	0	-	3.700	COP
9	133.0	47.0	70.0	Auto-Sized	133.0	0	-	3.700	COP
10	24.1	47.0	70.0	Auto-Sized	24.1	0	-	3.700	COP
11	35.7	47.0	70.0	Auto-Sized	35.7	0	-	3.700	COP
12	45.1	47.0	70.0	Auto-Sized	45.1	0	-	3.700	COP
13	2.2	47.0	70.0	Auto-Sized	2.2	0	-	3.700	COP
14	30.9	47.0	70.0	Auto-Sized	30.9	0	-	3.700	COP
15	37.4	47.0	70.0	Auto-Sized	37.4	0	-	3.700	COP
16	38.3	47.0	70.0	Auto-Sized	38.3	0	-	3.700	COP
17	12.1	47.0	70.0	Auto-Sized	12.1	0	-	3.700	COP
18	9.2	47.0	70.0	Auto-Sized	9.2	0	-	3.700	COP
19	33.7	47.0	70.0	Auto-Sized	33.7	0	-	3.700	COP
20	46.2	47.0	70.0	Auto-Sized	46.2	0	-	3.700	COP
21	15.7	47.0	70.0	Auto-Sized	15.7	0	-	3.700	COP
22	22.1	47.0	70.0	Auto-Sized	22.1	0	-	3.700	COP
23	22.7	47.0	70.0	Auto-Sized	22.7	0	-	3.700	COP
24	15.9	47.0	70.0	Auto-Sized	15.9	0	-	3.700	COP
25	21.5	47.0	70.0	Auto-Sized	21.5	0	-	3.700	COP
26	15.4	47.0	70.0	Auto-Sized	15.4	0	-	3.700	COP

Misc. Components - WSHP

Cooling Tower **Evaporative Fluid Cooler**
 Auxiliary Boiler **Gas Boiler**

Circulation Loop:

Loop Type **Variable Flow / Variable Speed (2-position valves)**
 Pump Performance **145.0** ft wg
 Pump Mechanical Efficiency **75.0** %
 Pump Motor Electrical Efficiency **94.0** %
 Minimum Flow **30** %
 Control Head **30.0** ft wg
 Maximum Setpoint **86.0** F
 Minimum Setpoint **40.0** F

VRF System Input Data

Project: 25061.000_LOAD1
Prepared by: EBL Engineers, LLC

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1. General Details:

Air System Name VRF System
Equipment Type Terminal Units
Air System Type Variable Refrigerant Flow (VRF)
Space Model: Default Space Model
Ventilation Direct Ventilation
Notes:

2. Dedicated Outdoor Air System Components:

(Dedicated Outdoor Air System not used: no inputs)

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	GSHP-01B - EMS Bunk 118
2	GSHP-02A - Lounge 131 / Dining 130
3	GSHP-02B - Gameroom 132 / EMS Office 114
4	GSHP-03 - Fitness 137
5	GSHP-04 - Office 141 / Comm. 144
6	GSHP-05 - Public Lobby 134 / Control Lobby 135
7	GSHP-07 - Int. 153 / Int. 154
8	GSHP-08 - Office 155 / Role Call 170
9	GSHP-09A - Men's Locker 163 / Women's Locker 166
10	GSHP-09B - Copy Room 161
11	GSHP-10 - Evidence Storage 256
12	GSHP-11 - Processing 176
13	GSHP-12 - Server 205
14	GSHP-13A - Fire Chief 210
15	GSHP-13B - Pres. / V.P. 217
16	GSHP-13C - Old Meeting Room 201
17	GSHP-14 - Library 213
18	GSHP-15A - Lobby 222 / Gallery 223
19	GSHP-15B - Lobby 226 / Gallery 223
20	GSHP-16 - Training Room 224
21	GSHP-17A - Police Commis. 233
22	GSHP-17B - Admin. Assist. 241
23	GSHP-18A - Detectives 258
24	GSHP-18B - Narc. 260
25	GSHP-19A - Chief 248
26	GSHP-19B - Office 249 / 250

Number of zones 26

VRF System Input Data

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

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Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	n/a	0.0
2	75.0	80.0	70.0	65.0	1.50	n/a	0.0
3	75.0	80.0	70.0	65.0	1.50	n/a	0.0
4	75.0	80.0	70.0	65.0	1.50	n/a	0.0
5	75.0	80.0	70.0	65.0	1.50	n/a	0.0
6	75.0	80.0	70.0	65.0	1.50	n/a	0.0
7	75.0	80.0	70.0	65.0	1.50	n/a	0.0
8	75.0	80.0	70.0	65.0	1.50	n/a	0.0
9	75.0	80.0	70.0	65.0	1.50	n/a	0.0
10	75.0	80.0	70.0	65.0	1.50	n/a	0.0
11	75.0	80.0	70.0	65.0	1.50	n/a	0.0
12	75.0	80.0	70.0	65.0	1.50	n/a	0.0
13	75.0	80.0	70.0	65.0	1.50	n/a	0.0
14	75.0	80.0	70.0	65.0	1.50	n/a	0.0
15	75.0	80.0	70.0	65.0	1.50	n/a	0.0
16	75.0	80.0	70.0	65.0	1.50	n/a	0.0
17	75.0	80.0	70.0	65.0	1.50	n/a	0.0
18	75.0	80.0	70.0	65.0	1.50	n/a	0.0
19	75.0	80.0	70.0	65.0	1.50	n/a	0.0
20	75.0	80.0	70.0	65.0	1.50	n/a	0.0
21	75.0	80.0	70.0	65.0	1.50	n/a	0.0
22	75.0	80.0	70.0	65.0	1.50	n/a	0.0
23	75.0	80.0	70.0	65.0	1.50	n/a	0.0
24	75.0	80.0	70.0	65.0	1.50	n/a	0.0
25	75.0	80.0	70.0	65.0	1.50	n/a	0.0
26	75.0	80.0	70.0	65.0	1.50	n/a	0.0

Thermostat Schedule **Default Fan/Thermostat Schedule**
 Unoccupied Cooling is **Available**

Common Terminal Unit Data:

Cooling Coil:
 Design Supply Temp. **55.0** F
 Cooling Source **Air-Cooled DX**
 Schedule **JFMAMJJASOND**

Heating Coil:
 Design Supply Temp. **105.0** F
 Heating Source **Air Source Heat Pump**
 Schedule **JFMAMJJASOND**

Fan Control **1-Speed Fan**
 Ventilation Sizing Method **ASHRAE Standard 62.1-2019**

VRF System Input Data

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

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Terminal Units Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
2	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
3	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
4	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
5	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
6	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
7	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
8	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
9	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
10	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
11	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
12	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
13	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
14	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
15	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
16	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
17	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
18	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
19	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
20	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
21	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
22	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
23	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
24	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
25	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %
26	Fan coil	Ceiling supply / ceiling return	ASHRAE 62.1	<auto>	0.00 CFM/person	-	1.00 in wg	50 %

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature **55.0** F
 Heating Supply Temperature **105.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature **44.0** F
 Chilled Water Delta-T **10.0** F
 Hot Water Supply Temperature **140.0** F
 Hot Water Delta-T **20.0** F

VRF System Input Data

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

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Safety Factors:

Cooling Sensible 0 %
 Cooling Latent 0 %
 Heating 0 %

Zone Sizing Data:

Zone Airflow Sizing Method **Peak zone sensible load**
 Space Airflow Sizing Method **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	Ventilation (CFM)
1	880.0	-	-	880.0
2	1061.8	-	-	250.6
3	1250.7	-	-	1250.7
4	541.4	-	-	163.0
5	150.0	-	-	150.0
6	415.4	-	-	95.9
7	343.9	-	-	177.3
8	1040.8	-	-	287.1
9	1530.0	-	-	1530.0
10	313.3	-	-	191.0
11	633.0	-	-	215.4
12	518.6	-	-	518.6
13	668.5	-	-	0.0
14	779.6	-	-	226.0
15	725.6	-	-	275.1
16	1155.4	-	-	478.8
17	318.4	-	-	116.6
18	298.6	-	-	75.7
19	875.5	-	-	246.6
20	1465.6	-	-	496.8
21	614.3	-	-	80.6
22	552.2	-	-	301.2
23	763.6	-	-	145.6
24	249.6	-	-	225.0
25	827.9	-	-	211.7
26	397.5	-	-	126.3

5. Equipment Data

VRF Outdoor Unit - Heat Pump

Performance Data - Cooling

Estimated Maximum Load 941.1 MBH
 Design OADB 95.0 F
 Design EWB 67.0 F
 Equipment Sizing **(Auto-Sized) 1010.8 MBH**
 Capacity Oversizing Factor 0 %
 AHRI Performance Rating 8.900 EER

Performance Data - Heating

Estimated Maximum Load 896.1 MBH
 Design OADB 47.0 F
 Design EDB 68.0 F
 Equipment Sizing **(Auto-Sized) 896.1 MBH**
 Capacity Oversizing Factor 0 %
 AHRI Performance Rating 3.20 COP

System Data:

VRF System Input Data

Project: 25061.000_LOAD1
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Compressor Type **Variable Speed Scroll**
Minimum Load **10** %
Refrigerant Piping Equivalent Length **200.0** ft
Refrigerant Piping Vertical Rise **-30.0** ft

Heat Pump Data:

Heat Pump Cutoff OADB **-4.0** F
Heat Recovery Used **Yes**
Auxiliary Heating Type **Electric Resistance**
Auxiliary Heating Upper Cutoff **20.0** F

Schedule Input Data

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

12/05/2025
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90.1 Assembly Lights/Elec (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	5

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	40	40	40	75	75	75	75	75	75	75	75	75	75	75	75	75	25	5

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	5	30	30	50	50	50	50	50	50	50	50	50	50	50	50	50	50	5

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	5	30	30	30	30	30	65	65	65	65	65	65	65	65	65	65	5	5

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

90.1 Assembly Occupancy (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	20	20	20	80	80	80	80	80	80	80	20	20	20	20	10	0

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	20	20	20	60	60	60	60	60	60	60	60	60	60	80	10	0

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	10	10	10	10	10	70	70	70	70	70	70	70	70	70	20	0

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

Schedule Input Data

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

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90.1 Health Lights/Elec (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	10	10	10	10	10	10	10	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	10

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	10	10	10	10	10	10	10	50	90	90	90	90	90	90	90	90	30	30	30	30	30	30	30	10

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	10	10	10	10	10	10	10	20	40	40	40	40	40	40	40	40	40	40	10	10	10	10	10	10

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10	5	5	5	5	5	5	5	5

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

90.1 Hotel/Motel Lights/Elec (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	20	15	10	10	10	20	40	50	40	40	25	25	25	25	25	25	25	25	25	60	80	90	80	30

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	20	20	10	10	10	10	30	30	40	40	30	25	25	25	25	25	25	25	60	70	70	70	60	30

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	30	30	20	20	20	20	30	40	40	30	30	30	30	20	20	20	20	20	50	70	80	60	50	30

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

Schedule Input Data

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

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90.1 Hotel/Motel Occupancy (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	90	90	90	90	90	90	70	40	40	20	20	20	20	20	20	30	50	50	50	70	70	80	90	90

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	90	90	90	90	90	90	70	50	50	30	30	30	30	30	30	30	30	50	60	60	60	70	70	70

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	70	70	70	70	70	70	70	70	50	50	50	30	30	20	20	20	30	40	40	60	60	80	80	80

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

90.1 Light Mfg Lights/Elec (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	5

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	10	10	30	90	90	90	90	80	90	90	90	90	50	30	30	20	20	10	5

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	10	10	30	30	30	30	15	15	15	15	15	5	5	5	5	5	5	5

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

Schedule Input Data

Project: 25061.000_LOAD1
Prepared by: EBL Engineers, LLC

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90.1 Light Mfg Occupancy (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0	0

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	10	20	95	95	95	95	50	95	95	95	95	30	10	10	10	10	5	5

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	10	10	30	30	30	30	10	10	10	10	10	5	5	0	0	0	0	0

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	5	5	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

90.1 Office Lights/Elec (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	5

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	10	10	30	90	90	90	90	80	90	90	90	90	50	30	30	20	20	10	5

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	10	10	30	30	30	30	15	15	15	15	15	5	5	5	5	5	5	5

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

Schedule Input Data

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

12/05/2025
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90.1 Office Occupancy (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0	0

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	10	20	95	95	95	95	50	95	95	95	95	30	10	10	10	10	5	5

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	10	10	30	30	30	30	10	10	10	10	10	5	5	0	0	0	0	0

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	5	5	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

90.1 Restaurant Lights/Elec (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	15	15	15	15	15	20	40	40	60	60	90	90	90	90	90	90	90	90	90	90	90	90	50	30

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	20	15	15	15	15	15	30	30	60	60	80	80	80	80	80	80	80	90	90	90	90	90	50	30

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	20	15	15	15	15	15	30	30	50	50	70	70	70	70	70	70	60	60	60	60	60	60	50	30

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

Schedule Input Data

Project: 25061.000_LOAD1
Prepared by: EBL Engineers, LLC

12/05/2025
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90.1 Restaurant Occupancy (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	50	50	20	0	0	0	0	20	20	20	50	100	100	100	100	100	100	100	100	100	100	100	100	100

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	15	15	5	0	0	0	0	5	5	5	20	50	80	70	40	20	25	50	80	80	80	50	35	20

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	30	25	5	0	0	0	0	0	0	5	20	45	50	50	35	30	30	30	70	90	70	65	55	35

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	20	20	5	0	0	0	0	0	0	0	10	20	25	25	15	20	25	35	55	65	70	35	20	20

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

90.1 School Lights/Elec (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	5	5

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	5	30	85	95	95	95	80	80	80	70	50	50	35	35	35	30	5	5

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	5	5	15	15	15	15	15	5	5	5	5	5	5	5	5	5	5	5

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

Schedule Input Data

Project: 25061.000_LOAD1
 Prepared by: EBL Engineers, LLC

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90.1 School Occupancy (Fractional)

Hourly Profiles:

Design Day

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0	0

Weekday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	5	75	90	90	80	80	80	80	45	15	5	15	20	20	10	0	0

Saturday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0

Sunday

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

Default Fan/Thermostat Schedule (Fan / Thermostat)

Hourly Profiles:

Profile One

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Profile Two

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Profile Three

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Profile Four

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

O = Occupied; U = Unoccupied

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	3	3	3	3	3	3	3	3	3	3	3	3
Sunday	4	4	4	4	4	4	4	4	4	4	4	4
Holiday	4	4	4	4	4	4	4	4	4	4	4	4

Schedule Input Data

Project: 25061.000_LOAD1
Prepared by: EBL Engineers, LLC

12/05/2025
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Appendix D:
Cost Estimates

Public Safety Building – GSHP vs. VRF Life Cycle Cost Analysis
EBL Engineers, LLC
December 11, 2025



Enhanced GSHP System Cost Estimate

PROJECT	EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR		EBL Project No.: 25061.000				
			SUBMISSION DATE: 12/11/2025				
			STATUS OF PROJECT LCCA Report Submission				
ITEM DESCRIPTION	UNIT	QUANTITY	MATERIAL		LABOR		TOTAL COST
			UNIT COST	AMOUNT	UNIT COST	AMOUNT	
MECHANICAL							
<u>DEMOLITION</u>							
Pumps & Piping	LS	1	2,500.00	\$2,500.00	6,400.00	\$6,400.00	\$8,900.00
<u>NEW WORK</u>							
<u>Equipment</u>							
Pumps, HW, 25 HP, VFD, inc. shutoff valves, check valve, flex connectors, gauges & VFD.	EA	2	27,000.00	\$54,000.00	5,000.00	\$10,000.00	\$64,000.00
Closed Circuit Fluid Cooler, 60 Ton, Evaporative, w/ Pump, Filters, VFD Fans, PLC Controller	EA	1	100,000.00	\$100,000.00	11,200.00	\$11,200.00	\$111,200.00
Air Separator, 6" Connection, Air Vent, Blowdown, ASME	EA	1	6,500.00	\$6,500.00	800.00	\$800.00	\$7,300.00
Glycol Feed Unit, 55 gallon, inc. leak containment skid &	EA	1	5,000.00	\$5,000.00	500.00	\$500.00	\$5,500.00
<u>Piping</u>							
Copper, 1", Type L, Soldered, w/ Clevis Hangers	LF	50	7.80	\$390.00	8.80	\$440.00	\$830.00
Copper, 1 1/2", Type L, Soldered, w/ Clevis Hangers	LF	50	13.75	\$687.50	11.50	\$575.00	\$1,262.50
Copper, 2", Type L, Soldered, w/ Clevis Hangers	LF		22.00		14.20		
Copper, 3", Type L, Soldered, w/ Clevis Hangers	LF		47.50		19.20		
Steel, 4", SCH 40, Insulated, w/ Roller Hangers	LF	100	60.00	\$6,000.00	32.00	\$3,200.00	\$9,200.00
Steel, 6", SCH 40, Welded, w/ Roller Hangers	LF	200	100.00	\$20,000.00	50.00	\$10,000.00	\$30,000.00
Valves, Fittings, & Accessories	%	50%		\$13,538.75		\$7,107.50	\$20,646.25
<u>Insulation</u>							
<u>Pipe Insulation</u>							
1" on 1" Pipe, Fiberglas w/ ASJ	LF	50	3.00	\$150.00	5.00	\$250.00	\$400.00
1" on 1 1/2" Pipe, Fiberglas w/ ASJ	LF	50	3.50	\$175.00	5.00	\$250.00	\$425.00
1 1/2" on 2" Pipe, Fiberglas w/ ASJ	LF		4.50		5.00		
1 1/2" on 3" Pipe, Fiberglas w/ ASJ	LF		5.50		5.00		
2" on 4" Pipe, Fiberglas w/ ASJ	LF	100	11.00	\$1,100.00	7.50	\$750.00	\$1,850.00
2" on 6" Pipe, Fiberglas w/ ASJ	LF	200	15.00	\$3,000.00	10.00	\$2,000.00	\$5,000.00
Valves, Fittings, & Accessories	%	25%		\$1,106.25		\$812.50	\$1,918.75
Aluminum Jacket, Anodized, SS Hardware	%	15%		\$663.75		\$487.50	\$1,151.25
<u>Duct Insulation</u>							
2", R-6, Fiberglass, FSK	SF		1.00		3.50		

ITEM DESCRIPTION			MATERIAL		LABOR		TOTAL COST
	UNIT	QUANTITY	UNIT COST	AMOUNT	UNIT COST	AMOUNT	
	PROJECT Public Safety Building, Cambridge, MD Enhanced GSHP System (Add Supplemental Fluid Cooler)						
EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR							
EBL Project No.: 25061.000 SUBMISSION DATE: 12/11/2025 STATUS OF PROJECT LCCA Report Submission							
3", R-8, Fiberglass, FSK Fittings & Accessories	SF %	25%	1.50		3.75		
Controls							
DDC Controls and Programming	POINTS	20	250.00	\$5,000.00	1,000.00	\$20,000.00	\$25,000.00
Control Valves & Actuators	EA	2	2,000.00	\$4,000.00	2,500.00	\$5,000.00	\$9,000.00
Miscellaneous							
Testing Adjusting and Balancing (TAB)	%	5.0%				\$9,400.00	\$9,400.00
Concrete Equipment Pad 6", Reinforced, Turndown Footings	SF	400	25.00	\$10,000.00	15.00	\$6,000.00	\$16,000.00
Structural Steel Support Dunnage For Fluid Cooler	LS	1	5,500.00	\$5,500.00	7,200.00	\$7,200.00	\$12,700.00
Miscellaneous Excavation & Site Repair	SF	400	5.00	\$2,000.00	15.00	\$6,000.00	\$8,000.00
Electric Heat Trace for Piping	LF	200	15.00	\$3,000.00	5.50	\$1,100.00	\$4,100.00
Exterior Pipe Supports, 18" Reinforced Concrete Pier, Galv. Steel Structure	EA	4	1,500.00	\$6,000.00	750.00	\$3,000.00	\$9,000.00
20% Environol Solution	Gallons	6,000	3.00	\$18,000.00	0.75	\$4,500.00	\$22,500.00
Lifting & Rigging	Day	1.0	3,500.00	\$3,500.00	2,400.00	\$2,400.00	\$5,900.00
ELECTRICAL							
DEMOLITION							

Public Safety Building – GSHP vs. VRF Life Cycle Cost Analysis
EBL Engineers, LLC
December 11, 2025



Enhanced GSHP System End Of Life Component Replacement Cost Estimate

ITEM DESCRIPTION			MATERIAL		LABOR		TOTAL COST
	UNIT	QUANTITY	UNIT COST	AMOUNT	UNIT COST	AMOUNT	
	PROJECT Public Safety Building, Cambridge, MD Enhanced GSHP System Fluid Cooler End Of Life Replacement						
EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR							
EBL Project No.: 25061.000 SUBMISSION DATE: 12/11/2025 STATUS OF PROJECT LCCA Report Submission							
GENERAL							
<u>DEMOLITION</u>							
Dumpster & Refuse	WK	1	775.00	\$775.00			\$775.00
<u>NEW WORK</u>							
Lifting & Rigging	Day		3,500.00		2,400.00		
Misc. Cleanup, Surface Protection, Materials, Storage	LS	0.25			5,000.00	\$1,250.00	\$1,250.00
Miscellaneous Architectural	LS		5,000.00		5,000.00		
MECHANICAL							
<u>DEMOLITION</u>							
Pumps & Piping	LS	1.0	1,750.00	\$1,750.00	3,200.00	\$3,200.00	\$4,950.00
<u>NEW WORK</u>							
<u>Equipment</u>							
Closed Circuit Fluid Cooler, 60 Ton, Evaporative, w/ Pump, Filters, VFD Fans, PLC Controller	EA	1	100,000.00	\$100,000.00	11,200.00	\$11,200.00	\$111,200.00
<u>Piping</u>							
Steel, 6", SCH 40, Welded, w/ Roller Hangers	LF	50	100.00	\$5,000.00	50.00	\$2,500.00	\$7,500.00
Valves, Fittings, & Accessories	%	50%		\$2,500.00		\$1,250.00	\$3,750.00
<u>Insulation</u>							
<u>Pipe Insulation</u>							
2" on 6" Pipe, Fiberglas w/ ASJ	LF	50	15.00	\$750.00	10.00	\$500.00	\$1,250.00
Valves, Fittings, & Accessories	%	25%		\$187.50		\$125.00	\$312.50
Aluminum Jacket, Anodized, SS Hardware	%	15%		\$112.50		\$75.00	\$187.50
<u>Miscellaneous</u>							
Testing Adjusting and Balancing (TAB)	%	5.0%				\$5,560.00	\$5,560.00
20% Environol Solution	Gallons	500	3.00	\$1,500.00	0.75	\$375.00	\$1,875.00
Lifting & Rigging	Day	1.0	3,500.00	\$3,500.00	2,400.00	\$2,400.00	\$5,900.00

Public Safety Building – GSHP vs. VRF Life Cycle Cost Analysis
EBL Engineers, LLC
December 11, 2025



Enhanced GSHP Add Alternate-1 Cost Estimate

PROJECT	EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR		EBL Project No.: 25061.000				
			SUBMISSION DATE: 12/11/2025				
			STATUS OF PROJECT LCCA Report Submission				
ITEM DESCRIPTION	UNIT	QUANTITY	MATERIAL		LABOR		TOTAL COST
			UNIT COST	AMOUNT	UNIT COST	AMOUNT	
MECHANICAL							
<u>DEMOLITION</u>							
WSHPUs	EA	28	50.00	\$1,400.00	500.00	\$14,000.00	\$15,400.00
<u>NEW WORK</u>							
<u>Equipment</u>							
WSHPU, 2-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	1	3,250.00	\$3,250.00	\$1,000.00	\$1,000.00	\$4,250.00
WSHPU, 3-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	8	3,750.00	\$30,000.00	\$1,000.00	\$8,000.00	\$38,000.00
WSHPU FCU, 4-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	2	4,000.00	\$8,000.00	\$1,000.00	\$2,000.00	\$10,000.00
WSHPU FCU, 5-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	8	4,250.00	\$34,000.00	\$2,000.00	\$16,000.00	\$50,000.00
WSHPU FCU, 6-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	8	5,500.00	\$44,000.00	\$2,000.00	\$16,000.00	\$60,000.00
WSHPU FCU, 8-Ton, Ducted, High Static, w/ drain pan & leak detection	EA		7,500.00		\$2,000.00		
WSHPU FCU, 10-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	1	8,000.00	\$8,000.00	\$2,000.00	\$2,000.00	\$10,000.00
Space Thermostats/Controllers	EA	28	500.00	\$14,000.00	300.00	\$8,400.00	\$22,400.00
<u>Piping</u>							
Copper, 1", Type L, Soldered, w/ Clevis Hangers	LF	140	7.80	\$1,092.00	8.80	\$1,232.00	\$2,324.00
Copper, 1 1/2", Type L, Soldered, w/ Clevis Hangers	LF	140	13.75	\$1,925.00	11.50	\$1,610.00	\$3,535.00
Copper, 2", Type L, Soldered, w/ Clevis Hangers	LF		22.00		14.20		
Copper, 3", Type L, Soldered, w/ Clevis Hangers	LF		47.50		19.20		
Steel, 4", SCH 40, Insulated, w/ Roller Hangers	LF		60.00		32.00		
Steel, 6", SCH 40, Welded, w/ Roller Hangers	LF		100.00		50.00		
Valves, Fittings, & Accessories	%	50%		\$1,508.50		\$1,421.00	\$2,929.50
<u>Ductwork</u>							
Galvanized Duct, 1" Pressure Class,	SF	1,344	6.00	\$8,064.00	6.90	\$9,273.60	\$17,337.60
Fittings, & Accessories	%	25%		\$2,016.00		\$2,318.40	\$4,334.40
<u>Insulation</u>							

PROJECT	EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR		EBL Project No.: 25061.000				
			SUBMISSION DATE: 12/11/2025				
			STATUS OF PROJECT LCCA Report Submission				
ITEM DESCRIPTION	UNIT	QUANTITY	MATERIAL		LABOR		TOTAL COST
			UNIT COST	AMOUNT	UNIT COST	AMOUNT	
Pipe Insulation							
1" on 1" Pipe, Fiberglas w/ ASJ	LF	140	3.00	\$420.00	5.00	\$700.00	\$1,120.00
1" on 1 1/2" Pipe, Fiberglas w/ ASJ	LF	140	3.50	\$490.00	5.00	\$700.00	\$1,190.00
1 1/2" on 2" Pipe, Fiberglas w/ ASJ	LF		4.50		5.00		
1 1/2" on 3" Pipe, Fiberglas w/ ASJ	LF		5.50		5.00		
2" on 4" Pipe, Fiberglas w/ ASJ	LF		11.00		7.50		
2" on 6" Pipe, Fiberglas w/ ASJ	LF		15.00		10.00		
Valves, Fittings, & Accessories	%	25%		\$227.50		\$350.00	\$577.50
Aluminum Jacket, Anodized, SS Hardware	%	15%		\$136.50		\$210.00	\$346.50
Duct Insulation							
2", R-6, Fiberglass, FSK	SF	1,344	1.00	\$1,344.00	3.50	\$4,704.00	\$6,048.00
3", R-8, Fiberglass, FSK	SF		1.50		3.75		
Fittings & Accessories	%	25%		\$336.00		\$1,176.00	\$1,512.00
Controls							
DDC Controls and Programming	POINTS	28	250.00	\$7,000.00	1,000.00	\$28,000.00	\$35,000.00
Control Valves & Actuators	EA	28	400.00	\$11,200.00	150.00	\$4,200.00	\$15,400.00
Miscellaneous							
Testing Adjusting and Balancing (TAB)	%	5.0%				\$9,732.50	\$9,732.50
Concrete Equipment Pad 6", Reinforced, Turndown Footings	SF		35.00		15.00		
Miscellaneous Excavation & Site Repair	SF		5.00		15.00		
Electric Heat Trace for Piping	LF		15.00		5.50		
Exterior Pipe Supports, 18" Reinforced Concrete Pier, Galv. Steel Structure	EA		1,500.00		500.00		
20% Environol Solution	Gallons		2.85		0.35		
ELECTRICAL							
DEMOLITION							

Public Safety Building – GSHP vs. VRF Life Cycle Cost Analysis
EBL Engineers, LLC
December 11, 2025



VRF System Cost Estimate

PROJECT	EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR		EBL Project No.: 25061.000				
			SUBMISSION DATE: 12/11/2025				
			STATUS OF PROJECT LCCA Report Submission				
ITEM DESCRIPTION	UNIT	QUANTITY	MATERIAL		LABOR		TOTAL COST
			UNIT COST	AMOUNT	UNIT COST	AMOUNT	
MECHANICAL							
<u>DEMOLITION</u>							
WSHPUs	EA	28	50.00	\$1,400.00	500.00	\$14,000.00	\$15,400.00
<u>NEW WORK</u>							
<u>Equipment</u>							
VRF HPU, 32 Ton (Nominal), Heat Recovery, Low Ambient, DDC i/o	EA	3	48,000.00	\$144,000.00	9,650.00	\$28,950.00	\$172,950.00
VRF FCU, 2-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	1	3,000.00	\$3,000.00	850.00	\$850.00	\$3,850.00
VRF FCU, 3-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	8	4,000.00	\$32,000.00	840.00	\$6,720.00	\$38,720.00
VRF FCU, 4-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	2	4,500.00	\$9,000.00	840.00	\$1,680.00	\$10,680.00
VRF FCU, 5-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	8	6,000.00	\$48,000.00	840.00	\$6,720.00	\$54,720.00
VRF FCU, 6-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	8	6,500.00	\$52,000.00	840.00	\$6,720.00	\$58,720.00
VRF FCU, 8-Ton, Ducted, High Static, w/ drain pan & leak detection	EA	1	7,000.00	\$7,000.00	840.00	\$840.00	\$7,840.00
VRF System Branc Controllers, Thermostats, Web-Enabled Controls	EA	28	1,500.00	\$42,000.00	300.00	\$8,400.00	\$50,400.00
<u>Piping</u>							
Refrigerant Pipe, 3/8", Type-L ACR, Brazed, w/ Hangers	LF		2.75		6.85		
Refrigerant Pipe, 1/2", Type-L ACR, Brazed, w/ Hangers	LF	900	3.00	\$2,700.00	7.10	\$6,390.00	\$9,090.00
Refrigerant Pipe, 5/8", Type-L ACR, Brazed, w/ Hangers	LF	900	4.00	\$3,600.00	7.35	\$6,615.00	\$10,215.00
Refrigerant Pipe, 7/8", Type-L AC, Brazed, w/ Hangers	LF		6.00		8.55		
Refrigerant Pipe, 1 1/8", Type-L AC, Brazed, w/ Hangers	LF	900	8.00	\$7,200.00	9.95	\$8,955.00	\$16,155.00
Refrigerant Pipe, 1 1/4", Type-L AC, Brazed, w/ Hangers	LF		14.00		9.95		
Refrigerant Pipe, 1 3/8", Type-L AC, Brazed, w/ Hangers	LF		16.00		11.05		
Refrigerant Pipe, 1 5/8", Type-L AC, Brazed, w/ Hangers	LF	600	18.00		11.05	\$6,630.00	\$6,630.00
Refrigerant Pipe, 2 5/8", Type-L AC, Brazed, w/ Hangers	LF	600	30.00		17.00		
Valves, Fittings, & Accessories	%	25%		\$3,375.00		\$7,147.50	\$10,522.50
<u>Ductwork</u>							

PROJECT	EBL ENGINEERS, LLC.				EBL Project No.: 25061.000					
	The Professional Engineering Center				SUBMISSION DATE:					
	8005 Harford Road				12/11/2025					
Public Safety Building, Cambridge, MD VRF System				Baltimore, Maryland 21234-5701				STATUS OF PROJECT		
				PREPARED BY: JSR				LCCA Report Submission		
ITEM DESCRIPTION	UNIT	QUANTITY	MATERIAL		LABOR		TOTAL COST			
			UNIT COST	AMOUNT	UNIT COST	AMOUNT				
Galvanized Duct, 1" Pressure Class,	SF	1,344	6.00	\$8,064.00	6.90	\$9,273.60	\$17,337.60			
Fittings, & Accessories	%	50%		\$4,032.00		\$4,636.80	\$8,668.80			
<u>Insulation</u>										
<u>Pipe Insulation</u>										
1/2" Thickness, 1 1/2" and Smaller Pipe, Closed Cell Foam	LF	3300	1.35	\$4,455.00	2.00	\$6,600.00	\$11,055.00			
1" Thickness, 2" and Larger Pipe, Closed Cell Foam	LF	600	10.85	\$6,510.00	6.40	\$3,840.00	\$10,350.00			
Valves, Fittings, & Accessories	%	25%		\$2,741.25		\$2,610.00	\$5,351.25			
Aluminum Jacket, Anodized, SS Hardware	%	15%		\$1,644.75		\$1,566.00	\$3,210.75			
<u>Duct Insulation</u>										
2", R-6, Fiberglass, FSK	SF	1,344	1.00	\$1,344.00	3.50	\$4,704.00	\$6,048.00			
3", R-8, Fiberglass, FSK	SF		1.50		3.75					
Fittings & Accessories	%	25%		\$336.00		\$1,176.00	\$1,512.00			
<u>Controls</u>										
DDC Controls and Programming	POINTS	12	250.00	\$3,000.00	1,000.00	\$12,000.00	\$15,000.00			
Control Valves & Actuators	EA	2	2,000.00	\$4,000.00	2,500.00	\$5,000.00	\$9,000.00			
Refrigerant Detection Ssystem	LS									
<u>Miscellaneous</u>										
Testing Adjusting and Balancing (TAB)	%	2.0%				\$7,957.60	\$7,957.60			
Concrete Equipment Turndown Pad, 6", Reinforced	SF	200	35.00	\$7,000.00	15.00	\$3,000.00	\$10,000.00			
Miscellaneous Excavation	SF									
Micellaneous Mechanical	LS									
ELECTRICAL										

ITEM DESCRIPTION			MATERIAL		LABOR		TOTAL COST
	UNIT	QUANTITY	UNIT COST	AMOUNT	UNIT COST	AMOUNT	
	PROJECT						
Public Safety Building, Cambridge, MD VRF System		EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR			EBL Project No.: 25061.000 SUBMISSION DATE: 12/11/2025 STATUS OF PROJECT LCCA Report Submission		
DEMOLITION							
Demolish existing HPU circuits to soruce VRF FCU Circuits,	EA	28	150.00	\$4,200.00	400.00	\$11,200.00	\$15,400.00
NEW WORK							
VRF HPU Circuit, 70A, 480v, 3-phase, Inc. OCPD, Conductors, Rigid Conduit, & NEMA 3R Fused Safety Switch	EA	6	5,250.00	\$31,500.00	3,600.00	\$21,600.00	\$53,100.00
VRF FCU Circuits, 208v, 1-phase, 20A, Inc. OCPD, Conductors, EMT Conduit, Motor Rated Safety Switch	EA	28	425.00	\$11,900.00	500.00	\$14,000.00	\$25,900.00
Load Center, 200A, 60 Pole, 120/208,	EA	2	2,500.00	\$5,000.00	600.00	\$1,200.00	\$6,200.00
Transformer, Dry Type, 75 kVA, 460v to 208/120v	EA	2	4,000.00	\$8,000.00	1,200.00	\$2,400.00	\$10,400.00
XFMR Branch Circuit, 200A, Inc. OCPD, Conductors, Rigid Conduit & NEMA 1 Safety Switch	EA	1	4,000.00	\$4,000.00	1,800.00	\$1,800.00	\$5,800.00
200A Load Center, Inc. Conductors, Rigid Conduit & Safety Switch	EA	1	6,500.00	\$6,500.00	6,550.00	\$6,550.00	\$13,050.00
Miscellaneous Electrical	LS	1	5,000.00	\$5,000.00	6,000.00	\$6,000.00	\$11,000.00

Public Safety Building – GSHP vs. VRF Life Cycle Cost Analysis
EBL Engineers, LLC
December 11, 2025



VRF System End Of Life Component Replacement Cost Estimate

ITEM DESCRIPTION			MATERIAL		LABOR		TOTAL COST
	UNIT	QUANTITY	UNIT COST	AMOUNT	UNIT COST	AMOUNT	
	PROJECT						
Public Safety Building, Cambridge, MD VRF System End of Life Replacement		EBL ENGINEERS, LLC. The Professional Engineering Center 8005 Harford Road Baltimore, Maryland 21234-5701 PREPARED BY: JSR			EBL Project No.: 25061.000 SUBMISSION DATE: 12/11/2025 STATUS OF PROJECT LCCA Report Submission		
MECHANICAL							
<u>DEMOLITION</u>							
WSHPUs	EA		50.00		500.00		
<u>NEW WORK</u>							
<u>Equipment</u>							
VRF HPU, 32 Ton (Nominal), Heat Recovery, Low Ambient, DDC i/o	EA	3	48,000.00	\$144,000.00	9,650.00	\$28,950.00	\$172,950.00
<u>Piping</u>							
Refrigerant Pipe, 1 5/8", Type-L AC, Brazed, w/ Hangers	LF	50	18.00		11.05	\$552.50	\$552.50
Refrigerant Pipe, 2 5/8", Type-L AC, Brazed, w/ Hangers	LF	50	30.00		17.00		
Valves, Fittings, & Accessories	%	25%				\$138.13	\$138.13
<u>Miscellaneous</u>							
Testing Adjusting and Balancing (TAB)	%	2.0%				\$3,459.00	\$3,459.00



COUNCIL AGENDA REPORT

To: The Honorable Commissioners of Cambridge
From: Andrew Koslow, Environmental Program Manager
Date: February 19, 2026
Subject: Award of Contract for Trenton St. Pump Station Construction Bid
Recommendation: Commissioners award the Construction to Retallack and Sons, Inc. and construction oversight to GMB.

Please find below an update for the City Commissioners regarding the Trenton Street Pumping Station reconstruction project, with a recommendation to accept the low bid.

Background

The Trenton Street sewage pumping station, which serves most of the City's core, is nearly 90 years old and was last upgraded 40 years ago, well beyond its expected service life. In September 2025, the City contracted with George, Miles & Buhr (GMB) to provide engineering services in the absence of a full-time City Engineer.

In October 2025, the City received notification from the Maryland Department of the Environment (MDE) approving a favorable financing package for the pump station renovation: a low-interest loan of \$4,689,765 plus \$2,512,235 in loan principal forgiveness (see attached award notification).

Procurement Process

GMB advertised the project for bids in December 2025. A bid opening was held on December 22, 2025, at the Department of Public Works with representatives from all four bidding companies present. On January 7, 2026, GMB issued a Bid Award Recommendation letter recommending the City accept the bid submitted by Retallack and Sons (attached).

Bid Results

The City received four bids:

- Retallack and Sons: \$6,355,000 (low bidder)
- Chesapeake Turf, LLC (Salisbury): \$8,535,100 (second lowest)
- M2 Construction, LLC \$8,916,747.00
- W.M. Schlosser \$9,488,850.00

Recommendation

Staff recommends the Commissioners:

1. Award the construction contract to Retallack and Sons in the amount of \$6,355,000
2. Authorize execution of the 20-year, low-interest loan agreement with MDE
3. Approve a contract with GMB for construction oversight services in the amount of \$373,504 to ensure the project is constructed according to design specifications and minimize potential change orders

Attachments

- MDE Award Notification Letter
- GMB Bid Award Recommendation Letter (January 7, 2026)
- Capital Asset Request forms from George Hyde (2022) and Bucky Jackson (2025)

Fiscal Impact: 20 year low interest loan.

Equity Impact: N/A

Environmental Impact: N/A

Approved by: Glenn Steckman, City Manager



MEMORANDUM

To: Drew Koslow, City of Cambridge (via email)

From: Adriana Caldarelli, MD Water Infrastructure Financing Administration Director

Date: October 14, 2025

Subject: Notification of Reallocated Water Quality State Revolving Fund (WQSRF) Funding

The Maryland Water Infrastructure Financing Administration (MWIFA) has agreed to re-allocate funding from your project “Cambridge Creek Interceptor Sewer Rehabilitation” to another project, “Trenton Street Sewage Pumping Station Rehabilitation.” The project’s new, total amount of funding provided by the WQSRF is as follows:

Project Name: Trenton Street Sewage Pumping Station Rehabilitation		
Program	Loan	Loan Principal Forgiveness
WQSRF Base Funds	\$3,189,765	\$0
WQSRF IIA General Supplemental Funds	\$1,500,000	\$ 2,512,235
Total	\$4,689,765	\$2,512,235

This is not a commitment to lend. Final loan and loan principal forgiveness amounts will be determined based on the MWIFA-approved project budget. All programmatic requirements MUST be completed and BPW approval received prior to receiving any SRF funding.

Please be aware of the following:

- Loan term is up to 30 years, not to exceed the useful project life as determined by the State.
- Interest rates are calculated each month, based on the average Bond Buyer 11-Bond Index (BB11-BI), with the Standard Rate equal to 50% of the average BB11-BI; the Disadvantaged Community interest rate is equal to 25% of the average BB11-BI. The interest rate for the project(s) listed above will be set based on the BB11-BI of the month preceding the loan closing. For loans that closed in Fiscal Year 2025, the Standard Rate ranged from 1.90% to 2.50% and the Disadvantaged Community Rate ranged from 0.90% to 1.00%.
- The Administrative Fee is 5% of the total debt service divided by the total number of scheduled Administrative Fee payments, collected in equal annual installments over the life of the loan.

¹ MWIFA may provide additional loan funding for the project if the need arises and as capacity allows.

Additionally, please note that the demand for SRF funding is extremely high; therefore, certain prerequisites must be met to successfully finance your capital project:

- **Programmatic Requirements:** please read the attached document closely which itemizes necessary steps that must be completed prior to loan closing.
- **Timeline:** The project(s) identified for funding in this letter is required to begin construction by no later than the end of December 2026 in accordance with the application you submitted.
- **Delays:** If you experience a delay beyond December 2026, you are required to notify MWIFA and provide a justification with a revised schedule. MWIFA reserves the right in the case of prolonged delays to reprogram any funding programmed in this letter toward faster moving projects. Recipients will be notified if funds are reprogrammed and recipients can reapply in future funding cycles for any funds lost.
- **Underwriting:** MWIFA is required to review the borrower's financial condition to determine sufficient ability to repay debt on any loan(s). Please provide the three (3) most recent years of audited financial statements, a schedule of water and sewer rates, any relevant information regarding debt commitments or factors that impact the borrowing entity's financial condition, and the dedicated source(s) of revenue for repayment for SRF financing of the project(s) to MWIFA's underwriter Mr. Gerald Gorham, Jr., via email at gerald.gorham@maryland.gov
- **Point of Contact:** The MWIFA SRF Funding Coordinator for the project(s) listed above is MiYarnie Johnson; please contact him at miyarnie.johnson@maryland.gov with any questions or concerns regarding this letter, the attached programmatic requirements, and/or the funding process. Please notify your funding coordinator as soon as possible if you choose to decline the SRF funding.

We look forward to working with you on this important capital project. Please reach out if you have any questions or we can assist you at any point during the financing process.

Enclosure: Programmatic Requirements

Cc: Glen Steckman, City Manager, City of Cambridge
George Hyde, City Engineer, City of Cambridge
Brandon Hesson, Economic Development Division, City of Cambridge
Paul Emmart and MiYarnie Johnson, MWIFA Capital Planning & Finance Division
Manith Hang, MWIFA Accounting Unit
Tonya Randall and Olubukola Adeyemi, MWIFA Capital Programs Contract Division
Gerald Gorham, Jr., MWIFA Underwriting
Walid Saffouri, Mehdi Majedi, Sunita Boyle, and Stephen Liu, Engineering and Capital Projects Program
Mary R. Sheppard and Rebecca B. Reske, MD Office of the Attorney General



**TRENTON STREET SEWAGE PUMPING STATION
REHABILITATION - REBID**

CITY OF CAMBRIDGE, MARYLAND

Construction Bid Approval Package



City of Cambridge
410 Academy Street
Cambridge, MD 21613

JANUARY 2026

GMB FILE NO. 210260.B

GMB

GEORGE, MILES & BUHR, LLC

ARCHITECTS/ENGINEERS

206 WEST MAIN STREET
SALISBURY, MD 21801
410.742.3115

SALISBURY/BALTIMORE/SEAFORD



Funding Agency Bid Procurement Package

Documents Included:

- No. 1 Project Cost Summary/Budget
- No. 2 Evidence of Advertisement
- No. 3 Certified Bid Tabulation
- No. 4 Prime Contractor Bid Bond
- No. 5 Recommendation for Award
- No. 6 Selected Proposal
- No. 7 Certification for all ROWs and/or Easements
- No. 8 Assurances for Compliance with Federal Laws and Regulations Form
- No. 9 Statement Regarding Construction Phase Engineering
- No. 10 Drawdown Plan
- No. 11 Small, Minority and Women's Business Enterprise Participation

PROJECT BUDGET SUMMARY

Category	Total Project	WQSRF IIJA General Supplemental Funds w/PF	WQSRF Base Funds	Local Funding
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1. <u>Construction</u>				
Contract No.	\$6,355,000	\$4,012,235	\$2,342,765	\$
Contract No.				
Force Account				
Later Contracts				
	\$	\$	\$	\$
2. <u>Technical Services</u>				
A/E Bidding, DSDC, & CMI	\$ 373,504	\$	\$	\$ 373,504
3. <u>Equipment/Miscellaneous</u>				
	\$	\$	\$	\$
4. <u>Administrative / Legal / Fiscal (3%)</u>				
	\$190,650	\$	\$ 190,650	\$
5. <u>Land / Other</u>				
	\$	\$	\$	\$
6. <u>Contingency (5%)</u>				
	\$317,750	\$	\$ 317,750	\$

TOTALS	\$7,236,904	\$4,012,235	\$3,189,765	\$ 373,504
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Prepared By 	Date 2-9-2026
Name and Title: Chris Derbyshire, P.E. Project Director/GMB	

7/00

Updated: 7/1/00

2.0 Evidence of Advertisement

- Star Democrat, Talbot County, MD: Affidavit/Tear Sheet
- List of Contractors - Received Bid Advertisement Via Email
- List of MBE/DBE Contractors - Received Bid Advertisement Via Email

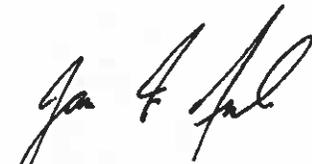
29088 Airpark Drive
Easton, MD 21601

CERTIFICATE OF PUBLICATION

STATE OF : MARYLAND
COUNTY OF: Talbot County

This is to certify that the annexed legal advertisement has been published in the publications and insertions listed below. "TRENTON STREET SEWAGE PUMPING STATION..." was published in the:

The Star Democrat 11/08/25
The Star Democrat 11/12/25



James F. Normandin
President & Publisher

**ADVERTISEMENT FOR BIDS
TRENTON STREET SEWAGE PUMPING STATION REHABILITATION**

Sealed bids for the Trenton Street Sewage Pumping Station Rehabilitation will be received by the Commissioners of Cambridge at the Office of the City Engineer, 1025 Washington Street, Cambridge, Maryland 21613 until 2:00 PM local time on Friday, December 12, 2025, at which time the Bids received will be publicly opened and read aloud.

Work consists of the construction of a new precast, post-tensioned wet well on an existing pumping station site, inclusive of pumps, mechanical piping, yard piping, vault structures, modifications to existing structures on site, renovations to an existing influent screen structure, a new wet well canopy structure, traveling bridge crane, odor control system, and all other appurtenant electrical, site, and appurtenant improvements depicted within the Contract Documents.

The Issuing Office for the Bidding Documents is GEORGE, MILES & BUHR, LLC, 206 West Main Street, Salisbury, Maryland, (410) 742-3115. Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 8:00 AM to 5:00 PM and may obtain copies of the Bidding Documents from the Issuing Office as described below.

Bidding Documents may also be examined at the Office of the City Engineer located at 1025 Washington Street, Cambridge, Maryland 21613, (410) 228-1955, on Mondays through Fridays between the hours of 8:00 AM to 4:30 PM.

Copies of the Contract Documents may be purchased at the office of George, Miles & Buhr, LLC, 206 West Main Street, Salisbury, Maryland 21601, upon payment of Forty Dollars (\$40.00) for each flash drive, non-refundable. Hard copies may be purchased for Three Hundred Dollars (\$300.00). Please email shapiro@gmbl.net for coordination of purchase. Checks shall be made payable to George, Miles & Buhr, LLC. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

A pre-bid conference will be held at the City Council Chambers, 305 Gay Street on Thursday, November 20, 2025, at 10:00 AM local time to allow Contractors an opportunity to obtain information on the project from the Consulting Engineer and the Owner. A site visit will immediately follow the pre-bid conference. Attendance at the pre-bid conference is encouraged but is not mandatory.

Each bid must be accompanied by a Bid Bond payable to the Owner for five percent (5%) of the total amount of the bid. No bidder may withdraw his bid within one hundred (100) days after the actual date of the opening thereof.

Davis-Bacon Prevailing Wage Rates and Regulations will apply to this project. If Bidder intends to let any subcontracts for a portion of the work, Bidder shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services. For additional information, see Supplemental General Conditions Article 19.08.A and visit the MWQFA website: www.mds.state.md.us/wqfa.

Any contract or contracts awarded under this Advertisement for Bids will be funded through the Maryland Department of the Environment's (MDE) State Revolving Loan Fund (SRF). All requirements referenced in the SRF insert dated December 2024 will apply to this project.

This project is subject to compliance with American Iron and Steel (AIS).

The Commissioners of Cambridge reserve the right to reject any and all bids, and/or waive informalities or irregularities, and/or to accept or reject any item of any bid, as it may deem best for its interest. The bids will be evaluated, and award will be made to the lowest responsive, responsible bidder.

Commissioners of Cambridge
Cambridge, Maryland

3092854 SD 11/7,11/12/2025

**TRENTON STREET PUMP STATION REHABILITATION
CITY OF CAMBRIDGE
GMB FILE 210260.B**

Copy of the Advertisement for Bids shall be sent to the following Contractors on **Wednesday, November 5, 2025**

LIST OF CONTRACTORS

American Contracting & Environmental Services, Inc.
10330 Old Columbia Road
Suite 102
Columbia, MD 21046
Attn: Corey McCarthy
301-490-9100
Corey.mccarthy@aceservinc.com

Bearing Construction, Inc.
805 Shine Smith Road
Sudlersville, MD 21668-1561
Attn: Mr. Jim Merrell
410-556-6100
Jim@bearingconstruction.net

Conewago Enterprises, Inc.
660 Edgegrove Road
Hanover, PA 17331
Attn: Don Smith, Jr.
717-632-8240
dsmithjr@conewago.com

Dutchland, LLC
160 Rt. 41
Gap, PA 17527
717-442-8282
info@dutchlandinc.com

Hopkins Construction, Inc.
18904 Maranatha Way, Unit 1
Bridgeville, DE 19933
Attn: Sharon Kelley
302-337-3366
sharon@hopkins-inc.com

Lee Foundation Co. Inc.
10039 Pulaski Highway
Baltimore, MD 21220
410-682-5335
Attn: Andy Lapinski
wal2lipinski@comcast.net

American Infrastructure (Allan Myers)
1805 Berks Road
Worcester, PA 19490
Attn: Shannon Moody
410-893-2695
Shannon.Moody@allanmyers.com

Billbrough's Electric, Inc.
25289 Smith Landing Road
Denton, MD 21629
Attn: Keith Bilbrough
410-479-4215
keith@bilbroughelectric.com

Chesapeake Turf, LLC
5652 N Nithsdale Drive
Salisbury, MD 21801
Attn: Rick Mazol
302-922-1317
rick@chesapeaketurf.com

George & Lynch, Inc.
150 Lafferty Lane
Dover, DE 19901
Attn: Aaron Fibelkom
302-734-9743
afibelkom@geolvn.com

JJID, Inc.
100 Julian Lane
Bear, DE 19701
302-836-0414
Attn: Cody Brown
302-836-0414
cbrown@jjid.com

Lywood Electric
102 Frank Adams Industrial Way
Federalsburg, MD 21632
Attn: Scott White
410-754-8631
white@lywoodelectric.com

A-Del Construction Co., Inc.
10 Adel Drive
Newark, DE 19702-1331
Attn: Mr. Scott Whitt
302-453-8286
swhitt@a-del.com

Bunting and Murray Construction Corp.
32996 Lighthouse Road
Selbyville, DE 19975
Attn: Jay Murray
302-436-5144
jay@buntingandmurray.com

David A. Bramble, Inc.
705 Morgnec Road
P.O. Box 419
Chestertown, MD 21620
Attn: JR Felchock
dfelchock@davidabrambleinc.com

Godwin Pumps
221 Commerce Dr.
Upper Marlboro, MD 20774
Attn: Tom Vance
301-433-7032
tom.vance@xylem.com

Kuhn Construction
~~P.O. Box 1419~~
787 Valley Road
Heckessin, DE 19707-0141
Attn: Bill Kuhn
302-239-2816
wkuhniii@kuhnconstr.com

M2 Construction, LLC
891 Stony Battery Road
Landisville, PA 17538
Attn: Andrew Mattson
717-892-2048
andrew@m2constructionllc.com

Michael F. Ronca & Sons, Inc.
179 Mikron Road
Bethlehem, PA 18020
Attn: Jim Bergeman
610-759-5100
jbergeman@mfronca.com

Mack Industries, Inc.
201 Columbia Road
Valley City, OH 44280
800-482-3111 x6322
Attn: Jay Wieland
jwieland@mackconcrete.com

Micro-Tech Designs, Inc.
4312 Black Rock Road
Hampstead, MD 21074
410-239-2885
Attn: Cameron Farzanfar
cameron.farzanfar@microtechdesigns.com

Teal Construction, Inc.
612 Mary Street
Dover, DE 19904
Attn: Chad Reed
302-678-9500
CR1647@tealconstruction.com

Whiting Turner Contracting Co.
300 East Joppa Road
Baltimore, MD 21286
Attn: Andy Scherer
410-821-1100
andrew.scherer@whiting-turner.com

Mid-Eastern Builders Inc.
4016 Holland Blvd.
Chesapeake, VA 23323
Attn: Ms. Cindy Spain
757-487-5858
info@mebgc.com

Northeast Remsco Construction, Inc.
1333 Campus Parkway
Wall Township, NJ 07753
732-557-6100
engineering@northeastremSCO.com

T.K. Construction, Inc.
31812 Johnson Road
Salisbury, MD 21804
Attn: Tommy Klaverweiden
410-742-5684
tommy@tk-construction.com

Tudor Electric, Inc.
801 Ottis Drive
Dover, DE 19903
Attn: Patty Brough
302-736-1444
tudorelectric@comcast.net

Wickersham Construction
777 E Ross Street
Lancaster, PA 17604
Attn: Doug Cherry
717-397-5826
cherrydw@wickcon.com

Norair Engineering Corp.
337 Brightseat Road, Suite 200
Landover, MD 20785
Attn: Mr. Harvey Yeager
301-499-2202
morair@norair.com

Rain for Rent
7677 Rolling Mill Road
Baltimore, MD 21224
Attn:
410-282-3880
info@rainforrent.com

Thompson Pump
38190 Old Stage Road, Suite A
Delmar, DE 19940
Attn: Warren Dittfield
302-907-0292
wdittfield@thompsonpump.com

W.M. Schlosser Co. Inc.
2400 51st Place
Hyattsville, MD 20781
Attn: Candice Geter
301-773-1806
cgeter@wmschlosser.com

Riordan Materials Corporation
8712 Inwood Rd
Windsor Mill, MD
Attn: Tom Rainier
410-440-4411
trainier@riordanmat.com

Trenton Street Pump Station Rehabilitation - REBID
City of Cambridge, Maryland
GMB File No. 210260.B

DBE / MBE Firms Contacted:			
Company	Owner First	Owner Last	Email
AB Construction, Inc.	Krupal	Patel	marilu.tapia@abconstructioninc.com
ADS Construction Services	Angel	Munoz	adsconstructionserv@gmail.com
All Stars Contracting, LLC	Furqan M.	Ahmed	Furqan.a.allstarscontracting@gmail.com
Amerigal Construction Co., Inc.	Luis A.	Ezequiel	amerigalcc@gmail.com
Bizsolutions 360 Inc.	Peter	Nganga	petern@b360inc.com
C R Construction Group Inc.	Ernesto	Anibal Cruz Reyes	roberto.cruz@crconstructiongroup.com
Clinton Sewer Expert, Inc.	Francisco	Alarcon	aura@thecseinc.com
D & B Construction, Inc.	Duane	Pleasant	dbciduane@yahoo.com
Environ Civil Engineering Ltd.	Mufutau	Osoba	certifications@ece-ltd.com
FLB Contractors, Inc	Jose	Franco	ingridf@flbcontractors.com
Hopkins Construction Inc.	Joann	Hopkins	joann@hopkins-inc.com
J.M. Murphy Enterprises, Inc.	Jesse	Murphy	murphyjesse@aol.com
Reviera Enterprises, Inc.	Stans	Udhiri	ustan@reidrayco.com
Stella May Contracting, Inc.	Harley	Flack	harleyflack@stellamay.com
Agency			
Minority Business Development Administration			support@mbda.gov
National Association of Women's Business			tchagnon@nawbo.org

3.0 Certified Bid Tabulation



Tabulation of Bids

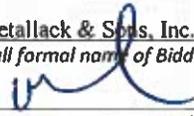
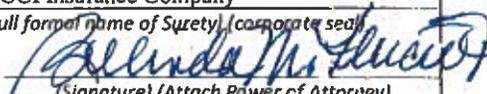
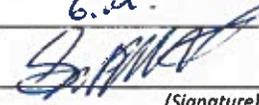
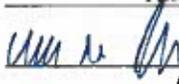
PROJECT NAME: Trenton St. Sewage Pumping Station
 Rehab, Cambridge MD
GMB JOB NO.: 210260.B
BIDS OPENED: December 19, 2025 @ 2:00 PM

Item No.	Bid Item Description	Size	Units	Est. Qty.	Retailack & Sons, inc.		M2 Construction, LLC		Chesapeake Turf		W.M. Schlosser	
					Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
SCHEDULE A: LUMP SUM BID ITEM												
A1	Mobilization/General Conditions (not exceeding 5% of Item No.A3)	-	LS	1	\$ 250,000.00	\$ 250,000.00	\$ 400,000.00	\$ 400,000.00	\$ 410,000.00	\$ 410,000.00	\$ 425,000.00	\$ 425,000.00
A2	Demolition and Disposal	-	LS	1	\$ 949,850.00	\$ 949,850.00	\$ 400,000.00	\$ 400,000.00	\$ 159,800.00	\$ 159,800.00	\$ 300,000.00	\$ 300,000.00
A3	Pump Station Rehabilitation	-	LS	1	\$ 5,000,000.00	\$ 5,000,000.00	\$ 8,116,747.00	\$ 8,116,747.00	\$ 7,726,400.00	\$ 7,726,400.00	\$ 8,763,850.00	\$ 8,763,850.00
SUBTOTAL SCHEDULE A - A1 THRU A3						\$ 6,199,850.00		\$ 8,916,747.00		\$ 8,296,200.00		\$ 9,488,850.00
SCHEDULE B: UNIT PRICE BID ITEMS												
B1	Excavation Below Subgrade	-	CY	200	\$ 38.00	\$ 7,200.00	\$ 25.00	\$ 5,000.00	\$ 150.00	\$ 30,000.00	\$ 150.00	\$ 30,000.00
B2	Furnish and Place Gravel Bedding	-	CY	200	\$ 55.00	\$ 11,000.00	\$ 85.00	\$ 17,000.00	\$ 150.00	\$ 30,000.00	\$ 162.00	\$ 32,400.00
B3	Furnish and Place Special Backfill	-	CY	200	\$ 100.00	\$ 20,000.00	\$ 95.00	\$ 19,000.00	\$ 50.00	\$ 10,000.00	\$ 162.00	\$ 32,400.00
B4	Miscellaneous Excavation and Backfill	-	CY	50	\$ 85.00	\$ 4,250.00	\$ 40.00	\$ 2,000.00	\$ 125.00	\$ 6,250.00	\$ 275.00	\$ 13,750.00
B5	Furnish and Place Miscellaneous 4,000 Concrete	-	CY	50	\$ 200.00	\$ 10,000.00	\$ 600.00	\$ 30,000.00	\$ 500.00	\$ 25,000.00	\$ 1,500.00	\$ 75,000.00
B6	Secure Modified Proctor Tests, AASHTO T-180, Method A	-	EA	2	\$ 550.00	\$ 1,100.00	\$ 3,000.00	\$ 6,000.00	\$ 600.00	\$ 1,200.00	\$ 1,800.00	\$ 3,600.00
B7	Secure Field Density Tests, AASHTO T-191	-	EA	10	\$ 360.00	\$ 3,600.00	\$ 3,000.00	\$ 30,000.00	\$ 350.00	\$ 3,500.00	\$ 1,400.00	\$ 14,000.00
SUBTOTAL SCHEDULE B - B1 THRU B7						\$ 57,150.00		\$ 109,000.00		\$ 105,950.00		\$ 201,150.00
SCHEDULE C: UNIT PRICE CONTINGENT BID ITEMS												
C1	Furnish and Place Low- Density Cellular Concrete	-	CY	140	\$ 700.00	\$ 98,000.00	\$ 725.00	\$ 101,500.00	\$ 945.00	\$ 132,300.00	\$ 700.00	\$ 98,000.00
SUBTOTAL SCHEDULE C						\$ 98,000.00		\$ 101,500.00		\$ 132,300.00		\$ 98,000.00
TOTAL BID PRICE - SCHEDULE A + B + C						\$ 6,355,000.00		\$ 9,127,247.00		\$ 8,534,450.00		\$ 9,788,000.00


 CERTIFIED BY: Christopher B. Derbyshire, P.E.

4.0 Prime Contractor Bid Bond

BID BOND (PENAL SUM FORM)

Bidder Retallack & Sons, Inc. Name: [Full formal name of Bidder] Address (principal place of business): [Address of Bidder's principal place of business] 8520 Swann Haven Road, Easton, MD 21601	Surety FCCI Insurance Company Name: [Full formal name of Surety] Address (principal place of business): [Address of Surety's principal place of business] 6300 University Parkway, Sarasota, FL 34240-8424
Owner Name: City of Cambridge, Maryland Address (principal place of business): P.O. Box 255 410 Academy Street Cambridge, MD 21613	Bid Project (name and location): Trenton Street Sewage Pumping Station Rehabilitation Cambridge, Maryland Bid Due Date: December 19, 2025 [Enter date bid is due]
Bond Penal Sum: [Amount] Five Percent of the Total Amount Bid (--5%--) Date of Bond: [Date] December 19, 2025	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder Retallack & Sons, Inc. (Full formal name of Bidder)	Surety FCCI Insurance Company (Full formal name of Surety) (Corporate Seal)
By:  (Signature)	By:  (Signature) (Attach Power of Attorney)
Name: <u>Rex P. Retallack</u> (Printed or typed)	Name: <u>Belinda M. Ferciot</u> (Printed or typed)
Title: <u>Gen. Mgr.</u>	Title: <u>Attorney-in-fact</u>
Attest:  (Signature)	Attest:  (Signature)
Name: <u>SPENCER RETALLACK</u> (Printed or typed)	Name: <u>Meredith N. Johnson</u> (Printed or typed)
Title: <u>OFFICE MANAGER</u>	Title: <u>Witness as to Surety</u>
Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.	

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by Owner, or
 - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.



GENERAL POWER OF ATTORNEY

Know all men by these presents: That the FCCI Insurance Company, a Corporation organized and existing under the laws of the State of Florida (the "Corporation") does make, constitute and appoint:

Belinda M. Ferciot; Reginald P. Jarvis; Michael E. Schendel; Courtney C. Seed; Debra L. Stewart; Brittany H. Ferciot; Andrew Porter

Each, its true and lawful Attorney-In-Fact, to make, execute, seal and deliver, for and on its behalf as surety, and as its act and deed in all bonds and undertakings provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the sum of (not to exceed \$20,000,000.00): \$20,000,000.00

This Power of Attorney is made and executed by authority of a Resolution adopted by the Board of Directors. That resolution also authorized any further action by the officers of the Company necessary to effect such transaction.

The signatures below and the seal of the Corporation may be affixed by facsimile, and any such facsimile signatures or facsimile seal shall be binding upon the Corporation when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached.

In witness whereof, the FCCI Insurance Company has caused these presents to be signed by its duly authorized officers and its corporate Seal to be hereunto affixed, this 23rd day of July, 2020.

Attest: Christina D. Welch
Christina D. Welch, President
FCCI Insurance Company



Christopher Shoucair
Christopher Shoucair,
EVP, CFO, Treasurer, Secretary
FCCI Insurance Company

State of Florida
County of Sarasota

Before me this day personally appeared Christina D. Welch, who is personally known to me and who executed the foregoing document for the purposes expressed therein.

My commission expires: 2/27/2027

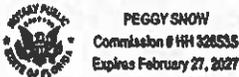


Peggy Snow
Notary Public

State of Florida
County of Sarasota

Before me this day personally appeared Christopher Shoucair, who is personally known to me and who executed the foregoing document for the purposes expressed therein.

My commission expires: 2/27/2027



Peggy Snow
Notary Public

CERTIFICATE

I, the undersigned Secretary of FCCI Insurance Company, a Florida Corporation, DO HEREBY CERTIFY that the foregoing Power of Attorney remains in full force and has not been revoked; and furthermore that the February 27, 2020 Resolution of the Board of Directors, referenced in said Power of Attorney, is now in force.

Dated this 19th day of December, 2025

Christopher Shoucair
Christopher Shoucair, EVP, CFO, Treasurer, Secretary
FCCI Insurance Company

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by Owner, or
 - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

5.0 Recommendation for Award

- Engineer's Recommendation of Award Letter**
- Owner's Concurrence of Award Recommendation**

••••

**ARCHITECTS
ENGINEERS**

206 WEST MAIN STREET
SALISBURY, MD 21801
PH: 410.742.3115
PH: 800.789.4462
salisbury@gmbnet.com

SALISBURY
BALTIMORE
SEAFORD
LEWES
OCEAN VIEW

www.gmbnet.com

••••

JAMES H. WILLEY, JR., P.E.
CHARLES M. O'DONNELL, III, P.E.
A. REGGIE MARINER, JR., P.E.
JAMES C. HOAGSON, P.E.
STEPHEN L. MARSH, P.E.
DAVID A. VANDERBEEK, P.E.
ROLAND E. HOLLAND, P.E.
JASON M. LYTLE, P.E.
CHRIS B. DERBYSHIRE, P.E.
MORGAN H. HELFRICH, AIA
KATHERINE J. MCALLISTER, P.E.
W. MARK GARDOCKY, P.E.
ANDREW J. LYONS, JR., P.E.

PETER A. BOZICK, JR., P.E.
JUDY A. SCHWARTZ, P.E.
W. BRICE FOXWELL, P.E.

JOHN E. BURNSWORTH, P.E.
VINCENT A. LUCIANI, P.E.
AUTUMN J. BURNS
CHRISTOPHER J. PFEIFER, P.E.
BENJAMIN K. HEARN, P.E.

January 7, 2026

City of Cambridge
1025 Washington Street
Cambridge, MD, 21613

Attn: Mr. Glenn Steckman
City Manager

Re: Trenton Street Sewage Pumping Station Rehabilitation
Bid Award Recommendation
GMB File No. 210260.B

Dear Mr. Steckman:

Bids for the referenced project were opened and read aloud publicly at the Office of the City Engineer at 2:00 P.M. on December 19, 2025. A total of four (4) bids were received from Contractors in Maryland and Pennsylvania. The total bid amount (Schedules A + B + C) ranged from \$6.35 million to \$9.78 million. A copy of the Certified Bid Tabulation is enclosed for your files.

The lowest bid was submitted by Retallack & Sons, Inc. of Easton, Maryland, with a Total Base Bid in the amount of \$6,355,000.00. The second lowest Total Base Bid was in the amount of \$8,535,100.00 and submitted by Chesapeake Turf, LLC. of Salisbury, Maryland.

GMB reviewed the Bids received and we offer the following comments:

- Retallack & Sons did not acknowledge the Addenda issued during the bidding period; however, all of the other bidders did.
- All Bidders provided the required bid bond.
- The low bid is approximately \$2,180,100 lower (25%) than the second lowest bid.
- Both W.M. Schlosser Company and Chesapeake Turf Bid the project previously in January 2025; due to funding challenges, both of these Bids were rejected.
- The Pump Station Rehabilitation Project is receiving State funds provided through the Maryland Department of the Environment; therefore, the project has DBE participation goals.
- Retallack & Son's supporting bid documentation indicates that they would provide 2.2% disadvantaged business enterprise participation for the project.

As indicated above, Retallack & Sons did not acknowledge Addenda 1 and 2 on the Bid form; however, Retallack & Sons has discussed this with GMB following the Bid opening and confirmed that it did in fact receive both Addenda. The *Assurances for Compliance with Federal Laws and Regulations* form they submitted confirms that they did utilize the correct Federal Wage rate General Decision Number included with Addenda 2. Additionally, the City's Bid advertisement affords ability to waive Bid informalities or irregularities, which GMB believes that failing to acknowledge Addenda on the Bid form qualifies as.

Focus was placed on Retallack & Sons' recent work performance, as they were the apparent low bidder. As GMB does not have prior working experience with this contractor, emphasis was placed on feedback from Owners and its representatives on Retallack & Sons' prior work. Retallack and Sons has recently completed projects which include the Royal Oak Pump Station Upgrade in Talbot County and the construction of Pumping Station No. 1 and No. 2 for the Lakeside at Trappe development. Feedback provided to GMB from these representatives was favorable towards Retallack & Sons' performance.

Retallack and Sons also listed George Hyde, P.E., former City Engineer for the City of Cambridge, as a reference for their work and capabilities. GMB spoke with Mr. Hyde regarding Retallack and Sons' previous performance. Mr. Hyde spoke favorably of the contractor and indicated that they have been one of the City's "go-to" contractors for emergency utility work for many years.

For the reasons stated above, Retallack & Sons, Inc. was found to be the lowest responsive, responsible bidder. Accordingly, GMB recommends that the City of Cambridge award construction of the Trenton Street Sewage Pumping Station Rehabilitation Project to Retallack & Sons, Inc. for a total award amount of Six Million Three Hundred Fifty-Five Thousand Dollars (\$6,355,000.00), contingent on MDE's approval of the Construction Bid Approval Package.

We routinely recommend that the City's attorney review the bid documents. If the City concurs with our recommendation, please prepare an appropriate letter of concurrence and intent to award.

If you need additional information, or if you would like to discuss any of these matters further, please do not hesitate to call the office at 410.742.3115 or contact me at jhibschman@gmbnet.com.

Thank you.

Sincerely,



John T. Hibschan
Graduate Engineer

JTH/slh

Enclosures:

Certified Bid Tabulation

cc: City of Cambridge
Attn: Andrew Koslow (w/encl.)



Tabulation of Bids

PROJECT NAME: Tranton St. Sewage Pumping Station
Rehab, Cambridge MD
 GMB JOB NO.: 210260.B
 BIDS OPENED: December 19, 2025 @ 2:00 PM

Item No	Bid Item Description	Size	Units	Est. Qty.	Retalack & Sons, Inc.		M2 Construction, LLC		Chesapeake Turf		W.M. Schlosser	
					Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
SCHEDULE A: LUMP SUM BID ITEM												
A1	Mobilization/General Conditions (not exceeding 5% of Item No.A3)	-	LS	1	\$ 250,000.00	\$ 250,000.00	\$ 400,000.00	\$ 400,000.00	\$ 410,000.00	\$ 410,000.00	\$ 425,000.00	\$ 425,000.00
A2	Demolition and Disposal	-	LS	1	\$ 949,850.00	\$ 949,850.00	\$ 400,000.00	\$ 400,000.00	\$ 159,800.00	\$ 159,800.00	\$ 300,000.00	\$ 300,000.00
A3	Pump Station Rehabilitation	-	LS	1	\$ 5,000,000.00	\$ 5,000,000.00	\$ 8,116,747.00	\$ 8,116,747.00	\$ 7,726,400.00	\$ 7,726,400.00	\$ 8,763,850.00	\$ 8,763,850.00
SUBTOTAL SCHEDULE A - A1 THRU A3						\$ 6,199,850.00		\$ 8,916,747.00		\$ 8,296,200.00		\$ 9,488,850.00
SCHEDULE B: UNIT PRICE BID ITEMS												
B1	Excavation Below Subgrade	-	CY	200	\$ 36.00	\$ 7,200.00	\$ 25.00	\$ 5,000.00	\$ 150.00	\$ 30,000.00	\$ 150.00	\$ 30,000.00
B2	Furnish and Place Gravel Bedding	-	CY	200	\$ 55.00	\$ 11,000.00	\$ 85.00	\$ 17,000.00	\$ 150.00	\$ 30,000.00	\$ 162.00	\$ 32,400.00
B3	Furnish and Place Special Backfill	-	CY	200	\$ 100.00	\$ 20,000.00	\$ 95.00	\$ 19,000.00	\$ 50.00	\$ 10,000.00	\$ 162.00	\$ 32,400.00
B4	Miscellaneous Excavation and Backfill	-	CY	50	\$ 85.00	\$ 4,250.00	\$ 40.00	\$ 2,000.00	\$ 125.00	\$ 6,250.00	\$ 275.00	\$ 13,750.00
B5	Furnish and Place Miscellaneous 4,000 Concrete	-	CY	50	\$ 200.00	\$ 10,000.00	\$ 600.00	\$ 30,000.00	\$ 500.00	\$ 25,000.00	\$ 1,500.00	\$ 75,000.00
B6	Secure Modified Proctor Tests, AASHTO T-180, Method A	-	EA	2	\$ 550.00	\$ 1,100.00	\$ 3,000.00	\$ 6,000.00	\$ 600.00	\$ 1,200.00	\$ 1,800.00	\$ 3,600.00
B7	Secure Field Density Tests, AASHTO T-191	-	EA	10	\$ 360.00	\$ 3,600.00	\$ 3,000.00	\$ 30,000.00	\$ 350.00	\$ 3,500.00	\$ 1,400.00	\$ 14,000.00
SUBTOTAL SCHEDULE B - B1 THRU B7						\$ 57,150.00		\$ 109,000.00		\$ 105,950.00		\$ 201,150.00
SCHEDULE C: UNIT PRICE CONTINGENT BID ITEMS												
C1	Furnish and Place Low-Density Cellular Concrete	-	CY	140	\$ 700.00	\$ 98,000.00	\$ 725.00	\$ 101,500.00	\$ 945.00	\$ 132,300.00	\$ 700.00	\$ 98,000.00
SUBTOTAL SCHEDULE C						\$ 98,000.00		\$ 101,500.00		\$ 132,300.00		\$ 98,000.00
TOTAL BID PRICE - SCHEDULE A + B + C						\$ 6,355,000.00		\$ 9,127,247.00		\$ 8,534,450.00		\$ 9,788,000.00


 CERTIFIED BY: Christopher B. Derbyshire, P.E.

6.0 Selected Proposal:
Retallack & Sons, Inc.

DIVISION 00 – BIDDING AND CONTRACT REQUIREMENTS

SECTION 00410 – BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

**COMMISSIONERS OF CAMBRIDGE
ATTN: CITY ENGINEER
1025 WASHINGTON STREET
CAMBRIDGE, MD 21613**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

- A. Required Bid security;
- B. List of Proposed Subcontractors;
- C. List of Proposed Suppliers;
- D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
- E. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;
- F. Required Bidder Qualification Statement with supporting data; and
- G. [List other documents and edit above as pertinent].

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 *Lump Sum Bids*

- A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s), together with any Unit Prices indicated in Paragraph 3.02:

SCHEDULE A –LUMP SUM PRICES BID

ITEM NO.	DESCRIPTION	UNIT	EST QTY	BID PRICE
A1	Mobilization/General Conditions (not exceeding 5% of Item No. A3)	Lump Sum	1	\$ 250,000.00
A2	Demolition and Disposal	Lump Sum	1	\$ 949,850.00
A3	Pump Station Rehabilitation	Lump Sum	1	\$ 5,000,000.00
Subtotal Schedule A				\$ 6,199,850.00

3.02 *Unit Price Bids*

A. Bidder will perform the following Work at the indicated unit prices:

SCHEDULE B –UNIT PRICE CONTINGENT BID

ITEM NO.	DESCRIPTION	SIZE	UNIT	EST QTY	BID UNIT PRICE	ESTIMATED BID PRICE
B1	Excavation Below Subgrade	--	CY	200	\$ 36	\$ 7,200.00
B2	Furnish and Place Gravel Bedding	--	CY	200	\$ 55	\$ 11,000.00
B3	Furnish and Place Special Backfill	--	CY	200	\$ 100	\$ 20,000.00
B4	Miscellaneous Excavation and Backfill	--	CY	50	\$ 85	\$ 4,250.00
B5	Furnish and Place Miscellaneous 4,000 Concrete	--	CY	50	\$ 200	\$ 10,000.00
B6	Secure Modified Proctor Tests, AASHTO T-180, Method A	--	EA	2	\$ 550	\$ 1,100.00
B7	Secure Field Density Tests, AASHTO T-191	--	EA	10	\$ 360	\$ 3,600.00
Subtotal Schedule B						\$ 57,150.00

SCHEDULE C –UNIT PRICE BID

ITEM NO.	DESCRIPTION	SIZE	UNIT	EST QTY	BID UNIT PRICE	ESTIMATED BID PRICE
C1	Furnish and Place Low-Density Cellular Concrete	--	CY	140	\$ 700	\$ 98,000.00
Subtotal Schedule C						\$ 98,000.00

EJCDC® C-410, Bid Form for Construction Contract.

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B. Bidder acknowledges that:

1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and
2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

3.03 *Total Bid Price (Lump Sum and Unit Prices)*

Total Bid Price (Total of Schedule A + B + C)	\$ 6,355,000.00
Six Million Three Hundred Fifty Five Thousand	Dollars \$(6,355,000.00)

~~ARTICLE 4—BASIS OF BID—COST PLUS FEE DELETED.~~

~~ARTICLE 5—PRICE PLUS TIME BID DELETED.~~

ARTICLE 6—TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Deleted.
- 6.03 Deleted.
- 6.04 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

7.01 *Bid Acceptance Period*

- A. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

7.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

7.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date
Addenda 1 thru 4	Previously Issued

From: John T. Hibschan
Sent: Tuesday, February 10, 2026 6:58 AM
To: Sheryll L. Harrold
Cc: Chris B. Derbyshire
Subject: FW: Trenton St Pump Station Apparent Low Bidder
Attachments: Trenton Pumping Stations Answers.docx

Sheryll,

The email below is what we need to insert into their bid to show they acknowledged both Addendums.

John



John Hibschan E.I.T.
Graduate Engineer
206 West Main Street | Salisbury, MD | 21801
410.742.3115 | www.gmbnet.com | [Find us on facebook](#)

From: Spencer Retallack <spencer@retallackandsonsinc.com>
Sent: Thursday, January 8, 2026 2:55 PM
To: John T. Hibschan <jHibschan@gmbnet.com>; Miles Retallack <miles@retallackandsonsinc.com>
Subject: Re: Trenton St Pump Station Apparent Low Bidder

John,

Just received these answers from Miles.

And we confirm that we received both addendums 1 and 2 during the bidding period.
If you need anything else for this confirmation, please let me know.

Thank you,



Spencer Retallack
Retallack & Son's Inc.

☎ 410-822-9467

🌐 retallackandsonsinc.com

📍 8570 Swann Haven Rd Easton, MD 21601

📞 410-822-9728



Retallack & Sons, Inc.

retallackandsonsinc.com

Subcontractors:

Billbrough Electric
Mix on Site – Concrete
RKJ Construction – Building
R.L. Ewing

Suppliers:

Derrick Dadds
STH Pumps
Gillespie Precast
Fort Line

Phone: 410-822-9467
Fax: 410-822-9728

Address: 8570 Swann Haven Rd
Easton, MD 21601

--	--

ARTICLE 8—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

8.01 Bidder's Representations

- A. In submitting this Bid, Bidder represents the following:
1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
 2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
 5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
 6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
 7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
 8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
 9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
 10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

8.02 Bidder's Certifications

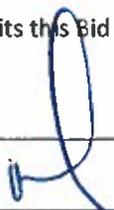
A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
 - c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
 - d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

Retallack & Son's, Inc.
(typed or printed name of organization)

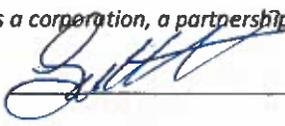
By: 
(individual's signature)

Name: Ralph Miles Retallack
(typed or printed)

Title: General Manager
(typed or printed)

Date: 12/19/25
(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: 
(individual's signature)

Name: Spencer Retallack
(typed or printed)

Title: Office Manager
(typed or printed)

Date: 12/19/25
(typed or printed)

Address for giving notices:

8570 Swann Haven Rd
Easton, MD 21601

Bidder's Contact:

Name: Ralph M. Retallack
(typed or printed)

Title: General Manager
(typed or printed)

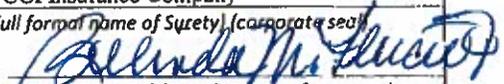
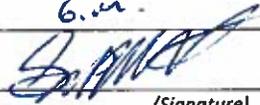
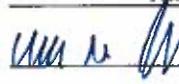
Phone: 410-822-9467

Email: miles@retallackandsonsinc.com

Address: 8570 SWANN HAVEN RD EASTON MD 21601

Bidder's Contractor License No.: (if applicable) 09332131

BID BOND (PENAL SUM FORM)

Bidder Retallack & Sons, Inc. Name: [Full formal name of Bidder] Address (principal place of business): [Address of Bidder's principal place of business] 8520 Swann Haven Road, Easton, MD 21601	Surety FCCI Insurance Company Name: [Full formal name of Surety] Address (principal place of business): [Address of Surety's principal place of business] 6300 University Parkway, Sarasota, FL 34240-8424
Owner Name: City of Cambridge, Maryland Address (principal place of business): P.O. Box 255 410 Academy Street Cambridge, MD 21613	Bid Project (name and location): Trenton Street Sewage Pumping Station Rehabilitation Cambridge, Maryland Bid Due Date: December 19, 2025 [Enter date bid is due]
Bond Penal Sum: [Amount] Five Percent of the Total Amount Bid (--5%--) Date of Bond: [Date] December 19, 2025	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder Retallack & Sons, Inc. (Full formal name of Bidder)	Surety FCCI Insurance Company (Full formal name of Surety) (Corporate Seal)
By:  (Signature)	By:  (Signature) (Attach Power of Attorney)
Name: <u>Robert W. Rosuach</u> (Printed or typed)	Name: <u>Belinda M. Ferciet</u> (Printed or typed)
Title: <u>G.M.</u>	Title: <u>Attorney-in-fact</u>
Attest:  (Signature)	Attest:  (Signature)
Name: <u>SPENCER RETALLACK</u> (Printed or typed)	Name: <u>Meredith N. Johnson</u> (Printed or typed)
Title: <u>OFFICE MANAGER</u>	Title: <u>Witness as to Surety</u>
Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.	

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by Owner, or
 - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.



GENERAL POWER OF ATTORNEY

Know all men by these presents: That the FCCI Insurance Company, a Corporation organized and existing under the laws of the State of Florida (the "Corporation") does make, constitute and appoint:

Belinda M. Ferciot; Reginald P. Jarvis; Michael E. Schendel; Courtney C. Seed; Debra L. Stewart; Brittany H. Ferciot; Andrew Porter

Each, its true and lawful Attorney-In-Fact, to make, execute, seal and deliver, for and on its behalf as surety, and as its act and deed in all bonds and undertakings provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the sum of (not to exceed \$20,000,000.00): **\$20,000,000.00**

This Power of Attorney is made and executed by authority of a Resolution adopted by the Board of Directors. That resolution also authorized any further action by the officers of the Company necessary to effect such transaction.

The signatures below and the seal of the Corporation may be affixed by facsimile, and any such facsimile signatures or facsimile seal shall be binding upon the Corporation when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached.

In witness whereof, the FCCI Insurance Company has caused these presents to be signed by its duly authorized officers and its corporate Seal to be hereunto affixed, this 23rd day of July, 2020.

Attest: Christina D. Welch
Christina D. Welch, President
FCCI Insurance Company

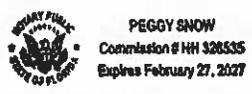


Christopher Shoucair
Christopher Shoucair,
EVP, CFO, Treasurer, Secretary
FCCI Insurance Company

State of Florida
County of Sarasota

Before me this day personally appeared Christina D. Welch, who is personally known to me and who executed the foregoing document for the purposes expressed therein.

My commission expires: 2/27/2027

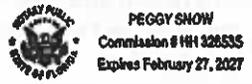


Peggy Snow
Notary Public

State of Florida
County of Sarasota

Before me this day personally appeared Christopher Shoucair, who is personally known to me and who executed the foregoing document for the purposes expressed therein.

My commission expires: 2/27/2027



Peggy Snow
Notary Public

CERTIFICATE

I, the undersigned Secretary of FCCI Insurance Company, a Florida Corporation, DO HEREBY CERTIFY that the foregoing Power of Attorney remains in full force and has not been revoked; and furthermore that the February 27, 2020 Resolution of the Board of Directors, referenced in said Power of Attorney, is now in force.

Dated this 19th day of December, 2025

Christopher Shoucair
Christopher Shoucair, EVP, CFO, Treasurer, Secretary
FCCI Insurance Company

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by Owner, or
 - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

EJCDC® C-430, Bid Bond (Penal Sum Form).

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QUALIFICATIONS STATEMENT

ARTICLE 1—GENERAL INFORMATION

1.01 Provide contact information for the Business:

Legal Name of Business:		Retallack & Sons, Inc.	
Corporate Office			
Name:	Spencer Retallack	Phone number:	410-822-9467
Title:	Office Manager	Email address:	spencer@retallackandsonsin.com
Business address of corporate office:		8570 Swann Haven Rd	
		Easton, MD 21601	
Local Office Same as Corporate office			
Name:		Phone number:	
Title:		Email address:	
Business address of local office:			

1.02 Provide information on the Business's organizational structure:

Form of Business:	<input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Partnership <input checked="" type="checkbox"/> Corporation		
<input type="checkbox"/> Limited Liability Company <input type="checkbox"/> Joint Venture comprised of the following companies:			
1.			
2.			
3.			
Provide a separate Qualification Statement for each Joint Venturer.			
Date Business was formed:	2005	State in which Business was formed:	MD
Is this Business authorized to operate in the Project location?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Pending	

1.03 Identify all businesses that own Business in whole or in part (25% or greater), or that are wholly or partly (25% or greater) owned by Business:

Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			

Name of business:		Affiliation:	
Address:			

1.04 Provide information regarding the Business's officers, partners, and limits of authority.

Name:	Joanne M. Retallack	Title:	President
Authorized to sign contracts:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$ 51%
Name:	Ralph Miles Retallack	Title:	General Manager
Authorized to sign contracts:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$ 49%
Name:	Spencer Retallack	Title:	Office Manager
Authorized to sign contracts:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$
Name:		Title:	

ARTICLE 2—LICENSING

2.01 Provide information regarding licensure for Business:

Name of License:	Construction Firm		
Licensing Agency:	State of Maryland		
License No:	09332131	Expiration Date:	4/30/26
Name of License:			
Licensing Agency:			
License No:		Expiration Date:	

ARTICLE 3—DIVERSE BUSINESS CERTIFICATIONS

3.01 Provide information regarding Business's Diverse Business Certification, if any. Provide evidence of current certification.

Certification	Certifying Agency	Certification Date
<input type="checkbox"/> Disadvantaged Business Enterprise		
<input type="checkbox"/> Minority Business Enterprise		
<input type="checkbox"/> Woman-Owned Business Enterprise		
<input type="checkbox"/> Small Business Enterprise		
<input type="checkbox"/> Disabled Business Enterprise		
<input type="checkbox"/> Veteran-Owned Business Enterprise		
<input type="checkbox"/> Service-Disabled Veteran-Owned Business		
<input type="checkbox"/> HUBZone Business (Historically Underutilized) Business		

EJCDC C-451, Qualifications Statement.

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<input type="checkbox"/> Other			
<input type="checkbox"/> None			

ARTICLE 4—SAFETY

4.01 Provide information regarding Business’s safety organization and safety performance.

Name of Business’s Safety Officer:	Brian Morvan	
Safety Certifications		
Certification Name	Issuing Agency	Expiration

4.02 Provide Worker’s Compensation Insurance Experience Modification Rate (EMR), Total Recordable Frequency Rate (TRFR) for incidents, and Total Number of Recorded Manhours (MH) for the last 3 years and the EMR, TRFR, and MH history for the last 3 years of any proposed Subcontractor(s) that will provide Work valued at 10% or more of the Contract Price. Provide documentation of the EMR history for Business and Subcontractor(s).

Year	2025			2024			2023		
Company	EMR	TRFR	MH	EMR	TRFR	MH	EMR	TRFR	MH
	.85	0	0	.85	0	0	.85	0	0

ARTICLE 5—FINANCIAL

5.01 Provide information regarding the Business’s financial stability. Provide the most recent audited financial statement, and if such audited financial statement is not current, also provide the most current financial statement.

Financial Institution:	Shore United Bank		
Business address:	18 East Dover Street Easton, MD 21601		
Date of Business’s most recent financial statement:	9/30/25	<input checked="" type="checkbox"/> Attached	
Date of Business’s most recent audited financial statement:		<input type="checkbox"/> Attached	
Financial indicators from the most recent financial statement			
Contractor’s Current Ratio (Current Assets ÷ Current Liabilities)			
Contractor’s Quick Ratio ((Cash and Cash Equivalents + Accounts Receivable + Short Term Investments) ÷ Current Liabilities)			
			1.25

ARTICLE 6—SURETY INFORMATION

6.01 Provide information regarding the surety company that will issue required bonds on behalf of the Business, including but not limited to performance and payment bonds.

Surety Name:	FCCI Insurance COmpany		
Surety is a corporation organized and existing under the laws of the state of:	FL		
Is surety authorized to provide surety bonds in the Project location?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Is surety listed in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" published in Department Circular 570 (as amended) by the Bureau of the Fiscal Service, U.S. Department of the Treasury?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Mailing Address (principal place of business):	6300 University Parkway		
	Sarasota, FL 34240-8424		
Physical Address (principal place of business):			
Phone (main):	800-226-3224	Phone (claims):	941-907-3224

ARTICLE 7—INSURANCE

7.01 Provide information regarding Business's insurance company(s), including but not limited to its Commercial General Liability carrier. Provide information for each provider.

Name of insurance provider, and type of policy (CLE, auto, etc.):			
Insurance Provider	Type of Policy (Coverage Provided)		
Bradley Atlantic LLC	Commerical General Liability		
	Automobile Liability		
	Umbrella Liability		
	Worker's Compensation and Employee		
Are providers licensed or authorized to issue policies in the Project location?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Does provider have an A.M. Best Rating of A-VII or better?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Mailing Address (principal place of business):	Bradley Atlantic LLC		
	209 E Jarrettsville Road		
	Forest Hill, MD 21050		
Physical Address (principal place of business):			
Phone (main):	410-692-8921	Phone (claims):	

ARTICLE 8—CONSTRUCTION EXPERIENCE

8.01 Provide information that will identify the overall size and capacity of the Business.

Average number of current full-time employees:	14
Estimate of revenue for the current year:	4,275,675.00
Estimate of revenue for the previous year:	3,725,270.28

8.02 Provide information regarding the Business’s previous contracting experience.

Years of experience with projects like the proposed project:			
As a general contractor:	20	As a joint venturer:	40
Has Business, or a predecessor in interest, or an affiliate identified in Paragraph 1.03:			
Been disqualified as a bidder by any local, state, or federal agency within the last 5 years? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Been barred from contracting by any local, state, or federal agency within the last 5 years? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Been released from a bid in the past 5 years? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Defaulted on a project or failed to complete any contract awarded to it? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Refused to construct or refused to provide materials defined in the contract documents or in a change order? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Been a party to any currently pending litigation or arbitration? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Provide full details in a separate attachment if the response to any of these questions is Yes.			

8.03 List all projects currently under contract in Schedule A and provide indicated information.

8.04 List a minimum of three and a maximum of six projects completed in the last 5 years in Schedule B and provide indicated information to demonstrate the Business’s experience with projects similar in type and cost of construction.

8.05 In Schedule C, provide information on key individuals whom Business intends to assign to the Project. Provide resumes for those individuals included in Schedule C. Key individuals include the Project Manager, Project Superintendent, Quality Manager, and Safety Manager. Resumes may be provided for Business’s key leaders as well.

ARTICLE 9—REQUIRED ATTACHMENTS

9.01 Provide the following information with the Statement of Qualifications:

- A. If Business is a Joint Venture, separate Qualifications Statements for each Joint Venturer, as required in Paragraph 1.02.
- B. Diverse Business Certifications if required by Paragraph 3.01.
- C. Certification of Business’s safety performance if required by Paragraph 4.02.
- D. Financial statements as required by Paragraph 5.01.

4:15 PM

10/07/25

Accrual Basis

Retallack & Sons, Inc.

Balance Sheet

As of September 30, 2025

	<u>Sep 30, 25</u>
ASSETS	
Current Assets	
Checking/Savings	
7606 Personal Checking	95,500.00
Business Checking	52,022.67
Business payroll 702	-49,556.40
Business Savings	15,811.76
Personal Savings #6471	10,774.99
Petty Cash	-1,350.00
Total Checking/Savings	<u>123,203.02</u>
Accounts Receivable	
Accounts Receivable	361,262.41
Total Accounts Receivable	<u>361,262.41</u>
Other Current Assets	
NA Escrow Account	62,002.22
NACS Harrison Street Escrow	155,840.00
Total Other Current Assets	<u>217,842.22</u>
Total Current Assets	<u>702,307.65</u>
Fixed Assets	
Accumulated Depreciation	-2,715,952.36
Ford Van	116,803.36
Machinery and Equipment	3,431,782.67
Office Equipment	17,478.82
Trucks and Trailers	900,471.32
Total Fixed Assets	<u>1,750,583.81</u>
Other Assets	
Due From Shareholder	114,601.50
Due From Swann Haven	409,581.03
Total Other Assets	<u>524,182.53</u>
TOTAL ASSETS	<u><u>2,977,073.99</u></u>
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
Accounts Payable	295,068.20
Total Accounts Payable	<u>295,068.20</u>
Credit Cards	
American Express #28003	5,838.72
Capital One #	9,617.59
Total Credit Cards	<u>15,456.31</u>
Other Current Liabilities	
Harrison Street Escrow Loan	-158,342.04
Payroll Liabilities	
FICA/FWH	7,005.96
FUTA	21.95
MD	1,844.48
SUTA	146.67
Payroll Liabilities - Other	1,568.38
Total Payroll Liabilities	<u>10,587.44</u>

4:15 PM
10/07/25
Accrual Basis

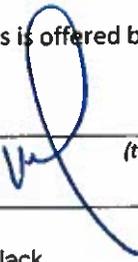
Retallack & Sons, Inc.
Balance Sheet
As of September 30, 2025

	Sep 30, 25
Shore United LOC 9770	100,306.75
Vox Easton Loan	97,949.94
Total Other Current Liabilities	50,502.09
Total Current Liabilities	361,026.60
Long Term Liabilities	
Equipment Purchase	-43,850.00
SBA Disaster Relief Loan	479,960.00
Shore UNited - Escrow Loan	156,340.00
Tesla - Model X	-11,951.37
Wells Fargo (Rover)	-6,154.32
Wells Fargo (Trimble)	13,449.95
Total Long Term Liabilities	587,794.26
Total Liabilities	948,820.86
Equity	
Additional Paid in Capital	33,710.00
Common Stock	100.00
Opening Balance Equity	100,000.00
Retained Earnings	1,752,363.32
Shareholder Distributions	-151,287.72
Net Income	293,367.53
Total Equity	2,028,253.13
TOTAL LIABILITIES & EQUITY	2,977,073.99

- E. Attachments providing additional information as required by Paragraph 8.02.
- F. Schedule A (Current Projects) as required by Paragraph 8.03.
- G. Schedule B (Previous Experience with Similar Projects) as required by Paragraph 8.04.
- H. Schedule C (Key Individuals) and resumes for the key individuals listed, as required by Paragraph 8.05.
- I. Additional items as pertinent.

This Statement of Qualifications is offered by:

Business: Retallack and Sons, Inc.
(typed or printed name of organization)

By: 
(individual's signature)

Name: Ralph Miles Retallack
(typed or printed)

Title: General Manager
(typed or printed)

Date: 12/19/25
(date signed)

(If Business is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: 
(individual's signature)

Name: Spencer Retallack
(typed or printed)

Title: Office Manager
(typed or printed)

Address for giving notices:

Designated Representative:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address: _____

Phone: 410-822-9467

Email: miles@retallackandsonsinc.com

Schedule A—Current Projects

Name of Organization	Queenstown				
Project Owner	Queenstown	Project Name	Old Wharf		
General Description of Project	Sewer Main				
Project Cost	\$488,525.65	Date Project	11/14/25		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name	Ralph Miles Retallack	Christopher Hood	Brian Morvan		
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner	Amy Moore	Mayor	Queenstown	410-827-7646	amoore@queenstown-md.com
Designer	Bob Rauch	P.E.	Rauch, Inc.	410-770-9081	robert@raucheng.com
Construction Manager	Ken McFadden	VP	Rauch, Inc.	410-770-9081	ken@raucheng.com

Project Owner		Project Name			
General Description of Project					
Project Cost		Date Project			
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name			
General Description of Project					
Project Cost		Date Project			
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule B—Previous Experience with Similar Projects

Name of Organization					
Project Owner	Talbot County		Project Name	Royal Oak Pumping Station	
General Description of Project	Pumping Station Upgrade				
Project Cost	1,819,996.38		Date Project	11/25/24	
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name	Ralph Miles Retallack	Justin Eason	Brian Morvan	Ralph Miles Retallack	
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner	Ray Clarke	P.E.	Talbot County	410-770-8170	rclarke@talbotcountymd.gov
Designer	Tim Glass	P.E.	Lane Engineering	410-822-8003	tglass@leinc.com
Construction Manager	Russel Lease	P.E.	Talbot County	410-770-8170	RLease@talbotcountymd.gov
Project Owner Southside Land Management Project Name Lakeside at Trappe Pumping Station 1					
General Description of Project	New Community				
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name	Ralph Miles Retallack	Justin Eason	Brian Morvan	Ralph Miles Retallack	
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner	Bob Rauch	P.E.	Rauch, Inc.	410-770-9081	robert@raucheng.com
Designer	James Cook	P.E.	Rauch, Inc.	410-770-9081	james@raucheng.com
Construction Manager	Ken McFadden	P.E.	Rauch, Inc.	410-770-9081	ken@raucheng.com
Project Owner Southside Land Management Project Name Lakeside at Trappe Pumping Station 2					
General Description of Project	New Community				
Project Cost	700,931.25		Date Project	6/25/25	
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name	Ralph Miles Retallack	Christopher Hood	Brian Morvan	Ralph Miles Retallack	
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner	Bob Rauch	P.E.	Rauch, Inc.	410-770-9081	robert@raucheng.com
Designer	James Cook	P.E.	Rauch, Inc.	410-770-9081	james@raucheng.com
Construction Manager	Ken McFadden	P.E.	Rauch, Inc.	410-770-9081	ken@raucheng.com

Schedule B—Previous Experience with Similar Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule C—Key Individuals

Project Manager			
Name of individual		Ralph Miles Retallack	
Years of experience as project manager		36	
Years of experience with this organization		20	
Number of similar projects as project manager		40	
Number of similar projects in other positions		40	
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
Project Superintendent			
Name of individual		Christopher Hood	
Years of experience as project superintendent		10	
Years of experience with this organization		1	
Number of similar projects as project superintendent		12	
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

Safety Manager			
Name of individual		Brian Morvan	
Years of experience as project manager		20	
Years of experience with this organization		20	
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
Quality Control Manager			
Name of individual		Ralph Miles Retallack	
Years of experience as project superintendent		36	
Years of experience with this organization		20	
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name	George Hyde	Name	Ed Bramble
Title/Position	P.E.	Title/Position	Engineer
Organization	City of Cambridge	Organization	MUC
Telephone		Telephone	
Email		Email	
Project	Numerous	Project	Numerous
Candidate's role on project		Candidate's role on project	

7.0 Certification for all ROWs and/or Easements



206 West Main Street
Salisbury, MD 21801



410.742.3115



salisbury@gmbnet.com



gmbnet.com

ARCHITECTS
• • •
ENGINEERS

CHARLES M. O'DONNELL, III, P.E.
A. REGGIE MARINER, JR., P.E.
JAMES C. HOAGESON, P.E.
JASON M. LYTLE, P.E.
ROLAND E. HOLLAND, P.E.
MORGAN H. HELFRICH, AIA
CHRIS B. DERBYSHIRE, P.E.
KATHERINE J. MCALLISTER, P.E.
ANDREW J. LYONS, JR., P.E.
W. MARK GARDOCKY, P.E.
CHRISTOPHER J. PFEIFER, P.E.
BENJAMIN K. HEARN, P.E.

JOHN E. BURNSWORTH, P.E.
AUTUMN J. BURNS
BRENT R. JETT, P.E.
BRADLEY J. HOGAN, P.E.
DEANE L. TOWNSEND, AIA

MEMO

DATE: February 6, 2026

GMB NO: 210260.B

TO: City of Cambridge

RE: Trenton Street Pumping
Station Rehabilitation

ATTN: Andrew Koslow

FROM: Chris Derbyshire, P.E.

Urgent

For Review

Please Reply

Please File

Mr. Koslow:

This memo confirms that the City will obtain the necessary construction easement for the adjacent parcel, in coordination with the Home Owners Association, as required to construct the subject project.

Sincerely,

Chris Derbyshire, P.E.
Sr. Vice President / Project Engineer

**8.0 Assurances for Compliance with Federal Laws
and Regulations Form**

ASSURANCES FOR COMPLIANCE WITH FEDERAL LAWS AND REGULATIONS
FOR WATER QUALITY-TREATMENT WORKS AND DRINKING WATER PROJECT

Project Name: Trenton St. Pump Station Contract No. (if applicable): 2102604

The contractor is required to comply with the following Federal laws and regulations:

1. Non-discrimination in Employment in accordance with Executive Order 11246 of September 24, 1965 entitled "Equal Employment Opportunity" as amended by Executive Order 11375 of October 13, 1967.
 2. Debarment in accordance with the Executive Order 12549 and Executive Order 11246.
 3. Anti-kickback in accordance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874).
 4. Contract Work Hours and Safety Standards in accordance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330).
 5. Compliance with Guidelines Contained in 40 CFR 247-254 (RCRA - Section 6002).
 6. The prevailing Federal wage rates as determined by the U.S. Department of Labor under the Davis-Bacon and related acts. The prevailing wage determination category that should be used for this project is Heavy Construction (including water and sewer). Available at: <https://sam.gov/content/wage-determinations>
- General Decision Number: MD 2026 0114 Date: 6/27/2025
7. Maryland Antidegradation Implementation Procedures as promulgated in three regulations: COMAR 26.08.02.04 sets out the policy itself, COMAR 26.08.02.04-1, provides for identification and implementation of Tier II (high quality waters) of the antidegradation policy, and COMAR 26.08.02.04-2 that describes Tier III (Outstanding National Resource Waters or ONRW), the highest quality waters. No Tier III waters have been designated at this time.
 8. Use of American Iron and Steel, as promulgated by H.R. 3547, "Consolidated Appropriations Act, 2014," Division G, Title IV, enacted on January 17, 2014.
 9. 2 CFR 200.216, which requires that EPA recipients and subrecipients, including borrowers under EPA funded revolving loan fund programs, are prohibited from obligating or expending loan or grant funds to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

I do solemnly declare and affirm that I am obligated to comply with the above Federal laws and regulations. It is understood that non-compliance with any one of the above Federal laws and regulations will be sufficient reason to cause termination of the contract.

Renaissance S&S INC
Contractor

Signed by: [Signature]
Authorized Officer

12/23/25
Date

Ralph M. Riencourt
Name (Print)

General Manager
Title (Print)

9.0 Statement Regarding Construction Phase Engineering

◆◆◆◆

**ARCHITECTS
ENGINEERS**

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salisbury@gmbnet.com

SALISBURY
BALTIMORE
SEAFORD
LEWES
OCEAN VIEW

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◆◆◆◆

JAMES H. WILLEY, JR., P.E.
CHARLES M. O'DONNELL, III, P.E.
A. REGGIE MARINER, JR., P.E.
JAMES C. HOAGESON, P.E.
STEPHEN L. MARSH, P.E.
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PETER A. BOZICK, JR., P.E.
JUDY A. SCHWARTZ, P.E.
W. BRICE FOXWELL, P.E.

JOHN E. BURNSWORTH, P.E.
VINCENT A. LUCIANI, P.E.
AUTUMN J. BURNS
CHRISTOPHER J. PFEIFER, P.E.
BENJAMIN K. HEARN, P.E.

October 21, 2024

City of Cambridge
Department of Public Works.
1025 Washington Street
Cambridge, MD 21613

Attn: Mr. Carl Jackson, P.E.
City Engineer

Re: *Proposal for Bidding, Construction Administration and RPR Services*
TRENTON STREET PUMPING STATION REHABILITATION
Cambridge, Maryland
GMB File No. 210260.A

Dear Mr. Jackson:

In response to the City's request, George, Miles & Buhr, LLC (GMB) is pleased to provide this proposal for bidding, contract administration, and RPR services to assist City of Cambridge Department of Public Works (DPW) with rehabilitation of the Trenton Street Sewage Pumping Station. The design and construction documents were recently completed by GMB.

UNDERSTANDING

The Trenton Street Sewage Pumping Station is located on Trenton Street. The station was constructed nearly 90 years ago and underwent its last significant upgrade 40 years ago. The station is located near Cambridge Creek and is vulnerable to flooding and is at heightened risk to sea level rise impacts. Due to the age of the facility and need to improve the station's long-term resiliency, a new station is proposed together with various improvements to the existing facility.

An application for a Construction Permit along with final design plans and the project manual have been submitted to the Maryland Department of the Environment (MDE). Permit approval and concurrence to proceed to Bid are expected soon.

The project approach for construction is unique and challenging based on the following listing of circumstances:

- Uninterrupted sewage conveyance from the facility must be maintained at all times.
- Receiving chamber must remain in service during construction of proposed improvements.
- Proximity of adjacent condominium building will necessitate vibration monitoring at site property limit during certain work operations.

- Limited space of pump station parcel will necessitate need for contractor to occupy adjacent condominium parking lot during construction and reconstruction of area to existing condition and installation of new landscaping.

SCOPE OF SERVICES

From the basis of this understanding, we anticipate the following scope of services to be provided:

A. Bid and Negotiation (Bid) Task:

1. Provide bid ready documents to City of Cambridge and supply documents to interested bidding contractors, subcontractors, and equipment suppliers, as requested.
2. Attend the Pre-Bid meeting and prepare meeting minutes.
3. Respond to questions and inquiries from interested bidders and equipment/material suppliers.
4. Prepare Addenda as appropriate, submit to MDE for approval, and issue to the official listing of bidders.
5. Attend the bid opening, tabulate bids, review bids for responsiveness, review qualifications of the apparent low bidder and check references.
6. Prepare bid award approval package for submittal to the funding agency.
7. Prepare a letter of recommendation for the lowest responsive and responsible bidder. Attend City Council meeting for presentation of recommendation.
8. Prepare and issue Notice of Award form upon approval by the City of Cambridge.

B. Construction Contract Administration (CA) Task:

1. *General Administration of Construction Contract.* Consult with Owner and act as Owner's representative as provided in the General Conditions. The extent and limitations of the duties, responsibilities and authority of Engineer as assigned in said General Conditions shall not be modified, except as Engineer may otherwise agree in writing. All of Owner's instructions to Contractor will be issued through Engineer, who shall have authority to act on behalf of Owner in dealings with Contractor to the extent provided in this Agreement and said General Conditions except as otherwise provided in writing.
2. *Pre-Construction Conference.* Participate in a pre-construction conference prior to commencement of Work at the Site. Issue meeting minutes.

3. ***Visits to Site and Observation of Construction.*** In connection with observations of Work in progress:
 - a. Make visits to the Site at intervals appropriate to the various stages of construction, as Engineer deems necessary, in order to observe the progress and quality of the Work. Such visits and observations by Engineer, and the Resident Project Representative, are not intended to be exhaustive or to extend to every aspect of the Work in progress or to involve detailed inspections of the Work in progress beyond the responsibilities specifically assigned to Engineer, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on Engineer's exercise of professional judgment as assisted by the Resident Project Representative. Based on information obtained during such visits and such observations, Engineer will determine, in general if Contractor's work is proceeding in accordance with the Project Manual, and Engineer shall keep Owner informed of the progress of the Work.
 - b. The purpose of Engineer's visits to, and representation by the Resident Project Representative at the Site of the Specific Project, will be to enable Engineer to better carry out the duties and responsibilities assigned to and undertaken by Engineer during the Construction Phase, and in addition, by the exercise of Engineer's efforts as an experienced and qualified design professional, to provide for Owner a greater degree of confidence that the completed Work will conform in general to the Project Manual and that the integrity of the design concept of the completed project as a functioning whole as indicated in the Project Manual has been implemented and preserved by Contractor. Engineer shall not, during such visits or as a result of such observations of Contractor's work in progress, supervise, direct, or have control over the Work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected by Contractor, for safety precautions and programs incident to the Work, or for any failure of Contractor to comply with Laws and Regulations applicable to Contractor's furnishing and performing the Work. Accordingly, Engineer neither guarantees the performance of any Contractor nor assumes responsibility for any Contractor's failure to furnish and perform its work in accordance with the Project Manual.
4. ***Defective Work.*** Have authority to disapprove or reject Contractor's work while it is in progress if, on the basis of such observations, Engineer believes that such work will not produce a completed project that conforms generally to the Project Manual or that it will prejudice the integrity of the design concept of the completed project as a functioning whole as indicated in the Project Manual.
5. ***Clarifications and Interpretations, Field Orders.*** Issue necessary clarifications and interpretations of the Project Manual as appropriate to the orderly completion of the Work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the Project Manual.

Engineer may issue Field Orders authorizing minor variations from the requirements of the Project Manual.

6. *Change Orders and Work Change Directives.* Recommend Change Orders and Work Change Directives to Owner, as appropriate, and prepare Change Orders and Work Change Directives as required.
7. *Shop Drawings and Samples.* Review and approve or take other appropriate action in respect to Shop Drawings and Samples and other data which Contractor is required to submit, but only for conformance with the information given in the Project Manual and compatibility with the design concept of the completed project as a functioning whole as indicated in the Project Manual. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences or procedures of construction or to safety precautions and programs incident thereto. Engineer has an obligation to meet any Contractors' submittal schedule that has earlier been acceptable to Engineer.
8. *Substitutes and "or-equal."* Evaluate and determine the acceptability of substitute or "or-equal" materials and equipment proposed by Contractor, but subject to the provisions of the specifications.
9. *Inspections and Tests.* Require such special inspections or tests of the Work as deemed reasonably necessary, and receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the Project Manual. Engineer's review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Project Manual and will not constitute an independent evaluation that the content or procedures of such inspections, tests, or approvals comply with the requirements of the Project Manual. Engineer shall be entitled to rely on the results of such tests.
10. *Disagreements between Owner and Contractor.* Render formal written decisions on all claims of Owner and Contractor relating to the acceptability of the Work or the interpretation of the requirements of the Project Manual pertaining to the execution and progress of the Work. In rendering such decisions, Engineer shall be fair and not show partiality to Owner or Contractor and shall not be liable in connection with any decision rendered in good faith in such capacity.
11. *Applications for Payment.* Based on Engineer's observations and on review of Applications for Payment and accompanying supporting documentation:
 - a. Determine the amounts that Engineer recommends Contractor be paid. Such recommendations of payment will be in writing and will constitute Engineer's representation to Owner, based on such observations and review, that, to the best of Engineer's knowledge, information and belief, the Work has progressed to the point indicated, the quality of such is generally in accordance with the Project Manual (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called

for in the Project Manual and to any other qualifications stated in the recommendation), and the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work. In the case of unit price work, Engineer's recommendations of payment will include final determinations of quantities and classifications of the Work (subject to any subsequent adjustments allowed by the Project Manual).

- b. By recommending any payment, Engineer shall not thereby be deemed to have represented that observations made by Engineer to check the quality or quantity of the Work as it is performed and furnished have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in this Agreement and the Project Manual. Neither Engineer's review of the Work for the purposes of recommending payments nor Engineer's recommendation of any payment including final payment will impose on Engineer responsibility to supervise, direct, or control the Work in progress or for the means, methods, techniques, sequences, or procedures of construction or safety precautions or programs incident thereto, or Contractor's compliance with Laws and Regulations applicable to the Work. It will also not impose responsibility on Engineer to make any examination to ascertain how or for what purpose Contractor has used the moneys paid on account of the Contract Price, or to determine that title to any portion of the Work in progress, materials, or equipment has passed to Owner free and clear of any liens, claims, security interests, or encumbrances, or that there may not be other matters at issue between Owner and Contractor that might affect the amount that should be paid.

12. Contractor's Completion Documents:

- a. Receive and review maintenance and operating instructions, schedules, and guarantees.
- b. Receive bonds, certificates, or other evidence of insurance not previously submitted and required by the Project Manual, certificates of inspection, tests and approvals, Shop Drawings, Samples and other data, and the annotated record documents which are to be assembled by Contractor in accordance with the Project Manual to obtain final payment. The extent of such Engineer's review will be limited as provided in paragraph 8.
- c. Engineer shall transmit these documents to Owner.
- d. Engineer shall prepare and furnish to Owner, in the format agreed to, Record Drawings showing appropriate record information based on project annotated record documents received from Contractor.

13. **Substantial Completion.** Promptly after notice from Contractor that Contractor considers the entire Work ready for its intended use, in company with Owner

and Contractor, conduct an inspection to determine if the Work is Substantially Complete. If after considering any objections of Owner, Engineer considers the Work Substantially Complete, Engineer shall deliver a certificate of Substantial Completion to Owner and Contractor.

14. *Final Notice of Acceptability of the Work.* Conduct a final payment inspection to determine if the completed Work of Contractor is acceptable, so that Engineer may recommend, in writing, final payment to Contractor. Accompanying the recommendation for final payment, Engineer shall also provide a "Notice of Acceptability of Work" that the Work is acceptable to the best of Engineer's knowledge, information, and belief and based on the extent of the services provided by Engineer under this Agreement.
15. *Duration of Construction Phase.* The Construction Phase will commence with the execution of the Construction Agreement for the Project and will terminate upon written recommendation by Engineer for final payment to Contractor.
16. *Limitation of Responsibilities.* Engineer shall not be responsible for the acts or omissions of any Contractor, or of any of their subcontractors, suppliers, or of any other individual or entity performing or furnishing any of the Work. Engineer shall not be responsible for failure of any Contractor to perform or furnish the Work in accordance with the Project Manual.

C. Resident Project Representative (RPR) Task:

1. The Resident Project Representative ("RPR") shall assist Engineer in observing progress and quality of the Work.
2. The duties and responsibilities of the RPR are limited to those of Engineer in the Agreement with the Owner and in the Contract Documents, and are further limited and described as follows:
 - a. *General.* RPR is Engineer's agent at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
 - i. RPR's dealings in matters pertaining to a Contractor's Work in progress shall in general be with Engineer and Contractor, keeping Owner advised, as necessary.
 - ii. RPR's dealings with subcontractors shall only be through or with the full knowledge and approval of Contractor.
 - iii. RPR shall generally communicate with Owner with the knowledge of and under the direction of Engineer.
3. *Schedules.* Review the progress schedule, schedule of Shop Drawing and Sample submittals, and schedule of values prepared by a Contractor and consult with Engineer concerning acceptability.

4. **Conferences and Meetings.** Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings.
5. **Liaison:**
 - a. Serve as Engineer's liaison with Contractor, working principally through Contractor's superintendent, and assist in providing information regarding the intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
6. **Interpretation of Contract Documents.** Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
7. **Shop Drawings and Samples:**
 - a. Record date of receipt of Samples and approved Shop Drawings.
 - b. Receive Samples which are furnished at the Specific Project Site by Contractor and notify Engineer of availability of Samples for examination.
 - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
8. **Modifications.** Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
9. **Review of Work and Rejection of Defective Work:**
 - a. Conduct on-Site observations of Contractor's Work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to Engineer whenever RPR believes that any part of Contractor's Work in progress will not produce a completed project that conforms generally to the Contract Documents or will imperil the integrity of the design concept of the completed Specific Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of Work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

10. Inspections, Tests, and System Start-ups:

- a. Consult with Engineer in advance of scheduled major inspections, tests, and systems start-ups of important phases of the Work.
- b. Verify that tests, equipment, and system start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
- c. Observe, record, and report to Engineer appropriate details relative to the test procedures and system start-ups.
- d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections, and report to Engineer.

11. Records

- a. Maintain at the Site orderly files for correspondence, reports of job conferences, reproductions of original Contract Documents including all Change Orders, Field Orders, Work Change Directives, Addenda, additional Drawings issued subsequent to the execution of the Contract, Engineer's clarifications and interpretations of the Contract Documents, progress reports, Shop Drawing and Sample submittals received from and delivered to Contractor, and other Specific Project-related documents.
- b. Prepare a daily report or keep a diary or log book recording Contractor's hours on the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
- c. Record names, addresses, fax numbers, e-mail addresses, web site locations and telephone numbers of all Contractors, subcontractors, and major suppliers of materials and equipment.
- d. Maintain records for use in preparing project documentation.
- e. Upon completion of the Work, furnish original set of all RPR Project documentation to the Owner.

12. Reports:

- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and recommend Engineering proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.

- c. Furnish to Engineer and Owner copies of all inspection, test, and system startup reports.
- d. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, damage to property by fire or other causes, or the discovery of any Constituent of Concern.

13. *Payment Requests:*

- a. Review Applications for Payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site, but not incorporated in the Work.

14. *Certificates, Operation and Maintenance Manuals:*

- a. During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Specifications to be assembled and furnished by a Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

15. *Completion:*

- a. Participate in a Substantial Completion inspection, assist in the determination of Substantial Completion and the preparation of lists of items to be completed or corrected.
- b. Participate in a final inspection in the company of Engineer, Owner, and Contractor and prepare a final list of items to be completed and deficiencies to be remedied.
- c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the Notice of Acceptability of the Work.

16. *Resident Project Representative Shall Not:*

- a. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
- b. Exceed limitations of Engineer's authority as set forth in the Agreement or the Contract Documents.
- c. Undertake any of the responsibilities of a Contractor, subcontractors, suppliers, or a Contractor's superintendent.

- d. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of the Contractor's work unless such advice or directions are specifically required by the Contract Documents.
- e. Advise on, issue directions regarding, or assume control over safety practices, precautions and programs in connection with the activities or operations of Owner or Contractor.
- f. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
- g. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
- h. Authorize Owner to occupy a Specific Project in whole or in part.

D. Post Construction (PC) Task:

- 1. Together with Owner, visit the Project to observe any apparent defects in the Work, assist Owner in consultations and discussions with Contractor concerning correction of any such defects, and make recommendations as to replacement or correction of Defective Work, if present.
- 2. In company with Owner or Owner's representative, provide an inspection of the Project within one month before the end of the Correction Period to ascertain whether any portion of the Work is subject to correction.
- 3. The Post-Construction Phase services may commence during the Construction Phase and will terminate at the end of the Correction Period.

E. Additional Service (AS) Task:

- 1. If authorized in writing by Owner, Engineer shall furnish or obtain from others Additional Services of the types listed below. These services will be paid for by Owner as indicated in a Task Order.
 - a. Participation in value engineering negotiations with bidders requiring redesign and revisions to the drawings and project manual.
 - b. Providing Construction Phase services beyond the Contract Times set forth in the Agreement.
 - c. Preparing to serve or serving as a consultant or witness for Owner in any litigation, arbitration or other dispute resolution process related to the Project.
 - d. Services in connection with Work Change Directives and Change Orders to reflect changes requested by Owner so as to make the compensation commensurate with the extent of the Additional Services rendered.

- e. Evaluating an unreasonable claim or an excessive number of claims or requests for information submitted by a Contractor or others in connection with the Work on the Project.
- f. Other services performed or furnished by Engineer not otherwise provided for in the Agreement.

SCHEDULE

GMB proposes to provide the bidding and negotiation services starting immediately upon your authorization. GMB will start administering the construction contractual documents upon issuance of the Notice of Award.

FEE FORMAT AND PROPOSED FEE

GMB proposes the following fee formats and fees.

- A. **BID Task:** An Hourly Rate fee format is proposed for the bid and negotiating services with an estimated amount of **\$20,000.00**, inclusive of reimbursable expenses. It is assumed that the City will handle costs associated with public advertising.
- B. **CA Task:** For the contract administration services GMB proposes an Hourly Rate fee format with an estimated amount of **\$163,000.00**, this amount is inclusive of the electrical engineering subconsultant and reimbursable expenses.
- C. **RPR Task:** An Hourly Rate of **\$100.00** is proposed for the Resident Project Representative. A fee estimate, based on 10 months at 8 hours per day (or 1,730 man-hours) equates to **\$173,000.00**. Reimbursable Expenses associated with RPR services would be billed at the GMB Schedule of Hourly Rates and Reimbursable Expenses with a budget estimate of **\$7,504.00**.
- D. **PC Task:** For the post construction services, GMB proposes a fee based upon the GMB Schedule of Hourly Rates and Reimbursable Expenses for the individuals directly providing the scope of services. The estimated budget amount to be determined at the time of substantial completion.
- E. **AS Task:** For additional services, the scope of work and estimated fees will be determined on an as needed basis.

The above estimated amounts will not be exceeded without prior authorization from the City. GMB has included our Schedule of Hourly Rates and Reimbursable Expenses dated June 27, 2024, and General Contract Conditions dated July 1, 2021, are proposed to govern this agreement.

If upon review, you find this proposal acceptable, please execute this agreement in the space provided below.

We greatly appreciate the opportunity to submit this proposal and please do not hesitate to contact us with any questions.

Sincerely,



Christopher B. Derbyshire, P.E.
Sr. Vice President / Project Director

CBD/slh

Attachments: Exhibits A, B & C – Fee Derivations
Schedule of Hourly Rates and Reimbursable Expenses
General Conditions

ACCEPTED FOR CITY OF CAMBRIDGE DPW:

By:  _____

Printed Name: Carl E. Jackson

Title: City Engineer

Date: 11/26/24

Phone Number: 410-228-1955

Email Address: cbjackson@choosecambridge.com

Please proceed with the following tasks: Bid and CA. The City would like to reduce the proposed hours in the RPR task. Please do not proceed with RPR task until an agreement is reached with GMB and the City.

EXHIBIT A - WORK PROGRAM MANHOOR ESTIMATES, STANDARD HOURLY RATES & REIMBURSABLES

PART 1 - GENERAL

1. <i>Grantee</i> City of Cambridge, Maryland		2. <i>Grant Number</i>	
3. <i>Name of Consultant</i> George, Miles & Buhr, LLC		4. <i>Date of Proposal</i> 15-Oct-24	
5. <i>Address of Consultant</i> 206 West Main St Salisbury, MD 21801-4907		6. <i>TYPE OF SERVICE TO BE FURNISHED</i> Bidding Services Trenton Street Pumping Station Rehabilitation	

PART II - COST SUMMARY

7. DIRECT LABOR	ESTIMATED HOURS	HOURLY RATE	ESTIMATED COST	TOTALS
Project Director/Sr. PM(s)	40	\$ 190.00	\$ 7,600.00	
Project Engineer(s)	60	\$ 115.00	\$ 6,900.00	
Project Coordinator	20	\$ 120.00	\$ 2,400.00	
Designer	8	\$ 115.00	\$ 920.00	
DIRECT LABOR TOTAL:	128			\$ 17,820.00
8. <i>INDIRECT COSTS</i>	<i>RATE</i>	<i>x BASE =</i>	<i>ESTIMATED COST</i>	
Overhead and Fringe	-			
INDIRECT COSTS TOTAL:				
9. <i>OTHER DIRECT COSTS</i>				
a. <i>TRAVEL</i>			<i>ESTIMATED COST</i>	
(1) <i>TRANSPORTATION</i> mileage	200	mi @ \$0.67/mi	\$ 125.00	
(2) <i>PER DIEM</i> meals				
TRAVEL SUBTOTAL:			\$ 125.00	
b. <i>EQUIPMENT, MATERIALS, SUPPLIES</i>			<i>ESTIMATED COST</i>	
plots/prints	60	\$ 3.00	\$ 180.00	
copies	600	\$ 0.20	\$ 120.00	
postage	1	\$ 255.00	\$ 255.00	
			\$ -	
EQUIPMENT SUBTOTAL:			\$ 555.00	
c. <i>SUBCONTRACTS</i>				
Keystone Eng. Group - Mechanical/Electrical (Allowance T&M)			\$ 1,500.00	
SUBCONTRACTS SUBTOTAL:			\$ 1,500.00	
OTHER DIRECT COSTS TOTAL:				\$ 2,180.00
10. ESTIMATED COST				\$ 20,000.00
11. FEE Included in Standard Hourly Rates				
12. TOTAL LUMP SUM FEE				\$ 20,000.00

EXHIBIT B - WORK PROGRAM MANHOUR ESTIMATES, STANDARD HOURLY RATES & REIMBURSABLES

PART 1 - GENERAL

1. Grantee City of Cambridge, Maryland		2. Grant Number	
3. Name of Consultant George, Miles & Buhr, LLC		4. Date of Proposal 15-Oct-24	
5. Address of Consultant 206 West Main St Salisbury, MD 21801-4907		6. TYPE OF SERVICE TO BE FURNISHED Construction Administration Services Trenton Street Pumping Station Rehabilitation	

PART II - COST SUMMARY

7. DIRECT LABOR	ESTIMATED HOURS	HOURLY RATE	ESTIMATED COST	TOTALS
Project Director/Sr. PM(s)	300	\$ 190.00	\$ 57,000.00	
Project Engineer(s)	600	\$ 115.00	\$ 69,000.00	
Construction Representative	90	\$ 135.00	\$ 12,150.00	
Project Coordinator	60	\$ 120.00	\$ 7,200.00	
Designer	30	\$ 115.00	\$ 3,450.00	
DIRECT LABOR TOTAL:	1,080			\$ 148,800.00
8. INDIRECT COSTS	RATE	x BASE =	ESTIMATED COST	
Overhead and Fringe	-			
INDIRECT COSTS TOTAL:				
9. OTHER DIRECT COSTS				
a. TRAVEL			ESTIMATED COST	
(1) TRANSPORTATION	mileage	1,300 mi @ \$0.67/mi	\$ 812.50	
(2) PER DIEM	meals			
TRAVEL SUBTOTAL:			\$ 812.50	
b. EQUIPMENT, MATERIALS, SUPPLIES			ESTIMATED COST	
	plots/prints	100 \$ 3.00	\$ 300.00	
	copies	2,000 \$ 0.20	\$ 400.00	
	postage	1 \$ 187.50	\$ 187.50	
			\$ -	
EQUIPMENT SUBTOTAL:			\$ 887.50	
c. SUBCONTRACTS				
	Keystone Eng. Group - Mechanical/Electrical (Allowance T&M)		\$ 12,500.00	
SUBCONTRACTS SUBTOTAL:			\$ 12,500.00	
OTHER DIRECT COSTS TOTAL:				\$ 14,200.00
10. ESTIMATED COST				\$ 163,000.00
11. FEE	Included in Standard Hourly Rates			
12. TOTAL LUMP SUM FEE				\$ 163,000.00

EXHIBIT C - WORK PROGRAM MANHOOR ESTIMATES, STANDARD HOURLY RATES & REIMBURSABLES

PART 1 - GENERAL

1. Grantee City of Cambridge, Maryland		2. Grant Number	
3. Name of Consultant George, Miles & Buhr, LLC		4. Date of Proposal 15-Oct-24	
5. Address of Consultant 206 West Main St Salisbury, MD 21801-4907		6. TYPE OF SERVICE TO BE FURNISHED Resident Project Representative (RPR) Trenton Street Pumping Station Rehabilitation	

PART II - COST SUMMARY

7. DIRECT LABOR	ESTIMATED HOURS	HOURLY RATE	ESTIMATED COST	TOTALS
Resident Project Representative	1,730	\$ 100.00	\$ 173,000.00	
DIRECT LABOR TOTAL:	1,730			\$ 173,000.00
8. INDIRECT COSTS	RATE	x BASE =	ESTIMATED COST	
Overhead and Fringe	-			
INDIRECT COSTS TOTAL:				
9. OTHER DIRECT COSTS				
a. TRAVEL			ESTIMATED COST	
(1) TRANSPORTATION	mileage	11,200 mi @ \$0.67/mi	\$ 7,504.00	
(2) PER DIEM	meals			
TRAVEL SUBTOTAL:			\$ 7,504.00	
b. EQUIPMENT, MATERIALS, SUPPLIES			ESTIMATED COST	
	plots/prints			
	copies			
	postage			
EQUIPMENT SUBTOTAL:			\$ -	
c. SUBCONTRACTS				
SUBCONTRACTS SUBTOTAL:			\$ -	
OTHER DIRECT COSTS TOTAL:				\$ 7,504.00
10. ESTIMATED COST				\$ 180,504.00
11. FEE	Included in Standard Hourly Rates			
12. TOTAL LUMP SUM FEE				\$ 180,504.00



GEORGE, MILES & BUHR, LLC

SCHEDULE OF HOURLY RATES & EXPENSES

HOURLY RATES

Effective June 27, 2024

CLASSIFICATION	HOURLY RATE
Senior Project Director	\$ 185.00 - \$ 225.00
Project Director	\$ 160.00 - \$ 210.00
Senior Project Manager	\$ 135.00 - \$ 200.00
Project Manager	\$ 115.00 - \$ 165.00
Assistant Project Manager	\$ 115.00 - \$ 155.00
Senior Project Engineer/Architect/Landscape Arch	\$ 115.00 - \$ 155.00
Senior Environmental Scientist	\$ 100.00 - \$ 155.00
Project Engineer/Architect/Landscape Arch	\$ 105.00 - \$ 145.00
Graduate Engineer/Architect/Landscape Arch	\$ 95.00 - \$ 140.00
Environmental Scientist	\$ 70.00 - \$ 135.00
Geospatial Analyst	\$ 70.00 - \$ 135.00
Senior Designer	\$ 90.00 - \$ 155.00
Designer	\$ 75.00 - \$ 115.00
CADD Operator	\$ 70.00 - \$ 100.00
Construction Representative	\$ 90.00 - \$ 135.00
Resident Project Representative (RPR)	\$ 65.00 - \$ 125.00
Senior Project Coordinator	\$ 90.00 - \$ 125.00
Project Coordinator	\$ 65.00 - \$ 120.00
Surveyor	\$ 95.00 - \$ 170.00
Survey Crew Chief	\$ 70.00 - \$ 120.00
Survey Technician	\$ 40.00 - \$ 80.00
Administrative/IT Support	\$ 50.00 - \$ 135.00
GIS Specialist	\$ 60.00 - \$ 95.00
Senior Technician	\$ 60.00 - \$ 125.00
Technician	\$ 40.00 - \$ 85.00

EXPENSES

All items per each, unless noted.

Internal:

Photocopies:	
Black & White	\$ 0.20
Color	\$ 0.50
Prints/Plots:	
Black & White/Color	\$ 0.50 /s.f.
Mylar	\$ 2.00 /s.f.
Travel:	
Mileage	\$ 0.67/mile*
Subsistence (Meals & Lodging)	At Actual Cost
Overnight/Immediate Delivery	At Actual Cost
Survey Crew Rates	
1-person crew	\$ 130.00/hour
2-person crew	\$ 160.00/hour
3-person crew	\$ 190.00/hour
Other:	
Electronic Media Copies/Transfers/File	\$ 300.00/file
Website Project File Sharing	\$ 1.00/MB/month
Construction Management Software	\$ 200.00/month
Surveying Equipment/Total Station Only	\$ 35.00 /day
Surveying Equipment/Total Station + GPS Unit	\$ 150.00 /day

* Adjusted annually in accordance with the Internal Revenue Service Directives

GENERAL CONDITIONS

(Effective July 1, 2021)

AGREEMENT

The term "Agreement" refers to the undertaking by George, Miles & Buhr, LLC ("GMB") to perform Services described in the attached Proposal and these General Conditions. The Agreement shall become effective upon acceptance by Client of the attached Proposal and General Conditions, which when acknowledged in writing, are authorization to proceed. The Agreement is between Client and GMB, and their respective partners, divisions, affiliates, members, successors and assigns, both of whom promise not to transfer or assign any interest in the Agreement without the other party's written consent. The Agreement supersedes all prior written proposals or negotiations and is conditioned upon Client's acceptance of these General Conditions. No modification of the terms of the Agreement or General Conditions shall be valid unless authorized in writing by both parties. If additional services are required by Client, GMB will provide the services when authorized in writing and documented to do so by Client.

FEES, RETAINER

Any estimate of the fees and expenses that GMB expects to incur in providing Client with services outlined in the attached Proposal is not a maximum or lump sum fee. Client understands and agrees that the final billing may be more or less than the estimate. Fees for services will be adjusted if there are changes to the scope or schedule, as defined in the Proposal including supporting drawings, schedules and exhibits. If GMB does not have an established relationship with the Client, a retainer will be requested approximating the value of services for a minimum of sixty (60) days and will be credited to the final invoice. A Schedule of Hourly Rates & Expenses is attached to and incorporated as part of the Proposal. Unless otherwise noted, all proposals are valid for a period of 90 days from the date of the proposal.

INVOICES

Invoices are due upon receipt. If an invoice is outstanding beyond thirty (30) days of the invoice date, interest will be charged at a rate of one percent (1%) per month and GMB reserves the right to stop providing services and to withdraw all permit applications. Further, if GMB has to refer any delinquent billing to an attorney for collection, Client agrees to pay GMB its reasonable attorney's fees and expenses of collection, to include, without limitation, all litigation related expenses and expert witness fees, plus 25%.

EXPENSES

Client agrees to pay GMB for internal expenses in accord with Schedule of Hourly Rates and Expenses charged for those items that are specific to the project, including, but not limited to, subcontracted consultants, permit fees, reproduction expenses, renderings, models, etc. GMB will invoice external expenses at cost plus 10%.

LIABILITY & CLAIMS

Client agrees to limit GMB's liability related to errors and omissions to an amount not to exceed the total fee for the project or GMB's available professional liability insurance coverage for that year, whichever is less. GMB will not be responsible for any liabilities arising from Client's negligent acts or errors, or from any entity whose conduct is not subject to GMB's control. Client acknowledges the inherent risks associated with construction. GMB will provide services with a standard of care exercised by licensed architects and engineers. At least 30 days prior to making any claim against GMB, Client agrees to provide GMB a Certificate of Merit issued by an architect or engineer, licensed by the state in which the project is located, specifically describing

every error or omission which the issuer believes to be a violation of the standard of care. If Client makes a claim or brings legal action against GMB for any services under this Agreement, and fails to prevail, Client agrees to pay all legal and other expenses incurred by GMB in its defense, including, but not limited to, attorney's fees, court costs, expert witness fees, etc.

INSTRUMENTS OF SERVICE

All work products, including those in electronic form, prepared by GMB and GMB's consultants are Instruments of Service for use solely with respect to this project. The Client shall be permitted to authorize Contractor, Subcontractors and material or equipment suppliers to reproduce applicable portions of the Instruments of Service appropriate to and for use in their execution of the work. Any unauthorized use of the Instruments of Service shall be at the Client's sole risk and without liability to GMB and GMB's consultants. No alterations shall be made to the Instruments of Service by the Client and/or any representative of the Client without the written permission of GMB and GMB's consultants. Copies of electronic media, if requested and approved, will be invoiced to the Client and due upon receipt.

APPROVALS

GMB has no control over governments and their agencies in granting approvals. Therefore, GMB cannot guarantee the timeframe for, or the cost of services incidental to, obtaining approvals from governments or governmental agencies. If the type or level of services as originally defined are revised or changed during our assignment, the fee for our services from that point forward will be subject to negotiation.

TERMINATION/SUSPENSION OF WORK

Client or GMB each may terminate the Agreement with fifteen (15) calendar days written notice; Client agrees to pay for all services provided by GMB up to the date of termination. Project delays and suspension of the project for more than 30 days, may result in additional cost to resume work. Client agrees to pay such costs before work resumes if said delays are attributable to the Client.

CONSTRUCTION SAFETY

Client agrees to require general or subcontractor to indemnify, defend and hold GMB harmless against claims arising from unsafe site conditions.

CONSTRUCTION ESTIMATES

GMB has no control over the cost of labor, materials, equipment and services provided by others or over the contractor's methods of determining prices and does not warrant or guarantee construction estimates.

CONSTRUCTION SCHEDULES

GMB has no control over the means, methods and techniques of construction employed by contractors, the timing of government approvals or the delivery of materials and equipment. The Client agrees that any construction schedule prepared by GMB is approximate and will not be the basis for a claim.

HAZARDOUS MATERIALS

Client agrees to defend, indemnify and hold GMB harmless for any and all liabilities, claims, costs and expenses, including, but not limited to, litigation expenses, attorney's fees, and expert witness fees, which relate in any way to the presence of any hazardous or toxic materials on the project.

GOVERNING LAWS; VENUE

The Agreement shall be interpreted in accordance with the laws of the State of Maryland. The venue for any dispute arising out of the Agreement shall be, at the sole discretion of GMB, the Circuit Court for Wicomico County, Maryland or the federal courts within the State of Maryland.

10.0 Drawdown Plan

11. Small, Minority, and Women's Business Enterprise Participation

- Recipient Documents

- Prime Contractor Documents

**MARYLAND DEPARTMENT OF THE ENVIRONMENT
SOLICITATION OF FIRMS**

Loan Recipient must complete one form for each prime (construction & A/E) contract

Project Name: **Trenton Street Sewage Pumping Station Rehabilitation**

Total Contract Amount (Prime Construction Contractor): **\$ 6,355,000.00**

Please answer the following questions for each prime contract

Procurement Category: Check only one procurement category for each prime contract being reported under the above referenced project. **Construction** **Equipment** **Services** **Supplies**

Summary of Prime Contractors Solicited

- 1 Number of firms solicited (attach list/documentation): 32
- 2 Number of firms that responded (attach documentation): 4
- 3 Number of DBE firms that responded (attach documentation): 0

Details of Selected Firm

4 Name of Firm: **Retallack & Sons, Inc.**

5 Address: **8570 Swann Haven Rd, Easton, MD 21601**

6 Contact Person (Name and Phone): **Ralph Miles Retallack (410) 822-9467**

7 Total amount of Contract **\$ 6,355,000.00**

8 Is the firm a Minority Business Enterprise? (MBE) Yes No

9 Is the firm a Women Business Enterprise? (WBE) Yes No

10 If the response to question 8 or 9 is **Yes**, please complete the following:

- o M/WBE Certification Number: _____
- o Certification Date: _____
- o Expiration Date (if applicable): _____
- o Certifying Agency: _____

**Please submit all information to:
DBE Coordinator, MWIFA
1800 Washington Blvd., Baltimore MD 21230
Phone: 410-537-3146, FAX: 410-537-3968**

**TRENTON STREET PUMP STATION REHABILITATION
CITY OF CAMBRIDGE
GMB FILE 210260.B**

Copy of the Advertisement for Bids shall be sent to the following Contractors on **Wednesday, November 5, 2025**

LIST OF CONTRACTORS

American Contracting & Environmental Services, Inc.
10330 Old Columbia Road
Suite 102
Columbia, MD 21046
Attn: Corey McCarthy
301-490-9100
Corey.mccarthy@aceservinc.com

Bearing Construction, Inc.
805 Shine Smith Road
Sudlersville, MD 21668-1561
Attn: Mr. Jim Merrell
410-556-6100
Jim@bearingconstruction.net

Conewago Enterprises, Inc.
660 Edgegrove Road
Hanover, PA 17331
Attn: Don Smith, Jr.
717-632-8240
dsmithjr@conewago.com

Dutchland, LLC
160 Rt. 41
Gap, PA 17527
717-442-8282
info@dutchlandinc.com

Hopkins Construction, Inc.
18904 Maranatha Way, Unit 1
Bridgeville, DE 19933
Attn: Sharon Kelley
302-337-3366
sharon@hopkins-inc.com

Lee Foundation Co. Inc.
10039 Pulaski Highway
Baltimore, MD 21220
410-682-5335
Attn: Andy Lapinski
wal2lipinski@comcast.net

**American Infrastructure
(Allan Myers)**
1805 Berks Road
Worcester, PA 19490
Attn: Shannon Moody
410-893-2695
Shannon.Moody@allanmyers.com

Bilbrough's Electric, Inc.
25289 Smith Landing Road
Denton, MD 21629
Attn: Keith Bilbrough
410-479-4215
keith@bilbroughelectric.com

Chesapeake Turf, LLC
5652 N Nithsdale Drive
Salisbury, MD 21801
Attn: Rick Mazol
302-922-1317
rick@chesapeaketurf.com

George & Lynch, Inc.
150 Lafferty Lane
Dover, DE 19901
Attn: Aaron Fibelkom
302-734-9743
afibelkom@geolyn.com

JJID, Inc.
100 Julian Lane
Bear, DE 19701
302-836-0414
Attn: Cody Brown
302-836-0414
cbrown@jjid.com

Lywood Electric
102 Frank Adams Industrial Way
Federalsburg, MD 21632
Attn: Scott White
410-754-8631
swhite@lywoodelectric.com

A-Del Construction Co., Inc.
10 Adel Drive
Newark, DE 19702-1331
Attn: Mr. Scott Whitt
302-453-8286
swhitt@a-del.com

Bunting and Murray Construction Corp.
32996 Lighthouse Road
Selbyville, DE 19975
Attn: Jay Murray
302-436-5144
jay@buntingandmurray.com

David A. Bramble, Inc.
705 Morgnac Road
P.O. Box 419
Chestertown, MD 21620
Attn: JR Felchock
dfelchock@davidabrambleinc.com

Godwin Pumps
221 Commerce Dr.
Upper Marlboro, MD 20774
Attn: Tom Vance
301-433-7032
tom.vance@xylem.com

Kuhn Construction-
P.O. Box 1419
787 Valley Road
Heckessin, DE 19707-0444
Attn: Bill Kuhn
302-239-2846
wkuhniii@kuhnconstr.com

M2 Construction, LLC
891 Stony Battery Road
Landisville, PA 17538
Attn: Andrew Mattson
717-892-2048
andrew@m2constructionllc.com

Michael F. Ronca & Sons, Inc.
179 Mikron Road
Bethlehem, PA 18020
Attn: Jim Bergeman
610-759-5100
jbergeman@mfronca.com

Mack Industries, Inc.
201 Columbia Road
Valley City, OH 44280
800-482-3111 x6322
Attn: Jay Wieland
jwieland@mackconcrete.com

Micro-Tech Designs, Inc.
4312 Black Rock Road
Hampstead, MD 21074
410-239-2885
Attn: Cameron Farzanfar
cameron.farzanfar@microtechdesigns.com

Teal Construction, Inc.
612 Mary Street
Dover, DE 19904
Attn: Chad Reed
302-678-9500
CR1647@tealconstruction.com

Whiting Turner Contracting Co.
300 East Joppa Road
Baltimore, MD 21286
Attn: Andy Scherer
410-821-1100
andrew.scherer@whiting-turner.com

Mid-Eastern Builders Inc.
4016 Holland Blvd.
Chesapeake, VA 23323
Attn: Ms. Cindy Spain
757-487-5858
info@mebgc.com

Northeast Remsco Construction, Inc.
1333 Campus Parkway
Wall Township, NJ 07753
732-557-6100
engineering@northeastremesco.com

T.K. Construction, Inc.
31812 Johnson Road
Salisbury, MD 21804
Attn: Tommy Klaverweiden
410-742-5684
tommy@tk-construction.com

Tudor Electric, Inc.
801 Ottis Drive
Dover, DE 19903
Attn: Patty Brough
302-736-1444
tudorelectric@comcast.net

Wickersham Construction
777 E Ross Street
Lancaster, PA 17604
Attn: Doug Cherry
717-397-5826
cherrydw@wickcon.com

Norair Engineering Corp.
337 Brightseat Road, Suite 200
Landover, MD 20785
Attn: Mr. Harvey Yeager
301-499-2202
rnorair@norair.com

Rain for Rent
7677 Rolling Mill Road
Baltimore, MD 21224
Attn:
410-282-3880
info@rainforrent.com

Thompson Pump
38190 Old Stage Road, Suite A
Delmar, DE 19940
Attn: Warren Dittfield
302-907-0292
writtfield@thompsonpump.com

W.M. Schlosser Co. Inc.
2400 51st Place
Hyattsville, MD 20781
Attn: Candice Geter
301-773-1806
cgeter@wmschlosser.com

Riordan Materials Corporation
8712 Inwood Rd
Windsor Mill, MD
Attn: Tom Rainier
410-440-4411
trainier@riordanmat.com

Trenton Street Pump Station Rehabilitation - REBID
City of Cambridge, Maryland
GMB File No. 210260.B

DBE / MBE Firms Contacted:			
Company	Owner First	Owner Last	Email
AB Construction, Inc.	Krupal	Patel	marilu.tapia@abconstructioninc.com
ADS Construction Services	Angel	Munoz	adsconstructionserv@gmail.com
All Stars Contracting, LLC	Furqan M.	Ahmed	Furgan.a.allstarscontracting@gmail.com
Amerigal Construction Co., Inc.	Luis A.	Ezequiel	amerigalcc@gmail.com
Bizsolutions 360 Inc.	Peter	Nganga	petern@b360inc.com
C R Construction Group Inc.	Ernesto	Anibal Cruz Reyes	roberto.cruz@crconstructiongroup.com
Clinton Sewer Expert, Inc.	Francisco	Alarcon	aura@thecseinc.com
D & B Construction, Inc.	Duane	Pleasant	dbciduane@yahoo.com
Environ Civil Engineering Ltd.	Mufutau	Osoba	certifications@ece-ltd.com
FLB Contractors, Inc	Jose	Franco	ingridf@flbcontractors.com
Hopkins Construction Inc.	Joann	Hopkins	joann@hopkins-inc.com
J.M. Murphy Enterprises, Inc.	Jesse	Murphy	murphyjesse@aol.com
Reviera Enterprises, Inc.	Stans	Udhiri	ustan@reidrayco.com
Stella May Contracting, Inc.	Harley	Flack	harleyflack@stellamay.com
Agency			
Minority Business Development Administration			support@mbda.gov
National Association of Women's Business			tchagnon@nawbo.org

29088 Airpark Drive
Easton, MD 21601

CERTIFICATE OF PUBLICATION

STATE OF : MARYLAND
COUNTY OF: Talbot County

This is to certify that the annexed legal advertisement has been published in the publications and insertions listed below. "TRENTON STREET SEWAGE PUMPING STATION..." was published in the:

The Star Democrat 11/08/25
The Star Democrat 11/12/25



James F. Normandin
President & Publisher

**ADVERTISEMENT FOR BIDS
TRENTON STREET SEWAGE PUMPING STATION REHABILITATION**

Sealed bids for the Trenton Street Sewage Pumping Station Rehabilitation will be received by the Commissioners of Cambridge at the Office of the City Engineer, 1025 Washington Street, Cambridge, Maryland 21613 until 2:00 PM local time on Friday, December 12, 2025, at which time the Bids received will be publicly opened and read aloud.

Work consists of the construction of a new precast, post-tensioned wet well on an existing pumping station site, inclusive of pumps, mechanical piping, yard piping, vault structures, modifications to existing structures on site, renovations to an existing influent screen structure, a new wet well canopy structure, traveling bridge crane, odor control system, and all other appurtenant electrical, site, and appurtenant improvements depicted within the Contract Documents.

The Issuing Office for the Bidding Documents is GEORGE, MILES & BUHR, LLC, 206 West Main Street, Salisbury, Maryland, (410) 742-3115. Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 8:00 AM to 5:00 PM and may obtain copies of the Bidding Documents from the Issuing Office as described below.

Bidding Documents may also be examined at the Office of the City Engineer located at 1025 Washington Street, Cambridge, Maryland 21613, (410) 228-1855, on Mondays through Fridays between the hours of 8:00 AM to 4:30 PM.

Copies of the Contract Documents may be purchased at the office of George, Miles & Buhr, LLC, 206 West Main Street, Salisbury, Maryland 21601, upon payment of Forty Dollars (\$40.00) for each flash drive, non-refundable. Hard copies may be purchased for Three Hundred Dollars (\$300.00). Please email gharmid@gmbnl.com for coordination of purchase. Checks shall be made payable to George, Miles & Buhr, LLC. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

A pre-bid conference will be held at the City Council Chambers, 305 Gay Street on Thursday, November 20, 2025, at 10:00 AM local time to allow Contractors an opportunity to obtain information on the project from the Consulting Engineer and the Owner. A site visit will immediately follow the pre-bid conference. Attendance at the pre-bid conference is encouraged but is not mandatory.

Each bid must be accompanied by a Bid Bond payable to the Owner for five percent (5%) of the total amount of the bid. No bidder may withdraw his bid within one hundred (100) days after the actual date of the opening thereof.

Davis-Bacon Prevailing Wage Rates and Regulations will apply to this project. If Bidder intends to let any subcontracts for a portion of the work, Bidder shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services. For additional information, see Supplemental General Conditions Article 19.06.A and visit the MWQFA website: www.mds.state.md.us/mwfa.

Any contract or contracts awarded under this Advertisement for Bids will be funded through the Maryland Department of the Environment's (MDE) State Revolving Loan Fund (SRF). All requirements referenced in the SRF insert dated December 2024 will apply to this project.

This project is subject to compliance with American Iron and Steel (AIS).

The Commissioners of Cambridge reserve the right to reject any and all bids, and/or waive formalities or irregularities, and/or to accept or reject any items of any bid, as it may deem best for its interest. The bids will be evaluated, and award will be made to the lowest responsive, responsible bidder.

Commissioners of Cambridge
Cambridge, Maryland

3092854 SD 11/7,11/12/2025



GEORGE, MILES & BUHR, LLC

Tabulation of Bids

PROJECT NAME: Trenton St. Sewage Pumping Station
Rehab, Cambridge MD
 GMB JOB NO.: 210260.B
 BIDS OPENED: December 19, 2025 @ 2:00 PM

Item No	Bid Item Description	Size	Units	Est. Qty.	Retallack & Sons, Inc.		M2 Construction, LLC		Chesapeake Turf		W.M. Schlosser	
					Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
SCHEDULE A: LUMP SUM BID ITEM												
A1	Mobilization/General Conditions (not exceeding 5% of Item No.A3)	-	LS	1	\$ 250,000.00	\$ 250,000.00	\$ 400,000.00	\$ 400,000.00	\$ 410,000.00	\$ 410,000.00	\$ 425,000.00	\$ 425,000.00
A2	Demolition and Disposal	-	LS	1	\$ 949,850.00	\$ 949,850.00	\$ 400,000.00	\$ 400,000.00	\$ 159,800.00	\$ 159,800.00	\$ 300,000.00	\$ 300,000.00
A3	Pump Station Rehabilitation	-	LS	1	\$ 5,000,000.00	\$ 5,000,000.00	\$ 8,116,747.00	\$ 8,116,747.00	\$ 7,726,400.00	\$ 7,726,400.00	\$ 8,763,850.00	\$ 8,763,850.00
SUBTOTAL SCHEDULE A - A1 THRU A3						\$ 6,199,850.00		\$ 8,916,747.00		\$ 8,296,200.00		\$ 9,488,850.00
SCHEDULE B: UNIT PRICE BID ITEMS												
B1	Excavation Below Subgrade	-	CY	200	\$ 36.00	\$ 7,200.00	\$ 25.00	\$ 5,000.00	\$ 150.00	\$ 30,000.00	\$ 150.00	\$ 30,000.00
B2	Furnish and Place Gravel Bedding	-	CY	200	\$ 55.00	\$ 11,000.00	\$ 85.00	\$ 17,000.00	\$ 150.00	\$ 30,000.00	\$ 182.00	\$ 32,400.00
B3	Furnish and Place Special Backfill	-	CY	200	\$ 100.00	\$ 20,000.00	\$ 95.00	\$ 19,000.00	\$ 50.00	\$ 10,000.00	\$ 182.00	\$ 32,400.00
B4	Miscellaneous Excavation and Backfill	-	CY	50	\$ 85.00	\$ 4,250.00	\$ 40.00	\$ 2,000.00	\$ 125.00	\$ 6,250.00	\$ 275.00	\$ 13,750.00
B5	Furnish and Place Miscellaneous 4,000 Concrete	-	CY	50	\$ 200.00	\$ 10,000.00	\$ 600.00	\$ 30,000.00	\$ 500.00	\$ 25,000.00	\$ 1,500.00	\$ 75,000.00
B6	Secure Modified Proctor Tests, AASHTO T-180, Method A	-	EA	2	\$ 550.00	\$ 1,100.00	\$ 3,000.00	\$ 6,000.00	\$ 600.00	\$ 1,200.00	\$ 1,800.00	\$ 3,600.00
B7	Secure Field Density Tests, AASHTO T-191	-	EA	10	\$ 360.00	\$ 3,600.00	\$ 3,000.00	\$ 30,000.00	\$ 350.00	\$ 3,500.00	\$ 1,400.00	\$ 14,000.00
SUBTOTAL SCHEDULE B - B1 THRU B7						\$ 57,150.00		\$ 109,000.00		\$ 105,950.00		\$ 201,150.00
SCHEDULE C: UNIT PRICE CONTINGENT BID ITEMS												
C1	Furnish and Place Low-Density Cellular Concrete	-	CY	140	\$ 700.00	\$ 98,000.00	\$ 725.00	\$ 101,500.00	\$ 945.00	\$ 132,300.00	\$ 700.00	\$ 98,000.00
SUBTOTAL SCHEDULE C						\$ 98,000.00		\$ 101,500.00		\$ 132,300.00		\$ 98,000.00
TOTAL BID PRICE - SCHEDULE A + B + C						\$ 6,355,000.00		\$ 9,127,247.00		\$ 8,534,450.00		\$ 9,788,000.00


 CERTIFIED BY: Christopher B. Derbyshire, P.E.

Loan Recipient DBE GFE Checklist – “NO” Response Clarification

B2- It was not feasible to break the project down into smaller components as the Contract for this type of work is typically awarded to one (1) General Contractor. However, the Bidders/General Contractors are able to break down the work to allow for work to be completed by sub-contractors.

D2- It is unknown as to why the DBE Contractors solicited by the loan recipient did not bid as a prime contractor.

D3- As there were not any DBE contractors who submitted as a prime contractor, it is not possible to select a DBE prime contractor.

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard Suite 515 Baltimore MD 21230-1718
410 537 3119 1-800-633-6101

<https://mde.maryland.gov/programs/water/WQFA/Pages/mwbe.aspx>

Disadvantaged Business Enterprise (DBE) Good Faith Efforts Checklist
To be completed by Prime (Construction & A/E) Contractor

Project Name: TRENTON ST Pumping STATION

Procurement Category: Check box for all M/WBE procurement categories being reported under the above referenced project. Construction Equipment Services Supplies

For each procurement action, please answer the following questions

A: Develop Bidders List of DBE firms

- A1 Did you develop a Bidders List of DBE firms? Yes No
- A2 Did you advertise via eMMA, minority, local/regional papers or Dodge Report? Yes No
- A3 Did you send invitation for bids to DBE trade associations? Yes No
- A4 Did you contact US-SBA/MBDA/MDOT? Yes No
- A5 Did you receive Bidders List from Loan Recipient? Yes No
- A6 Did you provide MDE with Bidders List? Yes No

B: Smaller work components and delivery schedules

- B1 Did DBE firms have opportunities to bid as subcontractors? Yes No
- B2 Did you break down the project, where economically feasible, into smaller components for DBE firms to bid as subcontractors? Yes No
- B3 Do project components have reasonable delivery schedules? Yes No
- B4 Did you allow a reasonable time for DBEs to bid? Yes No
- B5 Did you encourage DBEs to bid as a consortium due to project size? Yes No

C: Solicitation Summary of DBE firms (Prime Contractor must fill WIFA 6100 Form)

- C1 Did you use the Bidders List to solicit subcontractors? Yes No
- C2 Did DBE firms bid as subcontractors (provide list, work type, & price)? Yes No
- C3 Did you select any DBE firms as subcontractor? Yes No
- C4 Is the subcontractor using any additional subcontractors? Yes No

Prime contractor must provide to loan recipient: (1) list of ALL subcontractors (DBE and non-DBE) with type of work and estimated dollar amounts; (2) completed WIFA 6100 Form.

Supporting Documentation

In support of the actions taken in items A, B, and C, (above), all prime contractors must attach this checklist along with supporting documentation for "Yes" answers and an explanation for "No" answers. Examples of supporting documentation include: (i) Bidders List of DBE firms; (ii) list of sub-contract work elements possible under the prime contract; (iii) proof of contact with DBE firms as potential sub contractors (copies of invitations for bids/RFP, contact letters, faxes and telephone call sheets, etc.; (iv) copies of all procurement advertisements; and, (v) list of all sub contractors that submitted bids/RFP.

ROBERT M REYNOLDS G.M.
Prime Contractor's Name and Title

[Signature] 12/23/25
Prime Contractor Official's Signature/Date

Contact Phone # 410-832-9467

**Maryland Department of the Environment -- Water Infrastructure Financing Administration
Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form
(MDE WIFA 6100 Form)**

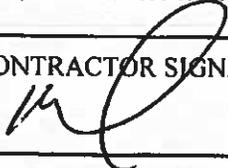
This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

PRIME CONTRACTOR NAME <i>RETDUAK + SONS INC</i>	PROJECT NAME <i>TAYLOR ST. PUMPING STATION</i>
CONTACT NAME <i>ROBERT M. RETDUAK</i>	CONTACT PHONE <i>443-496-6511</i>
ADDRESS <i>8520 SUMMER HAVEN RD EASTON MD 21601</i>	

Please list all DBE subcontractors you plan to utilize on this project. Use additional sheets as necessary.

SUBCONTRACTOR NAME	COMPANY ADDRESS	EST. DOLLAR AMOUNT TO BE SUBCONTRACTED	CURRENTLY DBE CERTIFIED? YES/NO
<i>RL EWING</i>	<i>EASTON MD</i>	<i>30,267</i>	<i>YES</i>
<i>RK J CONSTRUCTION</i>	<i>WILMINGTON DE</i>	<i>110,000. -</i>	<i>YES</i>

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware that in the event of the replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302(c).

PRIME CONTRACTOR SIGNATURE 	TITLE <i>GENERAL MANAGER</i>
PRINT FULL NAME <i>ROBERT M. RETDUAK</i>	DATE <i>12/23/25</i>

¹ A DBE is a Disadvantaged, Minority or Woman Business Enterprise that has been certified by any entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205.

² Subcontractor is defined as a company, firm, joint venture or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



Retallack & Sons, Inc.

retallackandsonsinc.com

1/8/26

A1 - All of our local firms

A2 - Did not find out in time to advertise locally

A3 – Reached out to our local firms.

A4 – Reached out to our local firms.

A6 – Listed on Form 6100

B1 – Listed on Form 6100

B2 – Reached out to our local firms.

B3 – Will know better after submittals.

B4 – As much as we had

B5 – Reached out to our local firms.

C1 – Small range of specialty work

C2 – Listed on Form 6100

C3- Listed on Form 6100

C4 – Local Sub Contractors

Sincerely,

Ralph Miles Retallack

General Manager

Phone: 410-822-9467

Fax: 410-822-9728

Address: 8570 Swann Haven Rd

Easton, MD 21601

TO: The Mayor and City Commissioners

FROM: Glenn Steckman

RE: CM Notes

February 19, 2026

Trenton Street Pump Station:

On your agenda is the request to approve the bid from Retallick and Sons to replace the Trenton Street Pump Station. This bid has been reviewed by GMB, the city's consultant and project manager. I am asking for a motion to approve Retallick and Sons as the low bidder in the amount of \$6,355,000.00 subject to state approval. Retallick and Son's have a positive working relationship with the city. Retallick and Sons most recently helped the city repair a broken stormwater pipe on Cedar Street.

State Assessors' Office:

Perry and I met with JoAnn Kunneman to discuss how assessments are performed in Dorchester County. The goal was to help us understand the data from the office and forecasting for future budgets.

Ann Damianos:

Tara Felts and I met with Ms. Damianos to discuss her concerns and her business that she raised at the previous council meeting.

Green Consultants:

The Mayor and I met with Derrick Green, our lobbyist, and Gerard Evans, who Green Consulting is partnering with, to discuss the city's concerns with tax differential and funding for projects.

Meeting with HUD with CWDI:

Representatives from CWDI, the Mayor and I met with representatives from HUD, Congressman Harris' Office and the USDA to discuss grant opportunities for CWDI. We were also informed about coming changes to Opportunity Zones coming in 2027.

Shore Resiliency Project:

The Shore Resiliency team met with the county property owners that were included in the proposed project. After their most recent meeting and the concerns about being part of the project in conjunction with the city, the team is withdrawing any effort to include them.

Salary and Benefits Study:

HR, Finance staff and I are continuing our meetings with Doctor Campbell on wrapping up the draft report for you to review on Monday, March 2, at 5:30pm.

Funds to Foundation:

The Mayor, Brandon and I met with Funds to Foundation on developing children's programming from eight to fifteen years old in electronic gaming with life skills development. The goal is to have this training up by this summer.



GEORGE, MILES & BUHR, LLC



ARCHITECTS
ENGINEERS

206 WEST MAIN STREET
SALISBURY, MD 21801
PH: 410.742.3115
PH: 800.789.4462
salisbury@gmbnet.com

SALISBURY
BALTIMORE
SEAFORD
LEWES
OCEAN VIEW

www.gmbnet.com



JAMES H. WILLEY, JR., P.E.
CHARLES M. O'DONNELL, III, P.E.
A. REGGIE MARINER, JR., P.E.
JAMES C. HOAGESON, P.E.
STEPHEN L. MARSH, P.E.
DAVID A. VANDERBEEK, P.E.
ROLAND E. HOLLAND, P.E.
JASON M. LYTLE, P.E.
CHRIS B. DERBYSHIRE, P.E.
MORGAN H. HELFRICH, AIA
KATHERINE J. MCALLISTER, P.E.
W. MARK GARDOCKY, P.E.
ANDREW J. LYONS, JR., P.E.

PETER A. BOZICK, JR., P.E.
JUDY A. SCHWARTZ, P.E.
W. BRICE FOXWELL, P.E.

JOHN E. BURNSWORTH, P.E.
VINCENT A. LUCIANI, P.E.
AUTUMN J. BURNS
CHRISTOPHER J. PFEIFER, P.E.
BENJAMIN K. HEARN, P.E.

January 7, 2026

City of Cambridge
1025 Washington Street
Cambridge, MD, 21613

Attn: Mr. Glenn Steckman
City Manager

Re: Trenton Street Sewage Pumping Station Rehabilitation
Bid Award Recommendation
GMB File No. 210260.B

Dear Mr. Steckman:

Bids for the referenced project were opened and read aloud publicly at the Office of the City Engineer at 2:00 P.M. on December 19, 2025. A total of four (4) bids were received from Contractors in Maryland and Pennsylvania. The total bid amount (Schedules A + B + C) ranged from \$6.35 million to \$9.78 million. A copy of the Certified Bid Tabulation is enclosed for your files.

The lowest bid was submitted by Retallack & Sons, Inc. of Easton, Maryland, with a Total Base Bid in the amount of \$6,355,000.00. The second lowest Total Base Bid was in the amount of \$8,535,100.00 and submitted by Chesapeake Turf, LLC. of Salisbury, Maryland.

GMB reviewed the Bids received and we offer the following comments:

- Retallack & Sons did not acknowledge the Addenda issued during the bidding period; however, all of the other bidders did.
- All Bidders provided the required bid bond.
- The low bid is approximately \$2,180,100 lower (25%) than the second lowest bid.
- Both W.M. Schlosser Company and Chesapeake Turf Bid the project previously in January 2025; due to funding challenges, both of these Bids were rejected.
- The Pump Station Rehabilitation Project is receiving State funds provided through the Maryland Department of the Environment; therefore, the project has DBE participation goals.
- Retallack & Son's supporting bid documentation indicates that they would provide 2.2% disadvantaged business enterprise participation for the project.

As indicated above, Retallack & Sons did not acknowledge Addenda 1 and 2 on the Bid form; however, Retallack & Sons has discussed this with GMB following the Bid opening and confirmed that it did in fact receive both Addenda. The *Assurances for Compliance with Federal Laws and Regulations* form they submitted confirms that they did utilize the correct Federal Wage rate General Decision Number included with Addenda 2. Additionally, the City's Bid advertisement affords ability to waive Bid informalities or irregularities, which GMB believes that failing to acknowledge Addenda on the Bid form qualifies as.

Focus was placed on Retallack & Sons' recent work performance, as they were the apparent low bidder. As GMB does not have prior working experience with this contractor, emphasis was placed on feedback from Owners and its representatives on Retallack & Sons' prior work. Retallack and Sons has recently completed projects which include the Royal Oak Pump Station Upgrade in Talbot County and the construction of Pumping Station No. 1 and No. 2 for the Lakeside at Trappe development. Feedback provided to GMB from these representatives was favorable towards Retallack & Sons' performance.

Retallack and Sons also listed George Hyde, P.E., former City Engineer for the City of Cambridge, as a reference for their work and capabilities. GMB spoke with Mr. Hyde regarding Retallack and Sons' previous performance. Mr. Hyde spoke favorably of the contractor and indicated that they have been one of the City's "go-to" contractors for emergency utility work for many years.

For the reasons stated above, Retallack & Sons, Inc. was found to be the lowest responsive, responsible bidder. Accordingly, GMB recommends that the City of Cambridge award construction of the Trenton Street Sewage Pumping Station Rehabilitation Project to Retallack & Sons, Inc. for a total award amount of Six Million Three Hundred Fifty-Five Thousand Dollars (\$6,355,000.00), contingent on MDE's approval of the Construction Bid Approval Package.

We routinely recommend that the City's attorney review the bid documents. If the City concurs with our recommendation, please prepare an appropriate letter of concurrence and intent to award.

If you need additional information, or if you would like to discuss any of these matters further, please do not hesitate to call the office at 410.742.3115 or contact me at jhibschman@gmbnet.com.

Thank you.

Sincerely,



John T. Hibschan
Graduate Engineer

JTH/slh

Enclosures:
Certified Bid Tabulation

cc: City of Cambridge
Attn: Andrew Koslow (w/encl.)



Tabulation of Bids

PROJECT NAME: Trenton St. Sewage Pumping Station
 Rehab, Cambridge MD
 GMB JOB NO.: 210260.B
 BIDS OPENED: December 19, 2025 @ 2:00 PM

Item No	Bid Item Description	Size	Units	Est. Qty.	Retallack & Sons, inc.		M2 Construction, LLC		Chesapeake Turf		W.M. Schlosser	
					Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
SCHEDULE A: LUMP SUM BID ITEM												
A1	Mobilization/General Conditions (not exceeding 5% of Item No.A3)	--	LS	1	\$ 250,000.00	\$ 250,000.00	\$ 400,000.00	\$ 400,000.00	\$ 410,000.00	\$ 410,000.00	\$ 425,000.00	\$ 425,000.00
A2	Demolition and Disposal	--	LS	1	\$ 949,850.00	\$ 949,850.00	\$ 400,000.00	\$ 400,000.00	\$ 159,800.00	\$ 159,800.00	\$ 300,000.00	\$ 300,000.00
A3	Pump Station Rehabilitation	--	LS	1	\$ 5,000,000.00	\$ 5,000,000.00	\$ 8,116,747.00	\$ 8,116,747.00	\$ 7,726,400.00	\$ 7,726,400.00	\$ 8,763,850.00	\$ 8,763,850.00
SUBTOTAL SCHEDULE A - A1 THRU A3						\$ 6,199,850.00		\$ 8,916,747.00		\$ 8,296,200.00		\$ 9,488,850.00
SCHEDULE B: UNIT PRICE BID ITEMS												
B1	Excavation Below Subgrade	--	CY	200	\$ 36.00	\$ 7,200.00	\$ 25.00	\$ 5,000.00	\$ 150.00	\$ 30,000.00	\$ 150.00	\$ 30,000.00
B2	Furnish and Place Gravel Bedding	--	CY	200	\$ 55.00	\$ 11,000.00	\$ 85.00	\$ 17,000.00	\$ 150.00	\$ 30,000.00	\$ 162.00	\$ 32,400.00
B3	Furnish and Place Special Backfill	--	CY	200	\$ 100.00	\$ 20,000.00	\$ 95.00	\$ 19,000.00	\$ 50.00	\$ 10,000.00	\$ 162.00	\$ 32,400.00
B4	Miscellaneous Excavation and Backfill	--	CY	50	\$ 85.00	\$ 4,250.00	\$ 40.00	\$ 2,000.00	\$ 125.00	\$ 6,250.00	\$ 275.00	\$ 13,750.00
B5	Furnish and Place Miscellaneous 4,000 Concrete	--	CY	50	\$ 200.00	\$ 10,000.00	\$ 600.00	\$ 30,000.00	\$ 500.00	\$ 25,000.00	\$ 1,500.00	\$ 75,000.00
B6	Secure Modified Proctor Tests, AASHTO T-180, Method A	--	EA	2	\$ 550.00	\$ 1,100.00	\$ 3,000.00	\$ 6,000.00	\$ 600.00	\$ 1,200.00	\$ 1,800.00	\$ 3,600.00
B7	Secure Field Density Tests, AASHTO T-191	--	EA	10	\$ 360.00	\$ 3,600.00	\$ 3,000.00	\$ 30,000.00	\$ 350.00	\$ 3,500.00	\$ 1,400.00	\$ 14,000.00
SUBTOTAL SCHEDULE B - B1 THRU B7						\$ 57,150.00		\$ 109,000.00		\$ 105,950.00		\$ 201,150.00
SCHEDULE C: UNIT PRICE CONTINGENT BID ITEMS												
C1	Furnish and Place Low- Density Cellular Concrete	--	CY	140	\$ 700.00	\$ 98,000.00	\$ 725.00	\$ 101,500.00	\$ 945.00	\$ 132,300.00	\$ 700.00	\$ 98,000.00
SUBTOTAL SCHEDULE C						\$ 98,000.00		\$ 101,500.00		\$ 132,300.00		\$ 98,000.00
TOTAL BID PRICE - SCHEDULE A + B + C						\$ 6,355,000.00		\$ 9,127,247.00		\$ 8,534,450.00		\$ 9,788,000.00

CERTIFIED BY: 
 Christopher B. Derbyshire, P.E.



COUNCIL AGENDA REPORT

To: The Honorable Mayor Lajan Cephas-Bey and the Commissioners of Cambridge

From: A.C. Alrey, Program Manager, Healthy Homes / *Lead Hazard Reduction Capacity Building Initiative*

Date: February 23, 2026

Subject: Council Agenda Report – Elected Officials Presentation for *Lead Hazard Reduction Capacity Building Initiative* (Quarterly)

Recommendation: Information Purposes Only (No Action Is Required)

The Lead Hazard Reduction Capacity Building Initiative via Housing of the Development Department is presenting an update to the Mayor and Commissioners as required by the HUD grant to raise awareness of current lead hazard reduction initiatives. This presentation is on Phase 1 and Phase 2; Phase 3 will be presented at a future time.

Project Description

The Lead Hazard Reduction Capacity Building Initiative is part of the Cambridge Healthy Homes Program. The overarching goal is to increase the City's existing infrastructure to support underserved communities and equitable community development. **Funding is used to build city capacity to identify and address housing units (primarily built pre-1978) in need of lead abatement and remediation for residents that live in or near target areas (deemed unsafe for children under the age of six and pregnant women due to lead prevalence/elevated lead blood levels).** Through this grant we will seek to increase and sustain city capacity by providing residents in the target (and surrounding areas in the future) with lead prevention education and remediation training through a certificate program. This will provide a unique workforce development opportunity where the local Cambridge residents, particularly those of the Historic Pine Street District, will be identified to become certified lead specialists and contractors.

After joining the Housing Department staff on August 19, 2025 and taking the (3) required training professional training course during the month of September and being brought up to speed on the grant program, its history and background, the numerous reporting requirements, and other maintenance procedures, I am in a position to move forward along with our Outreach Coordination, Mr. John Dabney in fulfilling the outreach, education, and awareness requirements that consist of providing workshops and presentations to residents, community organizations, landlords, tenants, local clergy and community leaders, contractors, and yourselves. Such activities will assist in creating the capacity needed to continue with the next phases necessary in implementing a successful lead hazard reduction program that will save lives, create a new, trained workforce, and strengthen the housing stock throughout a healthier Cambridge!

Key Deliverables

Objective 1: Provide public education and outreach to protect children and other vulnerable populations from the hazards of lead in the home.

Objective 2: Increase the lead specialist/contractor pool within the target community.

Objective 3: Perform lead remediation/abatement in identified units. Priority will be placed on houses where children ages six and under reside.

Schedule

A projected timeline for the required planning and implementation of workshops, presentations, trainings/certifications, home inspections, and remediation activities provided to the intended audiences is as follows:

<u>Key Milestone</u>	<u>Start Date</u>	<u>Completion Date</u>
<i>Phase 1 and 2</i> (Concurrent) Program Capacity Building	8/15/2024	8/15/2026
<i>Phase 3</i> Lead Inspection and Remediation Process	8/15/2026	8/15/2027

Fiscal Impact: AMA Inspector Training and MDE Certification. Required outreach efforts. Partnership and Advisory Council Development. Partners will bring their professional knowledge in areas of expertise and resources, ie. facilities, established business and community networks, communication materials, and various other training and job development for residents.

Equity Impact: We are connecting with our target audiences who comprise residents, landlords/property managers, construction related contractors, educational institutions, health officials, federal, state, and local government agencies, nonprofit organizations, small businesses and assistance organizations and City of Cambridge departments, ie. code enforcement, public safety, economic development, information technology, and others.

Environmental Impact: Creating lead-free homes. Environmental awareness of health issues. Healthier community both physically and mentally. Reduce the number of lead-based paint hazards within the City of Cambridge Housing units. Decrease in elevated blood levels in young children and/or pregnant women (primary purpose).

Approved By: A.C. Alrey, Healthy Homes Program Manager



City of Cambridge
Housing Department

1025 Washington Street, Cambridge, Maryland 21613
Phone: 410-228-1955 Fax: 410-228-1474

LEAD HAZARD REDUCTION INITIATIVE

Goal: Identify strategies necessary to develop and implement a Comprehensive Lead Hazard Reduction Plan that results in a decrease in number of Elevated Blood Lead Levels (EBLLs) and sources of lead hazard exposure in Cambridge.

