MIRA
Dissolution Authority
300 Maxim Road, Hartford, Connecticut 06114 Telephone (860) 757-7700 Fax (860) 757-7725

MEMORANDUM

TO: **South Meadows Transition Committee**

FROM: **William P. Beccaro, Committee Chairperson**

DATE: **November 1, 2024**

RE: **Notice of Regular Meeting**

There will be a **regular meeting** of the **South Meadows Transition Committee** of the MIRA Dissolution Authority's Board of Directors on ***Wednesday, November 6, 2024 at 11:00 a.m. in the Board Room at 300 Maxim Road, Hartford, CT. Members of the public may also attend the meeting telephonically by calling (929) 205-6099, entering Meeting ID: 858 1861 1943 and Passcode: 661934# when prompted. (NOTE - there is very limited physical space in the Board Room - consequently, virtual public attendance is encouraged).*** The meeting is scheduled to conclude at 12:30 p.m. The purpose of this meeting will be:

1. Call to Order; Chair's Welcome

2. Public Comment (3 minutes per speaker)

3. Approval of Minutes of the October 9, 2024 Regular Committee Meeting *(**Attachment 1**)*.

4. Presentation and Discussion of the following DRAFT Milestone Report associated with the South Meadows Redevelopment Considerations Study:
   - *Review of Existing Site Conditions and Restrictions, and Potential Future Uses* (***Attachment 2***)

5. Update and Discussion Regarding the South Meadows Redevelopment Considerations Study, Including:
   - Hazardous Building Materials Survey
   - Second Public Informational Meeting to be Held November 12, 2024

6. Executive Session to discuss pending Request for Services relative to prospective public supply contract associated with engineering design and permitting services related to the abandonment of floodwall penetrations at the South Meadows site.

7. Such other items that may properly come before the Committee.

Cc: Bert Hunter
Mark Daley
Christopher Shepard
Raymond Frigon (CT-DEEP)
Claire Quinn (CT-DEEP)
Jade Barber (CT-DEEP)
Robert Carr (Weston & Sampson)
Carl Stopper (TRC)

Attachment 1

South Meadows Transition Committee
October 9, 2024
Meeting Minutes

A Regular Meeting of the South Meadows Transition Committee of the MIRA Dissolution Authority was held on October 9, 2024. Present either in-person or via video or audio conferencing were:

Committee Present:	Director William Beccaro, Committee Chairperson (via Zoom) Director John Fonfara (via Zoom) Director Matthew Dayton (via Zoom) Director Rachel Taylor (via Zoom) Director David Steuber (via Zoom, joined @ 11:15) Director Bert Hunter (Ex Officio) (via Zoom, joined @ 11:25)) Member Frank Dellaripa (arrived @ 11:15) Member William DiBella (arrived @ 11:15)
Other Directors Present:	David H. Barkin Michael Looney (via Zoom)
Other Members Present:	Thomas Swarr (via Zoom)
Authority Staff Present:	Mark T. Daley, President & CFO Christopher Shepard, Environmental Compliance Manager Thomas Gaffey, Director of Recycling & Enforcement (via Zoom) Cheryl Kaminsky, Comptroller (via Zoom) Ann Catino (Halloran & Sage), General Counsel
CT-DEEP Staff Present:	Jade Barber (via Zoom) David McKeegan (via Zoom) Claire Quinn (via Zoom) Akhila Mirza (via Zoom)
Others Present:	Robert Carr, Weston & Sampson (via Zoom) Susan Mara, Weston & Sampson (via Zoom) Justin Dominguez, SGH Peter Folino, Eagle Environmental (vai Zoom) Nicholas Casparino, City of Hartford DPW (arrived @ 11:15) Alex Garneau, US Army Corps of Engineers (via Zoom) Joanna Wozniak-Brown (via Zoom) Marcus Y. (via Zoom) (860)573-5203 (via Zoom)

This meeting was recorded via ZOOM conferencing and is posted on the Authority's website at: https://www.ctmira.org/mira-dissolution-authority-south-meadows-transition-committee

1. Call to Order; Chair's Welcome

Committee Chairperson Beccaro called the meeting to order at 11:03 A.M. and confirmed that a quorum was present.

2. Public Comment (3 minutes per speaker)

Committee Chairperson Beccaro invited members of the public to address the Committee. There were no public comments, and Committee Chairperson Beccaro proceeded with the next agenda item.

3. Approval of Minutes of the September 4, 2024 Regular Committee Meeting

Committee Chairperson Beccaro requested a motion to approve the minutes of the September 4, 2024 Regular Committee Meeting. The motion was moved by Director Dayton and seconded by Director Fonfara.

Committee Chairperson Beccaro asked if there were any discussion, comments, corrections or modifications requested. Member Swarr noted one error in the first full paragraph on page 7 of the minutes – the minutes erroneously state that "Member Swarr suggested that Parkville elementary school could be considered." Member Swarr requested that the minutes be corrected to state that he had suggested Burr Elementary School on Wethersfield Avenue, not Parkville Elementary School, for consideration.

Chairperson Beccaro asked if there were any other discussion, comments, corrections or modifications requested. Hearing none, Committee Chairperson Beccaro asked for a vote to approve the minutes with the correction requested by Member Swarr. The motion was approved unanimously by those in attendance, as indicated below:

Director	Raised	Second	Aye	Nay	Abstain
Chairperson Beccaro			X		
Matthew Dayton	X		X		
Rachel Taylor			X		
John Fonfara		X	X		
Dave Steuber					(Absent)

4. Presentation and Discussion of DRAFT Milestone Reports associated with the South Meadows Redevelopment Considerations Study

Chairperson Beccaro introduced this update and discussion by noting that Attachments 2, 3, and 4 of the Committee package include the draft reports to be discussed. At Chairperson Beccaro's request, Mr. Daley then provided an overview of the draft milestone reports to be discussed during today's Committee meeting with Simpson Gumpertz & Heger Associates (SGH), a subconsultant to Weston & Sampson Engineers (WSE). Mr. Daley noted that SGH will be discussing the 3 draft milestone reports related to the Hartford flood control system,

and that the 3 draft reports have also been provided to the Greater Hartford Flood Commission, the US Army Corps of Engineers, and the CT-DEEP Dam Safety Division for review and comment.

Mr. Daley continued by summarizing that the first draft report is a plan to deal with 12 identified penetrations of the floodwall, all of which are inactive except for one storm water discharge, as well as several above-ground encroachments to the floodwall. Mr. Daley then stated that the plan includes guidelines and a scope of work for abandonment of the penetrations and removal of the encroachments, with an estimated cost of $2.65 million excluding design and permitting (6 potential permits are identified in the plan)

Mr. Daley then summarized the second plan, which is an O&M and inspection plan related to the penetrations. Mr. Daley stated that the O&M and inspection plan documents how to manage the penetrations until proper abandonment is completed. Mr. Daley further stated that it defines the inspection and maintenance programs associated with the penetrations, including such work as dewatering, cleaning, lubricating, replacing seals, etc., which is important for both the Authority and its successor to understand.

Mr. Daley then provided an overview description of the emergency preparedness plan, which he noted as building on the information included in the other two plans. Mr. Daley noted that the emergency preparedness plan addresses such matters as notification requirements, preliminary response tasks and full response to flood situations, cessation activities after flooding subsides, and roles and responsibilities of the various agencies involved.

Mr. Daley then introduced Justin Dominguez from SGH to provide the presentation of the Floodwall Penetrations Status Update, a copy of which is included as Attachment #1 to these meeting minutes.

Mr. Dominguez began his presentation with background information regarding historic floods that occurred in Hartford in 1936 and 1938, which prompted the construction of the Hartford Flood Control System in the 1940s by the US Army Corps of Engineers. Mr. Dominguez then noted that there are 12 penetrations of the floodwall (i.e., pipes passing through or under the floodwall) where it borders the South Meadows Station property; and that these penetrations present a risk to the integrity of the Hartford Flood Protection System even though the Facility has ceased operation. As the owner of the penetrations, the Authority is responsible for operations, inspections, and maintenance activities, and for operations during flooding, even for inactive penetrations, and even though some of the penetrations pre-date the operation of the waste-to-energy plant. Member Dellaripa and Mr. Casparino of the City of Hartford DPW/Greater Hartford Flood Commission (GHFC) confirmed that the responsibilities for operations, inspections and maintenance remain with the owner of the penetrations until such time as the penetrations are properly abandoned

Mr. Dominguez also noted that the responsibility for the penetrations will transfer to the Authority's successor (CT-DAS), and to any subsequent property owner(s), until such time as the proper abandonment of the penetrations eliminates the risks and responsibilities associated with them.

Mr. Dominguez then provided a brief description of each of the three draft reports that are included in the package for today's Committee meeting, followed by photographs and tabular summaries from his presentation that illustrate the characteristics of the 12 penetrations. Mr. Dominguez noted that only 1 of the 12 penetrations is still active, serving to convey stormwater runoff from a roof area and a portion of paved parking area on-site to the Connecticut River. The remaining penetrations are pipes that vary in diameter up to 48-inches, and that have historically conveyed water into the plant; water discharges to the Connecticut River; and fuel oil from a dock on the river to bulk fuel storage tanks that were formerly located on-site.

Member Dellaripa noted that it would be preferable to the GHFC that all 12 penetrations, including the single active penetration, be properly abandoned either ahead of or at the same time as site redevelopment activities. Mr. Dominguez noted that there is a significant storm drainage system on the interior (protected side) of the floodwall, and that re-routing that single stormwater discharge penetration would likely be feasible given the relatively small size of the discharge pipe when compared to other stormwater infrastructure on-site.

Chairperson Beccaro asked if it would be feasible to properly abandon the inactive penetrations, and if we would have the authority to do so sooner rather than later. Mr. Dominguez replied that such abandonment is definitely feasible, that he believed that it would be prudent to include abandonment of the single active penetration (after re-routing its discharge), and that SGH developed a cost estimate to abandon all 12 penetrations that was included in the draft report on the penetrations.

Mr. Dominguez then provided a more-detailed description of the penetration abandonment process. Mr. Dominguez noted that excavations to access underground pipes for abandonment, and the subsequent backfilling of those excavations, would have to be performed in accordance with Environmental Land Use Restrictions that have been recorded on the site. Attorney Catino asked if any steps would need to be taken to prevent "piping" around the piping that would remain in the ground after grouting. Mr. Dominguez stated that such soil movement is relatively low when the end of the pipe is buried on the protected side of the floodwall; however, some of the pipes emerge from the ground in the plant, so a "filter diaphragm" could be installed with the bulkheads on the ends of the pipes to intercept/arrest that type of soil movement.

Director Barkin asked Mr. Dominguez if SGH's study has identified any locations where there has been soil subsidence associated with these penetrations. Mr. Dominguez replied that no signs of subsidence were identified by SGH during its site visits and floodwall inspections. Director Barkin asked what would be the typical signs of such subsidence. Mr. Dominguez replied that typical signs of subsidence would include conditions such as cracking of paved surfaces above the penetrations, leading to development of depressions. Mr. Shepard also noted that the GHFC does some monitoring of the concrete flood wall on a regular/quarterly basis to check for movement. Mr. Casparino clarified that that monitoring is to determine if any deflections of the floodwall are developing at joint locations. Mr. Casparino also indicated that some deflections have been noted on-site in the past, and that such deflections are likely related to changes in the floodwall's foundation type (i.e., from piles to sheet piles, etc.) along the length of the floodwall.

Chairperson Beccaro asked if it would be possible and practical for the Authority to pursue the abandonment work in an effort to leave the site in a better condition. Director Hunter agreed that it would be the responsibility of the Authority to ensure that the property is "stabilized" as part of the plan for handing it off to CT-DAS. Director Barkin stated that DAS would prefer that the abandonment be pursued by the Authority. Director Hunter asked what the timeline for such a project would be, to which Mr. Dominguez indicated that this would likely be a 2 to 2.5 year process from conception through completion. Mr. Dominguez indicated that design and permit application submittals could likely be prepared between now and June 30, 2025, and that DAS would then have to continue forward with permitting process.

Chairperson Beccaro asked if the costs for abandonment have been estimated. Mr. Dominguez indicated that the construction cost estimate is approximately $2.65 million, plus another $300,000 to $400,000 for project design and permitting work. Mr. Dominguez also noted that there would be considerable stakeholder involvement and permitting through multiple authorities (GHFC, US Army Corps of Engineers, multiple divisions of the CT-DEEP).

Mr. Dominguez then provided an overview of intake and discharge tunnels associated with Screenhouse #2 that were previously abandoned by CL&P. Mr. Dominguez noted that the abandonment of these tunnels included concrete plugs under the floodwall and at the end of the discharge tunnel at the river, and sand fill inside of the discharge tunnel where it runs parallel to the floodwall on the river side. Director Barkin asked if the concrete plug at the discharge end of the tunnel is compromised, to which Mr. Dominguez stated that it is not currently compromised. Mr. Dominguez indicated that the GHFC has expressed a potential stability concern regarding the sand-filled portion of the tunnel; specifically, that the concrete plug could deteriorate over time, and that the sand from the tunnel could then run out of the tunnel and leave a void space in the tunnel that could be followed by the collapse or partial collapse of the tunnel, which could then de-stabilize the floodwall. Mr. Dominguez indicated that such a scenario would likely develop over a long period of time. Mr. Casparino stated that he has seen conflicting information regarding how the tunnel penetration was abandoned, and that it is not clear that the tunnels are filled with concrete beneath the floodwall.

Director Barkin asked why the tunnel section filled with sand would not simply be removed via excavation, to which Mr. Dominguez responded that the depth of the tunnel is near the river level, so such excavation would be complicated by the needs to keep the excavation de-watered while simultaneously excavating in close proximity to the floodwall without undermining it. Mr. Dominguez indicated that another potential option for proper abandonment of the sand-filled tunnel would be to drill holes through the top of the tunnel and then inject grout into the sand to effectively solidify the sand and make it less porous. Mr. Dominguez noted that SGH has not estimated the potential costs associated with this option to grout the sand in the tunnel.

Mr. Dominguez also recommended that a seepage analysis of the intake and discharge tunnel penetrations be completed because there are potential gaps between the sides of the tunnels and the sheet piles associated with the floodwall, and there are no sheet piles below the tunnels. Mr. Dominguez indicated that a computerized modeling and analysis of the seepage would be completed to estimate seepage rates. If the estimated seepage rate is found to be

unacceptable, then grouting of the areas around the tunnel with no sheet piling would be recommended in order to lower the seepage rate.

Mr. Dominguez then mentioned that there are a number of encroachments over and attached to the floodwall that could hamper future flood fighting activities, and that therefore need to be removed. Director Barkin asked if the oil pipes that remain still contain oil. Mr. Dominguez indicated that some of the pipes have labels indicating that they are empty, but we do not know if there are any residual materials present in those pipes, so proper precautions should be taken to ensure that any residual materials are collected and properly handled.

Mr. Dominguez then provided additional details regarding the estimated construction costs for the penetration abandonment work, noting that the $2.65 million cost estimate does not include potential costs associated with disposal of contaminated soils, which SGH estimated could approach $550,000 depending upon what pollutants are present in any soil that might need to be disposed of. Director Barkin recommended that SGH include a cost escalation table so that there is an awareness of how the costs will increase over time.

Mr. Dominguez then transitioned his presentation to a discussion regarding the operations, inspection, and maintenance plan, noting that the approach to this plan is to leave all valves associated with inactive floodwall penetrations closed, because there is no operational need for the valves to ever be opened again. Regarding the one active penetration, Mr. Dominguez stated that there is a gate valve on the protected side of the floodwall that would need to be exercised regularly to ensure that it continues to operate correctly, as well as a "flap valve" on the discharge end of the pipe that would have to be inspected regularly to ensure proper function.

Mr. Casparino then stated that the inspection protocols established by the US Army Corps of Engineers for floodwall penetrations requires a CCTV inspection every five years, and that the CCTV inspection requirements still apply to the inactive penetrations until they are properly abandoned. Mr. Casparino noted that the valves of the inactive penetrations would have to be opened for these CCTV inspections.

Mr. Dominguez continued with a discussion regarding additional visual inspections of all floodwall penetrations and surrounding ground surfaces that need to be conducted on an annual basis, as well as additional inspections that need to be conducted before, during and after flood events. Director Barkin asked what the regular inspection frequency is for the active penetration, and Mr. Dominguez confirmed that it is an annual inspection requirement.

Mr. Daley asked if the inspection work that SGH have completed to date for this project would qualify as meeting the annual inspection requirement, to which Mr. Dominguez stated that it would be considered a partial inspection. Mr. Dominguez stated that there are 2 valves in valve chambers, one of which was filled with water that would require confined space entry in order to inspect and exercise the valves. Mr. Daley asked for a summary of the scope necessary to complete the first annual inspection, and Attorney Catino asked if the CCTV inspection should be completed at the current time to identify any issues that the Authority could address before July 1, 2025. Mr. Dominguez said that he would certainly recommend CCTV of the active stormwater drain pipe; however, he also noted that there is no ready access point into the cooling water intake and discharge lines, so there is concern that CCTV of those lines could require cutting into the pipes for access, which would then pose a potential risk of

failure of those pipes. Mr. Daley asked when the next five-year CCTV inspection is due, to which Mr. Casparino replied that the GHFC is not aware of any CCTV inspections being completed in the past.

Director Barkin then offered that proper abandonment of the 12 penetrations, which would include re-directing the current stormwater discharge away from the floodwall, would resolve the concerns regarding potential floodwall impacts. Mr. Casparino noted that there are other things associated with the site that could potentially impact the floodwall, such as the foundations of the screen houses located on the riverbank outside the floodwall which could lead to riverbank subsidence. Mr. Dominguez noted that the scope of work for SGH does not include evaluating potential impacts from the screen houses, but that the Weston & Sampson scope of work includes evaluation of the screen houses as part of future site redevelopment considerations. Mr. Carr noted that Weston & Sampson's scope does not include inspections of the screen houses with respect to potential impacts on the floodwall; but that Weston & Sampson's scope does include developing costs estimates for demolition or renovation of the screen houses.

Mr. Dominguez then began discussions regarding the emergency preparedness plan, which plan covers both readiness for floods, as well as flood fighting if potential floodwall failure conditions develop, such as "sand boils." Mr. Dominguez stated that flood fighting requires supplies, labor and equipment, and he noted that supplies could be obtained but that there is no longer any labor or equipment on-site. Mr. Dominguez indicated that labor and equipment could be sub-contracted on an on-call basis that would have to be activated each time a flood condition occurs.

Mr. Dominguez then discussed how the emergency preparedness plan has been developed to be integrated with the City of Hartford's emergency response system. He then summarized the four phases of flood response (notification, preliminary response, full response, and cessation). Mr. Dominguez then noted that the "preliminary response" phase (requiring daily patrols) has been activated 27 times during the last 15 years, and that the "full responses" phase (requiring patrols every 4 hours) has been activated 2 times in the last 15 years.

Mr. Dominguez then discussed a summary of emergency preparedness plan responsibilities for each entity involved with flood emergencies, including the Authority; Hartford DPW; Hartford Police, Fire and Rescue; the Mayor of Hartford; the US Army Corps of Engineers; and the National Weather Service. Mr. Casparino noted that the Hartford DPW has certain responsibilities specific to the flood protection system, but those responsibilities do not include entering any site buildings. Member Dellaripa noted that the emergency coordinator for the City of Hartford is the Fire Chief.

Chairperson Beccaro thanked Mr. Dominguez for the presentation and asked what are the next steps that the Authority should undertake with respect to the floodwall penetrations. Mr. Dominguez suggested that the Authority should initiate the design and permitting process for abandonment of the penetrations as soon as possible. Member Dellaripa stated that the GHFC will also provide a formal response to the three plans that were discussed during today's meeting. Mr. Daley indicated that the Authority would request that the consultants start work on a scope of work for the design and permitting work, and that we will keep that process moving forward.

Director Barkin noted that DAS will apparently be handling the bidding and execution of the work for abandoning the penetrations, which means that all DAS requirements and standards will ultimately have to be met. Director Barkin then asked if the project design would have to be 100% complete before proceeding with permitting, or if permitting could proceed without completion of the full design. Mr. Dominguez stated that the design would not have to be 100% designed, but that it would have to be substantially developed beyond what SGH has presented in its report for this study. Mr. Dominguez then noted that the required abandonment work is relatively straight-forward, and that a significant portion of the design should be able to be completed before the hand-off to DAS. Director Barkin then requested that there be coordination of the design work with DAS in order to ensure that the work ultimately meets DAS's standards so that DAS can then move forward seamlessly with the next phase of the work. Chairperson Beccaro agreed with Director Barkin, but cautioned that he would not want to see the recommended work unnecessarily delayed in an effort to make everything "perfect." Director Barkin agreed, and Mr. Dominguez noted that the permitting authorities are typically concerned with the technical plans and specifications, and have little concern regarding the procurement, contracting, etc.

Chairperson Beccaro noted that the scheduled end time for this Committee meeting was close and that some Directors have a hard-stop at 12:30, and he then asked if there were any additional formalities that needed to be addressed. Mr. Daley noted that today's meeting agenda also includes a presentation on the draft milestone report regarding existing environmental conditions and how they relate to potential future uses. Given the limited meeting time remaining, Mr. Daley suggested that this planned presentation be carried over to the next regular meeting of this Committee. Chairperson Beccaro asked if any of the information from the planned presentation was time-sensitive such that a special Committee meeting would be required. Mr. Daley and Mr. Shepard indicated that they thought it would be fine to move the planned presentation to the next regularly-scheduled Committee meeting.

5. Update and Discussion Regarding the South Meadows Redevelopment Considerations Study – Hazardous Building Materials Survey and Second Public Informational Meeting

Chairperson Beccaro requested an update regarding the hazardous building materials survey and the second public informational meeting. Mr. Daley stated that we are still in a holding pattern regarding whether or not to submit the collected building material samples for analysis of PCBs. There is another meeting planned to discuss this matter. Regarding the next public information meeting, Mr. Daley reminded the Committee that it is scheduled for November 12, 2024 at the Metzner Center, from 5:30 PM to 7:30 PM. Mr. Daley also noted that Weston & Sampson is also working on a "Frequently Asked Questions" sheet to provide the public with additional information.

Director Steuber asked when the decision would be made regarding the analysis of building material samples for PCBs. Mr. Daley stated that another meeting is being scheduled to discuss the implications to the Study and to the Closure Plan of not analyzing the samples for PCBs. Chairperson Beccaro indicated that there would be some additional discussion on this matter at next week's meeting of the full Board, and Director Steuber stated that he does not want time-pressure to limit the Authority's options on this matter, regardless of what the Board ultimately decides.

6. Adjournment

Committee Chairperson Beccaro asked if there were any other matters to discuss. Hearing none, Committee Chairperson Beccaro requested a motion to adjourn. Director Steuber moved to adjourn, and Committee Chairperson Beccaro adjourned the meeting at 12:30 PM.

Attachment

Presentation Entitled "Floodwall Penetrations Status Update"

FLOODWALL PENETRATIONS STATUS UPDATE

MIRA FORMER TRASH-TO-ENERGY FACILITY REDEVELOPMENT CONSIDERATIONS STUDY

Justin A. Dominguez, P.E.

Senior Project Manager

9 October 2024

BACKGROUND

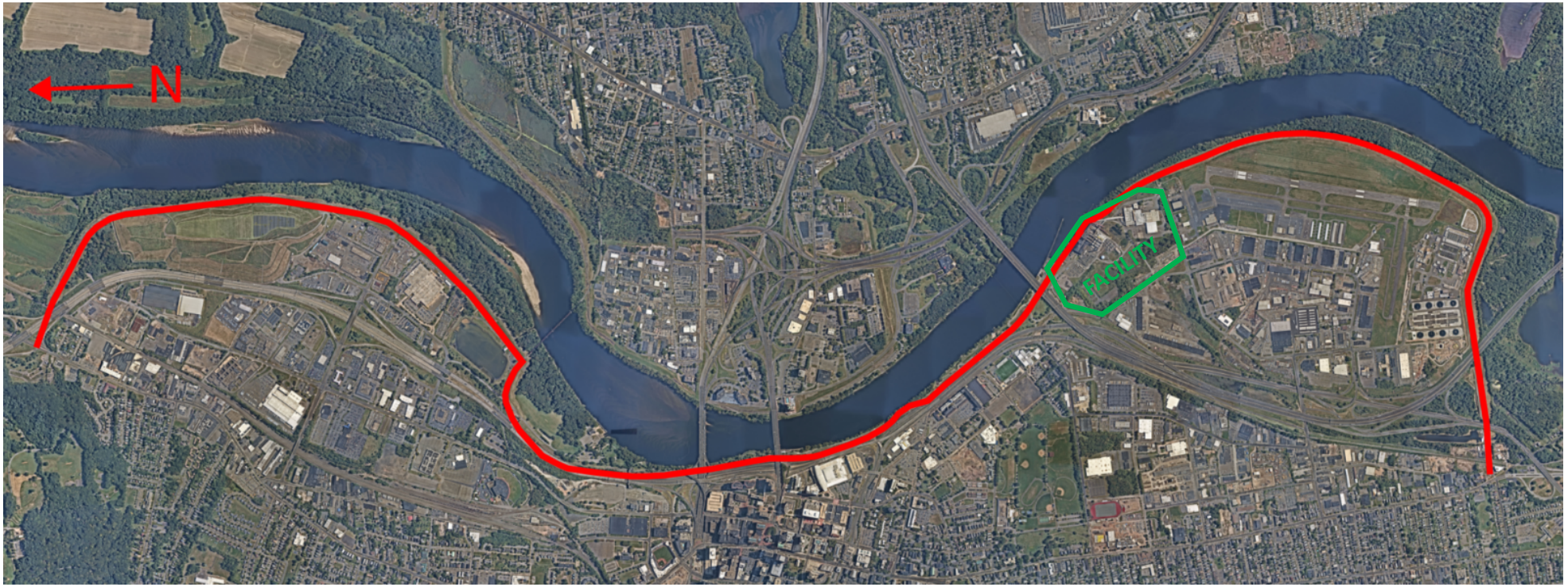
1936 Flood

Source: Library of Congress/New England Historical Society

1938 Flood

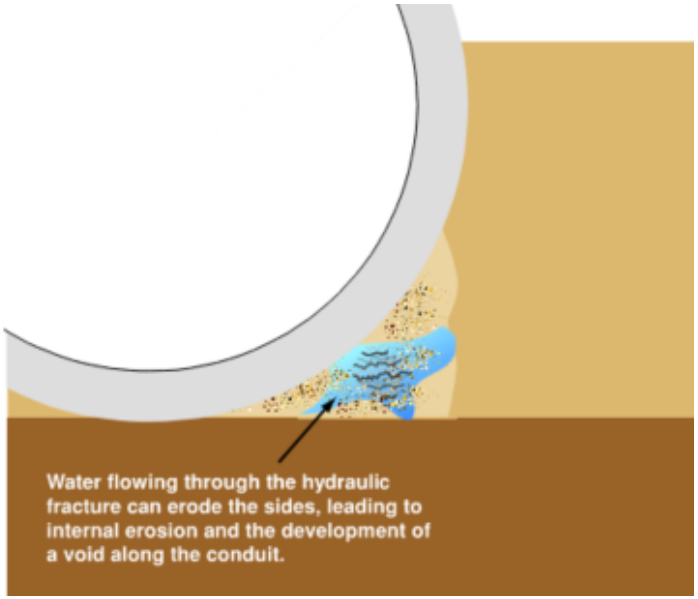
Source: CT State Library Archives

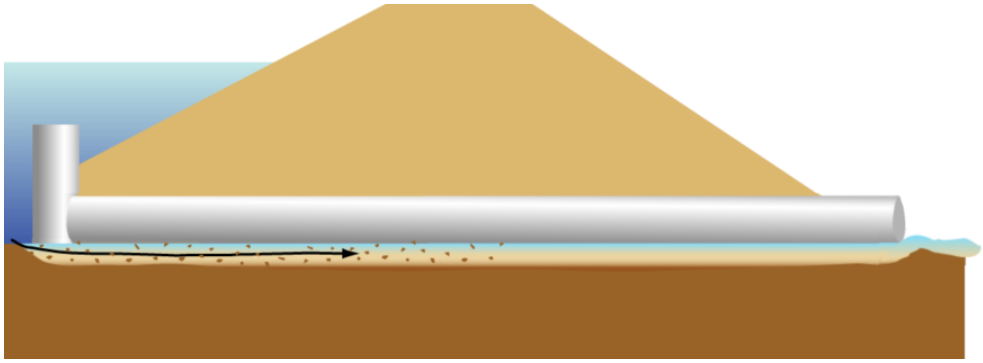
Hartford Flood Control System



Aerial photo source: Nearmap

Utility Penetrations Through Floodwalls and Levee Embankments





Source: FEMA (2005) Conduits through Embankment Dams

Motivation for this study

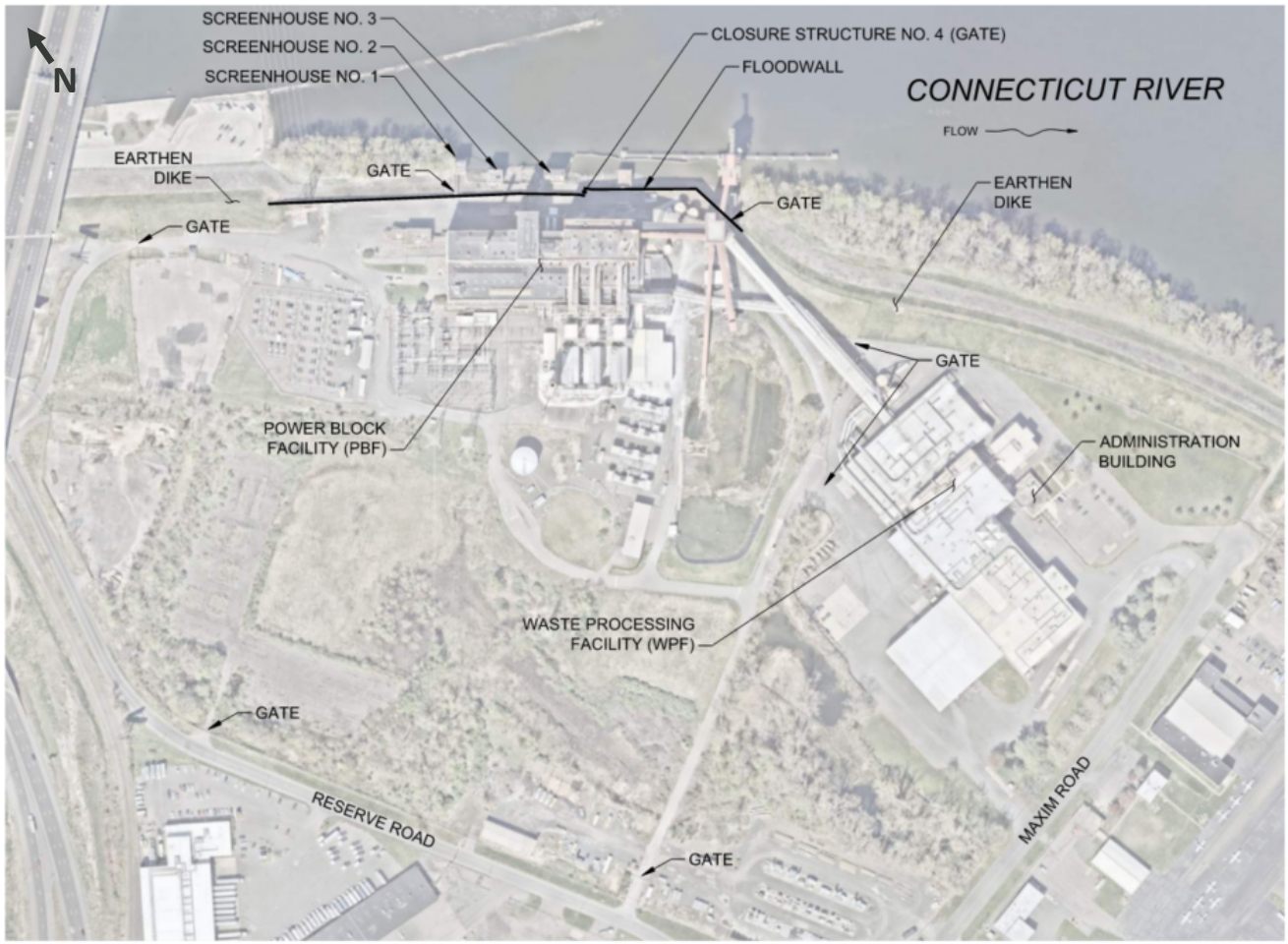
- Penetrations present a risk to the Hartford Flood Control System
  - The ceasing of Facility operations does not make this risk go away
  - Properly abandoning penetrations can eliminate the risk
- Responsibility for floodwall penetrations falls on the owner of the penetrations
  - Operations, inspections, maintenance
  - Includes operations during flooding
  - Ongoing commitment UNTIL penetrations are abandoned
- 12 penetrations associated with the Facility
  - MDA's responsibility currently
  - CT Department of Administrative Services assumes responsibility on 1 July 2025
  - Potential future ownership transition for redevelopment
- Greater Hartford Flood Commission identified concerns in a 10 May 2022 memo to MIRA

Weston & Sampson/SGH Scope of Work

- Review available documents, including a search of the Facility's plan room
- Visit the site to confirm details about the penetrations
- Report on the requirements for abandonment of penetrations and removal of encroachments
  - Draft issued 9/13, updated 10/2
- Floodwall Penetration Operation, Inspection, and Maintenance Plan
  - Draft issued 9/13, updated 10/2
- Floodwall Penetration Emergency Preparedness Plan
  - Draft issued 9/16

FLOODWALL PENETRATIONS AT THE FACILITY

THE FACILITY



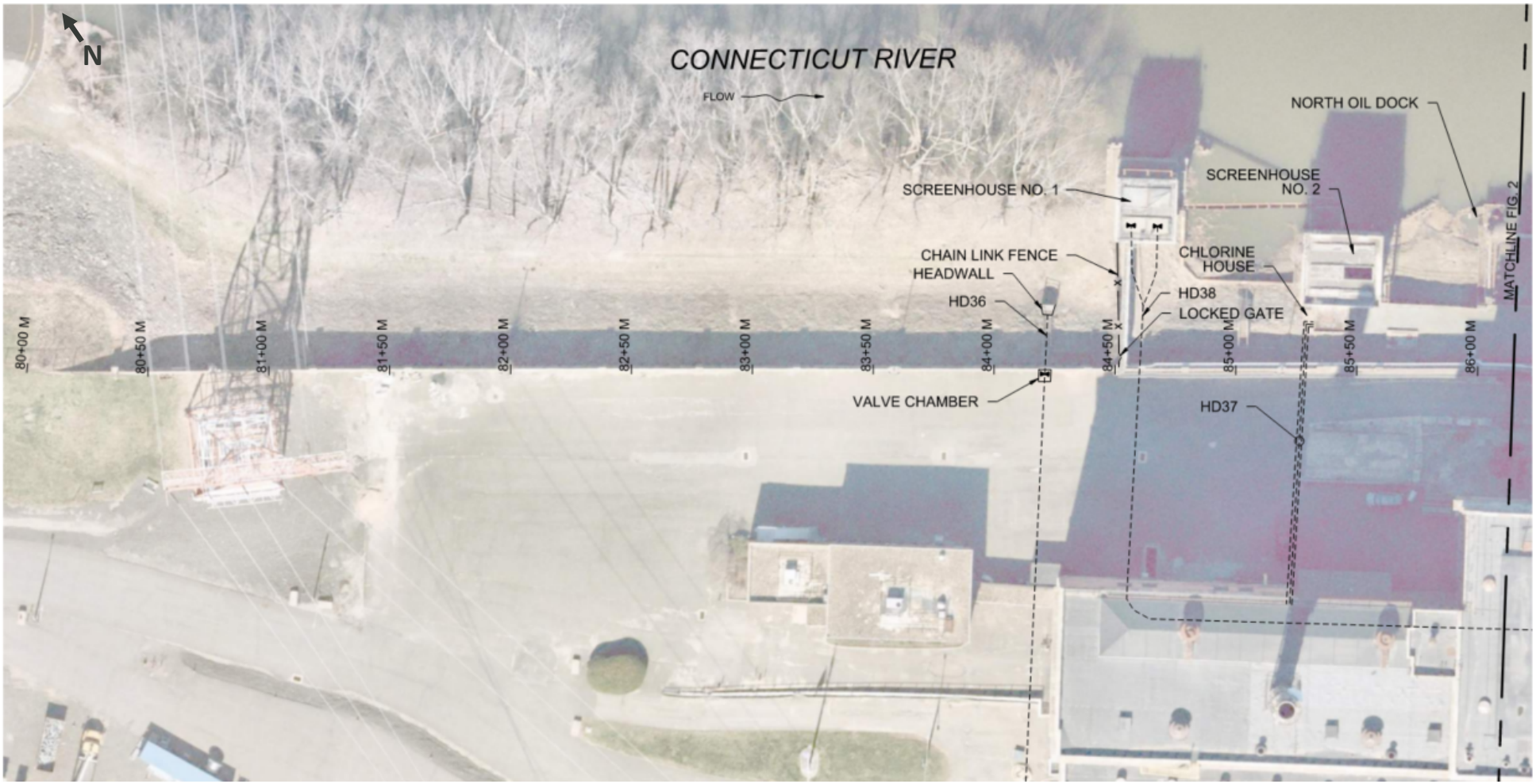
Aerial photo from Nearmap

FLOODWALL PENETRATIONS AT THE FACILITY

ID No.	Station	Description	Diameter/Size and Material of Penetration	Invert Elevation at Floodwall Centerline (ft NGVD 29)	Status	Backflow Prevention Measures
HD-36	84+21M	Roof drain outfall	12 in. dia. pipe - Cast Iron	21.92	Active	Flap valve at riverside outfall, gate valve in valve chamber immediately landside
HD-37	85+28M	Compressed air and water	1.5 in. dia. city water 1 in. dia. compressed air 6 in. dia. service water	25.0	Inactive	Unknown
HD-38	84+55M	Non-contact cooling water intake (Unit 6)	48 in. dia. pipe - Steel	~9.5	Inactive	Two gate valves in Screenhouse No. 1 on riverside, one on each intake pump
HD-43	86+77.5M	Service water intake	24 in. dia. pipe placed inside 48 in. dia. pipe - Steel	17.77	Inactive	Two gate valves in Screenhouse No. 3 on riverside, one on each intake pump
HD-44	87+65M	Non-contact cooling water intake (Unit 5)	48 in. dia. pipe - Steel	16.3	Inactive	Two gate valves in Screenhouse No. 3 on riverside, one on each intake pump
HD-45	87+40.6M	Water discharge (Source unknown)	14 in. dia. pipe - Cast Iron	22.25	Inactive	Unknown
HD-46	87+35.85M	Service water discharge	48 in. dia. pipe - Steel	18.0	Inactive	Unknown
HD-47	87+85M	Non-contact cooling water discharge (Unit 5)	48 in. dia. pipe - Steel	~9.5	Inactive	Gate valve in turbine hall on landside
HD-47a	88+34M	Non-contact cooling water discharge (Unit 6)	48 in. dia. pipe - Steel	17.13	Inactive	Gate valve in turbine hall on landside
HD-48	89+3.65M	Storm drain (former ash pit outfall)	12 in. dia. pipe - Cast Iron	7.72	Inactive	Flap valve at riverside outfall, gate valve in valve chamber immediately landside
HD-49	90+75M	Oil pipe in former ash pit outfall	8 in. dia. oil line (Steel) placed inside 10 in. dia. drain line (Cast Iron)	16.86	Inactive	Blind flange and gate valve at south dock on riverside, blind flange in valve chamber immediately landside
HD-50a	92+31.7M	Liquid fuel line	8 in. steel pipe encased in concrete	~43.5	Inactive	Blind flange and gate valve at south dock on riverside

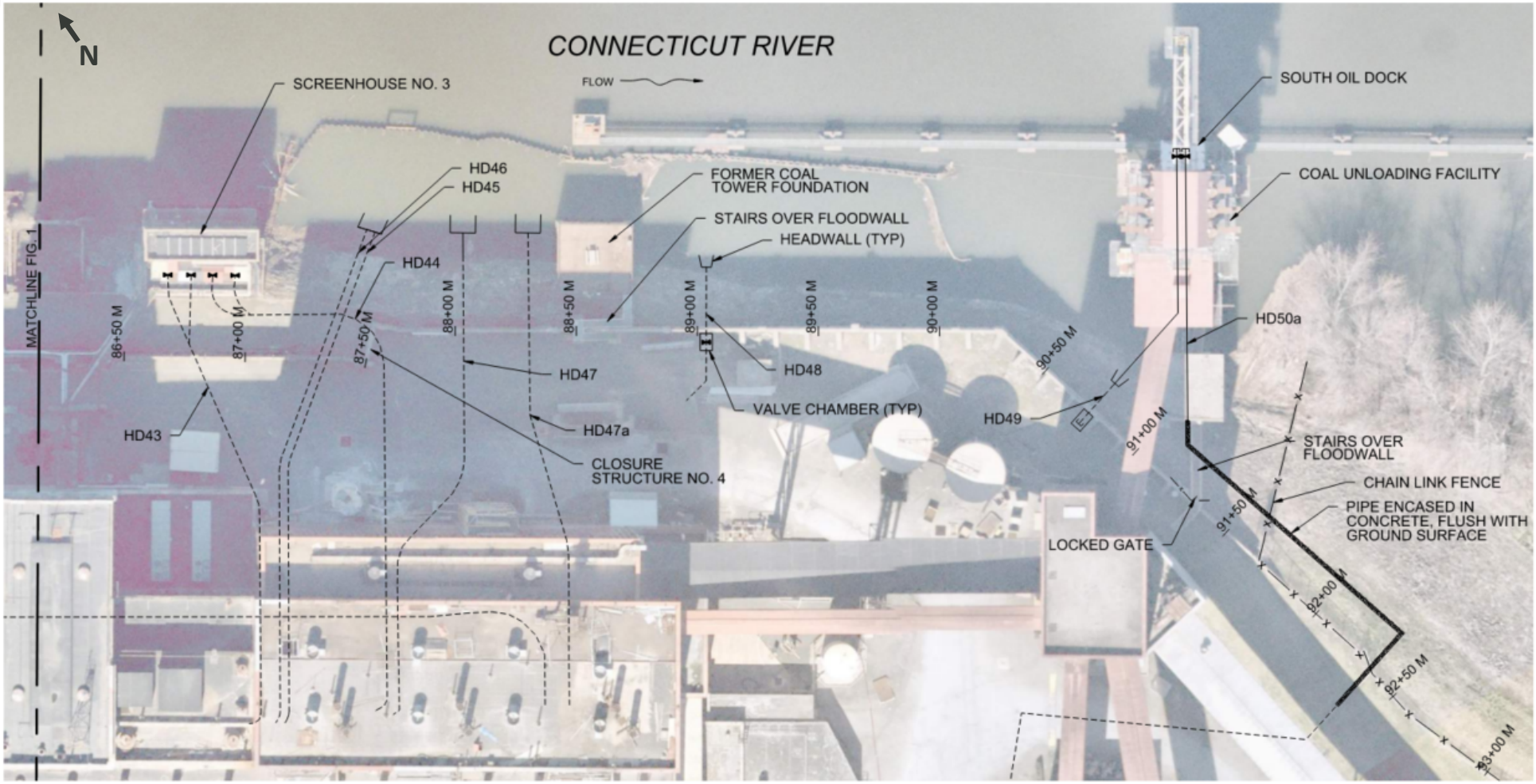
No penetrations HD-39 to HD-42 and HD-50 (already abandoned, duplicates, or don't penetrate floodwall)

FLOODWALL PENETRATIONS AT THE FACILITY



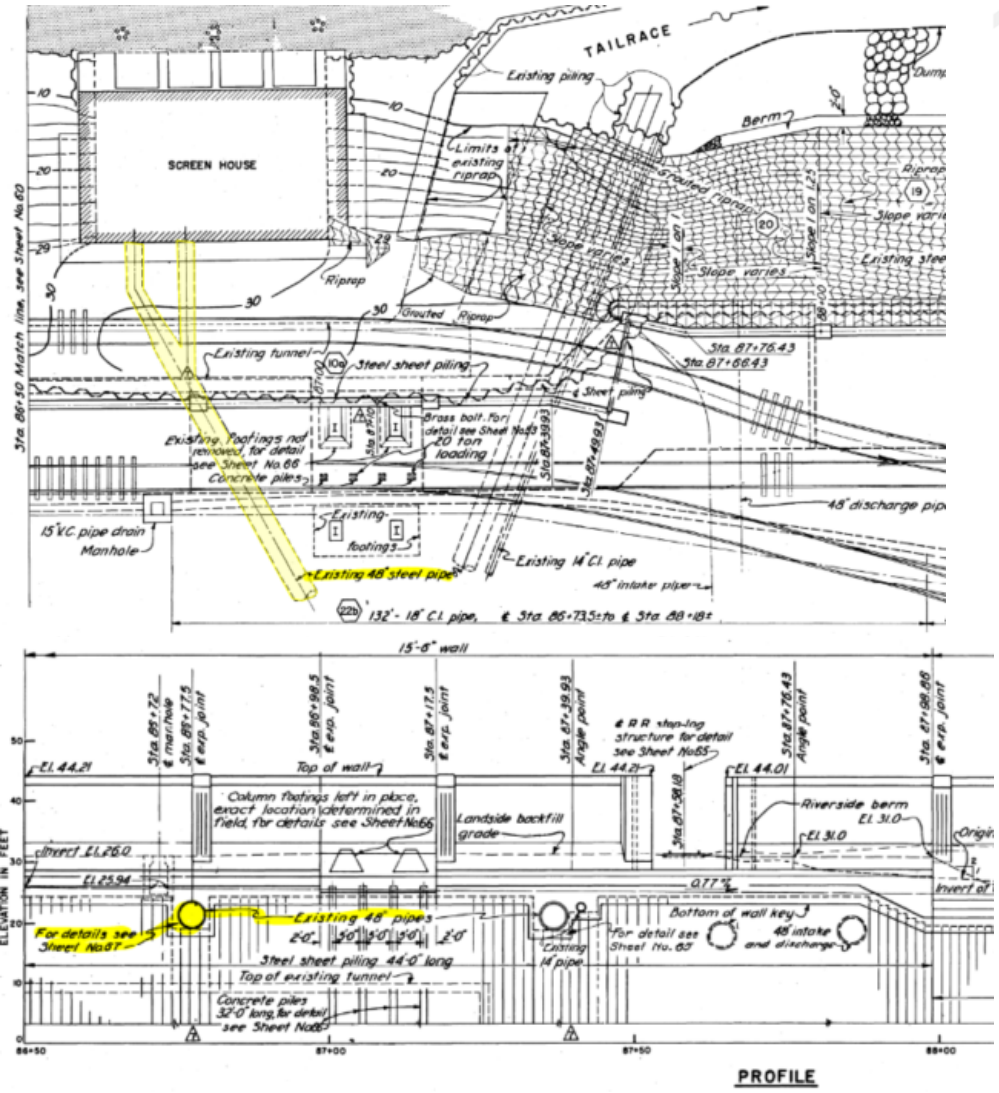
Aerial photo from Nearmap

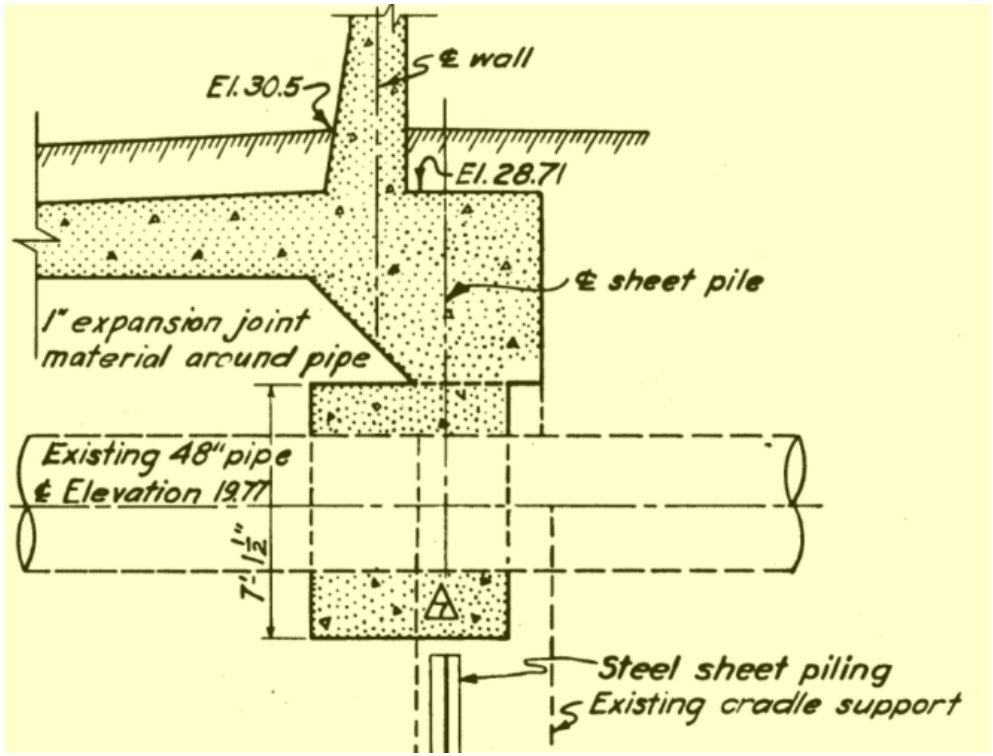
FLOODWALL PENETRATIONS AT THE FACILITY



Aerial photo from Nearmap

EXAMPLE PENETRATION





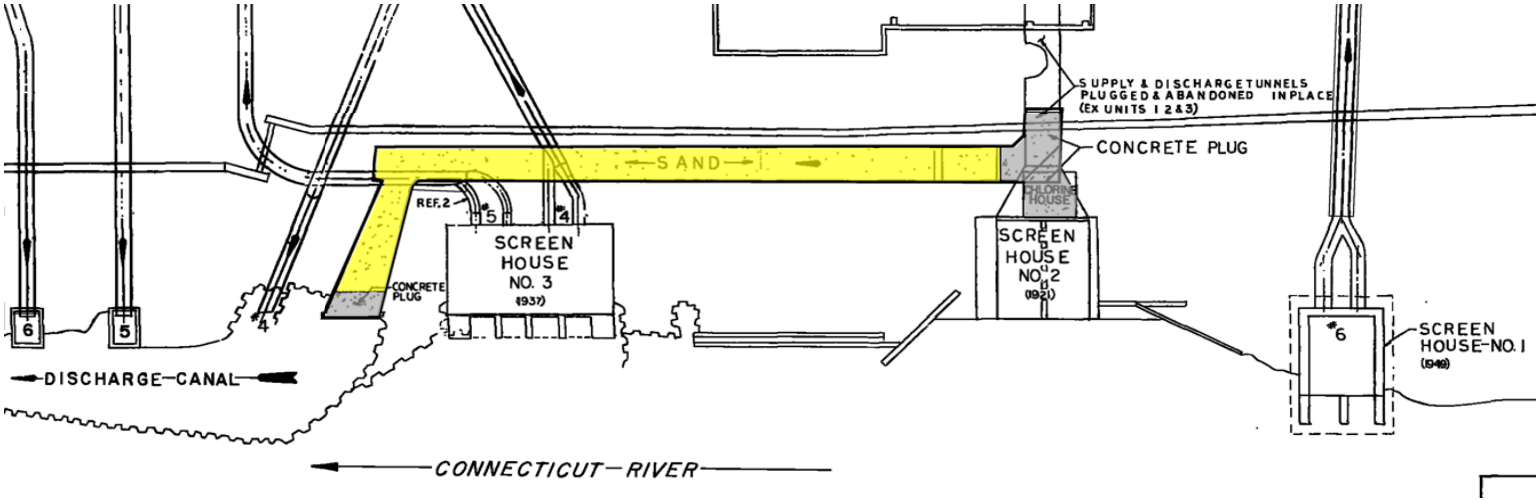
PENETRATION ABANDONMENT

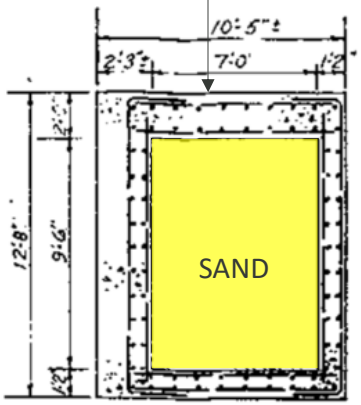
TYPICAL PENETRATION ABANDONMENT PROCESS

- Excavate to expose one or both ends of the pipe
- Create bulkheads inside the pipe, one on each end of the pipe
- Fill with cement grout or concrete
- Backfill excavations and restore original surfaces per ELUR

Photo from USACE Engineer Manual 1110-2-2902, Conduits, Pipes, and Culverts Associated with Dams and Levee Systems[16]

PREVIOUSLY ABANDONED INTAKE/DISCHARGE TUNNELS





GHFC is concerned that if the plug in the discharge canal is compromised, then the sand fill could erode into the river, leaving the 1920s-era tunnel to deteriorate and potentially compromise the ground in front of the floodwall.

ENCROACHMENT REMOVAL

FLOODWALL ABANDONMENT/ENCROACHMENT REMOVAL COST ESTIMATE

Item	Cost
Mobilization and demobilization	$25,000
Site preparation	$70,000
Dewatering and treatment of effluent	$115,000
Utility location	$70,000
Excavate, clean, and bulkhead pipes	$660,000
Fill pipes and valve chambers	$175,000
Miscellaneous encroachment removal	$30,000
Tunnel re-backfilling	$400,000
As-builts	$20,000
Restoration of surface conditions	$10,000
LEP services	$42,000
Subtotal:	**$1,617,000**
Overhead, profit, insurance, and payment bond (17%)	$274,890
Subtotal:	**$1,891,890**
Contingency (40%)	$756,756
Estimated total construction cost:	**$2,648,646**

Does not include disposal of contaminated soils. Depending on chemical testing results, disposal and import of clean fill could approach $550K.

ABANDONMENT APPROXIMATE DESIGN AND CONSTRUCTION TIMELINE

- Develop Issue for Permit Contract Docs – 6 months
  - Site survey
  - Environmental precharacterization
  - Seepage analysis at intake/discharge tunnel
  - Drawings and specifications
- Permitting – 4 to 6 months
  - USACE Section 404/408
  - CT DEEP Section 401/Dam Safety Permit
  - CT General Stormwater Permit
  - Temporary Release from ELUR by CT DEEP Remediation Division
- Develop Issue for Bid Contract Documents and Bid Window – 4 months
- Contracting, Issue for Construction Contract Docs, and Notice to Proceed – 2 months
- Construction – 9 months

OPERATIONS, INSPECTION, AND MAINTENANCE PLAN

OPERATIONS, INSPECTION, AND MAINTENANCE PLAN

- Of the 12 penetrations, only 1 remains active
- For the inactive penetrations, shut valves along the pipe and then keep them permanently closed
  - Do not continue to try to operate and maintain valves that do not need to be opened
- For the active penetration (roof and site drainage near the Administrative Building)
  - Maintain the flap valve at the river and the gate valve on the landside
  - Close the gate valve when floodwaters reach the bottom of the pipe
  - CCTV camera inspection every 5 years
- Visual inspections of all pipes, valves, and surrounding ground surface yearly
  - Additional inspections before, during, and after the flood (addressed in the Emergency Preparedness Plan)

EMERGENCY PREPAREDNESS PLAN

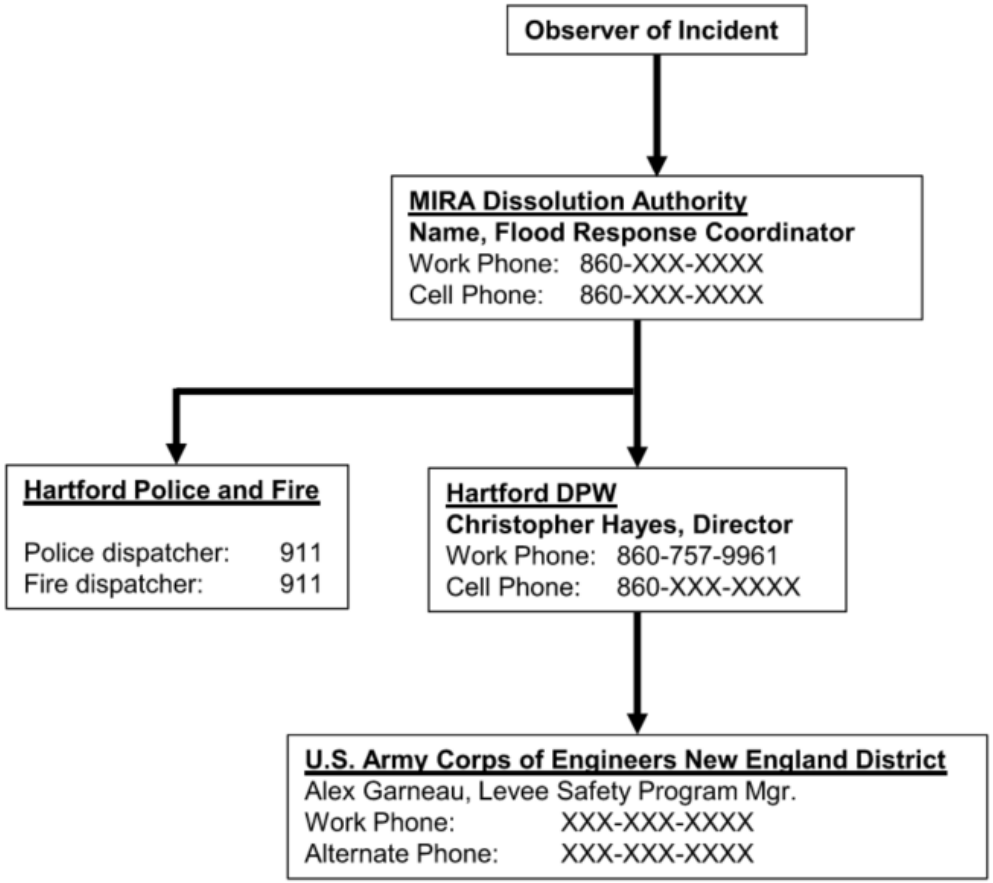
EMERGENCY PREPAREDNESS PLAN

- Plan for readiness and operation/inspection of the floodwall penetrations during flood emergencies
- Provisions for flood fighting if distress is observed
  - Including supplies, labor, and equipment
- Designed to be integral with the HFCS O&M Manual flood operations protocols
- Four phases:
  - Notification Phase: Alert all response personnel of possible flooding – El. 11 ft
  - Phase 1: Preliminary Response Activities (before river reaches flood stage) – El. 16 ft
  - Phase 2: Full Response Activities (after river reaches flood stage) – El. 24 ft
  - Phase 3: Cessation (after flood recedes to non-damaging level) – El. 21 ft
- To be implemented for all flood events until penetrations are abandoned.
- In the past 15 years:
  - Phase 1 was reached 27 times (patrols daily)
  - Phase 2 was reached twice (patrols every 4 hours)

EMERGENCY PREPAREDNESS PLAN RESPONSIBILITIES

Entity	Responsibilities
MIRA Dissolution Authority (MDA)	• Inspect and patrol floodwall penetrations at the Facility. • Identify and assess emergency conditions for penetrations at the Facility. • Notify Hartford DPW of emergency conditions. • Take corrective action at the Facility. • Issue penetration condition status reports to Hartford DPW.
City of Hartford Department of Public Works (DPW)	• Inspect and patrol the Hartford Flood Control System (HFCS), including the portion that passes through the Facility. • Identify and assess emergency conditions for the floodwalls and levees at the Facility and along the rest of the system. • Receive penetration condition status reports from MDA. • Notify MDA of changes in flood response phase. • Issue flood prediction. • Issue HFCS condition status reports and assistance requests to Hartford Police and Fire. • Issue assistance requests to the USACE. • Support MDA in taking corrective action at the Facility.
City of Hartford Police, Fire, and Rescue	• Receive HFCS condition status reports and assistance requests from Hartford DPW. • Notify the public in the event an evacuation is necessary. • Conduct evacuation from inundation areas, if required. • Render assistance to Hartford DPW, as necessary. • Render assistance to MDA, as necessary.
City of Hartford Mayor, Chief Executive Officer, or Fire Chief	• Issue evacuation orders in accordance with the City's Emergency Operation Plan.
U.S. Army Corps of Engineers (USACE) New England Division	• Render assistance to Hartford DPW, as necessary.
National Weather Service (NWS)	• Issue reports weather forecasts to the general public. • Maintain the Northeast River Forecast Center, which issues flood watches, warnings and forecasts for the Connecticut River Basin.

EMERGENCY PREPAREDNESS PLAN NOTIFICATION FLOWCHART



Attachment 2

The South Meadows Redevelopment Considerations Study

Draft Milestone Report #1 Environmental Existing Conditions and Potential Future Uses

Prepared for MIRA Dissolution Authority

Weston & Sampson

October 4, 2024

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1.0 INTRODUCTION

The purpose of this existing conditions report is to provide information on environmental conditions, existing infrastructure, and planning opportunities for the discontinued Materials Innovation and Recycling Authority (MIRA) Dissolution Authority (MDA) site ("the site") in the South Meadows neighborhood of the City of Hartford, Connecticut. This report will be incorporated into the final Report of the South Meadows Redevelopment Considerations Study.

This report is laid out as follows:

1.0 Introduction
2.0 Existing Plans and Studies
3.0 Regulations and Other Restrictions
4.0 Infrastructure and General Environmental Conditions
5.0 Conceptual Site Considerations

This report provides an overview of the environmental and other site conditions and considers their impact on future redevelopment. The last section will summarize potential redevelopment scenarios and conceptual site considerations that could present opportunities or constraints. The purpose of this report is to provide information to stakeholders and potential future developers so that the four potential future uses – residential/recreation; industrial/commercial; the current permitted use; and a mix of uses - may be refined. Once refined, these potential future uses will be assessed in terms of remediation, permitting, timelines, and costs.

1.1 Project Location

The MIRA South Meadows Facility consists of approximately 80 acres of land and is located at 100 Reserve Road and 300 Maxim Road in Hartford, Connecticut. The northern two-thirds of the property is where the Power Block Facility (PBF) is located, and the remaining one-third contains the Waste Processing Facility (WPF) where municipal solid waste was historically processed for combustion. Figure 1-1 displays the regional context.

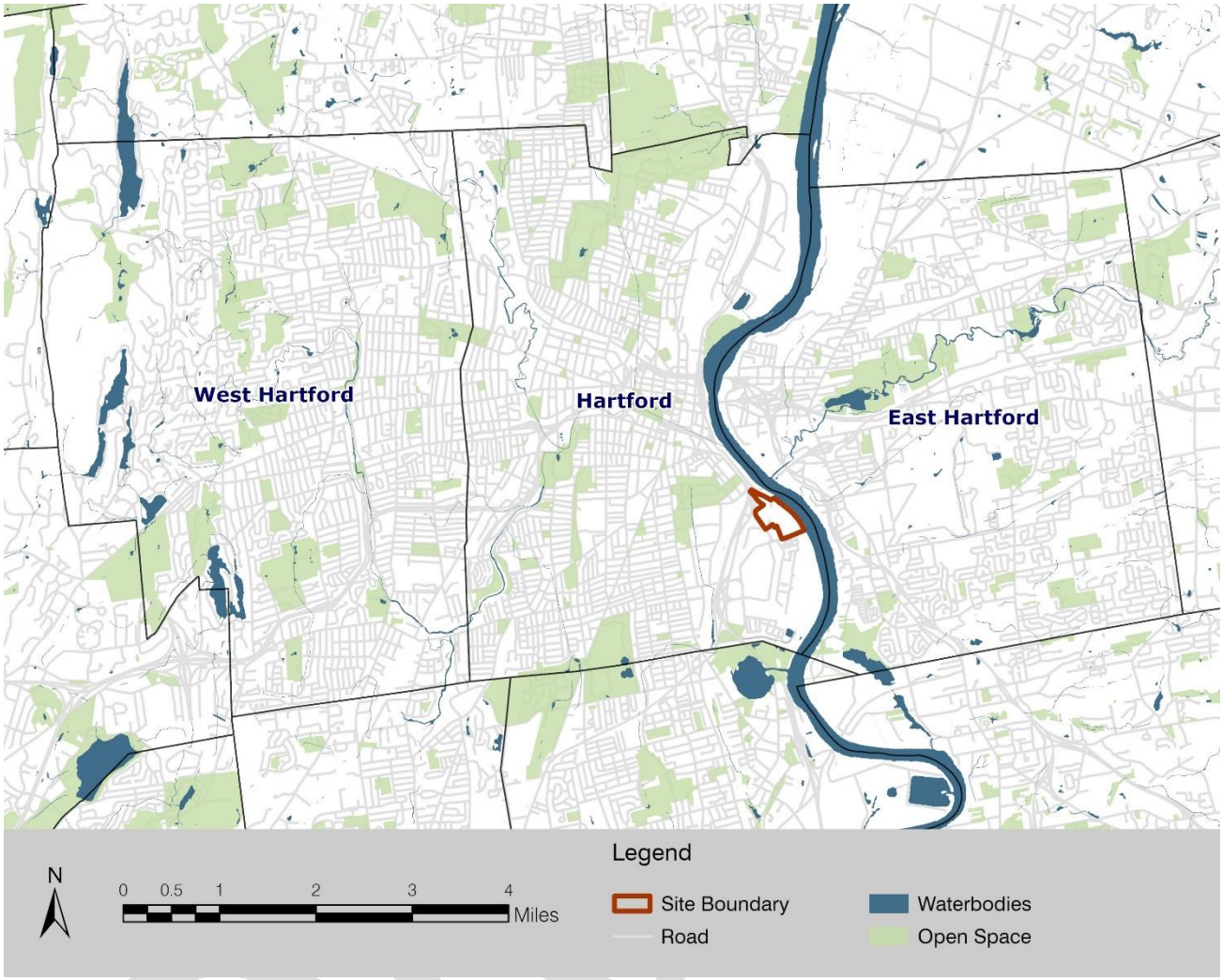


Figure 1-1. Site regional location map
Source: CT Department of Energy & Environmental Protection

As shown in Figure 1-2, Eversource maintains the South Meadow 1A Substation in the northern part of the site, and the Hartford-Brainard Airport, owned by the Connecticut Airport Authority and the State, abuts the site directly to the south. I-91 bounds the site to the west, and the Connecticut River and its associated flood control levee system bound it to the east.

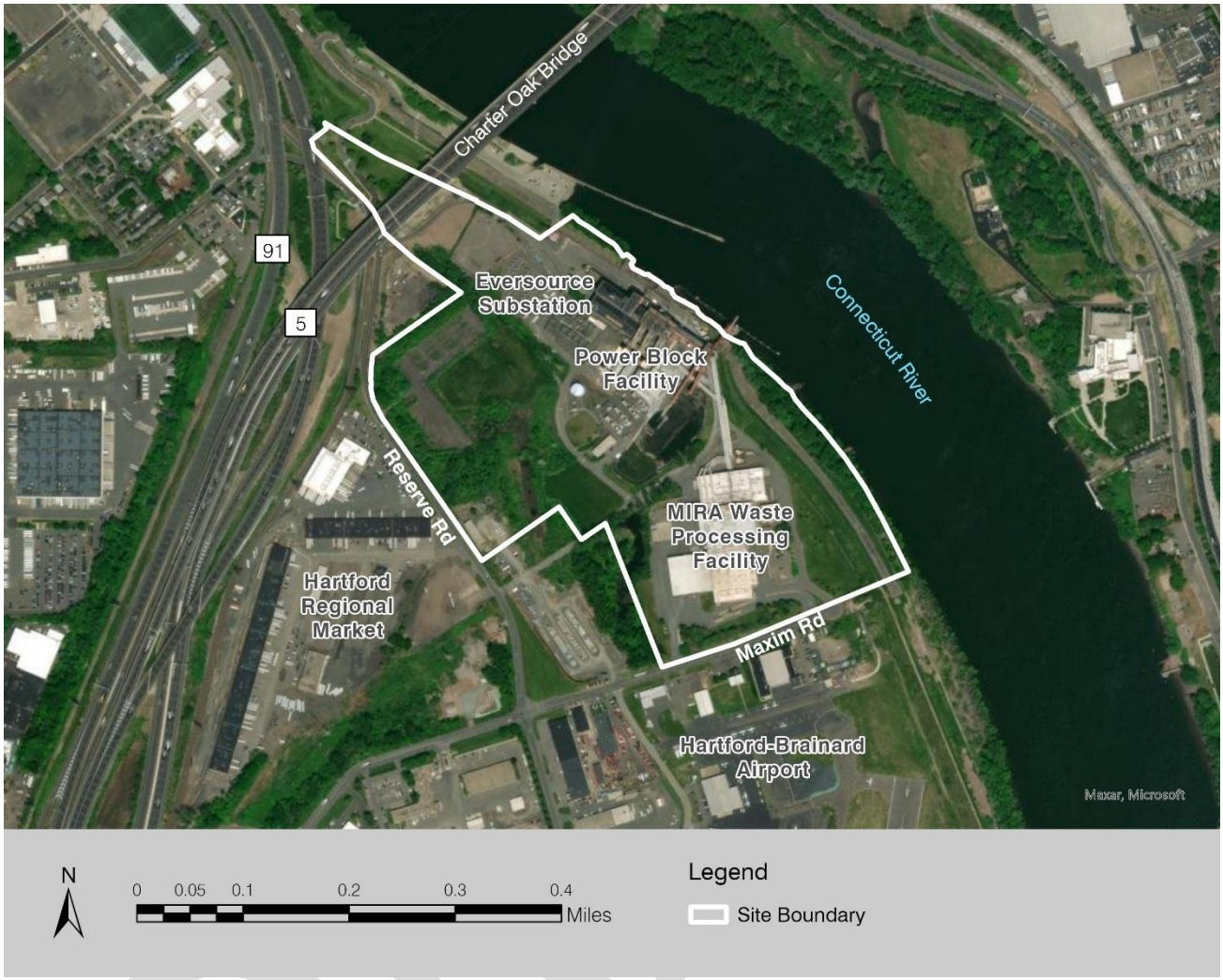


Figure 1-2. Site aerial map
Source: South Meadows Site General Layout Plan 2024

Also in the South Meadows neighborhood are the Hartford Regional Market, a wholesale food distribution center and restaurant area managed by the Capital Region Development Authority on State-owned land; Mobil Gas Station; a U.S. post office; industrial warehouses including Grainger, Hartford Granite & Marble, Universal Ceramic Tile, Nutmeg Trucks, Reliable Electric Motor, Hilti, Classic Restaurant Supply, CT Lighting Center, and O&G Earth Products; and a Best Western Hotel and Days Inn and recently opened Cannabis dispensary next to Best Western (City of Hartford, Energy Improvement District Comprehensive Plan, 2019).

1.2 Project History

The site operated as a coal-fired electric plant in the 1920s, before shifting to petroleum fuel in the 1940s and becoming a resource recovery facility in the 1980s. Under the Connecticut Resources Recovery Authority, which purchased the site in 2001, the site underwent extensive environmental remediation from 2001 to 2018. Additional remediation was required by the Connecticut Department of Energy and Environmental Protection (CT DEEP) from 2019 to 2023. After the announcement of its

closure in 2022, the MDA was created by the State to manage the site. The MDA is currently working toward establishment of another ELUR on the property, to document a recently-installed engineered control, followed by the planned resubmission of the site's Verification Report in Spring of 2025. (MIRA, 2024).

The resource recovery facility was shut down in 2022, the same year that MIRA submitted a formal closure plan to CT DEEP. The work needed for closure involves proper shutdown of the buildings, coal removal, PCBs removal from the Admin Building, removal of any remaining waste residues from the resource recovery facility, and the establishment of this South Meadows Redevelopment Considerations Study (MIRA, 2024)

2.0 EXISTING PLANS AND STUDIES

The City of Hartford has adopted multiple existing plans that have recommendations for the development of the site. Among them are the Hartford City Plan and Hartford 400, city-focused and regional plans, respectively, that set the planning landscape for the next fifteen years. The remaining plans reflect different aspects of that landscape, including market studies, mobility studies, and former visioning studies, that describe what existing goals are in place for or near the site. Many of these plans have a particular focus on reclaiming the Connecticut River waterfront and creating greenways along the riverfront. These plans also identify two land uses – the Hartford-Brainard Airport and the Hartford Regional Market, which represent some opportunities and constraints to the site's redevelopment.

2.1 Hartford City Plan, City of Hartford, 2020

The Hartford City Plan lays out a vision for a more connected and vibrant city by 2035, established through ten key recommendations along a "Green-Grow-Live-Move-Play" framework" and ten transformative projects. This site is part of one of the ten transformative projects because of its prime waterfront location and the redevelopment opportunity coming from the phasing out of the waste processing use.

This plan also includes the following goals that are relevant to the site's redevelopment: improve flood protections and overhaul the levee system, invest regionally in the health of the Connecticut River, build bike trail systems along the river, and prioritize equitable access to the river, are all important site considerations (City of Hartford, 2020).

2.2 Hartford 400, City of Hartford and the iQuilt Partnership, 2021

This regional plan, developed in conjunction with the Hartford City Plan, combines City goals with broader goals for the surrounding Connecticut Valley. It follows the same "Green-Grow-Live-Move-Play" framework and focuses on three redevelopment projects: the Hartline, a proposed greenway stretching from downtown to Blue Hills; River Road, a reclamation of riverfront property spanning the entire Connecticut River for parks and mixed-use development; and Midtown, a proposed district for the site to be left over from the future I-91/I-84 interchange relocation (City of Hartford, Hartford 400, 2021).

2.3 Energy Improvement District Comprehensive Plan, City of Hartford, 2019

The City's Energy Improvement District monitors energy affordability, greenhouse gas emissions, and energy goals. Its Comprehensive Plan sets strategies and identifies possible critical facility projects and solar projects. The South Meadows neighborhood was assigned high priority for its existing

industrial setting, opportunities for tidal or wind power by the Connecticut River, and the ongoing redevelopment opportunity presented by the closed MIRA site (City of Hartford, Energy Improvement District Comprehensive Plan, 2019).

2.4 The Hartford-Brainard Airport: A Visioning Report for the Future, City of Hartford, 2022

The Hartford-Brainard Airport is located directly south of the site. This report assessed future redevelopment options for the airport site, but the current assumption is that the airport remains. This report contained a market analysis that is timely and relevant to redevelopment opportunities at the site.

2.5 Connecticut Regional Agriculture Market Proposed Redevelopment Concept, Capital Regional Development Authority, 2022

The Connecticut Regional Agriculture Market, also known as the Hartford Regional Market, is an existing building located southwest of the site. The Capital Regional Development Authority envisions the growth of the current market into a statewide food distribution and production hub. (Capital Region Development Authority, 2022).

2.6 Greater Hartford Mobility Study, Connecticut Department of Transportation, 2022

In examining ways to improve connectivity and transit modes across Greater Hartford, the Connecticut Department of Transportation imagines an extensive riverfront park and boulevard made possible by the lowering and covering of I-91, complete with pedestrian paths, bike paths, and bus transit (Connecticut Department of Transportation, 2022).

2.7 Bicycle Master Plan, City of Hartford, 2019

The Bicycle Master Plan was developed to identify on which streets the City of Hartford should introduce or improve biking facilities. The plan proposes a shared-use pathway for the South Connecticut Riverfront that would connect the area to an existing bike path extending north from Charter Oak Bridge. The plan also proposes a one-way paired separated bike path on Wethersfield Avenue, connecting the South End to Downtown Hartford and further north to the North End. Finally, smaller bike lanes are proposed extending east of Wethersfield Avenue towards the airport. The South Connecticut Riverfront and Wethersfield Avenue bike paths were recommended for Phases 1 and 2, respectively, of implementation (City of Hartford, Bicycle Master Plan, 2019).

2.8 River Reach Park and Vision, Riverfront Recapture, Ongoing

Riverfront Recapture is a nonprofit organization that manages Riverside Park, Mortensen Riverfront Plaza, Charter Oak Landing, and Great River Park. The future River Reach Park plan focuses on developing 60 acres of open space north of the Hartford Levee and just south of the Windsor Meadows State Park, to create a riverwalk connecting Windsor to Hartford, build recreational amenities, and restore wetlands. While the current plan does not involve the neighborhood of South Meadows, future efforts by Riverfront Recapture could attempt to link all of the parks it manages and extend its riverfront open space south along the site (Riverfront Recapture, 2024).

2.9 Summary of Existing Open Space and Recreation

As shown in Figure 2-1 using City data, the access road to the Charter Oak Landing, located along the Connecticut River, from Reserve Road crosses the the site . On the ground, this access is located to the north of the northern boundary line for the Charter Oak Bridge easement. The park contains paved roads, pedestrian paths, and open space on the riverbanks.

Across the highway to the northwest is Colt Park and Trinity Health Stadium. Colt Park has several athletic fields, a playground, and a municipal pool. A large parking lot separates Trinity Health Stadium from the park. As discussed in this section, various plans by the City of Hartford have a concurrent vision for the City's riverfront space. Based on the work of Riverfront Recapture, the Capital City Parks Plan, and the Bicycle Master Plan, this vision is a riverfront park that includes pedestrian and bike paths, comprising the length of the Connecticut River shoreline in Hartford.

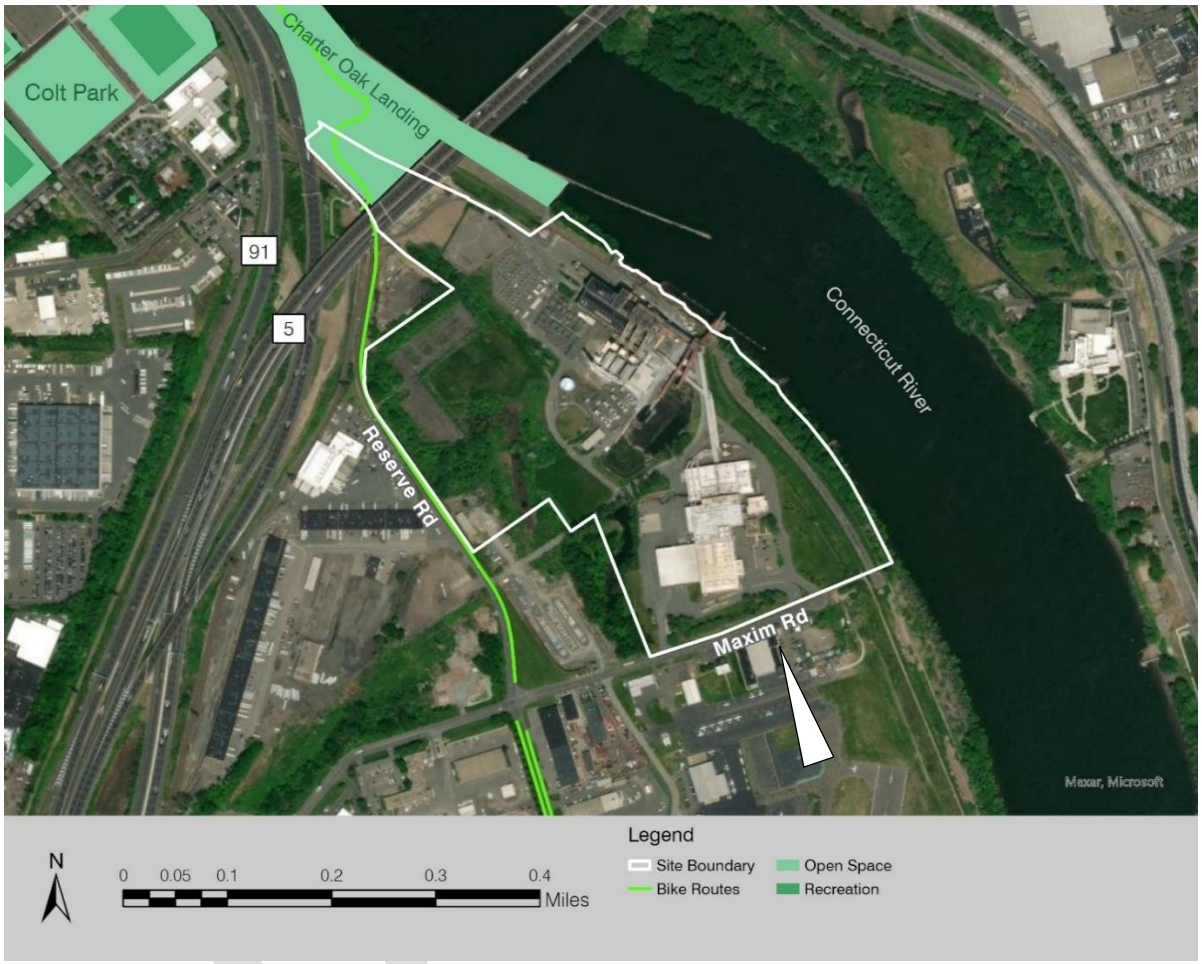


Figure 2-1. Open space and recreation map
Source: City of Hartford Open Data 2024

3.0 REGULATIONS AND OTHER RESTRICTIONS

This section describes local and other land use restrictions including zoning, wetlands, and other issues related to proximity to an airport. Easements are also discussed.

3.1 Zoning Constraints

The site is primarily located in the Industrial (ID-1) District and Connecticut River Overlay District, with a portion of the eastern side in the Open Space District, as shown in Figure 3-1. Following is a summary of the types of allowed uses within these zoning districts.

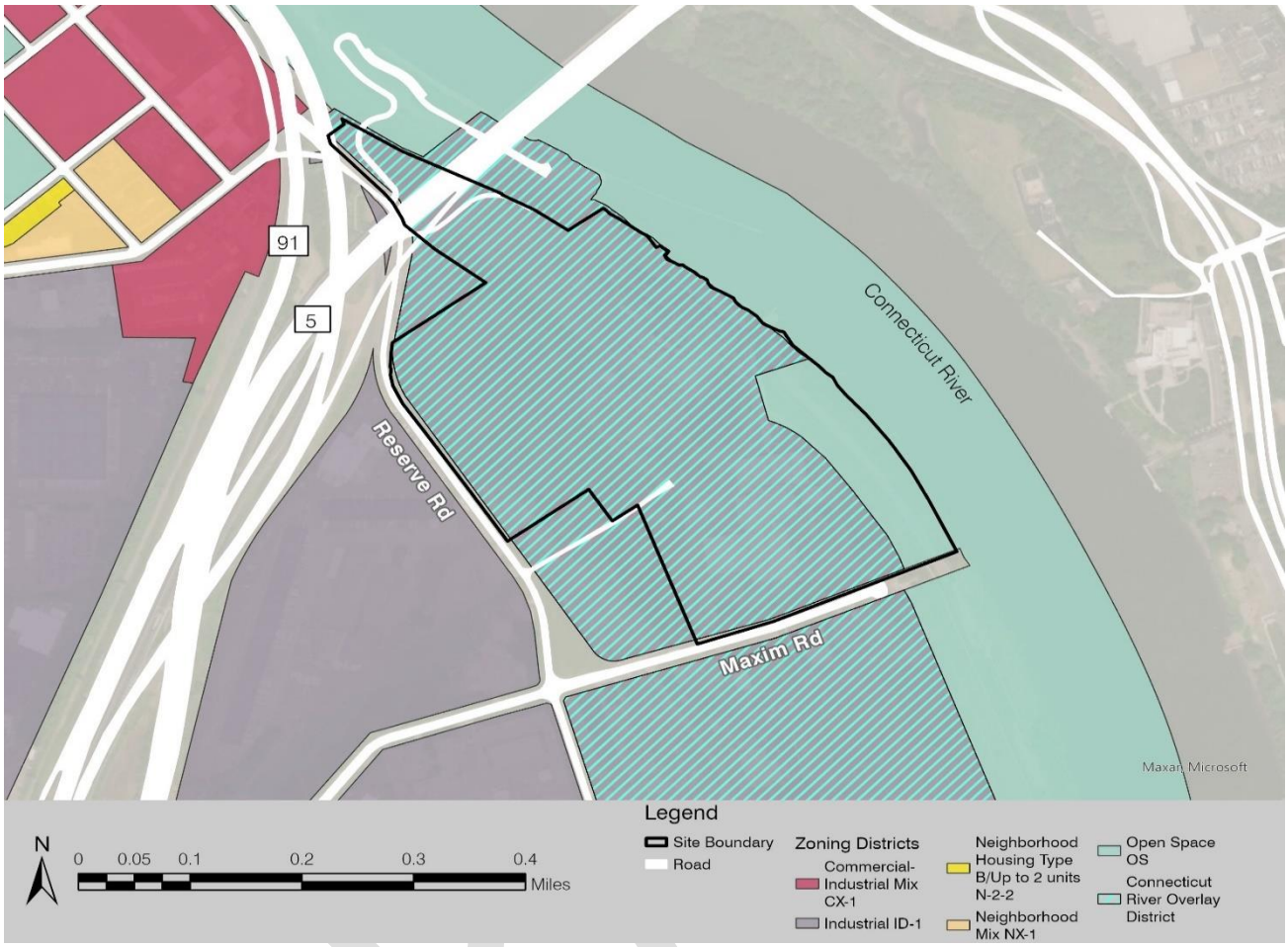


Figure 3-1. Zoning map
Source: CT Environmental Conditions Online 2012, City of Hartford Open Data 2024

3.1.1 Industrial District

The Industrial (ID-1) District is designed for medium to heavy industry with a minimum of noise, odor, glare, and pollution and moderate traffic on public streets. The zoning language specifically calls out using this district to integrate lower-impact industry with surrounding residential areas. This differentiates it from the Industrial (ID-2) District, which is designed for heavier industries such as waste processing and motor vehicle wrecking yards, and it reflects the City's desire for redevelopment on the site. The current closest residential areas to the site are the Neighborhood Mix (NX-1) Districts across the highway to the northwest (City of Hartford, Zoning Regulations, 2024).

Permitted Uses

The principal permitted uses, permitted uses with use-specific conditions, and uses requiring a special permit for the Industrial ID-1 District are listed in Table 3-1.

Table 3-1. ID-1 Principal Permitted Uses

Permissions	Uses
Permitted Uses	Service Use: General service; Automobile fueling & limited service; Automobile service/car wash; Automobile, truck, limousine rental; Community service; Eating places
	Infrastructure Use: Parking as principal use
Permitted Subject to Use-Specific Conditions	Residential & Lodging: Temporary shelter facility
	Open Space: Community garden; Honey beekeeping; Park
	Retail Use: Commercial equipment & supply; Convenience store; Discount variety store; Outdoor sales lot
	Service Use: Pawn shop/check cashing establishment; Tattoo/piercing parlor
	Employment Use: Craftsman industrial
	Industrial Use: Heavy industry; Light industry; Outdoor storage yard; Transportation facilities; Warehouse/distribution
	Cannabis Use: Medical marijuana producer
Permitted Subject to Use-Specific Conditions with Possible Special Permit	Residential & Lodging: Group living for health reasons
Requires a Special Permit	Residential & Lodging: Rooming house/boardinghouse
	Civic & Institutional: Assembly, general; Government/higher education/hospital; Police/fire; Stadium/arena; Transit station
	Open Space: Intensive park uses; River uses; Urban farm
	Service Use: Neighborhood service
	Adult Use: Adult establishment
	Infrastructure Use: Transportation & utilities; Transmission towers
	Cannabis Use: Cultivator; Micro-cultivator; Retailer; Hybrid retailer; Product manufacturer; Food and beverage manufacturer; Product packager

Source: (City of Hartford, Zoning Regulations, 2024)

Building Types

Allowed building types for new construction, renovations of existing structures, and redevelopment in the Industrial ID-1 District are Commercial Centers, General Buildings, and Workshops/Warehouses (City of Hartford, Zoning Regulations, 2024).

> *Commercial Centers* describe stores that are accessible to both pedestrians and vehicles, with parking lots along the street and generally ground-story retail.
>
> *General Buildings* have typically office, civic, and residential uses, and are designed to be accessible to pedestrians and transit riders. Buildings have a landscaped area before the sidewalk, and parking is generally in the rear of the lot.

Workshops/Warehouses in Industrial Districts specifically are designed to be more flexible for different truck loading, warehousing, and manufacturing uses. However, the buildings are still located close to the front lot lines to allow for pedestrian access.

Dimensional Requirements

Dimensions for each of the allowed building types are listed in Table 3-2. Additional dimensional requirements can be found in Section 4.0 of the Zoning Regulations.

Table 3-2. Dimensional Requirements of ID-1 Buildings

Dimensions	Building Type		
	Commercial Center	General Building	Workshop/Warehouse
Min. Lot Width	140’	None	60’
Max. Building Width	None	None	None
Max. Building Coverage	50%	60%	60%
Max. Impervious Area	70%	75%	80%
Min. Overall Height	1 story	2 stories	1 story
Max. Overall Height	4 stories	4 stories	No max.
Ground Story (Measured floor-to-floor)	14’ to 18’	9’ to 24’	12’ to 30’
Upper Stories (Measured floor-to-floor)	9’ to 14’	9’ to 16’	9’ to 16’

Source: (City of Hartford, Zoning Regulations, 2024), (City of Hartford, Zoning Regulations, 2024)

3.1.2 Connecticut River Overlay District

The Connecticut River Overlay District was created to open access to the river and allow for specific uses that account for ecological preservation. As drawn in Figure 3-1, this district applies to all locations located within 2,000 feet landward of the Connecticut River, overlapping with a majority of the site. Developers must file a zoning permit application unless other provisions of the Overlay District otherwise require a special permit application. Specifically, a special permit is required if construction is proposed within 75 feet landward of the Connecticut River (City of Hartford, Zoning Regulations, 2024).

Permitted Uses

Principal uses are limited to the following in Table 3-3, regardless of the uses of the underlying zoning. Accessory uses are allowed in conjunction with the principal uses.

Table 3-3. Connecticut River Overlay District Principal Permitted Uses

Permissions	Uses
Permitted Uses	Residential & Lodging: Multi-unit dwelling; Bed & breakfast; Hotel/apartment hotel
	Civic & Institutional: Assembly, general; School; Transit station
	Open Space: Intensive park uses; Park
	Retail Use: Neighborhood retail
	Service Use: Neighborhood service; Child day care; Drinking places; Eating places; Entertainment assembly; Temporary events
	Employment Use: Office; Craftsman industrial
	Infrastructure Use: Airport

Source: (City of Hartford, Zoning Regulations, 2024)

Building Types and Dimensional Requirements

Buildings follow the Building Types permitted by the underlying zoning. Building Type regulations apply to all buildings with the following exceptions:

- Minimum Overall Height shall be 3.5 stories.
- Maximum Overall Height shall be 30 percent greater than the Building Type otherwise allows.

Sustainability Requirements

As an additional requirement, the Connecticut River Overlay District may approve permit applications depending on the use of construction methods and building materials that minimize environmental impacts. Impacts include those affecting stormwater runoff, energy use, water quality, and air quality.

3.1.3 Parking Requirements

Maximum parking requirements by use are displayed in Table 3-4 (City of Hartford, Zoning Regulations, 2024).

Table 3-4. Maximum Parking Requirements by Use

Uses	Requirements
Residential & Lodging	
One-Unit Dwelling, Group Living for Health Reasons	Maximum 4 spaces per lot For a One-Unit Dwelling Building in N-1-1, maximum 6 spaces per lot
2- & 3-Unit Dwelling, Multi-Unit Dwelling, Efficiency/Micro Unit	Maximum 2 spaces per unit
Bed & Breakfast, Hotel/Apartment Hotel	Maximum 1.5 spaces per guest room
Temporary Shelter Facility	Maximum 1 space per bed
Group Living	In accordance with special permit review; guideline is maximum 1.5 spaces per adult resident, or for foster homes and children's homes guideline is maximum 2 spaces per 4 children residents
Residential Care	Maximum 1 space per bed (excluding bassinets)
Rooming house/Boardinghouse	In accordance with special permit review; guideline is maximum 1 space per rooming unit, plus maximum 1.5 spaces per dwelling unit of owner or manager

Civic & Institutional Uses	
Hospital	In accordance with special permit review; guideline is maximum 1 space per bed (excluding bassinets)
Library/Museum	None
All Other Civic & Institutional Uses	In accordance with special permit review
Open Space Uses	
Outdoor Market	2 per truck/kiosk
Park, River Uses, Urban Farm	In accordance with special permit review
Retail Uses	
Outdoor Sales Lot for Vehicles	1 space for each unregistered vehicle permitted to be sold, plus 1 additional space per minimum 10, maximum 5 such vehicles, reserved for visitors/employees
All Other Retail Uses	Maximum 3 spaces per 1,000 square feet net floor area devoted to retail space
Service Uses	
Automobile Fueling & Limited Service, Automobile Service/Car Wash, Drinking Places, Entertainment Assembly, & Smoking Places	In accordance with special permit review or, if special permit not required, in accordance with site plan review
Eating Places	Maximum 3 spaces for every 5 persons based on maximum capacity
All Other Service Uses	Maximum 3 spaces per 1,000 square foot of net floor area devoted to customer service
Adult Uses	
Adult Establishment	In accordance with special permit review; guideline is minimum 1 space, maximum 3 spaces per 600 square feet net floor area devoted to retail space; OR for assembly-type uses: minimum 1 space for every 4 persons based on maximum capacity
Employment Uses	
All Employment Uses	Maximum 4 spaces per 1,000 square feet
Infrastructure Uses	
All Industrial & Warehouse Uses	Maximum 1 space per employee
Cannabis Uses	
Cultivator, Micro-cultivator, Product Manufacturer, Food & Beverage Manufacturer, Product Packager, Medical Marijuana Production Facility	Maximum 1 space per employee
Retailer, Hybrid Retailer, & Medical Marijuana Dispensary	Maximum 3 spaces per 1,000 square feet net floor area devoted to retail space

Note: Where special permit review is required for particular projects, these off-street automobile parking requirements shall be used as guidance but are not binding.

Source: City of Hartford Zoning Regulations 2024

3.2 Wetlands Regulations

The Connecticut River runs from north to south directly along the eastern edge of the project area. Figure 3-2 depicts the wetlands present on site and the concrete levee wall which is part of a larger levee system that includes a 35-foot berm extending south from the wall. A total of eight wetland areas (designated Wetlands A through E and Wetlands G through I) comprising 2.5 acres were identified on the property by the Connecticut Resources Recovery Authority and are shown in Figure 3-2 (Connecticut Resources Recovery Authority, 2013). The current coal pond is also shown in Figure 3-2.

Wetland F was determined to be off-site following its initial delineation. Although technically delineated as a wetland, Wetland G, also known as Stormwater Basin G, is a stormwater detention basin at the Waste Processing Facility (WPF). Wetland G was remediated in 2013. Because the site is owned by a quasi-public State Authority Wetlands A, B, C, D, E, G, H, and I are subject to regulation by CT-DEEP but they are "not subject to regulation by the City of Hartford Inland Wetlands and Watercourses Commission based on a declaratory ruling from the State of Connecticut that allows the Connecticut Department of Energy and Environmental Protection to review and approve all regulated activities within wetland areas on CRRA property" (Connecticut Resources Recovery Authority, 2013). This regulatory oversight of wetlands by CT-DEEP would presumably continue after the State Department of Administrative Services succeeds the MDA as the site owner.

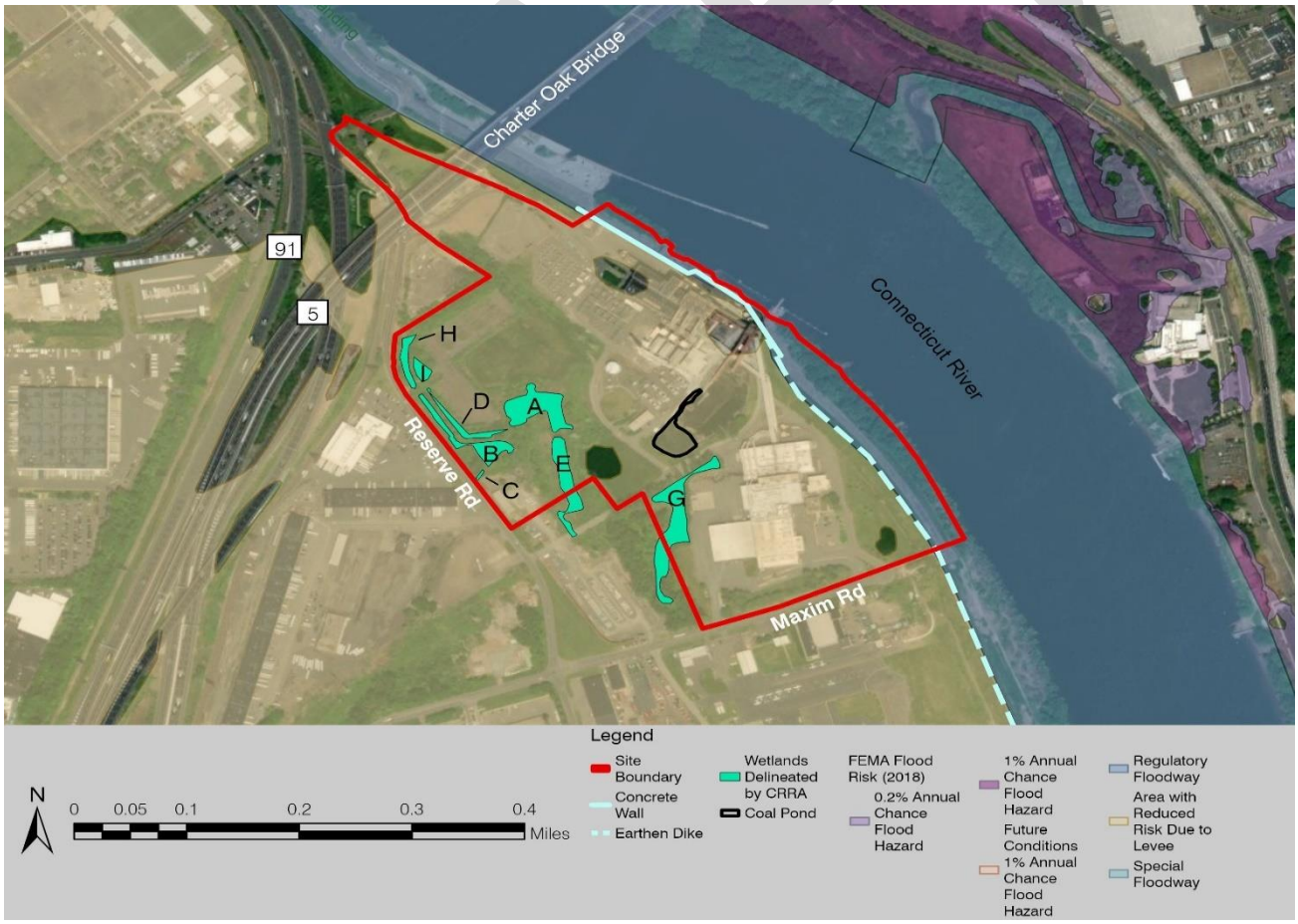


Figure 3-2. Water resources map; Source: City of Hartford Open Data 2024, National Wetland Inventory 2024, Connecticut Resources Recovery Authority PBF Wetlands Area Remediation Action Plan 2013

3.3 Flood Control System

As indicated in Figure 3-3, the site is in an "Area with Reduced Risk Due to Levee" as rated by FEMA, due to the flood control system in place. The flood control system at the MIRA facility is part of the Hartford Flood Control System (HFCS), which includes a combination of concrete floodwalls and earthen dikes designed to protect the site from flooding by the Connecticut River.

The concrete floodwalls provide primary protection, especially around the Power Block Facility (PBF), and include several penetrations where utilities like storm drains and water pipes pass through. The floodwall is reinforced with steel sheet piles to prevent seepage and erosion.

To the south, earthen dikes complement the floodwalls, with riprap on the riverside for erosion control and vegetation on the landside. The earthen dike structure is shown in Figure 3-3. A floodwall penetration, operation, maintenance, and inspection plan will be completed as part of this study. Any site work that has the potential to impact the floodwall and/or flood plain management is subject to the Greater Hartford Flood Commission's Rules and Regulations Governing the Use of the Flood Plain District, as adopted September 26, 2008/ and amended August 10, 2011.

Figure 3-3. Earthen dike component of levee
Source: Weston & Sampson site visit, 2024

3.4 Federal Airport Authority (FAA) Restrictions

The Hartford Brainard Airport. Originally known as Brainard Field, Hartford Brainard Airport is mainly used by recreational pilots, flight schools, and various aviation-related businesses. Managed by the Connecticut Airport Authority (CAA) and the State of Connecticut. In 2022, the City of Hartford commissioned a report titled "The Hartford-Brainard Airport – A Visioning Plan for Its Future." This report reviewed potential redevelopment alternatives. Land use compatibility near airports is essential to ensure that development around airports does not interfere with aviation safety or expose surrounding communities to significant risks (City of Hartford, Hartford-Brainard Airport Visioning Report for the Future, 2022). According to the FAA's guidelines, several restrictions apply to land use near airports, and these are tied to specific compatibility factors (FAA, 2022). Below are several potential restrictions related to development near an airport. Current research indicates that the runway protection zone for this airport is located away from the MIRA site, but official coordination with the FAA can confirm that.

Height Restrictions

Tall structures, such as buildings or towers, must comply with FAA Part 77 regulations to avoid penetrating protected airspace. Incompatible land uses include any developments that obstruct navigable airspace or increase the risk of collision. Compatible uses are lower-profile developments that do not interfere with aircraft flight paths.

Noise Compatibility

Land uses that are sensitive to noise, such as residential areas, schools, and hospitals, are generally incompatible within areas where noise levels exceed the Day-Night Average Sound Level (DNL) of 65 decibels (dB). Compatible uses in noisy areas include industrial, commercial, and agricultural developments, which are less sensitive to noise pollution.

Runway Protection Zones (RPZs)

The areas directly off the ends of runways are designated as RPZs to enhance safety for people and property on the ground. Residential, commercial, and recreational developments are considered incompatible due to the risk of accidents in these zones. However, open spaces, certain agricultural uses, and airport infrastructure are compatible, if they do not pose a hazard. The RPZ for Hartford-Brainard Airport is shown in Figure 3-4 (Connecticut Department of Transportation, Hartford Brainard Sustainable Airport Master Plan, 2014).

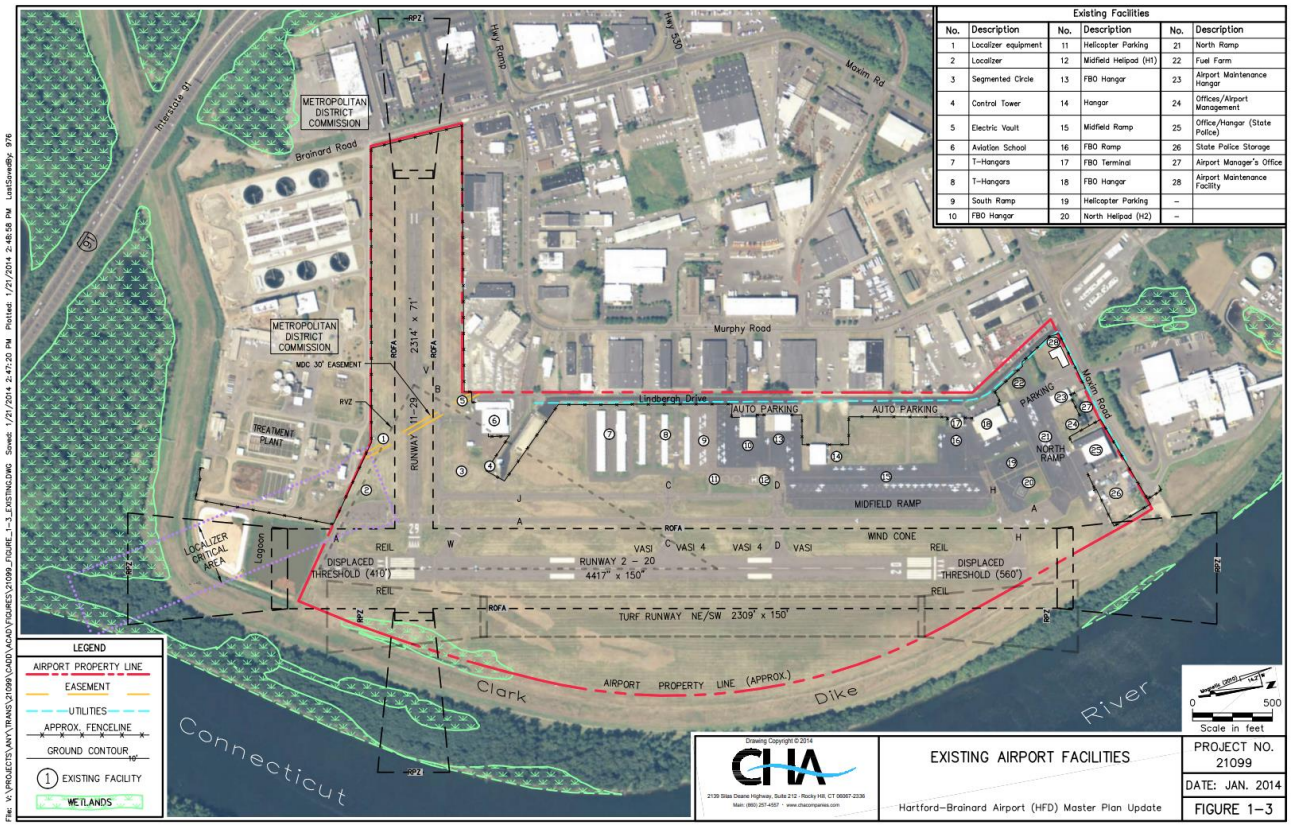


Figure 3-4. Runway Protection Zones Among Existing Airport Facilities
Source: Hartford Brainard Sustainable Airport Master Plan Update 2014

Wildlife Attractants

Land uses that attract wildlife, such as waste disposal sites, water bodies, or certain types of agriculture, are incompatible near airports due to the increased risk of bird strikes and other wildlife-related hazards. Compatible uses are those that do not attract wildlife or implement strategies to minimize wildlife hazards.

Visual and Atmospheric Interference

Developments that produce glare, light emissions, smoke, or steam are incompatible as they can impair pilot visibility during landing and takeoff. Compatible land uses are those that avoid causing visual or atmospheric disturbances and do not obstruct the pilot's line of sight or disrupt navigational aids.

3.5 Easements

The MIRA site is the subject of multiple easements and encumbrances. The information in this section includes the maps included in the South Meadows Redevelopment Considerations Study Request for Proposals as well as additional maps provided by MIRA, a four-page set of maps titled "Map Showing Property of the Connecticut Light & Power Company to be Conveyed to Connecticut Resources Recovery Authority Maxim & Reserve Roads Hartford, Connecticut, dated December 15, 2000. The discussion of Brownfields in the following section discusses environmental land use restrictions (ELURs), and the section below summarizes the easements by category.

There are various types of easements on site, including utility easements, easements related to the flood control system, rights-of-way, and other encumbrances. This report will focus on the easements that are mapped and have the potential to impact redevelopment.

Table 3-5. Utility Easements

Type	Descriptoin
Sewer Easement	From the Hartford Electric Light Company to the Metropolitan District, dated August 29, 1977, and amended (Encumbrance #24)
Right-of-Way and Easement for Telephone Lines	From the Hartford Electric Light Company to the Southern New England Telephone Company, dated August 31, 1973 (Encumbrance #22)
Utility Towers and Equipment Rights	Rights of Connecticut Light and Power Company d/b/a Eversource Energy in utility towers, electric poles, and equipment (Encumbrance #34D).
Propane Tank Easement	From Connecticut Resources Recovery Authority to Connecticut Light and Power Company, dated March 10, 2006, and modified in 2014 (Encumbrance #35).

There are easements related to existing public infrastructure, to allow for access to these facilities for operation and maintenance. These include:

Flood Control Easements - There are easements related to the flood control system in favor of the City of Hartford and the Greater Hartford Flood Commission required for continued operation and maintenance. This is a 30-foot setback on both sides of the floodwall where buildings cannot be located.

Highway and Bridge Easements – These easements allow access for the maintenance of highways and bridges in favor of the State of Connecticut.

A permanent right of way from Eversource (formerly CL&P) in favor of MDA (as the site owner) that grants MDA access to the site from Reserve Road via Gate 40 across land owned by Eversource.

There are access easements for the operation and maintenance of the substation and switchyard. The specific limitations on the utility easements and the Eversource easements need to be refined to fully understand the impact on redevelopment potential.

4.0 INFRASTRUCTURE AND GENERAL ENVIRONMENTAL CONDITIONS

4.1 Existing Structures

There are two main structures on site: The Power Block Facility (PBF) and Waste Processing Facility (WPF). The PBF is occupied by multiple structures, including the administrative building and the main PBF building which includes substructures added onto over time (the turbine hall, the boiler area, the electrical area, the cable vault, offices, and the control room). Other associated structures include the ash load-out building; the ash truck wheel wash building; the lined coal storage pile/runoff pond; a garage and warehouse; and the coal pond pump house.

The WPF includes two buildings. The first is an approximately 202,000-square-foot (sf) building that houses administrative offices, processing equipment, the Maneuvering Hall and storage. The second building is a storage building of approximately 38,000 sf located to the north of the administrative offices.

There are three other smaller buildings: the warehouse storage near Gate 40, the Jet Maintenance Shop, and a small guard building adjacent to the Gate 20 driveway entrance.

4.2 Facility Structures on the Connecticut River

Several structures from the power block facility extend out onto the Connecticut River. These are highlighted in Figure 4-1. These include screenhouse structures and screen equipment and the coal barge unloading crane and dock.

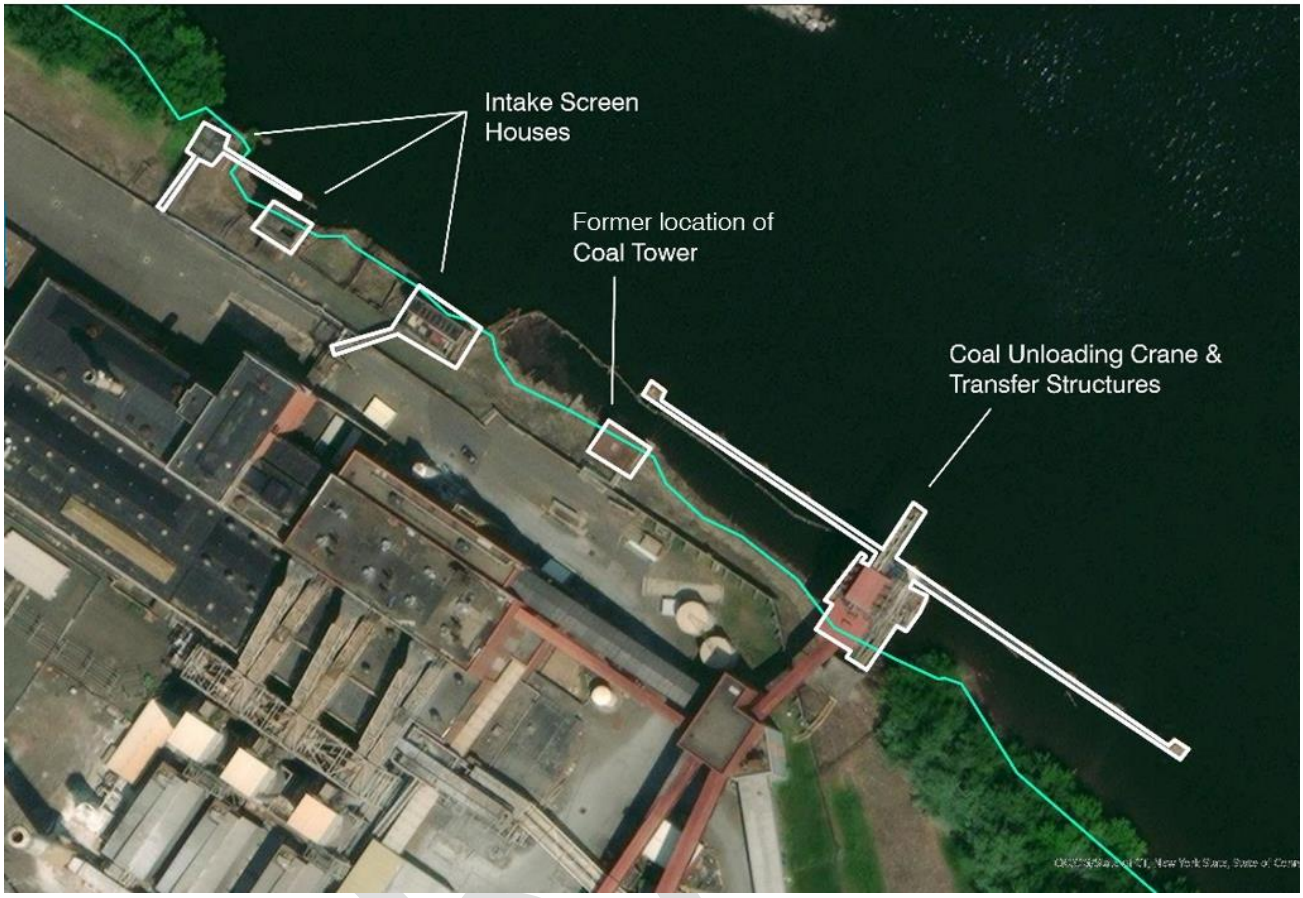


Figure 4-1. Facility structures on the Connecticut River
Source: City of Hartford Open Data 2024

The screenhouses are one- to two-story buildings as shown in Figure 4-2.

Figure 4-2. Screen houses on the Connecticut River
Source: Weston & Sampson site visit, 2024

4.3 Utilities

4.3.1 Water Supply

The site receives its potable water from the Metropolitan District Commission (MDC), with the supply sourced from local reservoirs such as the Barkhamsted and Nepaug Reservoirs. The water is treated before distribution (MDC, Drinking Water, 2024).

4.3.2 Gas

There is currently an active 2" natural gas service line that runs on-site from a natural gas main in Maxim Road to the administrative offices at the waste processing facility. The power block facility was formerly served by an 8" natural gas service line that was connected to a natural gas main in Reserve Road; this 8" natural gas service line was disconnected from the main in November 2023.

4.3.3 Electric

Eversource maintains Substation South Meadows.

4.3.4 Wastewater

The site's wastewater is managed by the Metropolitan District Commission (MDC). Wastewater is processed at the South Meadows Wastewater Treatment Plant, located just south of the property. This facility treats and manages the site's wastewater following environmental standards (MDC, 2024).

4.4 Soils and Groundwater

The property is located within the Connecticut River Valley. The soil contains a combination of clay, sand, silt, and gravel. This is consistent with typical river deposits. The soil type on site is a deep clay that has a depth of 30 to 40 feet, covered by Udorthent loamy soil (CT ECO, 2023). This soil type is a fill material that is fine, sandy, and has slopes ranging from 0-25% but mostly 0-5% (New England Soil, 1989). The drainage properties of the site soil range from moderately well-drained to well-drained, as shown in Figure 4-3. (CT ECO, 2023).

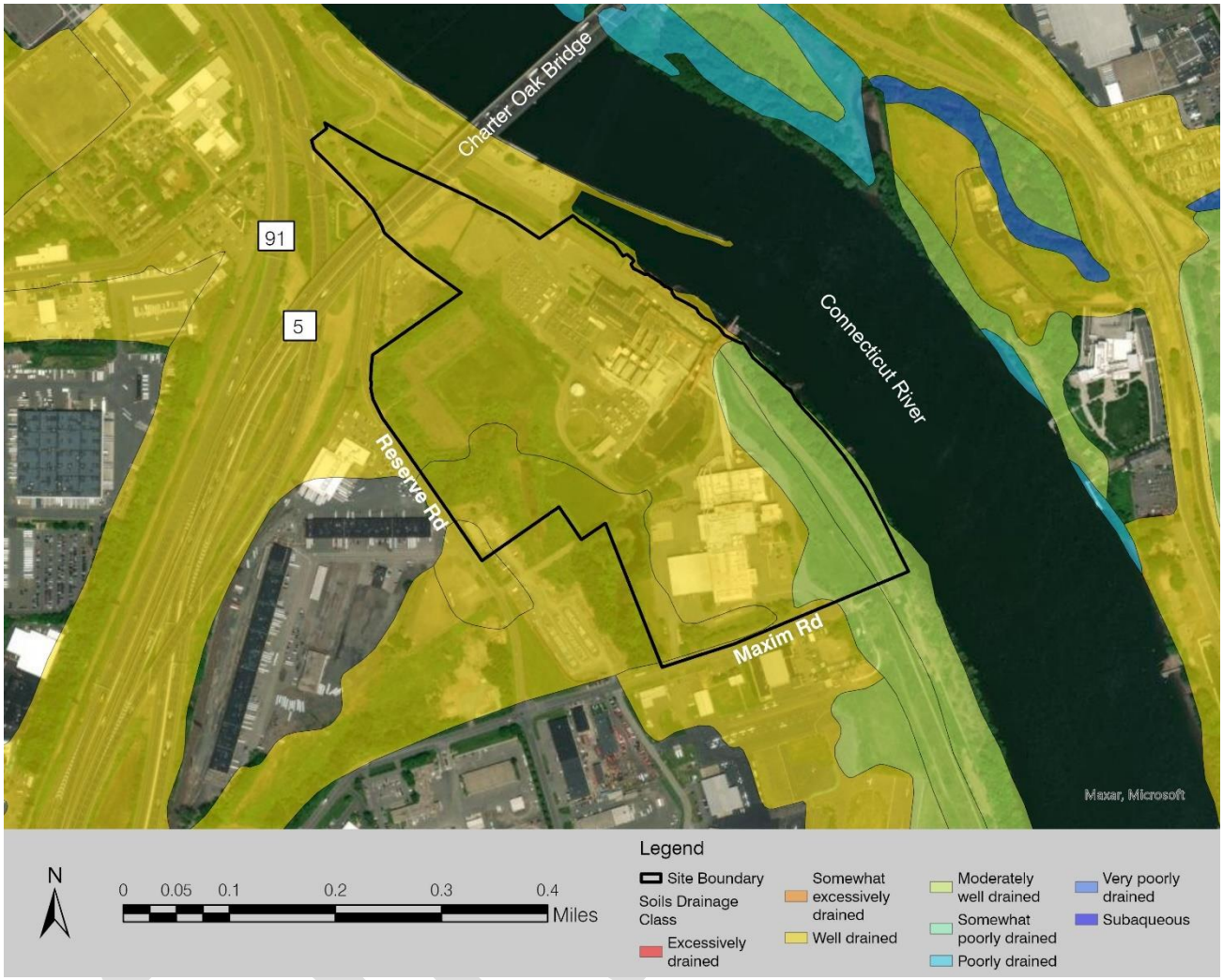


Figure 4-3. Soils drainage class map
Source: Connecticut Environmental Conditions Online 2023, USDA National Cooperative Soil Survey 2023

4.5 Brownfields

The following environmental land use restrictions have been placed on the WPF and PBF property as the result of remediation performed under the Connecticut Remediation Standard Regulations (RSRs). The Subject Areas referred to in the table refer to Sheets 3 and 4 of the South Meadows Site General Layout Plan, provided as Attachment A of the Request for Proposals.

Table 4-1. Brownfield Restrictions

Restriction	Description
A. Use	No residential activity shall be permitted at the Properties (in their entirety).
B. Disturbances	Inaccessible soil in Subject Areas A-1, A-2, B, D, E, F-1, F-2, G-b, H-1, H-2, J, K, L, Q, and R shall not be exposed as a result of excavation, demolition, or

	other activities. The soil, bituminous concrete, concrete, building slab, or permanent structures which are in the Subject Areas, shall not be disturbed in any manner by activities such as demolition, excavation or other intrusive activities. Any pavement, which is necessary to render such soil inaccessible, shall be maintained in good condition pursuant to the pavement, permanent structure and engineered control monitoring and maintenance plan entitled Engineered Control & Permanent Structure Inspections and Long Term Ground Water Monitoring Manual (Rev. 2, dated January 2018), as amended and approved by the Connecticut Department of Energy and Environmental Protection, and on file at the Connecticut Department of Energy and Environmental Protection Public File Room.
C. Demolition	Demolition of buildings or permanent structures within Subject Areas A-1, A-2, B, E, F-1, F-2 and J (transformer and electrical equipment foundations in switchyards and the Coal Pile/Coal Pond Liner, respectively) shall not be permitted. The permanent structures shall be maintained in good condition pursuant to the pavement, permanent structure and engineered control monitoring and maintenance Plan entitled Engineered Control & Permanent Structure Inspections and Long Term Ground Water Monitoring Manual (Rev. 2, dated January 2018), as amended and approved by the Connecticut Department of Energy and Environmental Protection, and on file at the Connecticut Department of Energy and Environmental Protection Public File Room. Demolition of buildings (the southwestern-most portion of the main "PBF building" known as the former Administrative wing) within Subject Area B shall not be permitted, and soil in Subject Area B shall not be exposed to infiltration of water.
D. Disturbances	The engineered controls or polluted soil below such engineered controls in Subject Areas C, D, G-a, I, M, N, O and P shall not be disturbed in any manner as a result of excavation, demolition, plant root growth, or other activities. Any pavement or concrete which constitutes the engineered controls (or portions thereof) in Subject Areas C and I, shall be maintained in good condition pursuant to the pavement, permanent structure and engineered control monitoring and maintenance Plan entitled Engineered Control & Permanent Structure Inspections and Long Term Ground Water Monitoring Manual (Rev. 2, dated January 2018), as amended and approved by the Connecticut Department of Energy and Environmental Protection, and on file at the Connecticut Department of Energy and Environmental Protection Public File Room.
E. Access	At Subject Area M, the two gates that allow access to the storm water basin shall remain locked at all times, except for conducting storm water sampling and maintenance activities.
F. Wetland Soils at Subject Areas Q and R	(i) The soil, wetland soils and vegetation at Subject Areas Q and R shall not be disturbed;

	(ii) The fence that borders the wetland at Subject Areas Q and R shall remain intact. This fence may be the perimeter security fence for the facility; (iii) The wetlands at Subject Areas Q and R shall be guarded to ensure no trespassers. The guard for wetland may be the guard(s) at the entrances to the facility; and (iv) Any future modifications to the ELUR at Subject Areas Q and R shall undergo a reevaluation of the health risks associated with the contaminated wetland.
G. Closure Requirement A	MIRA shall maintain existing structures and pavement consistent with the land use restrictions placed on the parcel. The Coal Pile/Coal Pond Liner will remain intact as required by the ELUR demolition restriction. In addition, facility access and wetlands disturbances shall not contravene the use restrictions placed on the parcel. Closure contractors shall be provided with a drawing that shows the areas of the restrictions and shall be instructed to avoid or limit activities within these areas.

Source: Verification Report, Exhibit C: Declaration of Environmental Land Use Restriction and Grant of Easement, Property of Materials Innovation and Recycling Authority, sheet 4 of 6.

4.6 Topography

The site has elevations ranging between 15 to 20 feet in the western half and the former MIRA facility, to 30 feet around the Eversource substation, as shown in Figure 4-4. The eastern edge of the site rises steeply up to 35 feet as part of the levee system.

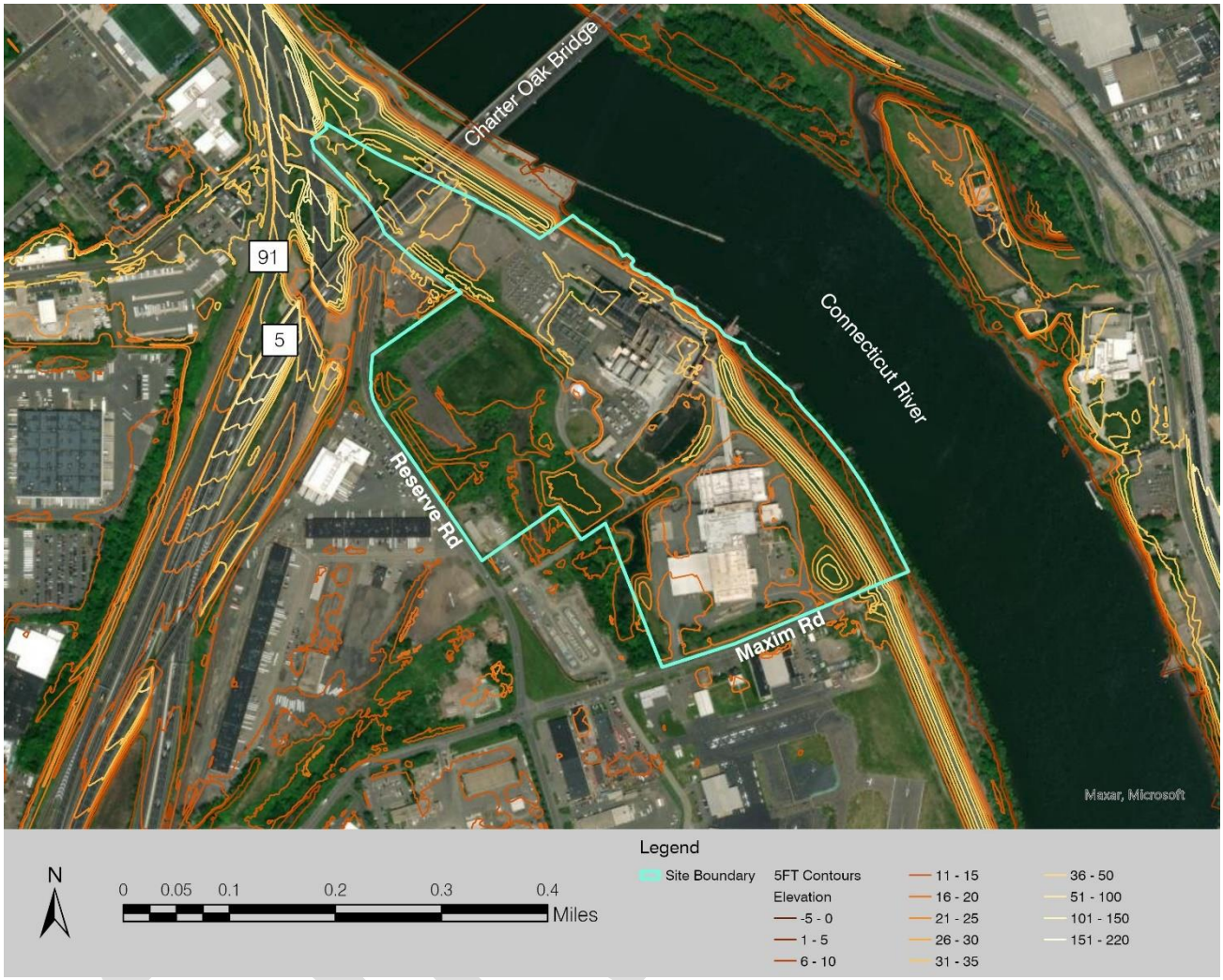


Figure 4-4. Elevations map
Source: City of Hartford Open Data 2024

4.7 Historic Preservation

Once a vital piece of industrial infrastructure, the plant played a crucial role in Hartford's energy production and economic development. Over the years, it has become a symbol of the area's industrial heritage, sparking discussions about its cultural importance. We will delve into its historical background, examine its lasting impact, and consider potential paths for preserving this iconic structure for future generations.

4.7.1 General History

The Hartford Electric Light Company (HELCO), chartered by the Connecticut General Assembly in 1881, began its service to the city of Hartford in 1882 under the leadership of its first president, Austin Cornelius Dunham. The company's first project, in 1883, was installing arc lighting at the Asylum Street

railroad station. By 1900, Hartford became the first city in New England to feature an all-electric street lighting system, marking HELCO's rise as a pioneering force in electricity generation and distribution.

Figure 4-5. Office of HELCO at 266 Peal Street where an arc lamp and lighted signage is visible, Hartford, c. 1902
Source: Connecticut Museum of Culture and History

HELCO quickly became known for its innovative contributions to the electrical industry. In 1893, it became the first public utility in the United States to transmit three-phase alternating current over long distances, sending electricity from the Rainbow Hydroelectric Station on the Farmington River to its Pearl Street station in Hartford. The company also introduced groundbreaking advancements in energy management, including the use of a storage battery in 1896 to store power from its hydraulic plants and supply peak energy demands.

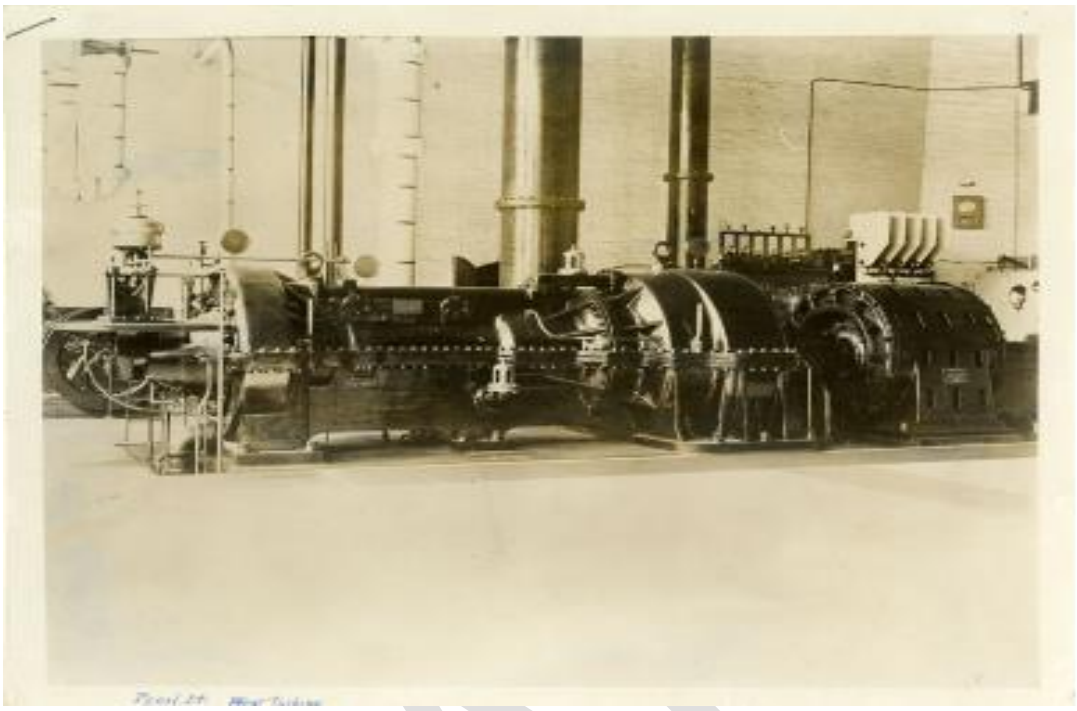


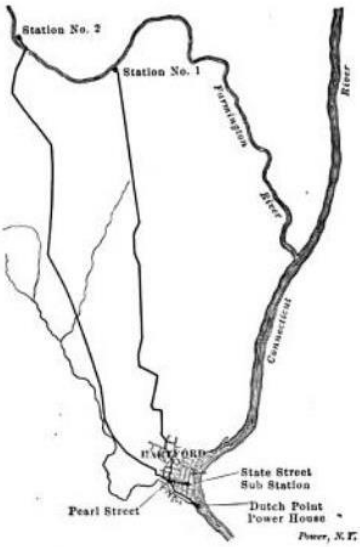
Figure 4-6. Steam turbine "Mary Ann" housed in the Pearl Street power station in 1901
Source: University of Connecticut Archives & Special Collections

As HELCO grew, its ability to harness cutting-edge technology helped to shape the electric age in Hartford. The company installed the first steam turbine used by a public utility in 1901, a 55-ton Westinghouse unit affectionately named "Mary Ann." By 1902, HELCO's system powered 77,000 incandescent lights and over 1,000 arc lamps, solidifying its role in making Hartford a leader in electric power use per capita. Additional innovations included the invention of the electric range, marketed by Dunham in 1908, which quickly became a staple in 20,000 Hartford homes.

HELCO's reach expanded with the construction of the Tariffville dam and powerhouse on the Farmington River in 1899, utilizing aluminum for transmission conductors for the first time. In 1915, HELCO partnered with the Connecticut Power Company, creating a power exchange agreement that allowed the two companies to cooperatively supply electricity to their customers. This partnership paved the way for HELCO's eventual merger with Connecticut Power Company in 1958 (University of Connecticut, 2013) (Mirecki, 2020).

4.7.2 History of the South Meadow Power Plant

As Hartford's population expanded and the need for electricity grew in the early 1900s, the Hartford Electric Light Company needed to expand its power generation capabilities. In 1904, a new power plant was established at Dutch Point on the south side of the city. The Mary Ann steam turbine was laboriously relocated to this facility and the Pearl Street plant transitioned to serve as a distribution substation.



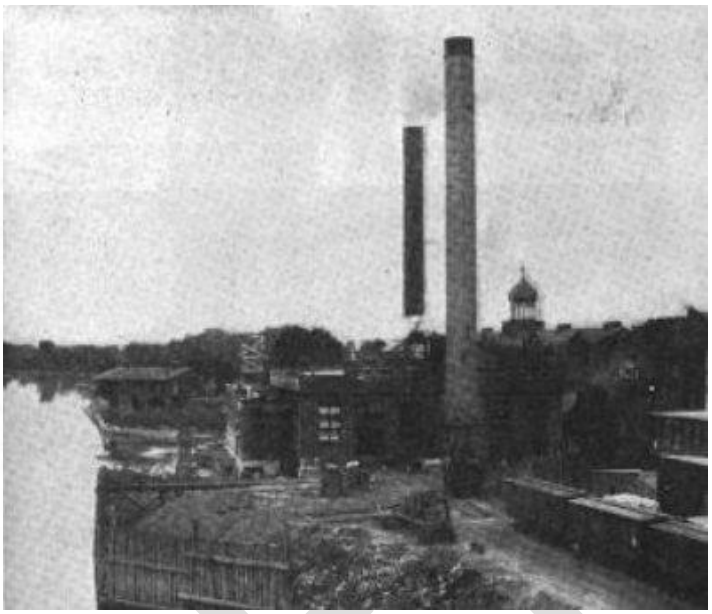


Figure 4-7 (left). Layout of HELCO stations in Hartford in 1909, showing Dutch Point on the south side of the city. Source: Power and the Engineer; Figure 4-8 (right). Image of the Dutch Point Power Plant in 1909. Source: Power and the Engineer

Over the following years, the Dutch Point plant underwent several expansions to increase its size and capacity. By 1917, the plant had reached its limits, prompting HELCO to acquire land a mile south on the Connecticut River for the construction of the new South Meadow Power Station (Hill Publishing Company, 1909) (Sterner, 2024).

2 A THE HARTFORD DAILY COURANT: SUNDAY, DECEMBER 18, 1921.

SPACE AND MAINTENANCE ECONOMY IN HARTFORD ELECTRIC LIGHT CO. POWER STATION AT SOUTH MEADOW

FEWER SQ. FEET PER H. P. THAN ANY POWER PLANT IN COUNTRY

Insures City Continuity of Service at Minimum Cost, Being Embodiment of Latest Ideas of Ablest Electrical and Construction Engineers to Secure Efficiency and Low Operating Expense

BUILDING ADEQUATE TO ALLOW FOR EXPANSION

Interior View Showing Piping Installation Totalling 10½ Miles In Length

ALL PIPING IS INSULATED WITH AN 85 PER CENT. MAGNESIA COATING TO SECURE HIGHEST POSSIBLE EFFICIENCY OPERATION.

MANY HELP IN BUILDING ELECTRIC LIGHT PLANT

Figure 4-9. Screenshot of Hartford Courant article reporting the opening of the South Meadow Power Plant on December 18, 1921
Source: Newspapers.com

The South Meadow Power Plant opened in 1921 to great enthusiasm and acclaim, celebrated as a paragon of efficiency with remarkably low operating costs. The plant's opening was marked by an article in the Hartford Courant on December 18, 1921, which noted: "So thoughtfully and carefully has the planning and building been done that it will require only about sixty employees to operate the station…Not only in the choice of equipment has forethought for efficiency been employed. The installation of it, the planning of the locations and the like, also tends to the best and most economical results" (Space and Maintenance Economy in Hartford Electric Light Co. Power Station at South Meadow, 1921). This innovative design reflected the advancements in technology and management that characterized the era, positioning the South Meadow Power Plant as a significant addition to Hartford's energy infrastructure.

Figure 4-10. View of the South Meadow Power Plant from the Connecticut River in 1922
Source: Hartford History Center, Hartford Public Library

In 1923, HELCO installed a new, experimental turbine at the Dutch Point plant that ran on mercury vapor instead of steam. The turbine was damaged and shut down in 1927, but in that same year, the company completed a substantial, new addition at the South Meadow plant to contain a similar unit, which was the first commercial mercury cycle generating unit in the country. Despite the high cost of mercury and the health hazards of mercury fumes, the turbine continued to operate until 1947, when it

was replaced with a new mercury boiler unit for $2,000,000 (Preservation Connecticut, 2024) (The Hartford Courant, 1947).

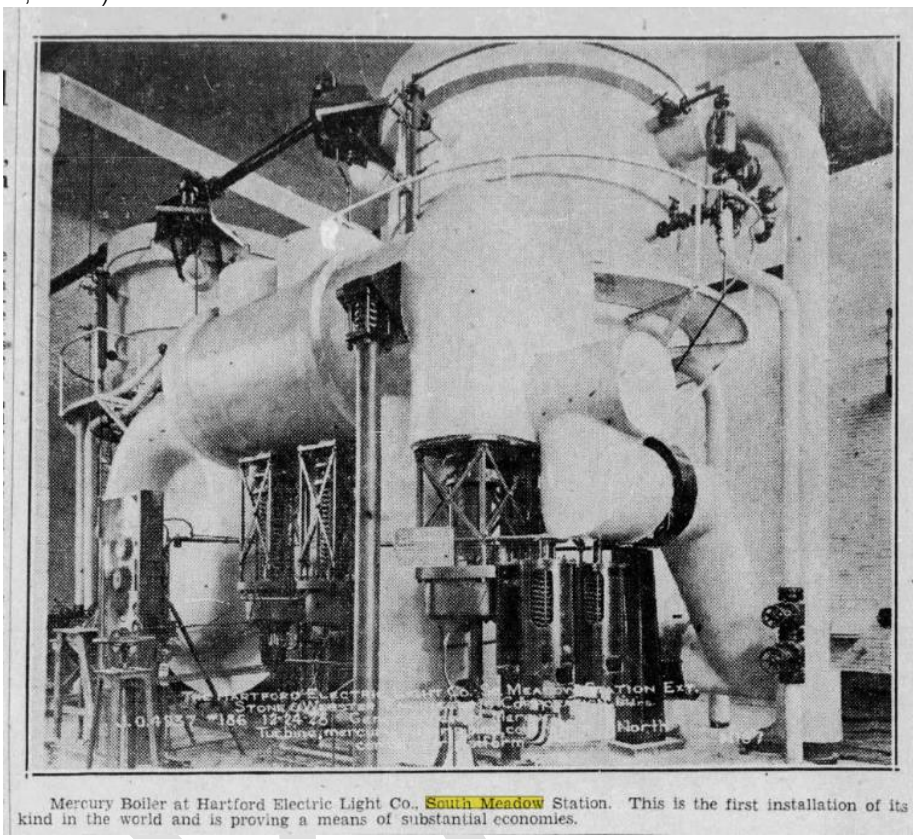


Figure 4-11. Photo of the mercury boiler at South Meadow Power Plant from 1933
Source: The Hartford Daily Courant, July 2, 2933

The plant transitioned to petroleum fuels by the 1940s and was converted into a waste-to-energy facility in the 1980s, which ultimately ceased operations in 2022 (MIRA, Future Redevelopment in South Meadows, 2024). The Dutch Point Power Station was demolished in 1962, leaving the South Meadow Power Plant as an important vestige of 20th-century industrial architecture along the Connecticut River.

4.7.3 Historic Building Evolution and Existing Conditions

The original core of the 1920s power plant at South Meadow survives and is legible today. However, the building has undergone several additions and expansions to reach its existing condition, with eras of construction from nearly every decade since its erection.

The first opportunity for the building footprint to be documented would likely have been on the 1922 Sanborn Company Fire Insurance Maps of Hartford. However, the property is blank with a note that the "Hartford Electric Light Company's Power Plant" is located "beyond," but permission to survey the plant was refused by the company (Yale University Library, 1922).

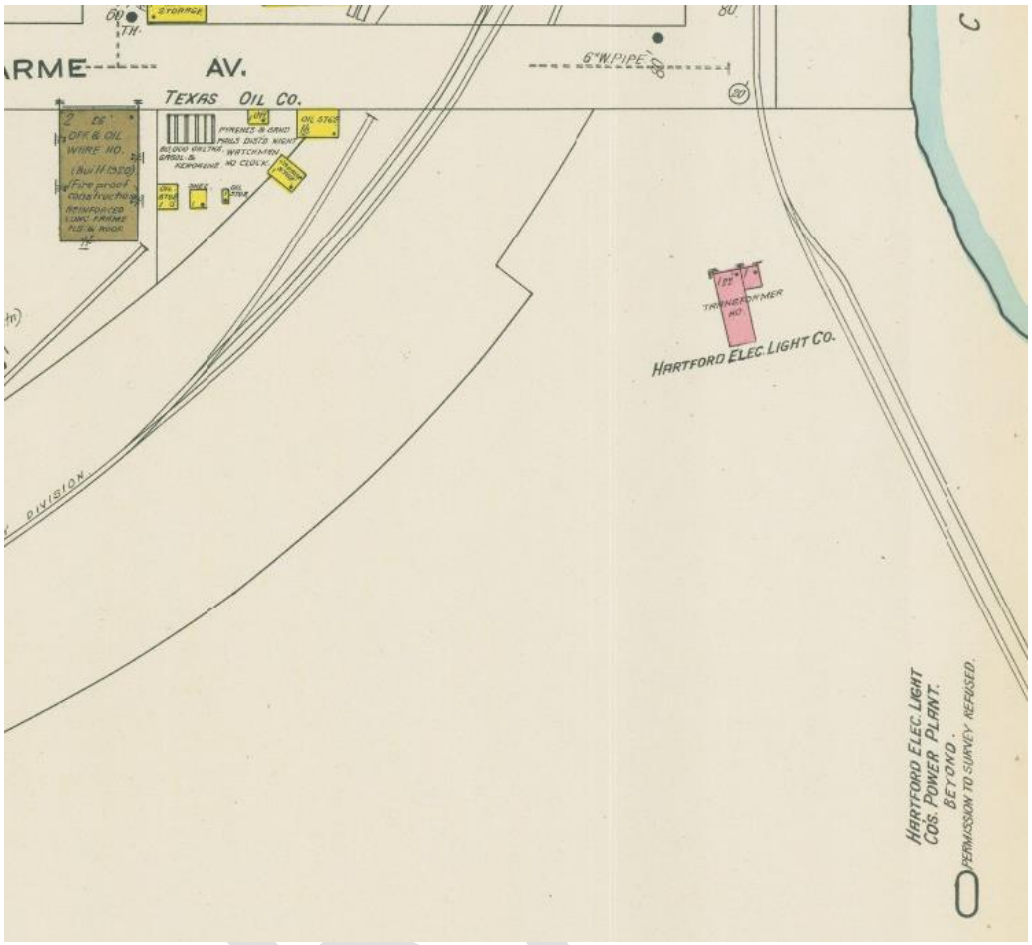


Figure 4-12. Screenshot of the 1922 Sanborn Map in the vicinity of South Meadow Power Plant, noting the plant was not surveyed because the company "refused permission"
Source: Yale University Library

Early on, a major addition was incorporated to house the new mercury vapor turbine in 1927. Aerial imagery from 1934 shows a large rectangular addition had been constructed westward, toward the rear of the building, and a long, shorter addition was built expanding south of the building, adjacent to the river. At this point, it appears the rear wing of the building was engulfed by the rectangular rear addition, but the roof forms of the primary body and north extension are defined as an L-shaped footprint in the northeastern most corner of the building mass.

Power Company Expanding Plant

GROUND BREAKING—Carleton F. Sharpe (left), city manager, and Dwight Douglas, superintendent of power for Hartford Electric Light Co., manipulate steam shovel as building of a new plant addition gets under way in South Meadows.

Officials of Hartford Electric Light Company, in the presence of a group of distinguished visitors, Friday afternoon broke ground for the sixth and final addition to the

More Electric Plants Cited In Power Expansion

JAN 18 1950

New power plant additions by Hartford Electric Light Company and Western Massachusetts Electric Company, Springfield, are cited today by a New England utilitiy official as examples of power expansion plan coming into service in the area.

The local utilitiy recently completed a large addition to its South Meadows plant, while the Springfield company dedicated its new 4,000-kilowatt steam generating plant today.

The utilitiy official, Avery R. Schiller, chairman of the Electric Coordinating Council of New England and president of Public Service Company of New Hampshire, said, "it is not mere coincidence that so many new generating stations and huge additions to existing stations are currently coming into service here in New England."

Figure 4-13 (left). Article from Hartford Courant discussing the planned expansion of the South Meadows Power Plant, April 30, 1948. Source: Hartford Public Library; Figure 4-14 (right): Article from Hartford Courant noting a "large addition" was recently completed at the South Meadows plant, January 18, 1950. Source: Hartford Public Library

Large-scale use of mercury for power generation came to an end in the mid-20th century, and the mercury turbines at the South Meadow plant ceased operation in the mid-1960s (Preservation Connecticut, 2024). When the property was converted to a resource recovery operation in the 1980s, more additions were incorporated into the power block facility, and a larger waste processing facility was constructed in a separate building to the south. These interventions did not impact the original, historic portion of the building.

Figure 4-15. View of the north elevation of the building today, with the historic portion seen on the right-hand side
Source: Weston & Sampson site visit, 2024

Today, the historic L-shaped footprint of the plant remains discernible. Comparing the structure to a 1922 photograph, many original architectural features, such as the large arched windows, brick corbelling, and stone details like the string course, cornice, sills, and keystones, are still intact, distinguishing the historic building from later modern additions. Additionally, a significant amount of historic material appears preserved both on the interior and exterior, including metal windows, enameled brick, and wood paneling. Also, notably, the historic structure still contains two General Electric steam turbines from 1942 and 1949, two boilers from 1960, and an 1883 Armington-Sims 50-horsepower steam engine that was originally used at the Hartford Electric Light Pearl Street Station (Preservation Connecticut, 2024).

Figure 4-16. Examples of historic materials still extant on the building, include (left to right) wood paneling, metal windows, enameled brick
Source: Weston & Sampson site visit, 2024.

4.8 Transportation

The site is strategically located at the junction of Interstate 91, Interstate 84, and State Route 5, three miles south of Downtown Hartford (see Figure 4-17. This location offers convenient regional connectivity for both commuters and freight transport. I-91 provides direct access to downtown Hartford to the north and the Bradley International Airport corridor, while I-84 connects to the western and eastern parts of Connecticut.

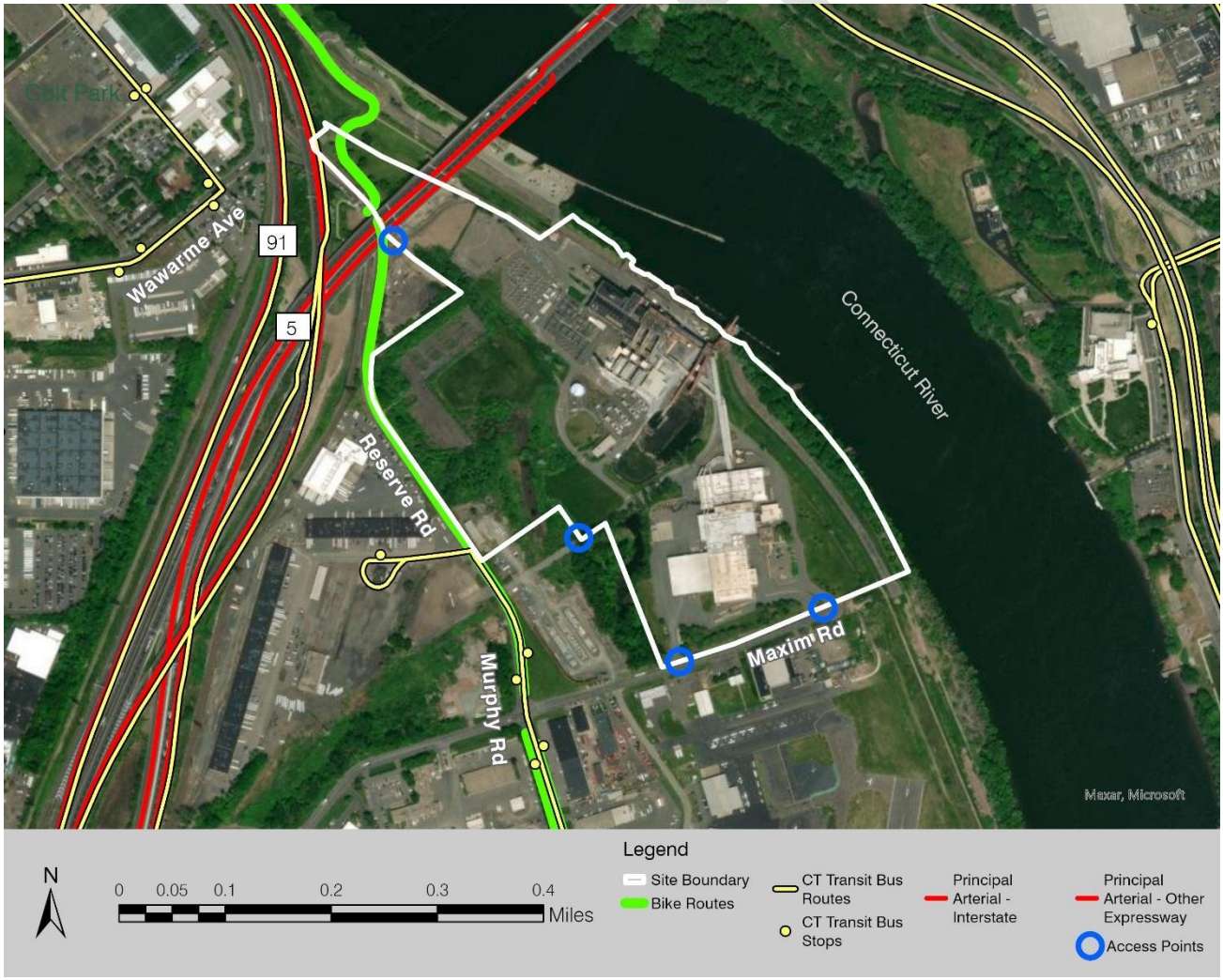


Figure 4-17. Transportation map
Source: City of Hartford Open Data 2024

4.8.1 Site Access

The site has numerous access points, with the primary entrances on Maxim Road and Reserve Road. There is also site access from Reserve Road that is enabled by easement. Maxim Road connects directly to Brainard Road to the west, providing straightforward access to the regional road network. From there, Brainard Road links to Murphy Road and Airport Road, allowing vehicles to quickly reach I-91 and I-84.

4.8.2 Bus Network

Public transportation options are available with local bus routes serving nearby streets, making it easier for workers and visitors who use transit. The site is connected to the Locust Street bus route along Reserve Road, which makes a loop down Murphy Road and across the highway, going north on Locust Street, Wawarme Avenue along Colt Park, and beyond.

The Wethersfield Avenue/Middletown, New Haven/Hartford Express, Berlin Turnpike Flyer, Cromwell Express, Newington Express, Century Hills Express, Meridien Express, and Middletown/Old Saybrook bus routes travel along I-91 and Route 5 but do not have stops in or near the site.

4.8.3 Pedestrian Resources

Pedestrian infrastructure in the immediate area is limited due to the prevalence of industrial and commercial developments.

4.8.4 Bicycle Resources

There is a one-sided bike lane on Reserve Road leading to the site from Charter Oak Landing, which crosses the Charter Oak Bridge and then converts into a two-sided bike lane on Murphy Road, connecting to Brainard Road.

4.8.5 Railroad Siding Remnants

The site features one long and one short railroad siding remnant on its western part. These remnants are not connected to any existing rail lines and are no longer in use, but they remain visible on the site.

5.0 CONCEPTUAL SITE CONSIDERATIONS

This final section includes two parts. The first is a summary of the site and regional factors that could present opportunities, constraints, or potentially both, to the site's redevelopment. The second is a discussion of the type and amount of development, based on the four redevelopment concepts that this report will consider – residential uses, including recreation, industrial/commercial, currently permitted uses, and a mix of uses.

5.1 Opportunities and Constraints

Following is a summary of the opportunities, followed by factors that could represent both opportunities and constraints and then constraints. This summary is followed by a discussion of how some of these factors might guide site and building design.

5.1.1 The City of Hartford

The MIRA site was designated by the city as part of the "South Meadows" redevelopment area in its Hartford City Plan, in 2020. Hartford's 2035 Plan of Conservation and Development (POCD)

specifically called out the reuse of the South Meadows area as a priority, including it in its ten transformative projects. The future land use map from the POCD designates the South Meadows's future land use as medium-density mixed-use, which is 3 to 6 stories, and light industrial. These plans all promote redevelopment that capitalizes on the site's riverfront location and includes significant recreation resources, specifically identifying a connection along the river.

> Opportunity – The City's identification of the MIRA site as a priority project for redevelopment suggests that a redevelopment plan that is consistent with the City's goals would receive significant City support.

5.1.2 Market Conditions

The 2023 Hartford-Brainard-Vision-Report included a market analysis, which had the following conclusions related to future development:

- The local industrial market is strong, particularly in terms of logistics and distribution uses.
- The retail market remains relatively stable.
- The multifamily market is strong. 96% of multi-family buildings in Hartford report a 4% vacancy rate. The analysis also indicated a need for affordable housing.
- The office market is not strong, and its future is uncertain.

> Opportunity – The market for all the proposed redevelopment options, except for office, is strong.

5.1.3 The Power Block Facility

This building is known historically as the South Meadow Power Plant and was built by the Hartford Electric Light Company in 1921.

> Opportunity – This building presents an opportunity for adaptive reuse if a feasible use or mix of uses can be identified. Its size presents some challenges to residential development. Its current height may also make it easier for the redevelopment to include taller structures.

5.1.4 The Connecticut River

The City of Hartford has identified this site for redevelopment, largely because of its location along the river and the potential to take advantage of views and other access to the river.

> Opportunity – The riverfront location is an opportunity. The current levee blocks views to the riverfront at ground level, but there are also several structures – screen houses, coal towers, and a dock – which may provide an opportunity for development on the river side of the levee.

5.1.5 Recreation Use

Plans put forth by the City of Hartford and Riverfront Recapture have proposed to use the MIRA site's riverfront to link recreation resources from the north to the south.

> Opportunity – The City's support for this recreation resource could help with the Greater Hartford Flood Control Commission and the Army Corps of Engineers for designing a

recreation resource along the riverfront that would increase the development value of the MIRA site.

5.1.6 Connecticut Regional Market

This is a 33-acre facility with over 185,000 square feet of warehouse and refrigerated space at 101 Reserve Road. It is the largest perishable food distribution facility between New York and Boston consisting of four distribution/warehouse buildings, one free-standing restaurant, office space dedicated to real estate management, Department of Agriculture and related federal agricultural services, and a farmers' market pavilion. The Market provides facilities for both retail and wholesale trade. A 2022 report identified a need for expansion.

Opportunity – There may be an opportunity for the MIRA site to be incorporated with the expansion of the Regional Market. The existing WPF building could provide distribution/warehouse space, and the Power Block building could provide an opportunity for adaptive reuse for more retail-oriented uses.

5.1.7 Waste Processing Facility (WPF)

The facility has a valid solid waste permit to operate that would allow the continuation of waste processing activities until the permit expiration date of May 16, 2028. The Waste Processing Facility building is permitted to receive municipal solid waste for processing, to store up to 20,000 cubic yards of waste on-site, and to transfer up to 680 tons of municipal solid waste off-site per day. In order for this use to continue, the WPF building would remain. Under the current permit, this use could be limited to the southern portion of the site. Truck access to the WPF would be off of Maxim Road. It should be noted that CT-DEEP approval would be required before any physical/operational upgrades, improvements and/or minor changes in the WPF design, practices or equipment could be implemented. Such upgrades, improvement, and/or minor changes would need to promote and implement waste diversion and/or additional recycling activities, consistent with the goals of the CT-DEEP's Comprehensive Materials Management Strategy. CT-DEEP would also require communication with City of Hartford stakeholders and public outreach as part of the approval process.

Opportunity – Allowing the WPF to continue to operate under the current permit until it expires presents the opportunity for the owner to realize some revenue to support redevelopment plans. This building could be reused for other industrial uses. Since this is the parcel closest to the airport, a light industrial use might provide an appropriate transition to a more mixed-use redevelopment on the rest of the site.

5.1.8 Airport

The proximity of both the Hartford Brainard Airport and the Interstate (I-91 and I-84) presents both opportunities and constraints. The impact depends upon the type of future redevelopment and future building siting. The Hartford Brainard Airport Vision report assessed the potential for advanced manufacturing, research and development, and aviation technology.

Opportunity/Constraint – There may be some restrictions related to uses, including residential uses. However, the report identified a few types of industrial uses related to aviation technology that could capitalize on the site's location and proximity to the airport use.

5.1.9 Access to Interstate

This site benefits from direct access to major interstate highways and state roads.

> Opportunity/Constraint – Proximity to the Interstate is an opportunity for some types of industrial uses but does present a barrier between downtown and the South Meadows Area.

5.2 Site Constraints

There are two types of legal constraints related to future redevelopment: the current easements and the existing ELURs.

5.2.1 Easements

As noted in the existing conditions section, there are multiple easements related to utilities and other infrastructure on the MIRA site. The mapped easements will need additional research to understand how they might impact or restrict building location.

5.2.2 Brownfields

The MIRA site has many areas of concern (AOCs) that require environmental land use restrictions (ELURs). Currently, an ELUR prohibits residential development at the MIRA site. In addition to this overall ELUR, there are multiple ELURs across the site that address different types and levels of contamination. Some ELURs are related to existing buildings and structures.

ELURs can be removed if the existing contamination is removed. There can also be ways to align the building program with the goals of the ELUR – for example, if a paved parking area or building foundation could restrict access to contaminated soils. As some contaminants have a greater impact on project costs, coordinating the site design with these restrictions can also reduce costs for redevelopment.

5.3 Site Design Considerations

In addition to the legal restrictions, several site factors can constrain, or guide, redevelopment. To maximize usable space while minimizing environmental impact, building placement can consider how to work with these conditions.

5.3.1 Slope and Topography

The site's slope ranges between 15 to 35 feet, with steeper areas closer to the levee system near the Connecticut River. There are flatter areas to the west near Interstate 91.

5.3.2 Wetlands and Stormwater

As noted, the wetlands jurisdiction is the Connecticut Department of Energy & Environmental Protection (CTDEEP), because the site is owned by a quasi-public State entity. The wetlands will present site constraints, and any potential impacts will be reviewed by CTDEEP.

5.3.3 Flood Control and Levee System

There is an easement for the continued operation and maintenance of the system that includes both the dike and the land around it. There may be potential to utilize some of this area for recreation resources. There are also existing structures on the river side of the dike that may present some opportunity for additional public access to the river.

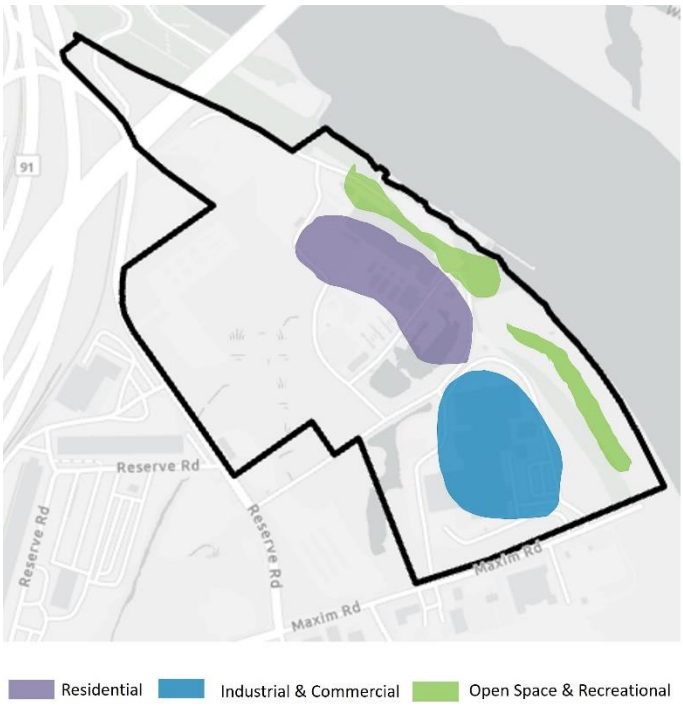


Figure 5-1. Conceptual Site Map
Source: Weston & Sampson 2024

5.4 Conceptual Site Design

This section describes how the site's layout and existing conditions could affect site design. Considering the adjacent airport use, and the access from Maxim Road, the southern part of the site – related to the WPF – could be utilized for a higher intensity industrial or commercial use. This portion of the site could be a buffer between the remainder of the site and the airport use. The central portion of the site, closer to the river, could accommodate residential buildings and would be the most desirable location because of the river views. Areas along the eastern edge and near the riverfront should be reserved for parks and riverwalks. The restrictions around the levee would prevent any more intense development (see Figure 5-1).

The MIRA South Meadows Facility site encompasses approximately 80 acres. After accounting for various environmental and regulatory constraints at this conceptual level, the net developable area is estimated at approximately 65 acres. This analysis will present potential development scenarios within the allowable zoning and regulatory framework, including mixed land uses and residential development options.

5.4.1 Zoning Designations

As noted in the previous section, there is an underlying industrial zone, with a Connecticut River Overlay.

Industrial District (ID-1)
The primary zoning designation for the site.

- Permitted Uses: Light and heavy industry, warehousing, and transportation facilities. Limited residential uses (temporary shelters) with conditions.
- Dimensional Limits: Max building coverage 60%, max impervious area 80%, no max height for industrial structures, and 4 stories for Commercial building

- Special Permit: Required for civic, institutional, certain residential, and specific commercial uses.

Connecticut River Overlay District

This overlay introduces additional regulations for areas within 2,000 feet of the river. It includes environmental sustainability requirements and restricts certain developments near the river.

- Permitted Uses: Multi-unit residential, hotels, parks, neighborhood retail, and office spaces.
- Dimensional Limits: Minimum height 3.5 stories, max height 30% above base zoning.
- Special Permits: Needed for development within 75 feet of the river. Emphasis on sustainable construction.

In terms of development feasibility, the following uses are allowed:

- Multi-unit residential is allowed in the Connecticut River Overlay District.
- Industrial is allowed in the I-1 District.
- Commercial & Mixed-Use: Depending upon the specific use, these are feasible in both the Overlay and ID-1 Districts.
- Recreation/Open Space: Best fit for Open Space and Overlay Districts.
- Currently Permitted Use: This is a continuation of an existing use.

5.4.2 Net Developable Area Assumptions

As noted, the gross area of the site is 80 acres. We have estimated some exclusion areas to reflect existing side constraints (see Figure 5-2). These were estimated to include:

- Flood Control Infrastructure – 5 Acres
  This exclusion includes the infrastructure as well as the 30-foot setback.
- Wetlands: 3 acres
  There were 2.5 acres of wetlands identified in the Power Block Facility Wetlands Area Remediation Action Plan (Connecticut Resources Recovery Authority, 2013).
- Under and north of the Charter Oak Bridge: 3.5 acres
  The area under and to the north of the Charter Oak Bridge is excluded. This area of the site is cut off from the remainder of the site and many of the existing easements affect this small area.

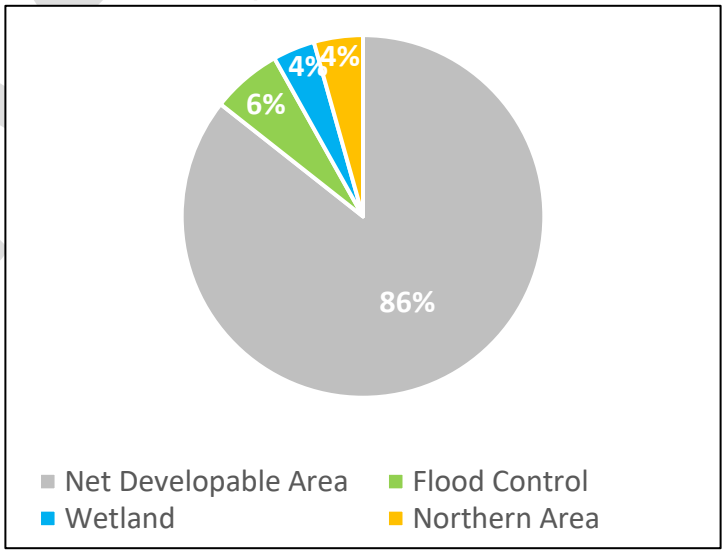


Figure 5-2 Summary of Developable Area
Source: Weston & Sampson 2024

The net developable area calculation used is:

Net Developable Area = Gross Site Area− (Flood Control Easements + Wetlands Setbacks + Northern Side Easement)

Using the specific site information, the calculation is:

Net Developable Area = 80 acres−(5+3+3.5) acres = 68.5 acres

5.5 Potential Future Uses

These four scenarios are contemplated to assist the Authority in understanding the risks and costs associated with these various land uses. The proposed uses are based upon the Connecticut Department of Energy and Environmental Protection Remediation Standard Regulations.

- Commercial/Industrial as defined by CTDEEP Remediation Standard Regulations
- Residential/Recreation as defined by CTDEEP Remediation Standard Regulations
- Current Permit as defined by the permit issued by CTDEEP to Materials Innovation and Recycling Authority to operate a solid waste Resources Recovery Facility.
- Mixed Use

This section will summarize the future development opportunities related to each use category, based on the existing conditions information, including some assumptions.

Residential

The future redevelopment as residential would include a recreation component. Assumptions for this concept include:

- Multi-family residential in a multi-story building at the maximum allowable density
- Demolition of the existing buildings
- Use of the site's general circulation pattern
- The recreation resource proposed would be a greenway, running along the river's edge, for the length of the site.
- Removal of the electrical infrastructure

This scenario emphasizes housing and recreational areas to create a residential community with easy access to public amenities and natural resources (see Figure 5-3). The land use breakdown allocates 35 acres to the residential area, with 40% building coverage, accommodating approximately 550 units. The housing focus includes a mix of high-density apartments.

The recreational and open space component spans 33.5 acres,

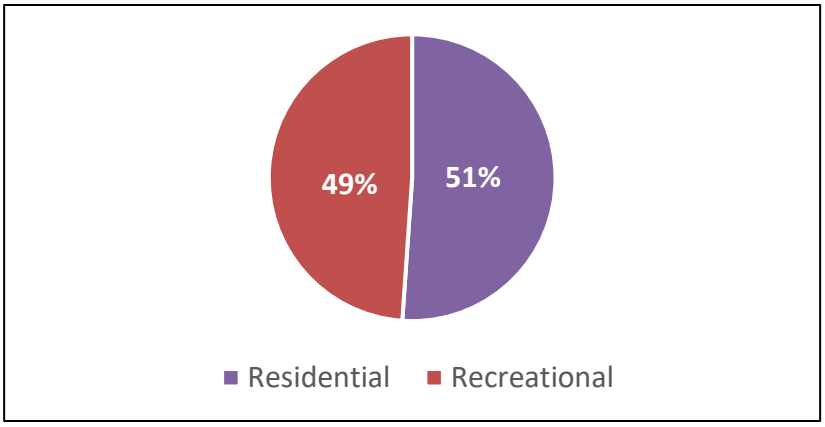


Figure 5-3 Breakdown of Residential and Recreation
Source: Weston & Sampson 2024

featuring public parks, trails, and riverfront greenways. These spaces would be utilized for extensive parks, sports fields, children's playgrounds, and community event areas. The riverfront would be leveraged for public enjoyment through walking and biking trails, community gardens, and picnic areas, enhancing the natural beauty of the location.

This concept aligns with the Hartford 400 Vision by integrating public parks and ensuring access to the Connecticut River. In response to environmental constraints, flood-prone areas near the riverfront would be designated for parks and greenways, providing natural flood protection and improving environmental resilience.

Commercial/Industrial

This redevelopment option was assumed to include:

- Reuse of the existing buildings.
- A combination of commercial and industrial.
- Some warehouse/distribution industrial uses.
- Some industrial uses that connect with either the airport or the Regional Food market.

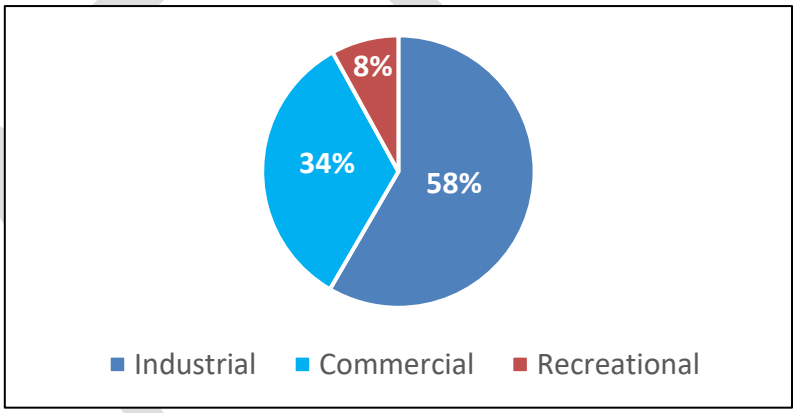


Figure 5-4 Breakdown of Industrial and Commercial
Source: Weston & Sampson 2024

This scenario prioritizes industrial and commercial use, with a well-planned land use breakdown to maximize both utility and efficiency, as shown in Figure 5-4. The industrial area covers 40 acres, with 60% building coverage dedicated to warehousing, food processing, and distribution centers. Potential tenants include local manufacturers, logistics companies, and food processing hubs, aligning with Hartford's Regional Agriculture Market. The commercial area spans 23 acres with 40% building coverage, focused on retail, office spaces, and small business hubs. This area is designed to serve the local workforce with restaurants, convenience stores, and offices for administrative or tech businesses.

In addition, 5.5 acres are allocated for recreational and open space, primarily serving as green buffers for stormwater retention along roads, along the Connecticut River, and between industrial and commercial sections. While green space is kept minimal to maintain a business-friendly atmosphere, it supports environmental management.

Key features of this development include its proximity to highways I-91 and I-84, making it ideal for distribution and industrial businesses. The commercial space leverages demand to serve industrial tenants and the broader community. The design also addresses constraints by mitigating environmental impacts through minimal green space and energy-efficient industrial buildings.

Currently Permitted Activities

This redevelopment option assumes that the use would be limited to what is currently permitted. Other assumptions include:

- The WPF structure remains in use.
- The electrical infrastructure remains
- The PBF structure may or may not remain.

This Scenario aims to focus on the current valid permit for the Waste Processing Facility (WPF) portion of the closed waste-to-energy plant located on the southern portion of the site. The WPF portion of the site is approximately 27.5 acres in area. The permitted use could continue utilizing the site and structures related to the current Waste Processing Facility and using Maxim Road for access. The permitted use does not impact the remainder of the site, which leaves most of the property available for additional redevelopment.

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Mixed Use

This future use assumes a combination of industrial, commercial and residential uses. Initial research suggests that a more intense use at the south end of the site around the current WPF could work as a buffer separating the airport use from more sensitive users at the northern end of the site. This use could be the currently permitted use in the short-term or could be a light industrial or warehouse/distribution use. The actual mix of uses will depend upon decisions related to the existing PBF and the substation. The greenway along the river is recommended to be part of this redevelopment scenario as well (Figure 5-5).

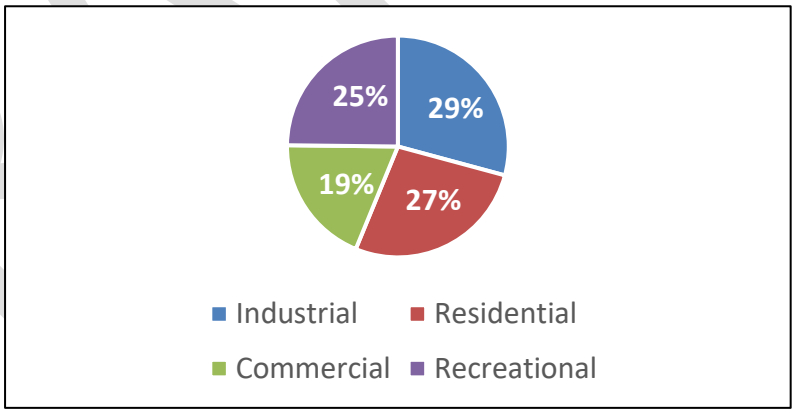

Figure 5-5 Breakdown of Mixed-Use Redevelopment
Source: Weston & Sampson 2024

This scenario envisions a vibrant live-work-play district that integrates industrial, commercial, residential, and recreational areas. This concept is based upon Hartford's City Plan and the zoning overlay, which promotes a mix of light industrial and residential. The land use breakdown allocates 20 acres for industrial purposes, with 50% of building coverage dedicated to warehousing, light manufacturing, and food processing. The industrial hub is designed to coexist with residential livability by offering shared cold storage facilities aligned with the needs of the Hartford Regional Agriculture Market. The industrial uses are concentrated within the WPF structure and use Maxim Road for access.

The commercial area spans 13 acres, also with 50% building coverage. It could include local retail, grocery stores, restaurants, and small office spaces, catering to both residential and industrial tenants.

This area emphasizes farm-to-table restaurants, food markets, and office spaces for agriculture-related startups, promoting a close connection between local food production and consumption. The residential area occupies 18.5 acres, with 40% building coverage, providing approximately 400 units averaging 800 square feet each. The housing focus is on high-density. Recreational and open spaces cover 17 acres, featuring public parks, and walking and bike paths. Residential buildings take advantage of the river views. Recreation uses are located along the river and the design of green spaces leverages the existing wetlands as natural features.

6.0 REFERENCES

Capital Region Development Authority. (2022). Retrieved from https://crdact.net/wp-content/uploads/2022/03/HRA-HartfordRegionalMarketRecommendationsSummary-1282022.pdf

City of Hartford. (2014). *Inland Wetlands and Watercourses Regulations.* Retrieved from https://www.hartfordct.gov/Government/Departments/DDS/DDS-Divisions/Planning-Zoning

City of Hartford. (2019). *Bicycle Master Plan.*

City of Hartford. (2019). *Energy Improvement District Comprehensive Plan.*

City of Hartford. (2020). *Hartford City Plan.* Retrieved from https://www.hartfordct.gov/Government/Departments/DDS/DDS-Divisions/Planning-Zoning/City-Plan

City of Hartford. (2021). *Hartford 400.* Retrieved from https://hartford400.org/.

City of Hartford. (2024). *Zoning Regulations.* Retrieved from https://library.municode.com/ct/hartford/codes/zoning_regulations?nodeId=n2.0DI_2.1DI

Connecticut Department of Transportation. (2014). *Hartford Brainard Sustainable Airport Master Plan.* Retrieved from https://ctairports.org/wp-content/uploads/2021/11/HFD_Final_AMPU_2014_rfs.pdf

Connecticut Department of Transportation. (2022). *Greater Hartford Mobility Study.*

Connecticut Resources Recovery Authority. (2013). *Power Block Facility Wetlands Area Remediation Action Plan.*

CT ECO. (2023). Retrieved from https://cteco.uconn.edu/metadata/dep/document/soils_poly_drain_class_view_FGDC_Plus.htm

CT ECO. (2023). *Soil Survey Geographic (SSURGO) database for the State of Connecticut.* Retrieved from https://cteco.uconn.edu/metadata/dep/document/soils_poly_fgdc_plus.htm

EPA. (2024). Retrieved from https://www.epa.gov/cwa-404/how-wetlands-are-defined-and-identified-under-cwa-section-404

FAA. (2022). *Airport Land Use Compatibility Planning.*

Hill Publishing Company. (1909). Power and the Engineer. In *Plant of the Hartford Electric Company* (pp. 893-894). Hill Publishing Company.

MDC. (2024). *Drinking Water.* Retrieved from https://themdc.org/drinking-water/

MDC. (2024). *Wastewater Treatment.* Retrieved from https://themdc.org/wastewater-treatment/

MIRA. (2024).

MIRA. (2024). *Future Redevelopment in South Meadows*. Retrieved from https://www.ctmira.org/home/future-redevelopment-in-south-meadows

Mirecki. (2020). *Let There be Light: An Early History of the Hartford Electric Light Company.* Retrieved from Connecticut History: https://connecticuthistory.org/let-there-be-light-in-hartford/

New England Soil. (1989). *Udorthents, loamy.* Retrieved from http://nesoil.com/norfolk/Ud.htm

Preservation Connecticut. (2024). Retrieved from Mill Record Hartford, South Meadow Power Plant; Mills Making Places of Connecticut, a Project of Preservation Connecticut: https://connecticutmills.org/find/details/south-meadow-power-plant

Riverfront Recapture. (2024). Retrieved from https://riverfront.org/projecttimeline/

Simpson Gumpertz & Heger Associates, Inc. (2024). *Floodwall Protection System Report.*

Space and Maintenance Economy in Hartford Electric Light Co. Power Station at South Meadow. (1921, December 18). *The Hartford Daily Courant*, p. 2A.
Sterner, D. (2024). *History of Dutch Point Part Three: The Power Plant.* Retrieved from Youtube.
The Hartford Courant. (1947, August 15). *Big Unit Planned By Light Company*.
The Hartford Courant. (1947, June 25). Expansion Planned by Light Company. *The Hartford Courant*.
University of Connecticut. (2013). *Hartford Electric Light Company records.* Retrieved from Archives and Special Collections, University of Connecticut Library: https://archivessearch.lib.uconn.edu/repositories/2/resources/422
Yale University Library. (1922). 1922 Sanborn Insurance Maps of Hartford, Connecticut. https://collections.library.yale.edu/catalog/11129334.
Capital Region Development Authority. (2022). Retrieved from https://crdact.net/wp-content/uploads/2022/03/HRA-HartfordRegionalMarketRecommendationsSummary-1282022.pdf
City of Hartford. (2014). *Inland Wetlands and Watercourses Regulations.* Retrieved from https://www.hartfordct.gov/Government/Departments/DDS/DDS-Divisions/Planning-Zoning
City of Hartford. (2019). *Bicycle Master Plan.*
City of Hartford. (2019). *Energy Improvement District Comprehensive Plan.*
City of Hartford. (2020). *Hartford City Plan.* Retrieved from https://www.hartfordct.gov/Government/Departments/DDS/DDS-Divisions/Planning-Zoning/City-Plan
City of Hartford. (2021). *Hartford 400.* Retrieved from https://hartford400.org/.
City of Hartford. (2024). *Zoning Regulations.* Retrieved from https://library.municode.com/ct/hartford/codes/zoning_regulations?nodeId=n2.0DI_2.1DI
Connecticut Department of Transportation. (2014). *Hartford Brainard Sustainable Airport Master Plan.* Retrieved from https://ctairports.org/wp-content/uploads/2021/11/HFD_Final_AMPU_2014_rfs.pdf
Connecticut Department of Transportation. (2022). *Greater Hartford Mobility Study.*
Connecticut Resources Recovery Authority. (2013). *Power Block Facility Wetlands Area Remediation Action Plan.*
CT ECO. (2023). Retrieved from https://cteco.uconn.edu/metadata/dep/document/soils_poly_drain_class_view_FGDC_Plus.htm
CT ECO. (2023). *Soil Survey Geographic (SSURGO) database for the State of Connecticut.* Retrieved from https://cteco.uconn.edu/metadata/dep/document/soils_poly_fgdc_plus.htm
EPA. (2024). Retrieved from https://www.epa.gov/cwa-404/how-wetlands-are-defined-and-identified-under-cwa-section-404
FAA. (2022). *Airport Land Use Compatibility Planning.*
Hill Publishing Company. (1909). Power and the Engineer. In *Plant of the Hartford Electric Company* (pp. 893-894). Hill Publishing Company.
MDC. (2024). *Drinking Water.* Retrieved from https://themdc.org/drinking-water/
MDC. (2024). *Wastewater Treatment.* Retrieved from https://themdc.org/wastewater-treatment/
MIRA. (2024).
MIRA. (2024). *Future Redevelopment in South Meadows*. Retrieved from https://www.ctmira.org/home/future-redevelopment-in-south-meadows
Mirecki. (2020). *Let There be Light: An Early History of the Hartford Electric Light Company.* Retrieved from Connecticut History: https://connecticuthistory.org/let-there-be-light-in-hartford/

New England Soil. (1989). *Udorthents, loamy.* Retrieved from http://nesoil.com/norfolk/Ud.htm
Preservation Connecticut. (2024). Retrieved from Mill Record Hartford, South Meadow Power Plant; Mills Making Places of Connecticut, a Project of Preservation Connecticut: https://connecticutmills.org/find/details/south-meadow-power-plant
Riverfront Recapture. (2024). Retrieved from https://riverfront.org/projecttimeline/
Simpson Gumpertz & Heger Associates, Inc. (2024). *Floodwall Protection System Report.*
Space and Maintenance Economy in Hartford Electric Light Co. Power Station at South Meadow. (1921, December 18). *The Hartford Daily Courant*, p. 2A.
Sterner, D. (2024). *History of Dutch Point Part Three: The Power Plant.* Retrieved from Youtube.
The Hartford Courant. (1947, August 15). *Big Unit Planned By Light Company*.
The Hartford Courant. (1947, June 25). Expansion Planned by Light Company. *The Hartford Courant*.
University of Connecticut. (2013). *Hartford Electric Light Company records.* Retrieved from Archives and Special Collections, University of Connecticut Library: https://archivessearch.lib.uconn.edu/repositories/2/resources/422
Yale University Library. (1922). 1922 Sanborn Insurance Maps of Hartford, Connecticut. https://collections.library.yale.edu/catalog/11129334.