



State of Connecticut

Environmental Review Checklist

Last Updated 02/25/2020

Instructions for Use:

The Environmental Review Checklist (ERC), as defined in Sec. 22a-1a-1(9) of the Regulations of Connecticut State Agencies (RCSA), is intended to assist state agencies in (1) determining whether a proposed action or category of actions requires public scoping, or (2) in recording an agency's initial assessment of the direct, indirect, and cumulative environmental effects of a proposed action at the completion of public scoping.

For the purposes of CEPA, an Action is defined in Sec 22a-1a-1(2) of the RCSA as an individual activity or a sequence of planned activities initiated or proposed to be undertaken by an agency or agencies, or funded in whole or in part by the state.

Completion of the ERC is only *required* as part of a sponsoring agency's post-scoping notice in which the agency has determined that it will not be preparing an EIE (Sec. 22a-1a-7(d) of the RCSA).

In all other instances, the sponsoring agency has the option to use this form or portions of it, in conjunction with the applicable Environmental Classification Document (ECD), as a tool to assist it in determining whether or not scoping is required and to document the agency's review. This can be especially useful for an agency administering a proposed action that is not specifically represented in the ECD or which may have additional factors and/or indirect or cumulative impacts requiring further consideration.

Even if an agency ultimately determines that public scoping is not necessary, as a matter of public record OPM highly recommends that the agency internally document its decision, and its justification.

In completing this form, include descriptions that are clear, concise, and understandable to the general public.

Note that prior to reviewing a proposed action under the Connecticut Environmental Policy Act (CEPA), Connecticut General Statutes (CGS), Section 16a-31 requires agencies to review any proposed actions for the acquisition, development or improvement of real properties, or the acquisition of public transportation equipment or facilities, and in excess of \$200,000, for consistency with the policies of the State Plan of Conservation and Development (State C&D Plan).



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PART I – Initial Review and Determination

Date: January 21, 2025
Name of Project/Action: Capitol Area System (CAS) Central Plant Upgrades
Project Address(es): 490 Capitol Ave
Affected Municipalities: Hartford

Sponsoring Agency(ies): DAS
Agency Project Number, if applicable: BI-2B-414
Project Funding: State Bond Funds
Source(s)/Program(s), if known:

Identify the Environmental Classification Document (ECD) being used in this review:

☒ Generic, or ☐ Agency-Specific

☐ An environmental assessment or environmental impact statement is being prepared pursuant to NEPA, and shall be circulated in accordance with CEPA requirements.

☐ The proposed action requires a written review by the State Historic Preservation Office (SHPO) and/or Nation Tribal Historic Preservation Office (NATHPO). Include SHPO/NATHPO reviews as an attachment, or indicate the status of those reviews: The facility is not listed, and is not eligible to be listed, on the State or Federal Historic Register. The facility is in the Frog Hollow Historic District and DAS will consult with SHPO during the design development process.

☒ Based on the analysis documented in this Environmental Review Checklist (ERC), and in consideration of public comments, this agency has determined that the preparation of an Environmental Impact Evaluation (EIE) for the proposed action is not warranted. Publication of this document to the Environmental Monitor shall satisfy the agency's responsibilities under [Section 22a-1a-7 of the Regulations of Connecticut State Agencies](#) (RCSA).

Completed by: Matthew Pafford, Supervising Environmental Analyst, 01/21/2025

Note that prior to commencing a CEPA review, Connecticut General Statutes (CGS) Section 16a-31 requires state agencies to review certain actions for their consistency with the policies of the State Plan of Conservation and Development (State C&D Plan). Completion of this ERC assumes the agency has determined this proposed action to be consistent with the State C&D Plan.

PART II – Detailed Project Information

Description of the Purpose & Need of the Proposed Action:

The purpose of the proposed action is to evaluate feasible options for upgrading and improving the existing facility to continue to provide effective and affordable heating and cooling to end-users, improve energy efficiency, and assist in meeting the state's goals identified in the Governor's Executive Order (EO) # 1 and # 21-3.

Description of the Proposed Action:

The proposed action is to develop a decarbonization study of the CAS Thermal Energy Facility to define, develop, and assess feasible options for upgrading the CAS central plant and thermal loop.

Alternatives Considered:

Alternatives included upgrading the CAS facility or taking no action. To assist in assessing potential upgrade options, DAS completed a decarbonization study that evaluated the following:

Supply Side Options:

- Hybrid of Heat pumps and electric boilers;
- 100% electric boilers;
- 100% heat pumps (ground source or air source);
- Hybrid of Heat pumps & Natural Gas Condensing boilers that are capable of transitioning to cleaner fuels;
- 100% Natural Gas Condensing boilers capable of transitioning to cleaner fuels;
- Other

Demand-Side Options:

- Reduce loads via energy efficiency at public and private facilities and reduce heating supply temperature;
- Reduce loads via energy efficiency at public facilities and keep heating supply temperature as is;
- Maintain existing status quo.

Public concerns or controversy associated with the proposed action:

Public concerns have been raised that advocate for transitioning the plan to 100% clean and renewable energy for its continued operation.

PART III – Site Characteristics (Check all that apply)

The proposed action is non-site specific, or encompasses multiple sites;	☐
Current site ownership:	☐ N/A, ☒ State; ☐ Municipal, ☐ Private, ☐ Other: Please Explain.
Anticipated ownership upon project completion:	☐ N/A, ☒ State; ☐ Municipal, ☐ Private, ☐ Other: Please Explain.

Locational Guide Map Criteria:

<http://ctmaps.maps.arcgis.com/apps/webappviewer/index.html?id=ba47efccdb304e02893b7b8e8cff556a>

Priority Funding Area factors:

- ☒ Designated as a Priority Funding Area, including ☐ Balanced, or ☐ Village PFA;
- ☒ Urban Area or Urban Cluster, as designated by the most recent US Census Data;
- ☒ Public Transit, defined as being within a ½ mile buffer surrounding existing or planned mass transit;
- ☒ Existing or planned sewer service from an adopted Wastewater Facility Plan;
- ☒ Existing or planned water service from an adopted Public Drinking Water Supply Plan;
- ☒ Existing local bus service provided 7 days a week.

Conservation Area factors:

- ☐ Core Forest Area(s), defined as greater than 250 acres based on the 2006 Land Cover Dataset;
- ☐ Existing or potential drinking water supply watershed(s);
- ☐ Aquifer Protection Area(s);
- ☐ Wetland Soils greater than 25 acres;
- ☐ Undeveloped Prime, Statewide Important and/or locally important agricultural soils greater than 25 acres;
- ☐ Category 1, 2, or 3 Hurricane Inundation Zone(s);
- ☐ 100 year Flood Zone(s);
- ☐ Critical Habitat;
- ☐ Locally Important Conservation Area(s),
- ☐ Protected Land (list type): Enter text.
- ☒ Local, State, or National Historic District(s).

PART IV - Assessment of Environmental Significance – Direct, Indirect, And Cumulative Effects

Required Factors for Consideration (Section 22a-1a-3 of the RCSA)	Agency's Assessment and Explanation
Effect on water quality, including surface water and groundwater;	No significant or adverse impacts on water quality. Groundwater is classified by CTDEEP as GB ,meaning that it is not suitable for human consumption without treatment. There are no surface waters or wetlands on the site. The site is not located in an Aquifer Protection Area (APA). The nearest water bodies are the underground Park River and the Connecticut River to the east. None of the scenarios considered will significantly or adversely impact water quality. Ground disturbance on the site will not exceed 1 acre, so a DEEP Construction General Permit is not required. DAS will follow all stormwater planning and management requirements.
Effect on a public water supply system;	No significant or adverse impacts on public water supply The project is not located in an APA and will not impact the public water supply system.
Effect on flooding, in-stream flows, erosion or sedimentation;	No significant or adverse impacts. According to available FEMA mapping, the project is not located within or adjacent to any flood-prone area. No state or federal flood permitting is anticipated. The property and surrounding properties are fully developed, and the anticipated facility improvements will not affect, or be affected by, flooding, stream flows, erosion, or sedimentation.
Disruption or alteration of an historic, archeological, cultural, or recreational building, object, district, site or its surroundings; A.	No significant or adverse impacts are anticipated. The central plant facility is not listed and is not eligible for listing, as a state or federal resource.

Alteration of an historic building, district, structure, object, or its setting; OR B. Disruption of an archeological or sacred site;	The plant and the thermal loop are located in the Frog Hollow Historic District of Hartford. However, the proposed improvements are to replace mechanical equipment and will not adversely impact the facility. DAS will consult with SHPO during design development to ensure no impacts to historic resources. Many of the buildings served by the CAS loop are within the Frog Hollow Historic District or are listed or eligible to be listed as historic resources. Any actions impacting those resources will be evaluated and coordinated with SHPO, as appropriate.
Effect on natural communities and upon critical plant and animal species and their habitat; interference with the movement of any resident or migratory fish or wildlife species;	No significant or adverse impacts are anticipated. DEEP scoping comments identified an inactive Peregrine Falcon nesting site within the vicinity. A formal review by DEEP NDDDB staff indicated that no extant populations of Federal or State endangered, threatened, or special concern species are known to occur within the project area and no additional action is necessary regarding the proposed project. A USFWS IPAC survey identified no critical habitats, and broadly identified the Northern Long-eared Bat and Monarch Butterflies as endangered species throughout Connecticut. The selected scenario is to replace mechanical equipment and will not impact these species.
Use of pesticides, toxic or hazardous materials or any other substance in such quantities as to cause unreasonable adverse effects on the environment;	No significant or adverse impacts. The use of pesticides or other hazardous materials is not anticipated as part of this project. DEEP scoping comments identified an Environmental Land-Use Restriction (ELUR) that prevents residential use at the property and soil disturbance in the site's northern portion. No residential use is being considered for the property, and no soil disturbance is currently anticipated at the site. DAS will follow all ELUR requirements and notify DEEP as appropriate.

Substantial aesthetic or visual effects;	No significant or adverse impacts. The improvements being proposed at this time are only to replace mechanical equipment within the facility and will not significantly affect the physical appearance of the building or the surrounding community.
Inconsistency with: (A) the policies of the State C&D Plan, developed in accordance with section 16a-30 of the CGS; (B) other relevant state agency plans; and (C) applicable regional or municipal land use plans;	The proposed action is generally consistent with the State C&D Plan, and there are no known inconsistencies with other state, local, or regional plans. The CAS facility will continue its current function to provide critical heating and cooling services to end users, and the proposed upgrades will increase operational efficiencies, and improve environmental outcomes including reducing energy use and corresponding emissions. The decarbonization study provided a detailed analysis of short and long-term impacts, costs, and broader environmental impacts consistent with the policies of the State C&D Plan.
Disruption or division of an established community or inconsistency with adopted municipal and regional plans, including impacts on existing housing where sections 22a-1b(c) and 8-37t of the CGS require additional analysis;	No significant or adverse impacts. Temporary disruption may occur during construction activities, but no significant or long-term disruptions or divisions to the existing community are expected. Once the upgrades are completed, the facility will continue to provide hot and chilled water to other facilities connected to the thermal loop, but with more efficient equipment, reduced energy use, and reduced emissions. The energy generation component of the plant has already been decommissioned and will not be reinstated, thereby greatly reducing the emissions previously generated by the facility. There are no known inconsistencies with municipal or regional plans, and no impacts to existing housing.
Displacement or addition of substantial numbers of people;	No significant or adverse impacts. The proposed action will not add or displace people.

Substantial increase in congestion (traffic, recreational, other);	No significant or adverse impacts. Construction activities may cause short-term increases in traffic congestion. Congestion is not currently a factor in the facility's operation, and this is not expected to change with any of the proposed upgrade scenarios. No significant or long-term impacts are anticipated.
A substantial increase in the type or rate of energy use as a direct or indirect result of the action;	No significant or adverse impacts. Fuel and energy use and resulting GHG emissions have already been significantly reduced with the decommissioning of the plant's energy-generating functions. The various scenarios considered by the decarbonization study include varying energy demands based on the type of system selected, however all of the scenarios are expected to utilize energy more efficiently through upgraded technology and equipment. The selected scenario includes a combination of heat pumps and natural gas boilers, which is expected to reduce overall natural gas usage but may increase overall electric use. Overall, no substantial increase in energy use is expected.
The creation of a hazard to human health or safety;	No significant or adverse impacts. Decommissioning the power-generation component of the facility has already drastically reduced emissions output and corresponding impacts on the community. This decommissioning reduced previous GHG outputs by approximately 69% and removed the CAS facility's status as a major source of air pollution subject to state or federal Clean Air Act requirements. The scenarios identified in the decarbonization study, including the selected option, will further reduce emissions through efficiencies in technology and mechanical upgrades, while continuing to provide hot and chilled water to facilities on the thermal loop.

	In contrast, the impacts from not investing in these upgrades would result in the continued degradation of the facility and eventual loss of services to end-users, creating a potential hazard to human health and safety for those people and facilities relying on the thermal loop for their facilities' heating and cooling.
Effect on air quality;	No significant adverse impacts. As identified previously, the decommissioning of the plant's energy-generating functions reduced GHG emissions by approximately 69%, resulting in the removal of the facility's Title V Permit. This means that DEEP does not consider the facility to be a major source of air pollution subject to state or federal Clean Air Act requirements. The various scenarios the decarbonization study considers, including the selected scenario, will further reduce emissions and improve air quality using upgraded technology and equipment. DAS is aware of environmental justice concerns, specifically with air quality impacts, due to the continued operation of a thermal plant in this location. This issue is discussed in more detail in DAS responses to comments.
Effect on ambient noise levels;	No significant or adverse impacts. Short-term increases in noise levels may occur due to construction activities, but no long-term impacts are anticipated. It is expected that noise levels will be consistent with, or less than, existing levels.
Effect on existing land resources and landscapes, including coastal and inland wetlands;	No significant or adverse impacts. The project site and the surrounding area is in a fully developed urban area and will not be altered because of the proposed project. No off-site impacts are anticipated.
Effect on agricultural resources;	No significant or adverse impacts. The site is fully developed and located in a highly developed urban area. There are no existing agricultural

	resources or agricultural activities associated with the site.
Adequacy of existing or proposed utilities and infrastructure;	No significant or adverse impacts. The CAS facility is a fully functioning thermal plant and thermal loop system that provides heating and cooling to end-user facilities. It has all necessary utilities and infrastructure connections to continue providing this service. The proposed project will upgrade the facility's existing mechanical infrastructure to improve services to end-users.
Effect on greenhouse gas emissions as a direct or indirect result of the action;	No significant or adverse impacts. The project will positively impact greenhouse gas emissions by upgrading the existing equipment and technology at the CAS facility. As identified previously, the decommissioning of the plant's energy-generating functions reduced GHG emissions by approximately 69%, resulting in the removal of the facility's Title V Permit. This means that DEEP does not consider the facility to be a major source of air pollution subject to state or federal Clean Air Act requirements. The various scenarios the decarbonization study considers, including the selected scenario, will further reduce GHG emissions.
Effect of a changing climate on the action, including any resiliency measures incorporated into the action;	No significant or adverse impacts. The proposed action will result in GHG emissions reductions and improved environmental outcomes in support of Connecticut's climate goals. A more detailed discussion of this topic can be found in DAS's responses to comments. In addition, the property is in a developed location in Hartford and is not at risk for flooding, coastal impacts, or other natural disasters.

Any other substantial effects on natural, cultural, recreational, or scenic resources.	No significant or adverse impacts.
Cumulative effects.	No significant or adverse impacts. The improvements being proposed as part of this project are to upgrade the existing mechanical equipment within the facility. There will be no significant change in the use of the existing facility, and the upgraded equipment will allow for the continued and reliable delivery of services to end users and further improve environmental conditions resulting from the facility's continued operation.

PART V - List of Required Permits, Approvals and/or Certifications Identified at the Time of this Review

To be determined during the Design Development of the selected scenario.

PART VI – Sponsoring Agency Comments and Recommendations

See agency responses to comments in the attached.

PART VII - Public Comments and Sponsoring Agency Responses:

See attachment.

DAS Responses to Public Comments

In addition to the information provided in the Environmental Review Checklist, the following provides more detailed responses to recurring topics raised by commenters. Responses are organized as follows:

COMMENT CODE (used as reference to the *Scoping Comments Response Key*)

Comment Title and a brief synopsis of the comments received.

DAS's response.

Comment Title Table of Contents (in the order they appear in this document):

- Environmental Justice
- Renewable
- Executive Order Compliance
- Demand Side, System Expansion
- Workforce, Community
- Cost
- Water
- Funding
- Criteria
- Biofuel Emissions
- DEEP-1
- DEEP-2
- DEEP-3
- DEEP-4
- DEEP-5
- OPM-1
- OPM-2
- OPM-3
- OPM-4

Note that responses in the section reference data from the 2024 CAS decarbonization alternatives study prepared by Veolia for CTDES. The full version of that study can be found by visiting the [Capitol Areas System website](#) maintained by DAS and downloading the [CAS Case Studies and Reports folder](#).

COMMENT CODE: ENVIRONMENTAL JUSTICE

Environmental Justice & Health Impacts (current and historic), especially air quality and pollution due to Green House Gas (GHG) Emissions and Fossil Fuel Usage.

Many commenters expressed support for reducing or eliminating greenhouse gas emissions and other pollutants from the CAS facility that have historically impacted Hartford residents. Many of these comments cited environmental justice and environmental equity concerns regarding the facility's continued use of fossil fuels.

DAS recognizes that Hartford is an Environmental Justice Community, and its population may be more vulnerable to health impacts caused by poor air quality and excessive pollution. The CAS Facility (formerly CDECCA) was a substantial source of pollution for many years. However, prior to DAS taking ownership of the CAS facility in 2022, the former owner worked with DEEP to decommission the Zurn Boiler and revoke the associated Title V permit. This means that emissions outputs have been significantly reduced, and the facility is no longer considered a major source of air pollution subject to state or federal Clean Air Act requirements.

The table below summarizes the Total GHG Emissions values calculated by DEEP during that process. Note that current operations represent a 69% reduction in Total GHG and are well below the threshold for being considered a major source of air pollution.

Summary of CTDEEP Boiler Emissions Calculations	
Boiler Description	Emissions: Total GHGs (in CO2e)
Cleaver-Brooks Boiler	16,552.50
Model RH 650 Boiler #1	13,785.80
Model RH 650 Boiler #2	13,785.80
Diesel Powered Boiler Feed Pump	114.70
Zurn Boiler	98,728.20
Previous Emissions Totals:	142,967.00
Zurn Boiler (Decommissioned)	-98,728.20
Diesel Powered Boiler Feed Pump (Not in Use)	-114.70
Current Operating Emissions Totals:	44,124.10

All of the scenarios evaluated in detail by the study will result in additional emissions reductions from what is shown in the table and will improve local air quality and the broader environment.

DAS recognizes that the selected hybrid scenario of heat pumps and natural gas condensing boilers is not zero emissions as was advocated for by many of the comments. However, other factors, such as funding limitations and the uncertainty surrounding the long-term disposition of the current CAS facility due to the anticipated realignment of I-84 in Hartford, prevent the implementation of more costly and extensive zero-emission scenarios. During the design development of the selected scenario, DAS will seek additional opportunities to reduce emissions further and improve environmental outputs.

COMMENT CODE: RENEWABLE

Electrification and Renewable Energy Sources

Many commenters expressed support for fully electrified options powered by renewable energy sources.

While DAS recognizes the desire and certain advantages of an all-electric facility in achieving 100% decarbonization, upgrading the CAS facility requires balancing a multitude of factors, including technical, operational, regulatory, policy, and fiscal constraints.

Ultimately it was cost, particularly the high capital costs of the fully electrified options, and uncertainty due to the pending I-84 viaduct project that became the major determining factors resulting in DAS selecting a hybrid natural gas scenario. As identified in Figure D1 in Appendix J of the study, fully electrified options are among the highest capital costs of the selected scenarios and would also require transitioning the broader CAS system to a low-temperature system, further compounding costs and requiring additional demand-side improvements. This high up-front cost, combined with the uncertainty associated with the I-84 realignment, make it impractical for DAS to proceed with a fully electrified option at this time.

The study's comparison of the various upgrade scenarios incorporated several different cost factors including potential state or federal incentives, the Social Cost of Carbon, existing and forecasted utility rates, Renewable Energy Credits (RECS), Carbon Offsets, Off-Site Solar, and others. These are discussed further in Sections 2 through 5 of the study.

Although DAS is unable to implement a fully electrified solution for the CAS facility, it is worth noting that DAS and its partner agencies are implementing other electrification solutions throughout the state. These include state solar projects on various state buildings across multiple agencies through a partnership with the Connecticut Green Bank with the goal of deploying an average of 10,000 kWDC of new solar capacity annually for the next 10 years in accordance with Executive Order 21-3. There are currently 37 solar projects across multiple state agencies in various stages, totaling approximately 43,000kWDC or 43MW.

COMMENT CODE: EXECUTIVE ORDER COMPLIANCE

Consistency with Governor's Executive Orders (EO) #1 and # 21-3, State (and Hartford) decarbonization goals, "Connecticut's climate law", and the Global Warming Solutions Act.

Several commenters expressed concerns that the continued use of natural gas or other fossil fuels is inconsistent with the state's decarbonization, emissions reductions, and climate goals, in particular Governor Lamont's [EO 1](#) and [EO 21-3](#).

EO 1 requires state agencies to, among other things, improve efficiencies and achieve a 45% reduction in statewide GHG emissions below 2001 levels by 2023. EO 21-3 expands on those goals and establishes additional interim targets, including additional planning and budgeting by DEEP and DAS to further reduce or eliminate GHG emissions at state buildings.

The CAS facility is just one of many state-owned facilities currently being upgraded to assist in meeting statewide emissions reductions targets. Although cost constraints and other factors prevent DAS from implementing a zero-emissions scenario, total GHG emissions at the facility have already been reduced from 142,967 tons per year to 44,124 tons per year (approximately

69%) by eliminating the facility's power-generation function. Upgrading and modernizing the remaining equipment will further reduce the CAS facility's Total GHG Emissions.

Even without a fully electrified solution, these reductions represent a significant step towards meeting the State's GHG reduction targets and broader climate goals, and for improving air quality in the surrounding community.

In addition to the CAS facility, the state has been working to reduce GHG emissions through improvements and efficiencies in other state-owned buildings, including projects such as lighting upgrades, high-efficiency HVAC, boiler and chiller replacements, and steam trap replacements. Other renewable measures such as solar PV and geothermal have been implemented across state buildings through partnerships with GreenerGov, utility-administered programs, and the Connecticut Green Bank to reduce energy costs, fuel and energy consumption, and resulting GHG emissions. Several fossil-free, net-zero facilities have been constructed that replaced existing, highly inefficient buildings. GreenerGov tracks the state's progress in reducing GHG emissions, and once finalized, FY23 data is expected to show greater reductions as the state continues to invest in more sustainable measures and cleaner electricity. For more information and current updates on achieving our state goals in EO1, please review the current legislative report from [GreenerGov](#), as well as, reviewing the [GreenerGov CT Dashboard](#) to visually see our progress on annual basis.

Also, in accordance with Section 3 of EO 21-3, DAS and DEEP continue to develop a plan to retrofit existing fossil fuel-based heating and cooling systems at state buildings. The planning study is being developed in four phases. The first phase, which consisted of collecting building information and identifying the current state of energy management at state buildings, was completed in July 2024. Phases 2-4 will take up to two years to complete.

COMMENT CODE: DEMAND SIDE, SYSTEM EXPANSION

Demand-Side Projects, Related Projects, and/or Expansion of CAS Service.

Several commenters identified the need for demand-side upgrades at currently served facilities to both lower costs and improve environmental outcomes, and advocated for the consideration of fiscal, environmental, and equity benefits of extending use of the system to currently unserved public or private buildings, and potential effects on operating cost efficiencies.

DAS's Scoping Notice identified the consideration of three potential demand-side options including (1) reducing loads via energy efficiency at public and private facilities and reduce heating supply temperature; (2) reducing loads via energy efficiency at public facilities and keep heating supply temperature as-is; and (3) maintaining existing status quo.

Inclusive of the three options identified in the scoping notice, the study evaluated several demand-side options and created a list of potentially feasible strategies as part of the state's decarbonization efforts, and developed production versus use energy modeling for each of the identified buildings (See Section 09 and Appendix E for more details). Additional strategies included retro-commissioning at existing facilities, rooftop solar for energy and hot water, and addressing leaks in the existing system. The study then compiled the data to identify high-level improvement opportunities and potential implementation options.

Based on the data presented in the study, the CAS facility will continue to operate as a high-temperature system. Although converting the CAS to a low-temperature system would result in additional efficiencies and potential decarbonization, the cost and complexity of converting the CAS facility, thermal loop, and demand-side users to operate at lower temps is not feasible within the current budget and could present a substantial cost-burden to end-users and future users.

Although not related to the decarbonization study, it is worth noting that DAS is in the process of converting the 410-470 Capitol Avenue Complex from steam to hot water for heating. This project was planned and implemented independently of efforts to upgrade the CAS facility. 41-470 Capitol Ave is the only complex on the CAS thermal loop that still uses steam, which is less efficient than hot water and more costly to maintain service for a single complex. This conversion will not change the use of the facility but will result in energy savings and improved efficiencies.

DAS is also considering adding several other state facilities to the thermal loop, including 210 Capitol Ave (State Capitol), and 80, 90, 95, and 100 Washington St (Superior Court). The thermal loop infrastructure to serve these buildings already exists and would only require internal equipment upgrades to connect to the loop. This would allow those facilities to discontinue use of their current aging and inefficient systems. Appendix C of the study provides a more detailed analysis of the resulting system demands. Increasing the number of off-takers of a district heating and cooling system benefits all users by sharing the cost of energy production and removing inefficiencies at smaller individual boiler rooms and chiller rooms.

No other demand-side actions are being proposed as part of this project, but DAS will continue to evaluate potential options for future improvements and undertake CEPA evaluation, as appropriate.

COMMENT CODE: WORKFORCE, COMMUNITY**Workforce Training and Community Engagement.**

Several commenters identified opportunities for the State to further engage with the community because of this project providing employment and workforce training opportunities for residents.

As with all projects managed by DAS, we are committed to adhering to state and federal requirements regarding hiring and workforce development. This includes considerations for public procurement and inclusion in Supplier Diversity programs

At this time, DAS is not suggesting specific workforce training requirements for plant operators for this project. The CAS facility is currently operated by a qualified third-party operator with substantial experience in the managing thermal facilities. DAS is in the process of administering a request for proposal for future operation of the CAS to succeed the current agreement set to expire in December 2026.

We recognize that providing training and job opportunities for Hartford residents is an important topic that extends beyond this specific project. Positions at a facility such as the CAS require specialized oversight, management, and staffing. Currently, DAS does not offer vocational training for this type of work, and we do not have immediate plans to implement such training. Instead, DAS relies on the state's procurement process to identify and select qualified vendors. We encourage interested firms to register their company name and profile with the DAS through CTsource to be eligible for future solicitations.

There are currently no additional community or public outreach efforts planned. By publishing this post-scoping notice, DAS is fulfilling its responsibilities under CEPA and will move forward with the design development for the chosen scenario.

COMMENT CODE: COST

Evaluate Long-Term Costs.

Several commenters identified long-term costs as something to be fully evaluated by DAS as part of this project, including long-term costs of the continued use of fossil fuels, and conversion costs from a higher temperature circulating water system to a lower temperature system, and engineering challenges, initial capital costs, life cycle cost analysis, and fuel price volatility and predictability.

Sections 2 and 11 of the study include a summary of the Financial Assumptions used in the cost modeling in Figure D1 in Appendix J that was used by DAS to assist in evaluating the various scenarios. Cost modeling in the study included consideration of both short-term capital costs and long-term operating costs, demand-side costs such as conversion to a low-temperature system, environmental costs such as the social cost of carbon, projected utility and commodities costs for fuel, electricity, and others, and the net present cost (i.e., life-cycle cost) for each option. In addition, the study also evaluated incentives such as tax credits, energy credits, carbon offsets and other options for reducing or dispersing costs.

As identified in Figure D1, scenarios that prioritized only decarbonization presented the highest up-front costs and exposed the state to considerable risk should the CTDOT's I-84 realignment project result in significant alterations to the facility, including the need to completely relocate the facility. Scenarios that prioritized cost-only did not provide the maximum amount of decarbonization that could be attained within the available budget.

DAS, along with input from DEEP, the Office of Policy and Management (OPM), and the Office of the Governor (OTG) determined that the options presented under a balanced scenario offered the best compromise between cost, decarbonization, and exposure to risk associated with the uncertainty of the I-84 realignment project, ultimately leading to the selection of the hybrid natural gas scenario.

COMMENT CODE: WATER

Water Pollution.

Several commenters identified pollution impacts on water quality, specifically drinking water.

Impacts to water quality are not anticipated due to existing or future operations of the CAS facility.

Groundwater at the site is classified as GB and is not suitable for human consumption without treatment. The site is not located in an Aquifer Protection Area (APA) and will not impact public drinking water supply. Operations at the CAS facility do not directly impact water quality or any nearby waterways, and the facility is equipped with several safety measures to prevent accidental or incidental impacts to water resources, including oil water separators to prevent any lubrication oil used in pumps from entering the water table, and a Spill Prevention Control and Countermeasure Plan (SPCC) to prevent chemicals from the treatment of the loop from impacting groundwater quality.

As noted in other responses, the proposed upgrades to the CAS Plant will result in reduced emissions and overall improvements to air quality, particularly in the vicinity of the facility. DAS and other state agencies are also undertaking projects to reduce waste, pollution, and emissions, and support projects for sustainability to provide additional environmental benefits. These improvements will have broad, positive impacts on various environmental resources, including the state's water quality.

COMMENT CODE: FUNDING

Investigate State and Federal Funding Sources

Comments from the Sierra Club indicated possible federal funding opportunities including the Energy Infrastructure Reinvestment Financing and the IRA Greenhouse Gas Reduction Fund. Other comments questioned state funding availability.

At the time of this determination, funding for improvements at the CAS facility and thermal loop is expected to be provided through State Legislative Bond Authorizations. DAS is not expecting any federal funding to be included as part of this project.

COMMENT CODE: CRITERIA

DAS Criteria for Decision-Making

One commenter specifically asked about the criteria for DAS decision-making and asked if DAS has produced a document that explains the criteria by which it will choose one option over another or the criteria DAS will be comparing when making decisions. The Commenter gave several examples including cost, cost vs. greenhouse gas emissions, and capital costs vs. operating costs.

The Memorandum of Findings and Determination includes a high-level summary of DAS's consideration of various scenarios and other criteria that influenced the agency's determination.

In addition, Sections 1.2 to 1.4 of the study summarize the evaluation and selection criteria used by the state to narrow down the list of feasible scenarios. Cost factors and assumptions used in the analysis are discussed in more detail in each subsequent section of the report, and the resulting criteria are summarized in Appendix J, Figure D1.

As stated previously, limited funding and uncertainty surrounding the I-84 realignment made it challenging for DAS to justify scenarios with high up-front costs, ultimately leading to the selection of Scenario D.1.H, a hybrid of heat pumps and natural gas condensing boilers, as the recommended scenario.

COMMENT CODE: BIOFUEL EMISSIONS

CT DEEP 1990-2021 Connecticut Greenhouse Gas Inventory Methodology

Commenter provided comments questioning CT DEEP's methodology for calculating emissions from biofuel combustion in the GHG Inventory, specifically challenging DEEP's determination that bio-fuels are carbon neutral.

DAS and its consultant used currently accepted methodologies in calculating carbon impacts and developing the 2024 CAS decarbonization alternatives study. To provide a more detailed response to this comment, DAS contacted the subject matter experts at DEEP who provided the following:

DEEP appreciates PACE's comments and welcomes its continued engagement on greenhouse gas (GHG) emissions accounting discussions.

As per Public Act no. 08-98 (Global Warming Solutions Act – GWSA), one of the objectives of the Connecticut GHG Emissions Inventory is to estimate the quantity of GHG emissions in the state to verify if Connecticut is on track to meet the GHG emissions reductions goals established by the same Act (GWSA goals).

DEEP relies largely on the Environmental Protection Agency (EPA) State Inventory Tool (SIT) in carrying out the state GHG Emissions Inventory. SIT adopts the international protocol for biofuels GHG accounting. Under this protocol, GHG emissions from the use of biofuels are to be accounted in the inventory of the jurisdiction where the crop is grown and harvested, not where biofuels are burned. Hence, carbon sequestration and emission are counted in the same jurisdiction despite where the biofuel is burned. Emissions from combustion of the fuels are to be noted separately – as a sidebar – in the inventories of the jurisdictions where combustion occurs.

The GWSA goals were established under the above methodology. Hence, they incorporate the assumption that biofuels consumed in Connecticut are carbon-neutral, as the feedstock is grown and harvested outside of the state. When accounting GHG emissions in CT toward the GWSA goals, the Inventory must follow the same methodology used when setting the goals. DEEP also reports the emissions from biofuels consumed in Connecticut in the Inventory's appendix.

Currently, due to lack of solid granular data, it is not possible to disaggregate bioheat from biofuels, hence only total amount is reported.

A fairly detailed methodology discussion is available in the [CT GHG Emissions Inventory 2018](#).

DEEP recognizes that the international protocol for biogenic GHG emissions accounting is controversial. The agency is committed to continuously improving its GHG accounting methodology and quality of data for calculating annual emissions. This includes discussing such topics in regional and national forums, such as National Association of State Energy Officials (NASEO) events and U.S. Climate Alliance (USCA) Emissions Working Group. The working group is now preparing an overview of alternative approaches for addressing biofuel GHG accounting in state inventories. This document is to be discussed by USCA member states in the near future.

At the same time, DEEP and sister agencies in other states have been conferring with the Energy Information Administration (EIA) about the need for state-level data that distinguishes between use of biofuels for transportation and use of biofuels for heating buildings. EIA's forthcoming estimate of energy consumption at the state level is expected to make this distinction for the first time.

THE FOLLOWING ARE RESPONSES TO STATE AGENCY COMMENTS FROM THE DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION (DEEP) AND OFFICE OF POLICY AND MANAGEMENT (OPM).

COMMENT CODE: DEEP-1

REMEDIATION DIVISION, ENVIRONMENTAL LAND USE RESTRICTIONS (ELUR)

Comments indicated that the site is remediated. However, there is an Environmental Land-Use Restriction (ELUR) that prevents residential use at the property and disturbance of soil in the northern portion of the site.

No residential use is being considered for the property and no soil disturbance is currently anticipated at the site. DAS will follow all ELUR requirements and notify DEEP as appropriate.

COMMENT CODE: DEEP-2

NATURAL DIVERSITY DATABASE (NDDB)

Comments indicated that the site is in an NDDB Area due to the presence of an inactive peregrine nesting site nearby.

DAS completed DEEP's NDDB review and DEEP's response letter dated 08/30/2024 indicated that there are no extant populations of federal or state endangered, threatened or special

Concern species within the project area. Based on DEEP's letter, no further investigation is required at this time. DAS will notify DEEP of any changes and adhere to all DEEP requirements.

COMMENT CODE: DEEP-3

STORMWATER MANAGEMENT DURING CONSTRUCTION

Comments identified potential stormwater permitting requirements and development of a Stormwater Pollution Control Plan.

The proposed project does not include ground disturbance of more than one acre and, therefore, does not require a Construction Stormwater General Permit. DAS will follow all stormwater planning and management as required.

COMMENT CODE: DEEP-4

SOLID WASTE DISPOSAL

Comments identified requirements for the proper disposal of demolition waste, including hazardous and other regulated wastes.

DAS has already conducted some remediation of hazardous materials within the building as part of general maintenance and repair activities and will continue to follow all state and federal waste disposal requirements as applicable.

COMMENT CODE: DEEP-5

AIR MANAGEMENT

Comments identified requirements and best practices for reducing emissions during construction activities.

DAS will follow air management requirements and best practices, as applicable.

COMMENT CODE: OPM-1

CEPA CONSIDERATION OF POTENTIAL IMPACTS

Comments state that a CEPA review of the proposed project is well-suited for considering a broad range of potential impacts including emissions and climate impacts; and historic social, economic, and other implications.

The range of topics identified in OPM's comments echo the primary concerns raised by other commenters and by DAS, and largely relate to the past, current, and future emissions generated by the CAS facility and corresponding impacts on air quality, environmental justice, and climate.

DAS developed the decarbonization study to assess those impacts and to identify a wide range of conceptual options with a specific focus on emissions profiles and corresponding costs. The study includes a detailed analysis of different fuel types (including “renewable” fuel sources, geothermal, or solar), costs (including consideration of the social costs of carbon and lifetime carbon costs), and potential demand-side improvements to reduce overall energy usage. Based on that analysis, the conceptual options were narrowed to identify the top-performing scenarios within three priority categories (1. Decarbonization, 2. Cost, and 3. Balanced). The priority categories were identified by DAS in consultation with other state agencies.

The study’s results show that the top-performing scenarios in all three priority categories demonstrate an overall decrease in GHG emissions and will result in positive impacts to other related environmental concerns such as those identified by OPM and others.

In addition to the study’s analysis of emissions, corresponding environmental concerns, and cost, DAS also considered other factors such as the potential impacts from the CTDOT’s I-84 realignment project and the timeframe for upgrading the CAS facility to ensure continued and reliable service to users. Unfortunately, the timeframe for upgrading the CAS facility to provide continued, reliable service delivery to end users is much shorter than the process required for CTDOT in determining a recommended option for realignment. This uncertainty makes it difficult to justify significant and costly upgrades to CAS, as such expenditures could be lost if the I-84 realignment results in major impacts or the need to relocate the CAS facility within the lifespan of these upgrades.

In making its CEPA determination, DAS fully incorporated the significant concerns raised by commenters, the data compiled in the study, and other factors as required by CEPA.

COMMENT CODE: OPM-2

SOLAR OR OTHER RENEWABLE ENERGY OPTIONS

Comments indicate that it would be appropriate for the CEPA review to incorporate an analysis of solar and other renewable energy options for the CAS and connected properties, including collaboration with DOT for the I-84 viaduct project options.

Section 4.6 and Appendices E, G, and I of the study presented a high-level analysis of potential options for solar PV and other renewable energy options such as geothermal. As noted in the study, implementing solar would largely need to occur at off-site locations and would require additional analysis to determine specific locations and corresponding design and engineering details.

Section 8 of the study also evaluated the possibility of using geothermal to meet energy demands and identified the adjacent parking lot as potentially conducive to installing geothermal wells. However, DAS has determined it is not currently feasible to implement solar or geothermal at the CAS site due to the uncertainty of impacts from the I-84 realignment on

the CAS facility and surrounding property and the need for a more detailed study of potential options to incorporate renewable energy options.

Implementation of solar PV or other renewable energy options at other locations to support CAS operations will remain under consideration but no specific projects are being recommended as part of this action. As previously stated, additional, more detailed evaluation is needed to determine feasible options, locations, and associated costs. The immediate concern is to upgrade the mechanical equipment at the CAS facility to ensure ongoing service to users. Solar and other renewable energy options can be implemented later to assist in bolstering the state's renewable energy supply.

Even though solar or renewable energy projects are not being implemented as part of the CAS facility upgrades, it is important to note that DAS and its partner agencies are implementing other electrification solutions throughout the State. These include 37 solar projects currently in various stages across multiple state agencies, through partnerships with the Connecticut Green Bank and others. DAS will continue to look for opportunities to implement solar and other renewable energy solutions, as feasible.

COMMENT CODE: OPM-3

CONSISTENCY WITH THE STATE C&D PLAN, POTENTIAL SYSTEM EXPANSION

Comments reference the State Plan of Conservation and Development's (State C&D Plan) policies directing agencies to (1) assess options for upgrading or expanding state infrastructure, including consideration of potential benefits and costs of any reasonable alternatives, and their potential socio-economic and environmental impacts, and (2) perform a life-cycle costs analysis of expanded service. Comments suggest that fiscal and environmental sustainability and equity might be enhanced by expanding the system to other public and private users.

The goal of the CAS decarbonization study was to evaluate multiple scenarios for upgrading the CAS facility to improve operations, reduce costs, and improve environmental outcomes. The analysis included in the study also assisted in DAS's review of potential environmental impacts from the proposed scenarios and included consideration of the topics identified in OPM's comment.

Of the 22 scenarios initially evaluated in the study, three categories were selected to undergo a more detailed analysis of costs and benefits. Analysis within those categories included consideration of capital and operating costs, net present costs (NPC) (i.e. life-cycle costs), the social cost of carbon, Renewable Energy Credits (RECs), and other potential options for offsetting remaining GHG emissions. Appendices A and J include tables comparing the results of that cost analysis across the various scenarios.

The study also evaluated the feasibility of several demand-side scenarios, such as converting to a low-temperature system and potential improvements at demand-side facilities. These are

discussed in greater detail in response to an earlier question, and in Section 09 and Appendix E of the Study.

The study also evaluated the existing and future load demands of several state buildings at 210 Capitol Ave (State Capitol) and 80, 90, 95, and 100 Washington St (Superior Court) in order to accommodate future expansion of the thermal loop to service these facilities. Appendix C of the Study provides a more detailed analysis of potential system demands from this proposed expansion to be included in the design of the selected scenario. These buildings are being considered due to their proximity to the existing thermal loop and would only require upgrading their existing, inefficient heating and cooling equipment. DAS is not aware of any immediate plans to extend the system beyond these buildings.

DAS finds that the proposed action and the Study to evaluate potential costs and options associated with the CAS improvements are generally consistent with the policies of the State C&D Plan. If additional expansion is considered, DAS will further evaluate the cost implications and potential benefits and impacts from such expansion.

COMMENT CODE: OPM-4

EMERGENCY OPERATIONS

Comments ask if the CAS Plant could be upgraded to maintain heating or cooling to key buildings during an extended interruption of power or natural gas supply, potentially allowing those buildings to serve as emergency shelters or heating/cooling stations, even if only in a limited capacity.

The CAS system only provides hot water and chilled water to end-users and does not have the operational capability to isolate buildings or only provide heating or cooling services to specific users, even during a non-emergency. The proposed action will only upgrade the existing mechanical equipment to more efficient equipment and will not substantially change the facility's operational capabilities. However, this use may be considered as part of future upgrades to the facility and the broader CAS system.