CTDOT
CONNECTICUT TRANSPORTATION

Capital Program Roadmap

IMPROVING LIVES THROUGH TRANSPORTATION

Summer 2025

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Introduction

Since the passage of the Infrastructure Investment and Jobs Act (IIJA) in 2021, the Connecticut Department of Transportation (CTDOT) has received more funding for capital infrastructure improvements than in several generations. CTDOT welcomes this funding and the opportunities it brings and sees it as a catalyst to strengthen CTDOT's capital program structure, policies, and processes to better meet growing project and staffing demands.

Why Draft a Capital Program Roadmap?

It is clear that CTDOT's talented teams are dedicated and focused on delivering projects and improving upon how the agency builds, operates, and maintains the transportation system. CTDOT leaders are continuously looking for opportunities to keep pace with increasing workload demands and adapt to increasing project complexities and growing system needs. Project managers are juggling multiple priorities and taking on an increasing number of projects, each with unique circumstances and challenges.

CTDOT leadership recognized the need to streamline Capital Program workflows as they relate to people and processes to build a stronger system that delivers vital projects efficiently. The CTDOT Strategic Plan, published in summer 2025, sets the direction for how CTDOT will achieve three core goals and seven supporting objectives through the implementation of 12 strategies. The advancement of the Capital Program Roadmap is one of those strategies.

Pursuing key improvement initiatives identified in this Capital Program Roadmap will strengthen CTDOT's ability to adapt to increasing demands while providing high-level visibility of the delivery of the capital program.

Approach

In fall 2024, CTDOT leadership appointed a Capital Program Roadmap Working Group made up of staff from across the agency to work with leadership to guide the development of the Capital Program Roadmap. The objectives were to:

- Establish current "as-is" processes of the capital planning/programming process, including both current and soon to be implemented processes.
- Define the desired "to-be" state by identifying opportunities for improvement.
- Develop an actionable Capital Program Roadmap to implement the identified improvement opportunities.

This Capital Program Roadmap recognizes the work CTDOT is already doing while also drawing attention to ways the agency can better manage resources—including people, processes, time, and budgets. It was created in alignment with the Strategic Technology Roadmap, another strategy identified in the Strategic Plan. The Strategic Technology Roadmap includes enterprise information technology (IT) and data governance frameworks that will support Capital Program Roadmap improvement initiatives. The roadmaps share a vision for data and information that is supported by purposeful technology infrastructure and data investments.

A multi-phase approach guided the process to envision and create a future state roadmap.

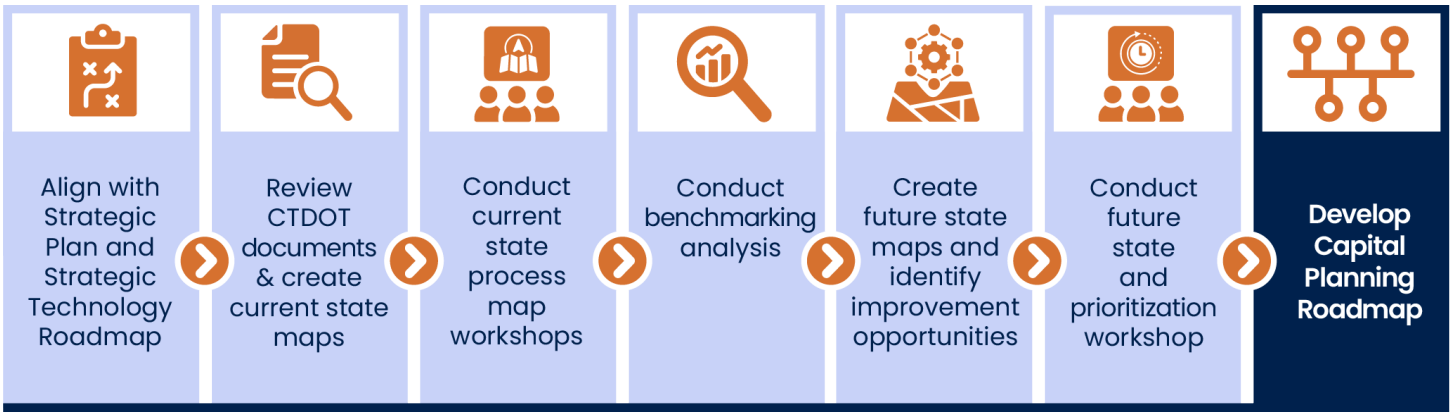

Figure 1: Capital Program Roadmap Approach

Capital Program Roadmap efforts (see Figure 1) were built on input received from small-group interviews and a CTDOT-wide employee survey conducted in fall 2024 as part of the Strategic Plan efforts. Focused in-person workshops including subject matter experts for four major processes (including Capital Planning and Programming, Program and Fiscal Management, Project Development, and Consultant Procurement) were conducted in early 2025.

Practices used by other state Departments of Transportation were reviewed as part of a benchmarking analysis to gather insights on potential process improvements that could be

incorporated at CTDOT, with a focus on similar agencies in the region. An American Association of State Highway and Transportation Officials (AASHTO) survey conducted by the Committee on Planning provided additional insights.

In addition, the dedicated Capital Program Roadmap Working Group met several times to brainstorm ideas, establish and prioritize needs, and provide context and feedback.

Process Mapping

In coordination with the Capital Program Roadmap Working Group, several current state workflows were mapped at a high level, enterprise-wide. The mapping exercise brought valuable insights to light, revealing details about Bureaus' and modes' aligned practices and their distinct approaches. It also highlighted delivery challenges individual project managers face.

Identifying Opportunities for Improvement

Based on Working Group feedback and industry practices observed at other agencies, new ideal-state processes were developed. Many of these ideas emerged from within CTDOT, and in some cases represent the expansion of strong existing practices. These revised processes guided the development of actionable improvement initiatives to standardize and streamline workflows across CTDOT.

Five Improvement Initiatives

This Capital Program Roadmap focuses on five interrelated improvement initiatives (see Table 1) that will further efforts to align processes, increase transparency and support a more structured and consistent consultant procurement workflow.

Table 1: Capital Program Roadmap Five Improvement Initiatives

No.	Improvement Initiative Name
1	**Establish a Portfolio Management Function:** Facilitates project delivery and supports program management.
2	**Standardize and Refine Procurement and Scoping Process:** Focuses on refining and standardizing project scoping and consultant procurement.
3	**Institute Project Data and Information Standards:** Improves data flow and supports data management throughout capital planning and delivery.
4	**Enhance Capital Needs Identification, Prioritization, and Project Initiation:** Refines capital planning and needs prioritization to improve coordination across Bureaus and units.
5	**Assess Skills Gap and Develop Training Program:** Develops and delivers training to help staff stay current with enterprise standards, operating procedures, technologies, and best practices.

CTDOT's implementation approach is detailed in Improvement Initiative Plans starting on Page 6. Improvement Initiative No. 1, Establish a Portfolio Management Function (PMF), is central to four subsequent improvement initiatives. It will require substantial resources and time to implement, so its rollout includes three phases. While the four additional improvement initiatives can stand alone, coordinating them with the PMF creates a multiplier effect—amplifying their collective impact.

How Technology Fits In

Two Strategic Technology Roadmap improvement initiatives will relate to and support the Capital Program Roadmap improvement initiatives:

- Implementation of data governance processes will help ensure that CTDOT collects the right data to help better track capital projects' status and progress.
- Procurement of a program and portfolio management software (PPMS) will provide additional functionality required for holistic project and portfolio management.

These efforts, and several more related to CTDOT's technology needs, are further described in the Strategic Technology Roadmap companion document.

Improvement Initiative Plans

The improvement initiative plans in this section further describe each of the planned initiatives/projects. Each improvement initiative plan includes the following elements:

- **Project Description:** A short description of the project.
- **Timeframe to Begin:** How long will it take us to begin each initiative. The "short-term" label includes those strategies with actions that are already underway.
    - Short-term – Up to 24 months (includes strategies with actions that are already underway)
    - Mid-term – Two to three years
    - Long-term – Four years or more
- **Full Implementation Duration:** Estimated time to complete each initiative's implementation actions. Some actions are related to core CTDOT activities and will continue on an ongoing basis.
- **Key Benefits:** The primary benefits anticipated through successful completion of this initiative.
- **Dependencies and Adjacent Initiatives:** Other Initiatives that are related to this initiative.
- **Resources Needed:** The roles that will need to be a part of the effort.
- **Implementation Actions:** The work activities that will lead to successful execution of each initiative.

Improvement Initiative No. 1

Establish a Portfolio Management Function

INITIATIVE DESCRIPTION

This function, which will be implemented incrementally, facilitates project delivery and supports overall CTDOT program management. It provides dedicated resources that will strengthen collaboration across Bureaus, formalize communication protocols, standardize project milestones, enhance coordination, and refine processes to support project managers across the full project life cycle.

TIMEFRAME TO BEGIN — Short-Term

FULL IMPLEMENTATION DURATION — 4 Years

Key Benefits

- Provides monitoring of entire program of projects to identify potential delays and improve efficient delivery.
- Enables objective, consistent evaluation of projects for improved prioritization.

Dependencies and Adjacent Initiatives

- All of the initiatives in this Capital Program Roadmap interact with the Portfolio Management Function. Initiatives 2 through 5 should be developed and implemented in parallel to this initiative.
- Supported by the Strategic Technology Roadmap's program and portfolio management system (PPMS) software development; adheres to the formalized data governance framework.

Resources Needed

- Initiative owner
- Dedicated staff resources, as recommended by the initiative owner

An Overarching Initiative

The core improvement initiative, the overarching PMF, aligns with many areas of CTDOT's capital program coordination efforts, supporting more efficient outcomes and enabling smoother communications. The PMF can be scaled based on available resources. It could be set up initially as a collection of duties assigned to a person or unit, with both the range of actions and persons assigned scalable based on available resources. The responsibility for this function would reside in the Engineering & Construction Bureau.

In most cases, the PMF acts in a support role, facilitating efficient execution and monitoring handoffs without having direct responsibilities. Once implemented, the PMF will monitor the entire program of projects, supporting project managers and leadership with the information needed to drive timely decisions.

CTDOT is well-positioned to implement many of the PMF responsibilities with its current technology capabilities, though integrating the Strategic Technology Roadmap's improvement initiatives will provide additional tools to accelerate progress.

A Phased Approach

Establishing the PMF function will help streamline project delivery. This work is significant, and it will require substantial resources and time to implement.

To that end, a three-phase approach supports the PMF's growth and success. The first phase's immediate action items establish the function and provide benefits to the processes.

The PMF will not reach full potential until enhanced program/project delivery systems delivered via technology improvements in the PPMS are coming online in Phase 2. In later phases, the work leverages investments in technology improvements that will enhance the capabilities of the PMF and provide greater value to the organization. The phased approach provides opportunities to focus and refine during implementation, allowing for adjustments in the plan.

Implementation Actions

Confirm PMF Responsibilities and Timing

Clarify expectations, collaborate across Bureaus and functional areas to define roles, and sequence the rollout of responsibilities based on organizational readiness, existing gaps, and areas where the function will have the most immediate impact.

Define the PMF Initiative Owner and Support Team

Identify the individuals who will serve as dedicated staff resources and carry out core PMF activities. Staff will work across teams and divisions to ensure consistent delivery support, from consultant procurement through construction.

Execute Phase One of PMF Responsibilities

Focus first on supporting early project development, monitoring consultant procurement for projects, and advancing project prioritization.

Execute Phase Two of PMF Responsibilities

Focus on guiding project selection, improving stakeholder coordination, defining DBE oversight roles, and integrating financial tracking systems to support active program delivery.

Execute Phase Three of PMF Responsibilities

Focus on formalizing project monitoring and utility coordination, standardizing project closeout practices, and centralizing bid data to enhance tracking, analysis, and overall coordination.

Improvement Initiative No. 2

Standardize and Refine Procurement and Scoping Process

INITIATIVE DESCRIPTION

Leverages resources to streamline the consultant procurement process. This effort will centralize project management resources to promote consistency, improve visibility into scope status, support more efficient execution, and clearly define and communicate expectations to consultants earlier in the process.

TIMEFRAME TO BEGIN — Mid-Term

FULL IMPLEMENTATION DURATION — 2.5 Years

Key Benefits

- Improves clarity, reduces delays, and supports a more structured and consistent procurement workflow.
- Builds on efforts to develop scoping templates and provides a mechanism for tracking progress, collecting feedback, and providing scoping guidance across Bureaus.
- Makes roles, responsibilities, and timelines clear to all consultants early in the process.
- Benefits task-order assignment and scope/fee negotiation for multi-phase or task order agreements in addition to initial procurement activities.

Dependencies and Adjacent Initiatives

- Aligned to the Portfolio Management Function; outcomes of this initiative will be supported by the Portfolio Management Function.
- Aligned to the Strategic Technology Roadmap's program and portfolio management system (PPMS) software development.

Resources Needed

- Initiative owner
- Dedicated staff resources, as recommended by the initiative owner

Implementation Actions

Validate Current Scoping Practices and Identify Improvement Areas

Review current scoping template efforts, checklists, and procedures to identify opportunities to improve structure, clarity, and completeness. Include input from project managers, procurement staff, and consultants to identify recurring challenges or inconsistencies.

Streamline Processes When Feasible

Right-size the length, format, and scale of consultant interviews and consider set times for negotiation meetings to create predictable timeframes for all parties. Expand the use of task orders for specialty work, such as geotechnical services or traffic studies, to improve efficiency and flexibility.

Standardize Scope and Cost Development Procedures and Templates

Create templates to standardize the content and format of scoping documents and track scope, schedule, and budget timelines against baseline targets to enable timely reviews, approvals, and early issue detection. Consider creating variations of scope templates for small vs large projects, reference guides, checklists, and annotated best practice examples. To promote consistency across teams, integrate templates into the PPMS aligned to the Strategic Technology Roadmap.

Develop a Consultant Onboarding Toolkit

Support consistent and action-oriented consultant communications with a toolkit that may include relevant, new and/or existing materials, checklists, templates, requirements for audited rates, and example language for use in scoping documents, RFPs, kickoff meetings, and status updates. Consider an onboarding package with process overviews, an introductory slide deck or video, and communication guidelines that clarify roles and expectations potentially stored on a portal or website. Update the toolkit as necessary consistent with applicable policy and administration changes.

Integrate Improvements into Existing Project Management Workflows

Formalize the above improvements into existing workflows, policies, and standards. As these changes are implemented, the team can monitor usage, track adoption, and collect lessons learned to guide ongoing refinements and reinforce continuous improvement.

Improvement Initiative No. 3

Institute Project Data and Information Standards

INITIATIVE DESCRIPTION

Define what data is tracked, where it is captured, and who is responsible for managing it, creating a structured approach to project information. This work will improve data flow, align with capital planning technology systems, and support consistent data management throughout the capital planning and delivery processes.

TIMEFRAME TO BEGIN — Short-Term

FULL IMPLEMENTATION DURATION — 1 Year

Key Benefits

- Supports the automation of tasks by identifying and defining critical data elements that connect tasks within project programming and development.
- Assists with tracking the status of projects by having a consistent approach to key assets, projects, and program information.
- Brings consistency to stakeholder query responses.
- Provides accurate, reliable, and consistent information for dashboards.
- Improves visibility into project status and performance throughout the project life cycle.

Dependencies and Adjacent Initiatives

- Aligned to the Portfolio Management Function; outcomes of this initiative will be supported by the Portfolio Management Function.
- Aligned to the Strategic Technology Roadmap's data governance initiative.

Resources Needed

- Initiative owner
- Dedicated staff resources, as recommended by the initiative owner

Implementation Actions

Validate Current Data and Information Standards

Document and evaluate current practices for collecting project data and attributes across Bureaus, divisions, and units. Leverage existing data and information collection processes to map out what project data is captured and when, and where paper-based record-keeping remains the primary standard.

Design Future Data and Information Standards

Continue efforts to establish CTDOT-wide guidelines to ensure consistent data collection and support project management across capital planning and delivery. Consistent with data governance, define what data is needed, who is responsible for it, where and when it is captured in the project life cycle, how it is shared, and who manages the related processes. Update standards as new software tools from the Strategic Technology Roadmap are established.

Conduct a Data Gap Assessment

Identify and address gaps between current and future data and information standards, and outline clear, actionable steps for successful implementation based on CTDOT goals. Tools like the AASHTO TAM Data Assistant can support this assessment.

Create a Transition Plan for Implementing New Standards

Consider which steps will have the greatest initial impact on capital planning and delivery. Develop a transition plan that accounts for current ad hoc practices and includes a realistic schedule for formalizing new data and information standards across CTDOT.

Improvement Initiative No. 4

Enhance Capital Needs Identification, Prioritization, and Project Initiation

INITIATIVE DESCRIPTION

Strengthen and formalize a consistent approach to identifying and prioritizing capital needs, supporting a more seamless transition from needs identification to project development and improving transparency and coordination across Bureaus. Strengthen the intake, prioritization, and initiation of capital projects by aligning existing workflows, formalizing procedures, and modernizing supporting tools.

TIMEFRAME TO BEGIN — Short-Term

FULL IMPLEMENTATION DURATION — 3 Years

Key Benefits

- Acknowledges ongoing process improvement efforts to improve transparency and the structure for project identification and project prioritization.
- Allows all stakeholders access to consistent information about projects, including scope, cost, and schedule.
- Captures key project details that will inform programming and project development decisions.

Dependencies and Adjacent Initiatives

- Aligned to the Portfolio Management Function; outcomes of this initiative will be supported by the Portfolio Management Function.
- Aligned to the Strategic Technology Roadmap's program and portfolio management system (PPMS) software development.

Resources Needed

- Initiative owner
- Dedicated staff resources, as recommended by the initiative owner

Implementation Actions

Integrate Capital Needs Prioritization Framework into Existing Workflows

Building on pilot efforts, incorporate prioritization into intake and programming processes. Ensure consistent data capture across all project types and modes, and align prioritization with decision points already in place within each Bureau.

Develop Formal Capital Prioritization Procedure

Define roles and responsibilities for intake, scoring, quality control, and program alignment. Establish cycles for reviewing and updating criteria and weighting. Accommodate both traditional capital improvements and asset-based/state of good repair (SOGR)-driven projects, some of which may bypass prioritization. Consider how prioritization tools or methods could be embedded in existing or future software platforms aligned to the Strategic Technology Roadmap.

Review and Streamline Project Initiation Forms

Evaluate current forms used during project initiation, including the Proposed Project Information (PPI) Form and Capital Action Request Form, to identify opportunities for consolidation. Explore creating a modular form that supports use across all modes and units, allows for Bureau-specific requirements, and captures early needs, enables prioritization, and supports formal project kickoff.

Develop Combined Needs Intake and Project Initiation Form

Design a unified digital form that captures early capital needs and full project initiation details. A Needs Intake Form will be completed when a need is initially identified. Once prioritized or approved, a Project Initiation Form will be completed to support the transition into Project Development. Design the tool for integration with the PPMS or another tool that may be identified as part of the Strategic Technology Roadmap.

Integrate Combined Form into Prioritization and Initiation Workflow

Define how and when the combined form will be used within the capital planning and project development processes. Clarify the handoff between Capital Planning and Project Development, ensuring alignment with prioritization process and supporting program-level reporting on capital needs, including those driven by SOGR and asset management priorities. Consider development of modular intake form that is structured to capture additional information needed for the Recommended Project Memorandum.

Develop a Structured Rollout and Change Management Plan

Prepare and distribute updated forms and procedures. Include pilot testing, tailored training materials, and communications to support adoption. Sequence the rollout with the implementation of Strategic Technology Roadmap tools such as PPMS to ensure successful change management and long-term sustainability of the new approach.

Improvement Initiative No. 5

Assess Skills Gap and Develop Training Program

IMPLEMENTATION DESCRIPTION

Increase opportunities for workforce training and skills development to support updated processes across capital planning, program, and delivery. Equip staff with the skills needed to stay current with enterprise standards, procedures, technologies, and best practices—covering areas such as project initiation, portfolio management, prioritization, consultant procurement, milestone tracking, and environmental review.

TIMEFRAME TO BEGIN — Short-Term

FULL IMPLEMENTATION DURATION — 5 Years

Key Benefits

- Eases onboarding to new roles and will support consistent and repeatable delivery of services.
- Demonstrates a commitment to employee development and can significantly improve overall productivity and innovation.

Dependencies and Adjacent Initiatives

- Aligned to the Portfolio Management Function; as Portfolio Management Function responsibilities are introduced, applicable trainings should be developed and executed.
- Aligned to the Strategic Technology Roadmap's program and portfolio management system (PPMS) software development and data governance Initiative.

Resources Needed

- Initiative owner
- Dedicated staff resources, as recommended by the initiative owner

Implementation Actions

Review Capital Program Processes and Identify Required Skills

Identify processes across capital planning, programming, and delivery that would benefit from training support, and clarify the specific skills needed for each.

Conduct Skills Survey and Gap Assessment

Evaluate staff skills against workflow requirements. Issue surveys, conduct interviews, and analyze responses to identify priority training needs. Focus assessment on areas where training would improve efficiency, support consistent outputs, and align with desired process outcomes.

Develop a Phased Training Roadmap

Establish training, based on the rollout of Capital Program Roadmap initiatives, in coordination with the Portfolio Management Function. Develop a communications plan to support staff engagement and change management.

Develop Training Material and Execute Phased Approach

Establish clear learning objectives that align with CTDOT goals. Design curriculum and content tailored to target audiences and specific workflow needs. Training formats may include team briefings, awareness sessions, practitioner-level courses, and new process or technology orientation.

Evaluate and Adjust Trainings

Assess effectiveness of training programs using feedback, participation data, and performance metrics. Use insights to refine and improve future sessions.

Institutionalize Continuous Improvement for Training

Establish a training life cycle framework that enables programs to adapt to evolving capital processes, systems, and workforce needs, so they remain relevant, effective, and integrated with ongoing improvements.