



CAPE COD
COMMISSION

Cape Cod Unified Planning Work Program Federal Fiscal Year 2021

Endorsed: May 26, 2020

Administrative Adjustment: September 17, 2020

Amendment 1: Endorsed November 16, 2020

Amendment 2: May 24, 2021



Cape Cod Unified Planning Work Program for FFY2021

This report was funded in part through grants from the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), United States Department of Transportation (USDOT). The views and opinions of the Cape Cod Metropolitan Planning Organization (MPO) expressed herein do not necessarily state or reflect those of the USDOT.

Title VI Notice of Nondiscrimination

The Cape Cod MPO complies with Title VI of the Civil Rights Act of 1964 and related federal and state statutes and regulations. It is the policy of the Cape Cod MPO to ensure that no person or group of persons shall on the grounds of Title VI protected categories, including race, color, national origin, or under additional federal and state protected categories including sex, age, disability, sexual orientation, gender identity or expression, religion, creed, ancestry, veteran's status (including Vietnam-era veterans), or background, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity administered by the Cape Cod MPO. To request additional information about this commitment, or to file a complaint under Title VI or a related nondiscrimination provision, please contact the MPO's Title VI Coordinator by phone at (508)362-3828, TTY at 508-362-5885, fax (508) 362-3136 or by e-mail at mhevenor@capecodcommission.org.

If this information is needed in another language, please contact the MPO's Title VI Coordinator by phone at (508)362-3828.

Caso estas informações sejam necessárias em outro idioma, por favor, contate o Coordenador de Título VI da MPO pelo telefone 508-744-1299.

The public discussion of the Unified Planning Work Program (UPWP) at CCJTC, MPO, and transportation meetings satisfies the Program of Projects (POP) public hearing requirements of the Federal Transit Administration (FTA).

Cape Cod Unified Planning Work Program for FFY2021

Cape Cod Transportation Improvement Program (TIP) prepared by the

Cape Cod Metropolitan Planning Organization (MPO) Members:

- Stephanie Pollack, Secretary and Chief Executive Officer, Massachusetts Department of Transportation (MassDOT)
- Jonathan Gulliver, Administrator, MassDOT Highway Division
- Tom Guerino, Chair, Cape Cod Regional Transit Authority
- Harold Mitchell, Cape Cod Commission
- Paul Hebert, President, Barnstable Town Council
- Ronald Bergstrom, Barnstable County Commissioners
- Judith MacLeod-Froman, Bourne Selectman, for Bourne, Falmouth, Mashpee, and Sandwich
- Norman Holcomb, Yarmouth Selectman, for Dennis and Yarmouth
- Alan McClennen, Orleans Selectman/Select Board, for Brewster, Chatham, Harwich, and Orleans
- Robert Weinstein, Truro Select Board, for Eastham, Provincetown, Truro, and Wellfleet
- Cedric Cromwell, Chairman, Mashpee Wampanoag Tribal Council

MPO Ex-Officio Members:

- Tom Andrade, Chairman, Cape Cod Joint Transportation Committee
- Brian Carlstrom, National Park Service/Cape Cod National Seashore
- Lawrence T. Davis, US Army Corps of Engineers/Cape Cod Canal
- Robert B. Davis, Woods Hole, Martha's Vineyard, and Nantucket Steamship Authority
- Jeffrey McEwan, Federal Highway Administration
- Peter Butler, Federal Transit Administration

and the

Cape Cod Joint Transportation Committee

- Tom Andrade, Chairman, Dennis
- Tom Temple, Vice-Chairman, Chatham

Cape Cod Commission UPWP Staff Contact:

- David Nolan Jr., Transportation Planner, Cape Cod Commission

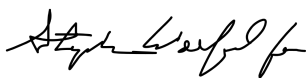
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Cape Cod Metropolitan Planning Organization

Endorsement of the Federal Fiscal Years 2021 Cape Cod Unified Planning Work Program (UPWP)

The signature below certifies that the Cape Cod Metropolitan Planning Organization (MPO), at their meeting on May 26, 2020, hereby approved the following action in accordance with the Comprehensive, Cooperative and Continuing transportation planning process. In accordance with the requirements of 23 CFR Part 450 Section 308(c) of Federal Regulations, the MPO for Cape Cod has completed its review and hereby endorses the Cape Cod Unified Planning Work Program for Transportation Planning Activities for October 1, 2019 through September 30, 2020.



Stephanie Pollack, Secretary/Chief Executive Officer – Massachusetts Department of Transportation (MassDOT)

MPO Members:

- Stephanie Pollack, Secretary and Chief Executive Officer, Massachusetts Department of Transportation (MassDOT)
- Jonathan Gulliver, Administrator, MassDOT Highway Division
- Robert Lawton, Chair, Cape Cod Regional Transit Authority
- Harold Mitchell, Cape Cod Commission
- Paul Hebert, President, Barnstable Town Council
- Ronald Bergstrom, Barnstable County Commissioners
- Judith MacLeod-Froman, Bourne Selectman, for Bourne, Falmouth, Mashpee, and Sandwich
- Norman Holcomb, Yarmouth Selectman, for Dennis and Yarmouth
- Alan McClennen, Orleans Selectman, for Brewster, Chatham, Harwich, and Orleans
- Robert Weinstein, Truro Selectman, for Eastham, Provincetown, Truro, and Wellfleet
- Cedric Cromwell, Chairman, Mashpee Wampanoag Tribal Council

MPO Ex-Officio Non-Voting Members:

- Tom Andrade, Chairman, Cape Cod Joint Transportation Committee
- Brian Carlstrom, National Park Service/Cape Cod National Seashore
- Lawrence T. Davis, US Army Corps of Engineers/Cape Cod Canal
- Robert B. Davis, Woods Hole, Martha's Vineyard, and Nantucket Steamship Authority
- Jeffrey McEwan, Federal Highway Administration
- Peter Butler, Federal Transit Administration

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Executive Summary

The Cape Cod Metropolitan Planning Organization's (MPO) staff work plan known as, the Unified Planning Work Program (UPWP), lists planning activities anticipated to be performed by MPO staff and others over the next year.

The MPO is made up of eleven voting members with representatives of state agencies, regional organizations, and Cape Cod towns. Discussions at MPO meetings help select planning studies to be included in the UPWP. Members of the public are welcome and encouraged to attend these meetings and voice opinions.

Contents of the Plan

The Unified Planning Work Program discusses coordination with the federal Fixing America's Surface Transportation (FAST) Act of 2015 and is organized by a series of tasks and corresponding sub-tasks. Each sub-task includes a scope of work with the following components: objectives, previous work, procedures, products, beneficiary communities, schedule, and funding breakdown.

FY 2021 Tasks

Unified Planning Work Program tasks and sub-tasks are listed below along with the associated funding level for each task.

- Task #1 – Management and Support of the Planning Process and Certification Activities (\$185,000)
 - Task 1.1 - Unified Planning Work Program (Certification Activity)
 - Task 1.2 - Transportation Improvement Program (Certification Activity)
 - Task 1.3 - CCJTC and MPO Activities
 - Task 1.4 – Environmental Justice/Title VI
 - Task 1.5 – Public Participation Plan
 - Task 1.6 – Regional Transportation Plan
- Task #2 – Data Collection and Analysis Activities (\$218,750)
 - Task 2.1 – Cape Cod Traffic Data Collection Program
 - Task 2.2 – Performance Standards
 - Task 2.3 – Transportation Database Management
 - Task 2.4 – Pavement Management/Stormwater Management
 - Task 2.5 – Healthy Transportation
 - Task 2.6 – Geographic Information System
- Task #3 – Short- And Long-Range Transportation Planning (\$246,875)
 - Task 3.1 – Route 28 East Hyannis Corridor Study
 - Task 3.2 – Transportation Safety: RSAs/Route 6 Safety

Cape Cod Unified Planning Work Program for FFY2021

- Task 3.3 – Rail Trail Crossing and Traffic Signal Inventories
- Task 3.4 – Managed Retreat Best Practices
- Task 3.5 – Follow-Up on Previous Transportation Planning Studies
- Task #4 – Technical Assistance Activities (\$133,649)
 - Task 4.1 – Transit Planning
 - Task 4.2 – Support for Passenger Rail Service
 - Task 4.3 – Transit Data Collection and Analysis
 - Task 4.4 – Other Technical Assistance Requests

The Unified Planning Work Program also includes other transportation planning activities such as those directly funded by the Cape Cod Commission and the Cape Cod Canal Transportation Study currently underway by the Massachusetts Department of Transportation (MassDOT). Finally, the UPWP includes a detailed breakdown of funding source and dollar amount for each sub-task.

How to get involved

The Cape Cod MPO voted to release the draft UPWP for the public review/ comment period at their 1:00 PM virtual meeting on April 27, 2020, officially beginning the 21-calendar-day public comment period.

Online public comment opportunities for this plan were held on Tuesday, May 12, 2020 at 5:30 PM and Thursday, May 14, 2020 at 10:00 AM. These meetings featured a short presentation on the document followed by an opportunity for public comments. A virtual public meeting of the Cape Cod MPO is scheduled for Tuesday, May 26, 2020 at 1 PM to hear additional public comments and consider endorsement of this document. Details on the online public comment opportunities and the virtual public meeting available at www.capecodcommission.org/mpo

Comments on this plan were accepted through May 18, 2020 via mail, by facsimile, or via e-mail, as follows:

Mailed:

Cape Cod Commission Transportation Program
David Nolan Jr., Transportation Planner
3225 Main Street (Route 6A)
PO Box 226
Barnstable MA 02630-0226

Sent by facsimile to the attention of David Nolan Jr., Transportation Planner:

FAX: 508-362-3136

Electronic mail “email”—please put “UPWP” in the subject line and send to:

david.nolan@capecodcommission.org

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Introduction

The Unified Planning Work Program (UPWP) is developed annually by the Cape Cod Commission transportation staff on behalf of the Cape Cod Metropolitan Planning Organization, in accordance with the requirements in the federal Fixing America's Surface Transportation (FAST) Act of 2015. The UPWP describes all significant transportation planning activities for Cape Cod over the twelve (12) month period of October 2020 to September 2021, regardless of lead organization and funding source. The following are the major transportation planning areas:

1. Management and Support of the Planning Process and Certification Activities – the efforts required for coordinating transportation planning activities between CCC and Metropolitan Planning Organization (MPO) member communities, local, regional, state and federal agencies; efforts required to maintain the public participation process; Environmental Justice strategies; efforts required for the administration of the CCC contract with the Massachusetts Department of Transportation (MassDOT); development and approval of the UPWP and the Transportation Improvement Program (TIP); and enhancement of the technical capacity of the planning process.
2. Data Collection and Analysis Activities – to continually gather and update traffic, crash, and road data necessary for transportation planning and analysis; to maintain databases; to develop and update Cape Cod's travel demand forecasting model; to review safety data, goals, objectives, and strategies to promote safety.
3. Short- and Long-Range Transportation Planning – includes efforts to perform special planning studies of corridor safety/traffic flow and transit and integration of special studies into the regional transportation plan. Emphasis areas include identification of strategies to support the economic vitality of the metropolitan area, transportation security, emergency planning, strategies to promote smart growth and economic development patterns, environmental protection and energy conservation and preservation of the existing transportation system.
4. Other Technical Activities – to provide other technical assistance to the region, including assistance in the design and implementation of projects, participating in special studies, coordination with transit agencies and assistance in the planning, design, and development of the Intelligent Transportation System for Cape Cod. Special emphasis areas include enhancing the integration and connectivity of the transportation system, across and between modes, for people and freight and promotion of Operation and Management Strategies.

5. Regulatory Review and Planning Assistance to the Towns – review of Developments of Regional Impact and assistance in the development and implementation of Local Comprehensive Plans and Districts of Critical Planning Concern.

Other transportation planning efforts that are being performed outside of the MPO budget process (e.g., Cape Cod transportation planning studies being performed by the state) are detailed in the Appendices. The Appendices also include funding information, summary of comments, and a checklist of UPWP elements.

Federal and state guidance recommend that at least 1/3 of PL funds are used on tasks that result in tangible products. Every task in the UPWP results in a report or includes documentation available to stakeholders including the public. The subtasks of the UPWP most directly leading to transportation improvement projects are those included in Task 3 (Short- and Long-Range Transportation Planning) corresponding to a 33% (\$224,375/\$681,447) level of effort.

Coordination with Federal Transportation Planning Factors

All tasks of the UPWP will be implemented with consideration of federal transportation planning factors. This discussion relates to the general topic of Cape Cod MPO transportation planning and is intended to provide an overview to the public. Each planning factor may apply to a varying degree to each specific UPWP task. Cape Cod MPO transportation planning goals are manifested in the Cape Cod Regional Transportation Plan (RTP) referenced in the discussion below. The UPWP is developed in coordination with the ten federal transportation planning factors as follows:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency

The Cape Cod MPO staff shall apply specific criteria in the review of transportation strategies. These criteria are applied to changes of delay and emissions. Reduction in traffic delay has a direct consequence on economic vitality both through the timely arrival of commuters and goods and reduction in fuel expenses and losses due to air pollution. The RTP directly supports these efforts through the goal: “Maintain, protect, and enhance the natural environment while strengthening the economy.” The CCC directly supports regional productivity through its economic development mission (including full-time staff) manifested in the Regional Policy Plan and support of the Cape Cod Economic Development Council’s initiatives, including support of the federally approved Cape Cod Comprehensive Economic Development Strategy priority projects.

2. Increase the safety of the transportation system for motorized and nonmotorized users

The Cape Cod MPO staff shall apply specific criteria in the review of transportation strategies. These criteria are applied to estimated changes in safety. The primary goal of the RTP is focused on safety: "Provide safe travel options for all users." Safety is of such importance that it is recognized in its major appendix of the RTP.

3. Increase the security of the transportation system for motorized and nonmotorized users

Goals of the RTP related to security include: "Provide safe travel options for all users" and "Preserve, maintain, and modernize the existing transportation system." Security is of such importance that it is recognized in a major appendix of the RTP. One area of additional security planning that applies to Cape Cod is that of traffic impacts due to weather events such as impending hurricanes. CCC staff is continuing to participate in the Massachusetts Emergency Management Agency (MEMA) Massachusetts State Police efforts regarding the "Cape Cod Emergency Traffic Plan."

4. Increase the accessibility and mobility of people and for freight

The Cape Cod MPO staff shall apply specific criteria in the review of transportation strategies. These criteria are applied to improvements in multimodal accessibility. The RTP supports these efforts through goals: "Provides a variety of healthy transportation options to all users" and "Improve efficiency and reliability of freight movement." The RTP includes an appendix addressing freight issues.

5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns

The RTP directly supports this planning factor through two goals: "Maintain, protect, and enhance the natural environment while strengthening the economy" and "Support livable communities and village centers that strengthen the long-term sustainability of the region." The RTP and therefore the UPWP includes a focus on addressing Climate Change. Where appropriate, UPWP tasks will include assessments of vulnerabilities and negative risks that climate change effects or extreme weather events pose, to the Cape's transportation infrastructure. These vulnerabilities and risks will be seriously considered when planning future improvements. Where appropriate, UPWP tasks will develop adaptation strategies that will enable the Cape Cod region to implement improvements appropriately. The reduction of greenhouse gas emissions (GHG) remains an important goal in addressing climate change. UPWP tasks are encouraged that reduce VMT and congestion.

6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight

The Cape Cod MPO staff shall apply specific criteria in the review of transportation strategies. These criteria are applied to improvements in multimodal accessibility. The RTP supports these efforts through its goals: “Provides a variety of healthy transportation options to all users” and “Improve efficiency and reliability of freight movement.” Where appropriate, UPWP tasks will support the enhancement of the movement of goods throughout the Cape Cod region. To further this goal, Cape Cod MPO staff will continue to develop knowledge and skills regarding the integration of goods movement. The RTP includes an appendix addressing freight issues.

7. Promote efficient system management and operation

The RTP supports this planning factor through two goals: “Reduce congestion and improve travel time reliability” and “Preserve, maintain, and modernize the existing transportation system.” Relevant objectives from these goals include:

- Reduce delay for all modes
- Improve connectivity and reliability for all modes of transportation
- Minimize the impacts of construction delays on all users, particularly impacts of Cape Cod Canal Bridge maintenance
- Improve the condition of all state and municipally owned bridges
- Improve the pavement condition on all federal-aid eligible roadways
- Maintain and improve on and off-road bicycle and pedestrian facilities
- Use modern technology to improve the efficiency of the transportation system
- Improve coordination and cooperation between agencies throughout all phases of project development and implementation for all improvement and maintenance projects

The RTP includes specific performance targets for each of the above objectives.

8. Emphasize the preservation of the existing transportation system

The RTP supports this planning factor through the goal: “Preserve, maintain, and modernize the existing transportation system.” Through the CCC regulatory process, development projects are required to provide traffic mitigation. Additionally, a significant number of acres of developable land have been conserved through the CCC regulatory process — thereby reducing future transportation impacts.

9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.

The RTP includes a key effort to integrate resiliency into transportation planning. Goals within this effort include:

- Identify critical transportation infrastructure on Cape Cod
- Identify transportation infrastructure vulnerable to the impacts of sea level rise
- Improve vulnerability and risk assessment practices for planners and town officials
- Formulate effective adaptation strategies for Cape Cod
- Foster local support and input on climate change vulnerability assessments

Additionally, the RTP includes a section on stormwater management including a set of “best management practices” that have applicability to the Cape’s roadways.

10. Enhance travel and tourism

For many years, tourism has been a major component of the Cape’s economy. As such, an RTP section on scenario planning includes tourism as the Cape’s future transportation needs are being identified.

Staff Development

Throughout the year staff will be provided with opportunities for professional development in support of the various UPWP tasks. For example, to attend a workshop that focuses on reducing crashes at hazardous intersections the workshop fee and staff time will be billed to the UPWP task related to safety.

UPWP Amendment/Adjustment Procedures

Due to unforeseen circumstances, the UPWP may need to be modified from their original MPO endorsed form. There are different actions that may be taken in order to modify the endorsed UPWP. These actions vary, depending on the extent of the modification, and have different impacts on the UPWP. All proposed Amendments and Adjustments are presented to the MPO for consultation prior to endorsement. The procedures for modifying the UPWP are:

UPWP Amendment

A UPWP Amendment is the most extensive change procedure that a UPWP may undergo. A UPWP Amendment requires the proposed change to undergo a 21-day public review period, endorsement by the MPO, and approval by FHWA. The Cape Cod MPO, at their discretion, may vote to abbreviate the public comment period under what they consider extraordinary circumstances beyond the MPO's control. Examples of UPWP Amendments include:

- The addition or removal of UPWP tasks
- The change in start/ completion dates, outside of originally intended federal fiscal year(s)
- Any revision which would result in the need for additional funding.
- The significant change in project scope, cost (budget reallocation over 10% of the total approved budget), and/ or time allocation

UPWP Administrative Modification (Adjustment)

A UPWP Administrative Modification (Adjustment) is a minor Amendment. The Adjustment procedure requires an administrative action, consultation with the MPO, and MassDOT-OTP approval through the utilization of a Budget Reallocation Request Form. Examples of UPWP Adjustments include:

- The reallocation of budget funds (under 10% of the total approved budget)
- The change in start/ completion dates, within originally intended federal fiscal year(s)
- Adjustment to project scope

Task #1 – Management and Support of the Planning Process and Certification Activities

TASK 1.1 - UNIFIED PLANNING WORK PROGRAM (CERTIFICATION ACTIVITY)

Objectives: To develop a Unified Planning Work Program (UPWP), in accordance with the requirements in federal transportation planning regulations, and to obtain MPO endorsement of the UPWP. To prepare progress reports, as needed.

Previous Work: Previous UPWPs (most recent MPO-endorsed FY 2020 UPWP & Amendment; endorsement of FY 2021 UPWP expected May 2020)

Procedures: In conformance with applicable Federal and State guidelines, prepare a UPWP which describes all significant transportation and transportation-related planning activities anticipated to be carried out in the region during the period, regardless of funding sources or lead organization. Maintain the UPWP and make amendments as necessary. Active reviewers and contributors to UPWP development include MassDOT (Office of Transportation Planning and District 5), the CCJTC and the CCMPO.

Products: Unified Planning Work Program for Transportation Planning Activities for the period October 1, 2020 to September 30, 2021. Amendments to the current UPWP will be submitted as necessary. Monthly progress reports on PL activities performed under the UPWP and an annual report of transportation planning activities.

Schedule:

- Draft FFY 2022 UPWP anticipated submission to MPO and CCJTC, April 2021
- Final FFY 2022 UPWP anticipated submission to MPO, May 2021
- Monthly progress reports
- Annual Report

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$25,000

TASK 1.2 - TRANSPORTATION IMPROVEMENT PROGRAM (CERTIFICATION ACTIVITY)

Objectives: To prepare a program of transportation improvement projects that is consistent with the federal Fixing America's Surface Transportation (FAST) Act of 2015, the region's transportation plan, the State Implementation Plan, EPA's Air Quality Conformity Regulations, and FHWA/FTA's Planning Regulations. The Transportation Improvement Program (TIP) will include a five-year program of projects. The TIP will be presented for endorsement by the Metropolitan Planning Organization (MPO) in accordance with federal regulations and the region's Public Participation Plan.

The recent success of the Cape Cod Bicycle Infrastructure Program has demonstrated that strategic use of small amount of the annual TIP regional allocation can have significant benefits to the region. Commission staff will begin to investigate the creations of another such program(s) to implement specific regional priorities, performance metrics, or goals. This will be accomplished by developing a draft framework including: 1) identification of a regional goal to accomplish or priority to address through the RTP 2) defining a budget, 3) identifying eligible project types, 4) setting project selection criteria, 5) selection of projects, 6) process evaluation. The program will likely address project types that have historically been challenging to program in the TIP potentially including, but not limited to:

- Small bicycle/pedestrian projects that improve the conditions and/or level accommodation
- Small bicycle/pedestrian projects that close gaps in the multi-modal network
- Small transit projects to improve connections to transit stops
- Technology updates for traffic signal
- Projects consistent with the "Climate Change Adaptation and Mitigation" funding share identified in the Cape Cod RTP.

Previous Work: "Cape Cod Transportation Improvement Programs (TIPs)," and amendments as needed, 1988 to present;

- Latest endorsed TIP FFY 2020-2024 (endorsed May 2019)
- FFY 2021-2025 TIP (endorsement expected May 2020)

Procedures:

To continue to participate in a committee of Regional Planning Agency (RPA) Directors, Federal and State officials to cooperatively develop financial estimates, evaluate projects, and create a schedule of TIP development.

TIP Development Process:

The Cape Cod Transportation Improvement Program (TIP) is a listing of federal aid eligible transportation projects for Cape Cod prepared under the direction of the Cape Cod Metropolitan Planning Organization (MPO). The plan is prepared by the Cape Cod Commission (CCC) transportation staff, the Cape Cod Regional Transit Authority (CCRTA) staff, Massachusetts Department of Transportation (MassDOT) staff (Boston and District 5), and the Cape Cod Joint Transportation Committee (CCJTC) with input from the public and in cooperation with multiple state and federal agencies.

The TIP is developed based on a vision defined in the Cape Cod Regional Transportation Plan (RTP) and includes the transportation projects proposed for implementation in the next five years. Each year of the TIP must be financially constrained; anticipated project costs cannot exceed available funding. The TIP must conform to a host of federal and state requirements and polices including air quality and equity programs.

The inclusion of a project in the TIP is one step on the path towards construction. Inclusion on this list does not guarantee funding; the project proponent is responsible for completing the steps toward implementation within the program. For a highway project, the obligation of the federal and state funds occurs when the project is advertised for construction by MassDOT. For a transit project, the obligation of the funding is through an electronic approval system by FTA.

Development Schedule

The Cape Cod MPO process follows an annual schedule for development of the Transportation Improvement Program (TIP) to be compatible with the development schedule of the State Transportation Improvement Program (STIP), as is required under 23 CFR 450.324. The STIP includes projects lists in the Cape Cod TIP, projects listed in the TIP from other planning regions, and projects that span multiple planning regions. The Cape Cod TIP is generally endorsed by the Cape Cod MPO each May with the STIP being submitted for federal approvals prior to the beginning of the Federal Fiscal Year on October 1.

Public Participation Process

Pursuant to Federal Highway Administration 23 CFR Part 450 and Federal Transit Administration 49 CFR, the Cape Cod Transportation Improvement Program (TIP) was developed locally and is based on the latest Regional Transportation Plan (RTP) following the process detailed in the Public Participation Plan (PPP).

Cape Cod Unified Planning Work Program for FFY2021

Products:

- TIP consistent with the State Implementation Plan and the Regional Transportation Plan
- Modifications/amendments to the TIP as required

Schedule: As determined by the MPO, FHWA, FTA, and MassDOT

- Presentations of potential new projects to the CCJTC/CCMPO [*Fall 2020*]
- Scoring of potential projects; development of potential program of projects [*Winter/Spring 2020-2021*]
- Release of public comment draft TIP [*April 2021*]
- Final draft TIP [*May 2021*]
- Administrative Adjustments/Amendments [*as needed*]

Beneficiary Communities: All

<u>Funding source</u>	<u>Amount</u>
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FHWA/MassDOT	\$43,750
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TASK 1.3 - CCJTC AND MPO ACTIVITIES

Objectives: To maintain an open comprehensive, cooperative and continuing (3C) transportation planning and programming process involving the local, regional, state, and federal levels of government in conformance with applicable federal and state requirements and guidelines. Address follow-up actions from FHWA/FTA MPO certification review received April 2018.

Previous Work: Past maintenance of 3C process, including support to the CCJTC, the MPO, and member agencies

Procedures:

1. Provide administrative and technical support to the 3C regional planning process, such as:
 - a. Community liaison and assistance on transportation planning matters
 - b. Review of federal and state transportation programs and related documents as required
2. Provide for and support the public participation process in transportation planning for Cape Cod

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- a. Support Cape Cod Joint Transportation Committee (CCJTC)
 - b. Develop, support and participate in local parking, traffic, bikeway, and environmental committee meetings
 - c. Preliminary and follow-up work for meetings as required
3. Present transportation plans and programs (e.g., UPWP, Regional Transportation Plan, and TIP) developed through the public participation process to the Cape Cod Joint Transportation Committee and the Metropolitan Planning Organization (MPO) for appropriate action
 4. Conduct efforts in conformance with federal, state and local requirements
 5. Review and address recommendations and corrective actions from most recent MPO recertification review

Products:

- Viable 3C process, including CCJTC and public outreach
- Website updates, notices to news media, meeting notices
- Transportation program annual report
- Minutes and reports on CCJTC meetings
- Letters, memoranda, and notes as required
- Other products as required

Schedule: Meetings typically held monthly

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$37,500

TASK 1.4 – TITLE VI/ENVIRONMENTAL JUSTICE

Objectives: To integrate Title VI nondiscrimination program requirements while also maintaining awareness and achievement of principles of Environmental Justice into the 3C Transportation Planning Process. To develop and maintain a Title VI Civil Rights program for the Cape Cod MPO. To incorporate Title VI nondiscrimination requirements while ensuring maintenance of Environmental Justice principles within each task as appropriate.

Cape Cod Unified Planning Work Program for FFY2021

Previous Work:

- Attendance at preliminary meetings with MassDOT and FHWA to discuss Title VI program requirements and receive guidance on ensuring compliance.
- Preparation of updates to the Cape Cod Regional Transportation Plan including information and strategies to ensure compliance with Title VI requirements while also ensuring maintenance of Environmental Justice principles.
- 2018 Title VI Report

Procedures: Coordination with the Cape Cod Regional Transit Authority and MassDOT, as required.

Products:

- Application of Title VI Civil Rights program for the Cape Cod MPO
- Updated demographic maps showing traditionally underserved and “at risk” populations.
- Update maps with housing affordability indicators and begin to develop a database of affordable housing developments.
- Begin to use Accessibility Observatory (AO) data provided by MassDOT to analyze accessibility to jobs on Cape Cod.
- Enhanced outreach procedures to engage Title VI communities and other underserved populations to ensure awareness and participation in the MassDOT 3C planning process on current and proposed projects.

Pre- and post-analysis of projected and ongoing improvement projects should ensure that no Title VI discrimination will/is occurring, while also considering and avoiding disproportionately high adverse human health and environmental effects on minority and low-income populations on Cape Cod.

Schedule: Ongoing procedures

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$25,000

TASK 1.5 – PUBLIC PARTICIPATION PLAN

Objectives: To ensure that all segments of the population are able to fully participate in transportation planning processes and has access to transportation facilities. To cooperate with stakeholders in the development of the Public Transit Human Services Transportation Plan. To engage the Mashpee Wampanoag Tribe in transportation planning.

Previous Work:

- Preparation of updates to the Cape Cod Regional Transportation Plan including information and strategies to ensure a viable public outreach process.
- Public Participation Plan (2015)
- Previous updates of the Public Participation Plan (PPP) (June 2007, Addendum in 2009)

Procedures:

- Coordination with the Cape Cod Regional Transit Authority and MassDOT, as required.
- Research/discover additional tools to enhance public outreach.
- Research best practices on virtual public meetings and virtual public engagement. Update the PPP as appropriate.
- If necessary, MPO staff will draft and present a revised PPP to the MPO for potential endorsement.

Products/Activities:

- UPWP projects with a public outreach requirement that comply with the PPP.
- TIP public meetings that comply with the outreach and accessibility requirements of the PPP.
- An evaluation of the effectiveness of the procedures outlined in the PPP will be performed and summarized in a presentation to the MPO.
- Revisions to the PPP, as necessary.

Schedule: Ongoing procedures

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
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FHWA/MassDOT	\$22,500
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TASK 1.6 – REGIONAL TRANSPORTATION PLAN

(Certification Activity)

Objectives: To maintain and update the Regional Transportation Plan for Cape Cod providing greater integration of land use, transportation, and climate change data, in conformance with the federal Fixing America's Surface Transportation (FAST) Act of 2015 and consistent with the goals and requirements of the Cape Cod Commission, towns, the MassDOT, FTA, and the FHWA. Consider all modes of transportation and both short- and long-range elements. Expand public accessibility to RTP effort in accordance with the Commission's Title VI program.

Previous Work:

- Cape Cod 2020 Regional Transportation Plan
- Regional Policy Plan for Cape Cod, 2018
- Interagency Scenario Planning Pilot Project, 2011
- Living Streets Design Manual for Cape Cod, 2013
- UPWP FFY14 Climate Change Risk and Vulnerability Assessment of Transportation Infrastructure, November 2013
- UPWP FFY15 Climate Change Mitigation & Adaptation Strategy for Critical Transportation Infrastructure, under development 2014
- INVEST sustainable highways self-evaluation tool, 2014
- 2014 Title VI Report and Public Participation Plan
- 2014 GIS-based Infrastructure Vulnerability Tool
- 2014 Freight Study
- 2014 "Section 208 Area-Wide Water Quality Management Plan for Cape Cod"

Procedures:

- Updates to the Regional Transportation Plan (RTP), as needed. As planning for Cape Cod Canal Area Improvements advances, specific changes to the RTP may be required.
- Work closely with MassDOT's Environmental Services section to ensure that any proposed projects have support and approval of MPO. Continue to develop partnerships and conduct outreach with community groups and the Mashpee Wampanoag Tribe.
- Continue to work with communities to identify Growth Incentive Zones and areas for higher Development of Regional Impact (DRI) thresholds designated through Chapter H of the Commission's regulations to promote research and development/light manufacturing and identify appropriate transportation infrastructure to support these areas.

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- Strengthen procedures to incorporate stormwater and nutrient management from transportation rights-of-way.
- Identify and map congestion corridors and bottlenecks based on a specific methodology for Cape Cod. Information gathered from RITIS will be used to inform the Congestion Management Process (CMP).
- Continue to integrate Performance Standards into the RTP.

Products:

- Updates and amendments as necessary (e.g., amendment to include Cape Cod Canal Area transportation recommendations)
- Presentation materials, maps, website downloads for meetings and workshops

Schedule: Ongoing

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$ 31,250

Task #2 – Data Collection and Analysis Activities

TASK 2.1 – CAPE COD TRAFFIC DATA COLLECTION PROGRAM

Objectives: To create and maintain databases of traffic counting data for Cape Cod to be used for transportation planning. To monitor growth in traffic volumes and to determine existing traffic volumes on Cape Cod roads. To perform the coverage counts for MassDOT. To perform bicycle and pedestrian activity counts in selected locations. To obtain data on road geometry, when necessary, as part of the traffic counting efforts. To monitor and display Park and Ride data on a regular basis to show trends and usage of the Park and Rides facilities on Cape Cod.

Note: It is a goal of the region to install permanent traffic counters to provide continuous reliable data on traffic volumes, vehicle types, and speed on all major roads. Permanent stations with remote access capabilities are the appropriate safe and cost-effective manner to collect data.

Previous Work:

Annual traffic counting programs, 1984–2019. Traffic counting reports and appendices (2018 versions most recently):

- Cape Cod Traffic Counting Report
- Intersection Turning Movement Counts
- Bicycle - Pedestrian Counts
- Park and Ride Lot Counts

Procedures:

For the summer of 2020, over 200 automated traffic recorder (ATR) counts will be scheduled across Cape Cod's 15 towns. The 2020 summer traffic counting season may be modified to comply with the current State of Emergency or other unforeseen circumstances. Additional counts, in coordination with or at the request of the towns and MassDOT, will be taken as schedule and weather permits. Where possible, FHWA traffic monitoring guide procedures will be followed. Police details, if required for the additional count locations, shall be the responsibility of the towns for local roads and MassDOT for state roads and locations requested by MassDOT. Turning movement counts will also be taken at selected intersections. Bicycle and pedestrian counts will also be performed on selected paths throughout Cape Cod.

Where possible, FHWA traffic monitoring guide procedures will be followed.

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Work activities under this task include:

- Placement of counters
- Retrieval of counters
- Routine checks of counters
- Equipment inventory and maintenance
- Data tabulation
- Data factoring
- Data analysis/recording
- Coordination of counters
- Coordination of safety measures with towns
- Coordination of external program counts
- Periodic calibration/verification of equipment per MassDOT guidelines
- Obtain necessary permits from towns and MassDOT
- Development of traffic count file and data base
- Data mapping
- Program evaluation
- Computer data entry and maintenance
- Updated geometric information, as needed. Gather information to include sidewalks, shoulders and bicycle lanes.

Products:

- Cape Cod Traffic Counting Report for 2020. Report will contain information on study design, count location, date/time of peak-hour volume, average daily traffic, and factored average daily traffic. The most recent 10 years of counts conducted by CCC will be included in this report.
- Online database that includes date of counts, general weather and traffic conditions average daily traffic, factored average daily traffic, peak hour traffic volume. Breakdown of traffic by hour over period studied kept on file. Information provided via a map-based search tool for ease of use by the public and other stakeholders.
- Factored counts for MassDOT
- Expanded seasonal traffic counting data
- Turning movement counts at intersections, including bicycle and pedestrian counts
- An analysis of traffic growth trends over the past 10-year period for Cape Cod, subregions and major routes
- Counts accessible at website:

<http://www.capecodcommission.org/counts>

Schedule: Report on counts taken in 2020 submitted winter 2021

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$56,250

TASK 2.2 – PERFORMANCE MEASURES

The FAST Act emphasizes performance-based planning as an integral part of the metropolitan planning process: states are to develop performance goals, guided by the national goals, and then MPOs will work with state departments of transportation to develop MPO performance targets. The TIP integrates the MPOs' performance measures and link transportation-investment decisions to progress toward achieving performance goals. The FAST Act identifies the following national goal areas:

- **Safety:** To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
- **Infrastructure condition:** To maintain the highway infrastructure asset system in a state of good repair
- **Congestion reduction:** To achieve a significant reduction in congestion on the National Highway System
- **System reliability:** To improve the efficiency of the surface transportation system
- **Freight movement and economic vitality:** To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
- **Environmental sustainability:** To enhance the performance of the transportation system while protecting and enhancing the natural environment, including mitigation strategies for stormwater management and nutrient loading.
- **Reduced project delivery delays:** To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

Cape Cod Regional Transportation Plan Goals:

Consistent with new federal legislation, the Cape Cod Regional Transportation Plan is built on a performance-based planning approach with a vision statement, goals, objectives, performance measures and targets, strategies, and policies.

The RTP vision statement established the overarching vision of the document and is as follows:

The Cape Cod Metropolitan Planning Organization, informed by public input, envisions a transportation system that supports the environmental and economic vitality of the region through infrastructure investment that focuses on livability, sustainability, equity, and preservation of the character that makes our special place special.

The 2020 Regional Transportation Plan (RTP) is a community-driven, performance-based plan that considers the unique challenges and opportunities of the region and establishes spending priorities to allocate available surface transportation funding towards transportation infrastructure. The goals of the RTP expand on the vision statement in seven areas of emphasis. The goals are:

- **Safety:** Provide safe travel options for all users
- **Environmental and Economic Vitality:** Maintain, protect, and enhance the natural environment while strengthening the economy
- **Livability and Sustainability:** Support livable communities and village centers that strengthen the long-term sustainability of the region
- **Multimodal Options/Healthy Transportation:** Provides a variety of healthy transportation options to all users
- **Congestion Reduction:** Reduce congestion and improve travel time reliability
- **System Preservation:** Preserve, maintain, and modernize the existing transportation system
- **Freight Mobility:** Improve efficiency and reliability of freight movement

Federally Required Performance Measure Summary:

The US Department of Transportation (USDOT), in consultation with states, MPOs, and other stakeholders, established measures in performance areas relevant to the national goals. Table 1 lists federally required performance measures for the highway system and Table 2 lists federally required performance measures for the transit system.

Table 1. Federally Required Highway Performance Measures

NATIONAL GOAL	HIGHWAY PERFORMANCE AREA	PERFORMANCE MEASURE
Safety	Injuries and Fatalities	<ul style="list-style-type: none"> • Number of fatalities • Fatality rate per 100 million vehicle-miles traveled • Number of serious injuries • Serious injury rate per 100 million vehicle-miles traveled • Number of non-motorized fatalities and non-motorized serious injuries
Infrastructure Condition	Pavement Condition	<ul style="list-style-type: none"> • Percent of pavements on the Interstate System in good condition • Percent of pavements on the Interstate System in poor condition • Percent of pavements on the non-Interstate NHS in good condition • Percent of pavements on the non-Interstate NHS in poor condition
Infrastructure Condition	Bridge Condition	<ul style="list-style-type: none"> • Percent of NHS bridges by deck area classified as in good condition • Percent of NHS bridges by deck area classified as in poor condition
System Reliability	Performance of the National Highway System	<ul style="list-style-type: none"> • Percent of person-miles traveled on the Interstate System that are reliable • Percent of person-miles traveled on the non-Interstate NHS that are reliable
System Reliability, Freight Movement, and Economic Vitality	Freight Movement on the Interstate System	<ul style="list-style-type: none"> • Truck Travel Time Reliability Index
Congestion Reduction	Traffic Congestion	<ul style="list-style-type: none"> • Annual hours of peak hour excessive delay per capita (for travel on NHS roadways) • Percent of non-single-occupant vehicle travel
Environmental Sustainability	On-Road Mobile Source Emissions	<ul style="list-style-type: none"> • Total emissions reductions

Table 2. Federally Required Transit Performance Measures

NATIONAL GOAL	TRANSIT PERFORMANCE AREA OR ASSET CATEGORY	PERFORMANCE MEASURE
Safety	Fatalities	Total number of reportable fatalities and rate per total vehicle revenue-miles by mode
Safety	Injuries	Total number of reportable injuries and rate per total vehicle revenue-miles by mode
Safety	Safety Events	Total number of reportable events and rate per total vehicle revenue-miles by mode
Safety	System Reliability	Mean distance between major mechanical failures by mode
Infrastructure Condition	Equipment	Percent of vehicles that have met or exceeded their Useful Life Benchmark (ULB)
Infrastructure Condition	Rolling Stock	Percent of revenue vehicles within a particular asset class that have met or exceeded their ULB
Infrastructure Condition	Infrastructure	Percent of track segments with performance restrictions
Infrastructure Condition	Facilities	Percent of facilities within an asset class rated below 3.0 on the Federal Transit Administration’s Transit Economic Requirements Model scale

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Targets for federally required performance measures must be set according to timelines established in the current federal transportation legislation. Regarding federally required performance measures, to date the Cape Cod MPO has chosen to adopt:

- The statewide safety performance measure targets set by MassDOT for Calendar Year (CY) 2020),
- the 2-year (2020) and 4-year (2022) statewide bridge and pavement performance measure targets set by MassDOT,
- the 2-year (2020) and 4-year (2022) statewide reliability, congestion, and emissions performance measure targets set by MassDOT, and the
- Cape Cod Regional Transit Authority's Transit Asset Management (TAM) targets at the target for the Cape Cod region.

Objectives: To work with MassDOT to support the above federal transportation goals at the state level. To work with MassDOT and the CCRTA on tracking progress on federally required performance measures and updating targets as required. Track performance on regional performance measures established in the Cape Cod Regional Transportation Plan. To integrate Performance Standards into the RTP, Regional Policy Plan (RPP) update and Cape Cod Commission's "OGSM" (Objectives, Goals, Strategies and Measures) initiative.

Previous Work:

- 2014 "Section 208 Area-Wide Water Quality Management Plan for Cape Cod"
- Development of transportation databases for travel times, vehicle counts, crash records
- Geo-located Cape Cod crash database for 2004–2013
- Online mapping of traffic counting data
- Transportation model developed in 1999/2000 for base year of 1997
- Transportation model updated in 2010

Procedures:

Collect, compile, and analyses data to support performance measure tracking. Update the Cape Cod Joint Transportation Committee and the Cape Cod Metropolitan Planning Organization on regional progress towards meeting performance targets. Develop an online dashboard to report on regional progress towards meeting performance targets. Integrate performance measures and targets into other planning efforts including the Cape Cod Commission's Regional Policy Plan, and Objectives, Strategies, Goals and Measures initiative.

Products: Summary report of Cape Cod transportation performance standards

Schedule: Ongoing

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$31,250

TASK 2.3 – TRANSPORTATION DATABASE MANAGEMENT/MODELING

Objectives: To maintain and improve databases of Cape Cod transportation information including roadway geometry, traffic volumes (motor vehicles, bicycles, pedestrian), and other. To provide transportation information for Cape Cod to local and state officials, transportation professionals, and the public. To perform highway capacity analyses as needed. To continue to develop and calibrate computerized travel demand forecasting databases and models for Cape Cod. To continue integration with Geographic Information System (GIS) data to provide a platform for GIS-based traffic counts, congested link summaries, and accident summaries.

Previous Work:

Draft VISSIM models for Harwich Center and Yarmouth Road/Willow Street (Barnstable)

- Geo-located Cape Cod crash database for 2004–2013
- Online mapping of traffic counting data

Procedures:

- Integrate new records when available; maintain database, develop subroutines for analysis. When details are needed for specific locations, town crash records may be obtained and reviewed. CCC staff will contact MassDOT to request latest crash records. Conduct public outreach to member communities. Respond to data and information requests from the public, transportation professionals, and local, regional, and state officials. Participate in analyses of and obtain latest Pictometry data and software.
- Review and utilize available socio-economic, employment, population, and housing data for base year and forecast year data. Utilize existing traffic volume and transit data to determine existing travel demands. Utilize existing transportation models for sub-regions of Cape Cod. Improve transfer methods of data between CCC Geographic Information System (GIS) services and

transportation modeling effort. Expand transportation demand model to include Saturday morning element and to explicitly include public transportation used. Additional modeling efforts include the use of Synchro/Sim-Traffic software. Construction of Synchro models includes development of a computerized roadway/intersection network. Inputs include turning movements and roadway link traffic volumes, roadway and intersection geometry, and signal timing and phasing.

Products:

- Crash, roadway geometry, roadway traffic volumes, intersection turning movements data, and Pictometry information database
- Reports, letters, and memoranda as required
- Updated regional transportation model based on latest available demographic information, reports of results, and summaries
- Models will be used to support Task 3 and other regional planning and TIP activities

Schedule: Ongoing

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$31,250

TASK 2.4 – PAVEMENT MANAGEMENT

Objectives: To collect data and implement a regional pavement management system for Cape Cod to provide an objective rating of pavement conditions and needs. To collect other roadway attribute data as part of the pavement management system.

Previous Work:

- Pavement Management Status Reports (2011 - 2019). 2021 data collection includes approximately 200 “point” assessments collected during installation of automatic traffic recorder installation – outputs include updated databases and mapping. Corridor-based pavement assessments for 33% of the municipally-owned federal-aid roadway network – outputs include updated databases and mapping.
- Reviews of town-based pavement management efforts.

Procedures:

- Existing roadway conditions will be identified through observations made from motor vehicles. Approximately 33% of the municipally owned federal-aid eligible roadways will be surveyed and results will be used to update databases and produce pavement condition maps and reports. Approximately 200 point-assessments of pavement condition will be made as part of the installation of automatic traffic recorders – results inputted into a database and used to generate maps and reports. Additional information may be provided by individual towns; some towns maintain pavement management databases. Existing data will be requested from individual towns. The proposed pavement rating system will be determined in coordination with the towns and MassDOT based on the Office of Transportation Planning research task on pavement management.

Products: Assessment of pavement management needs and inventory of other roadway attributes such as sidewalk availability and serviceability.

Schedule:

January-March 2021- Evaluation of existing data, coordination with communities, review of methodologies.

March-April 2021- Schedule & coordination of data collection

May-August 2021- Data Collection

September 2021- Status Report

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$ 37,500

TASK 2.5 – HEALTHY TRANSPORTATION

Background: The goal of this task is to support the MassDOT Complete Streets and Safe Routes to School programs. Two Cape Cod towns have had Complete Streets prioritization plans approved to date, Sandwich and Eastham, while only Harwich has been approved for a Safe Routes to School project. The Cape Cod Commission works closely with the towns and these programs to ensure Cape Cod towns are competitive for available funds.

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Objectives:

To assist towns with applying for Complete Streets and Safe Routes to School funding.

Procedures:

Provide assistance to municipalities that have not yet registered to be a part of the Complete Street program. Commission staff expect to engage with the communities of Bourne, Brewster, and Falmouth. Continuing to support the existing prioritization plans of Sandwich and Eastham. Assisting the Town of Orleans with a Complete Streets prioritization plan. Coordinating with towns to retrieve MAPIT credentials and assisting them with Project Information Forms and Project Need Forms to secure Safe Routes to School projects.

Previous Studies/Work:

- Eastham Complete Streets Prioritization Plan
- Bicycle/Pedestrian LOS Study
- Town centers bicycle and pedestrian connections study
- Pedestrian and Bicycling sections of Regional Transportation Plan
- 2012 bicycle route/transit route connectivity report
- Technical support for town-based bicycle routing
- Harwich Bike Planning 2010
- Cape Cod National Seashore Integrated Bicycle Plan, 2010
- Outer Cape Bicycle and Pedestrian Master Plan
- Falmouth Bicycle Plan

Products: Draft and final reports

Schedule: October 2019 to September 2020

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$33,750

TASK 2.6 – GEOGRAPHIC INFORMATION SYSTEM

Objectives: To maintain and improve the Geographic Information System for Cape Cod to provide an analysis tool for transportation decision-making.

Ongoing Work:

- Integration of Massachusetts DOT Roadway Inventory Files
- Development of geographic land use information for transportation planning

Procedures: Importing of transportation-related geographic information from state, federal, local and other sources into Cape Cod's Geographic Information System; editing as needed; provide database, digital, and graphic outputs of geographic information as required.

Products: Digital files for input into specialized transportation analyses; graphic output of maps (paper, .jpg, .pdf as required).

Schedule: Ongoing

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$ 37,500

Task #3 – Short- and Long-range Transportation Planning

The Cape Cod MPO includes a close partnership between member agencies and the Cape Cod Regional Transit Authority. Many of the planning strategies resulting from Task 3 efforts will capitalize on the services that the Cape Cod RTA has to offer.

Livability Statement

Livability refers to the social and environmental quality of an area as perceived by residents, workers, and visitors. The U.S. Department of Transportation considers the principle of Livability to be essential to the success of regional transportation planning. Livability directly benefits people who live in, work in or visit Cape Cod, increases property values and business activity, and it can improve public health and safety. Livability is largely affected by conditions in our public spaces, places where people naturally interact with each other and their community, including roads, conservation lands, transportation hubs and other public facilities, and so is affected by public policy and planning decisions.

Transportation decisions can have a major impact on Livability. Streetscapes that are attractive, safe and suitable for a variety of transportation modes (particularly walking) are a key factor in Livability. Traffic safety, traffic noise and local air pollution, affordability, impervious surface coverage (i.e., the portion of land devoted to roads and parking), preservation of environmental and cultural structures, and opportunities for recreation are all Livability factors often affected by transportation policies and practices. Transportation decisions can also affect social interactions and community cohesion. Pedestrian-friendly streets create opportunities for people to meet and interact, helping to create community networks. The MPO continues to support Livability through the following planning tasks in this UPWP.

TASK 3.1 – ROUTE 28 EAST HYANNIS CORRIDOR STUDY

Background

Route 28 on Cape Cod is a major regional transportation route that runs from Bourne to Orleans, connecting many village centers and providing the main transportation route on the southern side of Cape Cod. The portion of Route 28 being examined in this study stretches from the intersection of Yarmouth Road in Barnstable to the intersection of East Main Street in Yarmouth. The intersection of Route 28 and Yarmouth Road was programmed for reconstruction in the 2019 and 2020 Transportation Improvement Program (TIP) and construction should be commencing in the coming years. In addition, a segment of Route 28 in Yarmouth from East Main Street to the Parkers River bridge is programmed as a future TIP resurfacing project for 2023. This project includes resurfacing Route 28 and upgrading sidewalks, wheelchair ramps, and driveway aprons as well as providing bicycle accommodations throughout the corridor. Linking these two important projects by studying the half mile that separates them is important to both towns and the Cape as whole.

Congestion is a noted issue in the corridor, especially during the peak summer season. This section of Route 28 leads into Hyannis where access to Cape Cod Hospital, the Cape Cod Regional Transit Authority, Steamship Authority and Hy-Line Cruises, and Barnstable Municipal Airport are critical. Another concern is the signalized intersection of Route 28 and East Main Street. The Route 28 East Hyannis Corridor Study will examine potential geometric and intersection improvements for this intersection. Also, of key concern is accommodation for all road users including motorists, pedestrians, bicyclists, and transit users. This is a heavily used corridor for non-motorized users looking to access their jobs, retail destinations, and public transportation from their neighborhoods.

Description of Services

The Cape Cod Commission, under the Unified Planning Work Program, will conduct a transportation planning study for the study area with the following study goal: Develop alternatives that will provide safe and convenient access within the study area for all users of the roadway system including pedestrians, bicyclists, and motorists.

Project Limits

The study area consists of Route 28 from Yarmouth Road (Barnstable) in the west to East Main Street (Yarmouth) in the east.



Figure 1 –East Hyannis Route 28 study area

Task A: Project Initiation

Commission staff will gather past studies and develop a plan for analysis of the study area. This task will include meeting with Commission staff and a consultation meeting with Town of Barnstable and Yarmouth staff and MassDOT District 5. Commission staff will also consult with Cape Cod Regional Transit Authority staff.

Product: Final Scope of Work and Public Participation Plan and kickoff meeting summary

Task B: Data Collection/Mapping

Commission staff will gather data including crash locations, roadway geometry, traffic volumes, pedestrian/bicycle connections and land use information. At a minimum, traffic volume data will be collected at multiple locations along Route 28 and approaching roadways.

Commission staff will visit the study area to evaluate and photograph conditions. Town staffs will be invited to attend the site visit.

Task C: Public Informational Meeting

Commission staff will prepare for and host a public informational meeting in or near the study area where opportunities and constraints along the corridor will be identified. The meeting will include a brief presentation including information gathered as part of the first two tasks and focus on input from the stakeholders in attendance at the meeting.

The Commission staff will provide meeting materials, including sign-in sheets, and comment forms. Cape Cod Commission staff representatives at the meeting will include

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at least two key personnel knowledgeable of the project. The Town of Barnstable will secure the locations, dates, times, and advertising for the meetings in coordination with the Town of Yarmouth.

Product: Summary of Listening Session and Public Comments

Task E: Concept Development and Refinement

Information collected during the previous task will be reviewed with Town of Barnstable staff, the Town of Yarmouth staff and Cape Cod RTA staff and preliminary concepts will be developed. Conceptual design plans will illustrate options for corridor improvements with a minimum of 3 alternatives. One of these alternatives will be the “no-build” scenario and will form the basis of comparison for any of the “build” alternatives.

Product: Preliminary Concepts and Summary of Feedback

Task F: Public Review of Concepts

After review of the preliminary concepts by Commission, MassDOT District 5, Town and CCRTA staff, the preliminary concepts will be presented at a public meeting. Feedback on the preliminary concepts will be used to refine those concepts.

Product: Summary of Public Meeting

Task G: Draft and Final Report

Concepts will be refined based on public comments and feedback from Town, MassDOT District 5, CCRTA, and Commission staff.

Refined concepts will be prepared as part of a draft report. The draft report will also include an analysis of each alternative’s impact on traffic flow and safety.

All the information and comments received will be compiled into a final report document and delivered to MassDOT, the Towns of Barnstable and Yarmouth, and the Cape Cod RTA.

Schedule:

The schedule for this effort allows for completion by October 2021. Milestones include coordination meetings with the Cape Cod Joint Transportation Committee and updates to the Cape Cod Metropolitan Planning Organization.

- Needed data collection (FY 2020) – Summer of 2020
- Review of methodology/project initiation: November 2020
- Public meeting with Stakeholders: Winter 2021

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- Problem identification and development of alternatives – review with CCJTC: Spring 2021
- Analysis of Alternatives – review with CCJTC: Summer 2021
- Draft report/public meeting: Summer 2021
- Final report: Fall 2021

Beneficiary Community: Barnstable and Yarmouth

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$68,750

TASK 3.2 – TRANSPORTATION SAFETY

Objectives:

To conduct and assist with Roadway Safety Audits (RSAs) at MassDOT identified high crash locations across Cape Cod, as well as assisting municipalities with any other small technical assistance needs that arise.

Previous Work:

Roadway Safety Audits

Barnstable Road Safety Audits

- Route 6A at Mary Dunn Road/Indian Trail (2019)
- Iyannough Road (Route 132) at Cape Cod Community College/Cape Cod Conservatory Intersection (2014)
- Route 28 at Osterville-West Barnstable Road (2012)
- Iyannough Road (Route 28) at Yarmouth Road (2012)
- Meetinghouse Way (Route 149)/Route 6 Ramps (2010)
- Route 28 (Falmouth Road)/Bearses Way (2009)
- Route 28 in Barnstable – Lane Departure Safety Audit (2007)

Bourne Roadway Safety Audits

- Route 28 between Bourne Rotary and Otis Rotary (2013)
- Sandwich Road at Cranberry Highway (2012)

Dennis Roadway Safety Audit

- Route 134 at the Route 6 Ramps (2009)

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Eastham Roadway Safety Audit

- Route 6 and Governor Prence Road (2012)
- Route 6 and Vandale Ave. and Orleans/Eastham Rotary (2019)

Mashpee Roadway Safety Audits

- Mashpee Rotary (2019)
- Nathan Ellis Highway (Route 151) at Jobs Fishing Road, Algonquin Ave and Ninigret Ave (2018)
- Nathan Ellis Highway (Route 151) at Old Barnstable Road Intersection (2014)
- Great Neck Road North/Old Barnstable Road (2009)
- Route 130 Lane Departure Road Safety Audit (2007)

Sandwich Road Safety Audits

- Cotuit Road/Harlow Road/South Sandwich Road (2009)
- Route 6: Major Highway Median Cross-Over Crashes (2009)

Yarmouth Road Safety Audits

- Yarmouth Route 28 between Iyannough Road and Parkers River Bridges (2020)
- Route 6A – Willow Street to Union Street (2013)
- Old Townhouse Road/Forest Road (2010)

Location-Specific Safety Studies

Wellfleet: Route 6 Safety Study (2012)

Route 6 at Main Street

- Route 6 at LeCount Hollow Road
- Route 6 at Cove Road
- Route 6 Merge Area near Eastham Town Line

Analysis of High Crash Locations in Dennisport (2012)

- Upper County Road at Depot Street
- Main Street (Route 28) at Sea Street
- Main Street (Route 28) at Depot Street

Safety Study (2009)

- Route 6 at the Truro Central School
- Orleans/Eastham Rotary
- Route 6 at Shank Painter Road in Provincetown

Transportation Safety Report (2008)

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- Eastham: Route 6 at Brackett Road
- Sandwich: Route 6 at Route 130 (Exit 2) (Westbound and Eastbound Ramps)

Transportation Safety Report (2006)

- Bourne: Route 28 at Otis Rotary
- Harwich: Route 137 at Route 39
- Orleans: Route 6A at Route 28

Route 28 Safety & Traffic Flow Study: Chatham, Harwich, Dennis, Yarmouth (2006)

Route 6 Safety & Traffic Flow Study: Eastham, Wellfleet, Truro, Provincetown (2004)

The 2019 Barnstable County High Crash Locations Report (top fifty crash location report) provided analysis based on frequency, crash rate, Equivalent Property-Damage Only (EPDO), and EPDO rate using geo-located crash data to the extent available. Creation of the report also included a interactive portal, Cape Cod Crash Dashboard, which will help identify high crash intersections across Cape Cod and help inform future Roadway Safety Audits.

Procedures:

With town and state staff members present RSAs will be conducted. A review of the crash history as well as the existing layout of the study area will be conducted. RSA team members will visit the roadway locations and strategize solutions for making the roadway safer for all users.

Products:

Recommendations will be published in a written report to be made available online. Other study materials will be produced and made available via internet including maps and charts, handouts and crash diagrams.

Reports and memoranda published to include analyses and recommendations for improvements at other safety problem locations as appropriate.

Commission staff will also update the Cape Cod Crash Dashboard with the most recent available crash data and rank the top 50 crash locations on Cape Cod accordingly.

Schedule: Ongoing throughout the year

Beneficiary Communities: All communities

<u>Funding source</u>	<u>Amount</u>
FHWA/MassDOT	\$42,500

TASK 3.3 – RAIL TRAIL CROSSING & TRAFFIC SIGNAL INVENTORIES

Background

To identify locations with special safety and operational needs an inventory of all rail trail crossings and signalized intersections will be taken. Staff will visit all at-grade rail trail crossings and take an inventory of existing roadway and trail features, with an emphasis on safety-related elements. Staff will create recommendations for every at-grade rail trail crossing given the information discovered as part of the site visits.

The traffic signal inventory will follow a similar style, as staff will visit signalized intersections across Cape Cod and inventory the existing amenities at each intersection (pedestrian facilities, CCRTA routes, etc.). Recommended improvements for signalized intersections may include transit and emergency vehicle priority, signal timing and phasing, pedestrian signals or crossings, etc.

The goal of the inventories is to provide recommendations that will improve safety for all users as well as improving functionality of the intersections.

As part of this Cape-wide project, the Commission will begin the discussion of regional asset management with all Cape towns.

Task 1: Project Initiation

The Cape Cod Commission staff will produce data collection sheets for surveyors. The data collection sheets will provide a checklist of information for surveyors to collect at both rail trail crossings and traffic signals. All final data collection sheets will be incorporated into the final report and fuel the recommendations.

The Cape Cod Commission staff will gather information from outside agencies regarding any previous rail trail crossing or traffic signal inventories.

Deliverables:

Data collection field sheets for surveyors

Task 2: Collect and Analyze Existing Data, Plans, and Proposals

The Cape Cod Commission staff will inventory all at-grade rail trail crossings and all traffic signals on Cape Cod.

Description of existing facilities and assessment of conditions including:

- Safety features
- Crash history

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- CCRTA routes
- Pavement and markings conditions
- Traffic/user volumes

Deliverables:

Inventory sheets for all at-grade rail trail crossings and signalized intersections on Cape Cod.

Task 3: Recommendations Development

Using the data and analysis generated in previous tasks, the Cape Cod Commission staff will develop recommendations to improve existing conditions to achieve the goals of this study outlined above. The Cape Cod Commission staff will complete the following tasks as part of the alternative's development process:

Prioritize safety for all users while understanding the need for improving the flow of traffic where applicable.

Rail Trail Crossing Inventory:

- Identify crossings where improved signage and pavement markings is critical
- Identify crossings where ADA/AAB compliance is not currently met
- Identify crossings where Rectangular Rapid Flashing Beacons (RRFBs) would provide safety benefits

Traffic Signal Inventory:

- Identify intersections where transit and emergency vehicle priority are key
- Identify what pedestrian facilities are needed to improve each intersection, given the demand
- Identify safety elements that could reduce crashes at or near the intersection

Deliverables:

Mapping and recommendations for all at-grade rail trail crossings and signalized intersections on Cape Cod.

Task 4: Dashboard Development

The Cape Cod Commission will build GIS-based dashboards with inventoried information from all at-grade rail trail crossings and traffic signals. Available information will be all information that is collected as part of the surveying process of the study. MassDOT, Towns, and the public will have access to the dashboards and all available information.

Deliverables:

Rail trail crossing dashboard and traffic signal dashboard on the Cape Cod Commission website.

Schedule: October 2020 to September 2021

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$46,875

TASK 3.4 – MANAGED RETREAT BEST PRACTICES

Background:

The Cape Cod shoreline is highly vulnerable to multiple hazards; erosion, coastal storm flooding, and sea level rise. Flooding is currently a regular event on several road segments around the Cape during extreme high tides, and many more segments are flooded during storm events. Communities are beginning to closely examine vulnerable roadway segments and consider their options, including in some cases, abandonment of that road segment. Also known as “managed retreat,” the abandonment of roads poses many challenges for neighborhoods and communities.

Objectives:

Commission staff will research and examine best management practices for managing retreat from vulnerable sections of coastline. This study will include identifying best practices for communicating risks and options to the neighborhood and community, and options for elevating, moving, or removing and restoring roadway segments that are identified as threatened or vulnerable to flooding or erosion.

Commission staff will review and incorporate findings from the Resilient Transportation Projects viewer into the transportation planning process. Staff will also use the Cape Cod Sea Level Rise Viewer to analyze low-lying roads and better identify vulnerable road segments.

Previous Work:

- Resilient Cape Cod Project (NOAA RCRG funded project), Stakeholder Process, Outreach Resource Development and Decision-Support Tool Development, 2016-2018

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- Local Hazard Mitigation Plan Development for Provincetown, Truro, Wellfleet, Chatham, Harwich, Yarmouth, Mashpee, Sandwich and Bourne, 2014-2017
- Public Engagement tools developed in FFY15 for UPWP 3.4
- UPWP FFY14 Critical Transportation Assets and their Vulnerability to Sea Level Rise, March 2015
- GIS-Based Sea Level Rise Viewer, April 2014
- UPWP FFY13 Climate Change Risk and Vulnerability Assessment of Transportation Infrastructure, November 2013
- Interagency Scenario Planning Project, 2011
- Regional Multi-Hazard Mitigation Plan, 2010

Procedures:

Research best practices for communicating risk. Methods may include changing messaging over time, different forms of communication including graphical, narrative, multi-media, language choices, and how to communicate with and involve varied stakeholders/populations.

Research methods for managing retreat from vulnerable shorelines and road segments. Methods may include potential means for addressing a road segment vulnerable to flooding or erosion, ranging from traditional engineered solutions to nature-based solutions.

Analyze low-lying roads and known problem areas utilizing available GIS tools. Examine road segments vulnerable to flooding within the next 20 years based on current projections for sea level rise (~1 ft). Prepare inventory of vulnerable road segments across Cape Cod.

Products:

- Report on methods for communicating risk to stakeholders
- Report and/or web-based tool to illustrate options for addressing low-lying roads
- Inventory of near-term threatened road segments

Schedule: October 2020 to September 2021

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$37,500

TASK 3.5 – FOLLOW-UP ON PREVIOUS TRANSPORTATION PLANNING STUDIES

During development of particular UPWP studies, unforeseen external factors may cause delay of completion within a particular fiscal year. The most common cause of delay is the need for additional public outreach or an expanded scope due to discovery of factors such as environmental constraints. In some cases, projects are delayed due to the need for additional review by outside agencies. Even upon study completion, additional staff time may be required as a project moves into the design and TIP funding phases.

Objectives:

To allow for completion of and/or follow-up work on special transportation studies of prior UPWPs.

Procedures:

- Incorporate additional public review into UPWP study, produce draft and final reports
- Participate in study implementation efforts in concert with state and local agencies

Products:

- Previous UPWP tasks as needed

Schedule: As needed.

Beneficiary Communities: Towns containing follow-up studies

<u>Funding source</u>	<u>Amount</u>
FHWA/MassDOT	\$28,750

Task #4 – Technical Assistance Activities

TASK 4.1 – TRANSIT PLANNING

Objective: To provide transit planning and technical assistance services in coordination with the Cape Cod Regional Transit Authority and Cape Cod towns receiving transit service from the CCRTA or other transit organizations. Objectives include identifying unmet needs of the transit community and keeping the Cape's transit system in compliance with federal, state and local policy and legislation.

General Procedures:

Specific tasks identified by the Cape Cod Commission, CCRTA and Cape Cod Towns that may be included under this task are listed as follows:

- Evaluate and develop proposed transit services
- Integrate transit planning into corridor studies
- Evaluate existing routes for demographic coverage as presented in the Comprehensive Service Assessment
- Provide guidance on regulatory compliance with Title VI, Environmental Justice and other federal or local requirements
- Assist in making digital and paper maps or schedules
- Assist in coordinating marketing and outreach efforts
- Identify solutions to meet transit workforce gaps
- Identify funding for access to bus stops as identified in Eliminating Transit Barriers and Closing the Gaps Report
- Assist in Transit Oriented Development planning of the Hyannis Transportation Center
- Coordinate commuter rail feeder service from Bourne to existing MBTA commuter rail in Middleborough
- Identify regional impacts and demand of commuter and intercity bus travel
- Evaluate seasonal transit travel demand to and throughout cape cod
- Identify work trips that could be captured by transit
- Create GIS transit applications for use by planning staff and riders
- Analyze performance of transit operators
- Conduct surveys and outreach efforts
- Identify destination of passengers
- Support CCRTA travel training program
- Identify ways to optimize demand response services

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Level of effort

Coordination will be facilitated by regular meetings with CCRTA staff to discuss ongoing transit studies and inclusion of transit in Cape Cod Commission corridor studies. Projects may be reviewed and assisted by consultants in coordination with CCRTA staff.

Proposed Products

A report, map or memo may be drafted and released as a public document. Public outreach will be performed under the guidance of the Cape Cod Commission Public Participation Plan and in coordination with CCRTA staff.

Evaluation of CCRTA transit routes; letters and memoranda as required; continued identification and development of congestion and intermodal management strategies; updated and expanded website of transportation information, reports and memoranda as required. Several possible products include:

- Traveler information via Internet
- Promotion of transportation alternatives
- ITS plans for Cape Cod Canal Area, including real-time traveler information
- ITS plans for Hyannis area
- Summary reports of updates to CMS database
- Technical memoranda reporting analyses of travel patterns and traffic condition prediction methodology
- ITS coordination with other regions
- Updated "Coordinated Human Service Transportation Plan for the Barnstable Urbanized Area"
- Assessment of effect of the recently implemented MassDOT Route 6 ITS project on Freight Operators

Previous Products:

Previous transit planning has been performed under specific tasks included in corridor and other regional transportation studies. Project specific to transit performed by the Cape Cod Commission are listed but not limited to as follows;

- 2020 Coordinated Public Transit – Human Service Transportation Plan (under development) - Draft prepared in FFY 2020, may be adopted in 2020 or 2021 pending presentation to MPO
- 2016 Eliminating Transit Barriers
- 2015 Comprehensive Service Assessment
- 2015 Buzzards Bay Commuter Rail Local Impacts Report
- 2014 Coordinated Public Transit – Human Service Transportation Plan
- 2013 Closing the Gaps

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$ 56,250

TASK 4.2 – SUPPORT FOR PASSENGER RAIL SERVICE

Objective: To support planning and introduction of commuter rail feeder service to Bourne connecting to MBTA commuter rail in coordination with the MBTA, MassDOT, Town of Bourne and CCRTA. This task includes identifying the needs of the commuter community and feasibility of extending commuter rail from Middleborough, 18 miles along existing track. Previous studies summarized reports and analyzed impacts to local intersections considering the introduction of commuter rail to Buzzards Bay under assumptions provided in previous documents.

Products:

Products may include memorandums that update the public and planners on the progress of commuter rail including summarizing ongoing studies, design efforts or funding allocations.

Beneficiary Community: Bourne

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$13,125

TASK 4.3 – TRANSIT DATA COLLECTION AND ANALYSIS

Objective:

Working with the CCRTA, the goal is to collect and map data on bus stops, routes, and ridership for all CCRTA routes. Consideration and inclusion of the MassDOT engineering directives and design guidelines and Transit Asset Management (TAM) plans will be explored.

Procedures:

Commission staff, along with the assistance of the RTA, Steamship Authority (SSA) and Hy-Line Cruises, will conduct ridership surveys on SSA and Hy-Line vessels from Hyannis to Nantucket to understand the percentage of commuters using these ferry

services. Surveys will be collected on random representative days throughout the year and all passengers on all ferries will be surveyed the day a survey is being conducted. All data will be presented to the Federal Transit Authority (FTA).

Products:

GIS application that shows the ridership, stop amenities and other regional datasets as requested by the CCRTA. The product will be used to identify gaps in the pedestrian network and high ridership stops that do not contain amenities consistent with the transit stop buildout.

A database of all data collected on SSA and Hy-Line ferries and a memo to be prepared for FTA documenting the percentage of commuters on all ferries.

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$38,565

TASK 4.4 – OTHER TECHNICAL ASSISTANCE REQUESTS

Objectives: To provide the state, the towns, and the region with technical transportation assistance, as needed.

Previous Work:

- Hyannis Parking Study, 2013
- Preparation of signal warrant analyses, review of local transportation improvement alternatives, preparation of local safety studies
- Wellfleet Fire Station access/egress recommendations, 2007
- West Chatham Route 28 Improvements, 2008
- Traffic Calming Techniques identified for local roads in Truro (2011)

Procedures:

Assist towns with infrastructure improvements including pedestrian, bicycle, transit rider shelter locations, roadway reconfigurations, corridor studies, etc. Potential locations include Route 28/Bearses Way in Barnstable (capacity and safety improvements), Shank Painter Road in Provincetown (corridor improvements), and Route 28 in Harwich (pedestrian, bicycle and transit improvements).

Products: Letters, reports, memoranda, and analyses

Schedule: Continuous throughout the year

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Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$ 25,709

Task #5 – Cape Cod Commission Transportation Planning and Regulatory Activities

TASK 5.1 – REGULATORY

Objectives:

The primary purpose of the CCC regulatory program is mitigation of transportation impacts in a manner that is consistent with Barnstable County's Regional Policy Plan. To ensure proper review and analysis of traffic impacts of major residential and commercial developments throughout the region. To provide such information to the CCC, MassDOT, EOEA-MEPA Unit, town officials, and other interested parties, as required. To recommend mitigation measures and work with interested parties in applying conditions to projects. To assist the Cape Cod Commission regulatory staff in the review of developments of regional impact. To assist the MassDOT/Public Private Development Unit (MassDOT - PPDU) in the implementation of mitigation strategies. Review and comment on Environmental Notification Forms (ENFs), Environmental Impact Reports (EIRs), and Developments of Regional Impact (DRI).

Previous Work:

Previous work includes analysis, review, and comment on ENFs, EIRs, and Cape Cod Commission regulatory review.

Procedures:

- Review ENF, EIR, EIS, MIS and/or traffic analyses
- Compute trip generation estimates
- Review traffic counts on adjacent street network; conduct special traffic counts
- Perform preliminary site visit
- Compute LOS at site drive and area intersections, as necessary
- Attend MEPA site visit, if applicable
- Discuss project with interested parties
- Identification of appropriate mitigation measures
- Review mitigation measures for compliance and consistency with the Regional Policy Plan
- Written and oral comments and testimony to the Cape Cod Commission, MassDOT District 5, MEPA, the towns, and other interested organizations as required
- Coordinate mitigation with MassDOT-PPDU

Products:

- Discussions with MEPA, MassDOT, project proponents, and town officials – provide written comments

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- Testimony at DRI and other meetings as required
- Advancement of measures to mitigate traffic impacts
- Analysis and recommendation on transportation improvements necessary to mitigate impacts

Schedule: As required to meet CCC, MEPA, MassDOT, and local deadlines

Beneficiary Communities: All

Support of this effort will be provided by the CCC. Below is the funding/staffing breakdown:

<u>Funding Source</u>	<u>Amount</u>
CCC	\$ 37,543

TASK 5.2 – PLANNING

Objectives: To assist communities and the region in the development and implementation of Local Comprehensive Plans (LCPs), Districts of Critical Planning Concern (DCPCs), and economic development in designated growth centers.

Previous work:

- Regional Policy Plan updates
- Past assistance in the development of LCPs in various Cape Cod towns

Procedures: Advisory and analytical assistance

Products: Testimony, letters, LCPs, DCPCs, and Technical Memoranda as required

Schedule: As established by the Cape Cod Commission and the Towns and legislated requirements

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
CCC	\$ 48,511

TASK 5.3 – OTHER TRANSPORTATION ACTIVITIES

Objectives: To perform other transportation activities and transportation program management.

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Previous Work: Past transportation program management

Procedures:

- Commission staff will assist towns in local transportation planning efforts including intersection safety analysis, trip generation calculations for small scale development, and TIP guidance.
- Commission staff will evaluate the impact of TIP project requirements relative to community character and environmental impacts
- Commission staff will also direct town in the appropriate MassDOT official/MassDOT department to address local concerns.

Products: Viable transportation planning program. Technical memoranda, email responses, telephone responses to member communities and stakeholders.

Schedule: Continuous throughout the year

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
CCC	\$ 64,869

Distribution of UPWP Efforts

Equity Analysis by Community

The table below identifies the affected communities by UPWP efforts included in UPWPs for the past five years as well as this current UPWP. Individual UPWP subtasks may affect one or more towns or in some cases all fifteen communities of Barnstable County. The map on the following page shows the affected the locations of these studies within Barnstable County.

Table 3 - Geographic Distribution of UPWP Efforts

Town	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2016-21
Barnstable	3	3	2	1	2	1	12
Bourne	3	2	2	1	2	0	10
Brewster	1	1	1	0	0	0	3
Chatham	0	1	0	1	0	0	2
Dennis	1	2	1	0	2	0	6
Eastham	0	1	1	0	0	0	2
Falmouth	1	1	0	0	0	0	2
Harwich	1	2	1	0	0	0	4
Mashpee	0	1	0	1	0	0	2
Orleans	1	1	1	0	1	0	4
Provincetown	2	0	1	0	0	0	3
Sandwich	1	1	2	1	0	0	5
Truro	1	0	1	0	0	0	2
Wellfleet	1	1	0	0	0	0	2
Yarmouth	1	2	1	0	0	1	5
<i>All Towns</i>	<i>21</i>	<i>23</i>	<i>18</i>	<i>19</i>	<i>22</i>	<i>23</i>	<i>126</i>

The regional nature of many of the UPWP efforts encompass all fifteen communities at an average of over twenty studies per year. The table above cites regional (“All Towns”) and the smaller-scale efforts for the individual towns or groups of towns (e.g., an Outer Cape study may be counted in two or more Outer Cape towns).

These efforts are tailored to problem identification and are scaled accordingly. For example, a single effort in Barnstable (e.g., Hyannis Access Study Implementation) may lead to a \$50 million-dollar transportation improvement while three studies in a smaller community may reflect small-scale intersection improvements costing much less.

Equity Analysis by Impacted Population

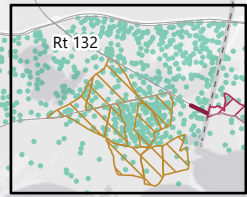
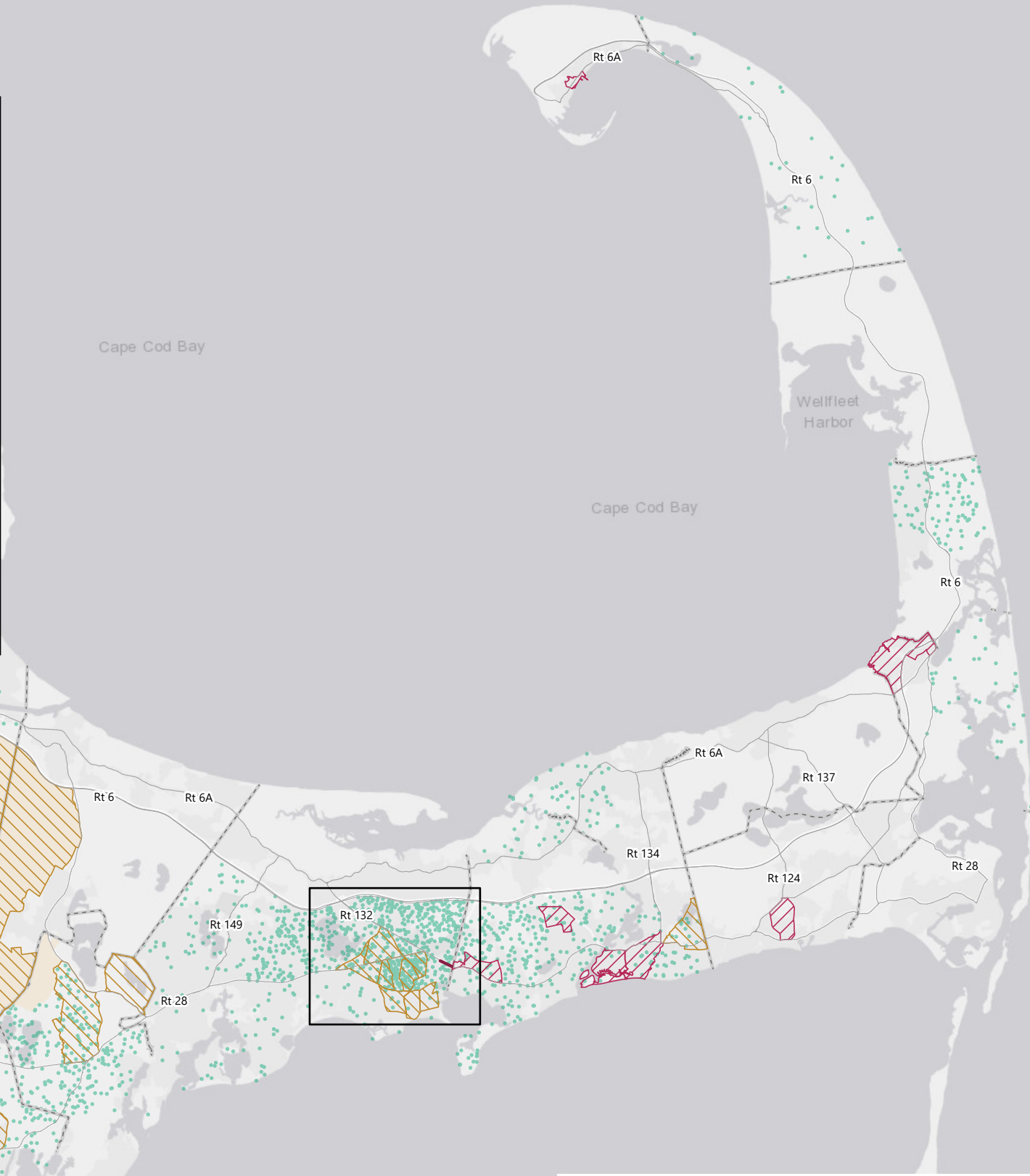
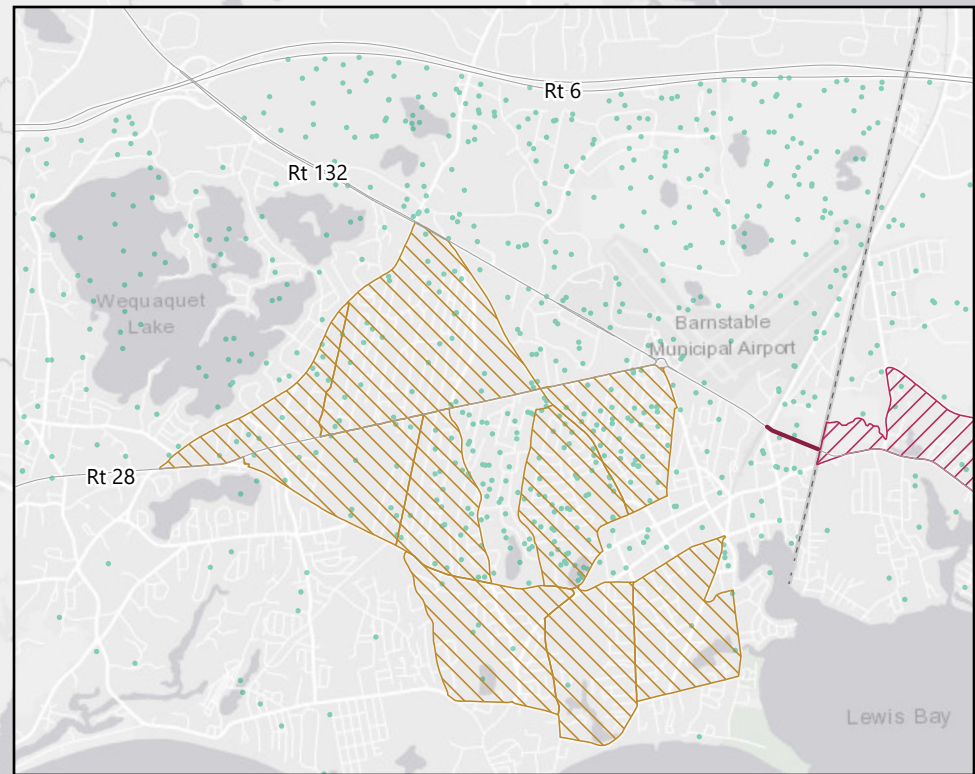
An equity analysis of UPWP subtasks was conducted with respect to anticipated impacts on minority, low income, and limited English proficiency populations over the last five years and the current year. The maps at the end of this Appendix show the locations of projects in relation to identified concentrations of these populations both for the current UPWP and the five-year look back.

The only geographically specific study in 2021 is the Route 28 East Hyannis Corridor Study. This study will positively benefit all impacted populations as noted above. In the figure below, all geographically specific UPWP studies are outlined to identify the impacted populations they benefit. The majority of geographically specific locations do benefit these impacted locations. These estimates exclude regional projects that have the potential to benefit all transportation users on Cape Cod.

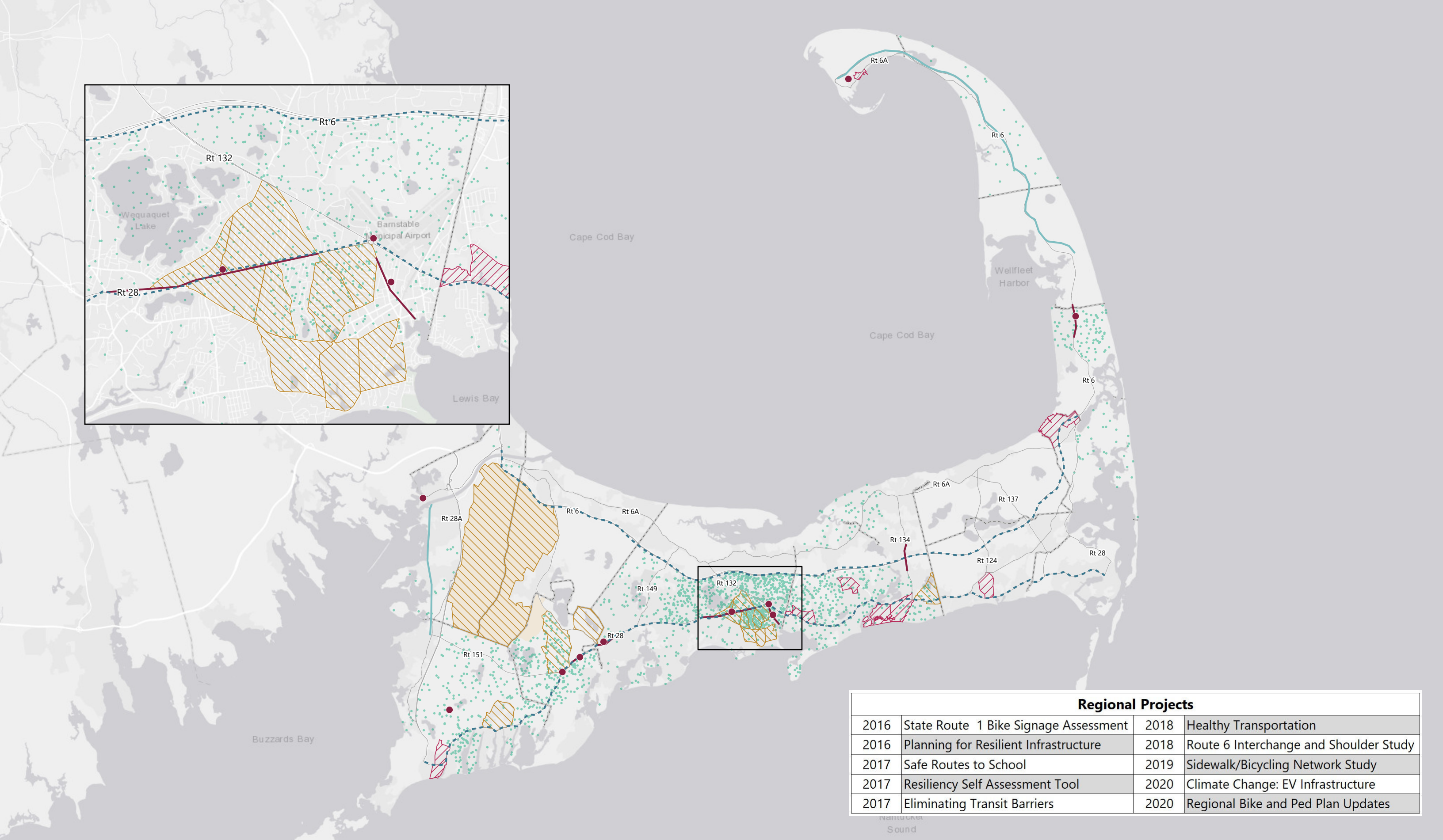
Table 4 - Geographic Distribution of UPWP Efforts

Project	Year	Impacted Population
Route 28 East Hyannis Corridor Study	FFY 2021	I, M, LEP
Route 134 Dennis Corridor Study	FFY 2020	I, M, LEP
Bourne Bike Plan	FFY 2020	I, LEP
Mashpee Rotary Study	FFY 2019	M, LEP
Eastham Route 6 Corridor Study	FFY 2018	LEP
Route 28 Eastern Mashpee Corridor Study	FFY 2017	M, LEP
Route 28 Cotuit Corridor Study	FFY 2016	M, LEP
Falmouth Bike Plan	FFY 2016	I, M, LEP

Note: Based on projects within 3 miles of the populations identified on the maps on the following page.



Regional Projects			
2021	Rail Trail Crossing Inventory	2021	Traffic Signal Inventory
2021	Managed Retreat Best Practices	2021	Transportation Safety: RSAs
2021	Data Collection and Analysis	2021	Healthy Transportation



Regional Projects			
2016	State Route 1 Bike Signage Assessment	2018	Healthy Transportation
2016	Planning for Resilient Infrastructure	2018	Route 6 Interchange and Shoulder Study
2017	Safe Routes to School	2019	Sidewalk/Bicycling Network Study
2017	Resiliency Self Assessment Tool	2020	Climate Change: EV Infrastructure
2017	Eliminating Transit Barriers	2020	Regional Bike and Ped Plan Updates

Five Years Review (2016-2020)
 Unified Planning Works Program (UPWP)
 Minority, Low Income, and Limited
 English Proficiency Populations

- Bike Planning
- Corridor Study
- Various locations

- Minority Block Group
- Low Income Block Group

● Each point represents one Portuguese speaking individual who speaks English less than very well

- Major Road
- Town Line
- Joint Base Cape Cod

Income: Median household income of census block is less than or equal to 60% Barnstable County median household income (\$59,000)

Minority: 15% or more residents of census block self-identify as a race other than white

Barnstable County Census Block Minority Population:
 Mean % Minority: 8.45%
 Median % Minority: 6.39%

Population classified as minority represents residents who self-identify as a race other than white



Glossary

Table 1. Acronyms

ACRONYM	MEANING
AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
CAAA	Clean Air Act Amendments of 1990
CCC	Cape Cod Commission
CCJTC	Cape Cod Joint Transportation Committee
CCMPO	Cape Cod Metropolitan Planning Organization
CCRTA	Cape Cod Regional Transit Authority
CIP	(MassDOT) Capital Investment Plan
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CMP	Congestions Management Plan/Process
CMR	Code of Massachusetts Regulations
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CTPS	Central Transportation Planning Staff
CZM	(Massachusetts) Coastal Zone Management
DEP	Department of Environmental Protection
DOT	United States Department of Transportation
DRI	Development of Regional Impact
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EOEA	(Massachusetts) Executive Office of Environmental Affairs
EPA	Environmental Protection Agency
FA	Federal Aid
FAST	Fixing America's Surface Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY, FFY	Fiscal Year, Federal Fiscal Year
GPS	Global Positioning System
HSIP	Highway Safety Improvement Program
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation System(s)
LOS	Level of Service
LRTP	Long Range Transportation Plan (see RTP)
MAP	Mobility Assistance Program
MAP-21	Moving Ahead for Progress in the 21st Century
MassDOT	Massachusetts Department of Transportation

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MEPA	Massachusetts Environmental Protection Act
MHD	Massachusetts Highway Department or MassHighway (now MassDOT/Highway Division)
MPO	Metropolitan Planning Organization (see CCMPO)
NAAQS	National Ambient Air Quality Standards
NFA	Non-Federal Aid
NHPP	National Highway Performance Program
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
NOx	Nitrogen Oxides
PPP	Public Participation Plan
RPA	Regional Planning Agency
RPP	Regional Policy Plan
RSA	Roadway Safety Audit
RTA	Regional Transit Authority (see CCRTA)
RTP	Regional Transportation Plan
SIP	State Implementation Plan
SOV	Single Occupancy Vehicle
STIP	Statewide Transportation Improvement Program
STP	Surface Transportation Program
TAP	Transportation Alternatives Program
TDM	Transportation Demand Management
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TSM	Transportation Systems Management
UPWP	Unified Planning Work Program
USGS	United States Geographical Survey
UZA	Urbanized Area
v/c	Volume to Capacity
VMT	Vehicle Miles Traveled
VPD	Vehicles Per Day
VPH	Vehicles Per Hour

Appendices

APPENDIX A: REGIONALLY SIGNIFICANT TRANSPORTATION PLANNING STUDIES FUNDED BY OTHER SOURCES

Buzzards Bay Commuter Rail Study

The purpose of this study is to develop and analyze the feasibility of publicly-supported alternatives for passenger rail service to the Upper Cape. This study, being conducted by MassDOT, will work with regional stakeholders to develop potential scenarios for passenger rail service that would meet the needs of the Towns of Bourne, Wareham, and the Upper Cape. Scenarios would be analyzed for anticipated ridership, capital costs, and operational costs.

MassDOT Cape Cod Canal Transportation Study

Completed in 2019, this study sets the stage ongoing discussions on the future of the transportation system in the Cape Cod Canal Area.

This purpose of this conceptual planning study was to identify existing and future multimodal transportation deficiencies and needs around the Cape Cod Canal area.

The study developed and analyzed a range of transportation alternatives in Bourne and Sandwich. These include highway, interchange, and non-highway improvements, as well as options and design elements that improve access and safety for all modes. Additionally, this study included significant coordination with the US Army Corps of Engineers on its study of the Bourne and Sagamore Bridges, which are under its stewardship and jurisdiction.

Additional information is available at: <https://www.mass.gov/cape-cod-canal-transportation-study>

U.S. Army Corps of Engineers Cape Cod Canal Bridges Major Rehabilitation Evaluation Study

Completed in 2020, this study, along with the MassDOT study referenced above, sets the stage ongoing discussions on the future of the transportation system in the Cape Cod Canal Area.

The U.S. Army Corps of Engineers, New England District is conducted a multiyear Major Rehabilitation Evaluation (MRE) Study of the Bourne and Sagamore Highway Bridges. The bridges span the Cape Cod Canal in Bourne, Massachusetts. The purpose of the study was to determine whether major rehabilitation or replacement of either or both bridges will provide the most reliable, fiscally responsible solution for the future. The study resulted in a Major Rehabilitation Evaluation Report (MRER), which evaluated the risk and reliability of the structures as well as the economic

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impacts/benefits of a number of alternatives, including continuation of routine maintenance, major rehabilitation, or bridge replacement.

Additional information is available at: <https://capecodcanalbridgesstudy.com/>

Complete Streets Prioritization Plans

A number of communities on Cape Cod have recently completed Complete Streets Prioritization Plans and others intend to soon.

APPENDIX B: FEDERAL FISCAL YEAR 2021 PL FORMULA ALLOCATION



2021 Unified Planning Work Program Funding

	FFY 21 (PL)	FFY 20 (PL)	Δ	FFY 20 (Actual)
apportionment obligation authority	\$ 9,899,184	\$ 9,746,953		\$ 9,695,577.00
federal PL funds only	\$ 9,008,258	\$ 9,076,363	-0.8%	
matching funds added	\$ 11,260,322	\$ 11,345,453		

The recommended PL Allocation Formula was developed by the Massachusetts Association of Regional Planning Agencies and recommended by MassDOT to FHWA, is based upon the following three factors: 40% of available funds divided equally among the ten MPOs, 30% is allocated based on each MPO's relative share of Massachusetts population, and 30% is allocated based on each MPO's relative share of urbanized population. These factors result in the percentages shown.

PL funds are provided to the MPOs from the previous year's federal-aid ("forward funded")

MPOs PL funded	40% of total funds /ten MPOs			30% of funding for relative size of population			30% of funding for relative size of urbanized population			\$5303 Full Amount w/ Match (FFY 20)	\$5303 Full Amount w/Match FFY 21 (2.1%)	Total FFY 20 funding by MPO	Total FFY 21 funding by MPO	Δ
	\$			\$			\$			\$	\$	\$	\$	
MPOs PL funded	\$ 4,504,129			\$3,378,097			\$3,378,097						\$ 11,260,322	
Berkshire	\$ 450,413	131,219	2.03%	\$ 68,729	88,795	1.49%	\$ 50,396	\$ 53,402	\$ 54,523	\$ 627,246	\$ 624,061	\$ (3,184)		
Boston	\$ 450,413	3,087,975	47.88%	\$ 1,617,396	3,026,176	50.84%	\$ 1,717,522	\$ 1,987,670	\$ 2,029,411	\$ 5,801,619	\$ 5,814,742	\$ 13,123		
CTPS*	\$ 364,834			\$ 1,310,091			\$ 1,391,193	\$ 1,639,445	\$ 1,673,873		\$ 4,739,992			
MAPC	\$ 85,578			\$ 307,305			\$ 326,329	\$ 348,225	\$ 355,538		\$ 1,074,751			
Cape Cod	\$ 450,413	215,888	3.35%	\$ 113,076	198,826	3.34%	\$ 112,845	\$ 98,201	\$ 100,264	\$ 779,649	\$ 776,597	\$ (3,051)		
Central Mass	\$ 450,413	556,698	8.63%	\$ 291,583	462,724	7.77%	\$ 262,621	\$ 222,087	\$ 226,751	\$ 1,234,300	\$ 1,231,368	\$ (2,931)		
Merrimack Valley	\$ 450,413	333,748	5.17%	\$ 174,808	316,362	5.32%	\$ 179,553	\$ 152,412	\$ 155,613	\$ 963,270	\$ 960,387	\$ (2,884)		
Montachusett	\$ 450,413	236,475	3.67%	\$ 123,859	171,236	2.88%	\$ 97,186	\$ 88,353	\$ 90,209	\$ 764,887	\$ 761,666	\$ (3,221)		
Northern Middlesex	\$ 450,413	286,901	4.45%	\$ 150,271	277,474	4.66%	\$ 157,482	\$ 140,726	\$ 143,681	\$ 904,623	\$ 901,847	\$ (2,777)		
Old Colony	\$ 450,413	362,406	5.62%	\$ 189,818	342,110	5.75%	\$ 194,166	\$ 141,719	\$ 144,695	\$ 982,425	\$ 979,093	\$ (3,332)		
Pioneer Valley	\$ 450,413	621,570	9.64%	\$ 325,561	537,074	9.02%	\$ 304,819	\$ 294,652	\$ 300,840	\$ 1,383,617	\$ 1,381,633	\$ (1,983)		
Southeastern Mass	\$ 450,413	616,670	9.56%	\$ 322,995	531,236	8.93%	\$ 301,506	\$ 313,614	\$ 320,200	\$ 1,396,654	\$ 1,395,114	\$ (1,541)		
Total	\$ 4,504,129	6,449,550	100.00%	\$ 3,378,097	5,952,013	100.00%	\$ 3,378,097	\$ 3,492,837	\$ 3,566,187	\$ 14,838,291	\$ 14,826,509	\$ (11,782)		

RPAs SPR funded	SPR the year before (federal only)		FFY 20 total funding by RPA	FFY 21 total funding by RPA	Δ	Federal aid number
	Δ	\$				
Franklin	-0.8%	\$ 452,099	\$ 565,124	\$ 560,851	\$ (4,273)	
Martha's Vineyard	-0.8%	\$ 259,268	\$ 324,085	\$ 321,635	\$ (2,450)	
Nantucket	-0.8%	\$ 220,540	\$ 275,675	\$ 273,591	\$ (2,085)	

The SPR funding provided to the RPAs not officially recognized as MPOs is adjusted year-to-year based on the change in funding experienced by the MPOs for their PL funds.
 *CTPS 5303 includes MassDOT 5303

Figure 2 – Unified Planning Work Program Funding (Source: MassDOT)

APPENDIX C: COMMENTS ON PUBLIC DRAFT

The Cape Cod MPO voted to release the draft UPWP for the public review/ comment period at their 1:00 PM virtual meeting on April 27, 2020, officially beginning the 21-calendar-day public comment period.

Online public comment opportunities for this plan were held on Tuesday, May 12, 2020 at 5:30 PM and Thursday, May 14, 2020 at 10:00 AM. These meetings featured a short presentation on the document followed by an opportunity for public comments. A virtual public meeting of the Cape Cod MPO is scheduled for Tuesday, May 26, 2020 at 1 PM to hear additional public comments and consider endorsement of this document. Details on the online public comment opportunities and the virtual public meeting available at www.capecodcommission.org/mpo

Comments on this plan were accepted through May 18, 2020 via mail, by facsimile, or via e-mail, as follows:

Mailed:

Cape Cod Commission Transportation Program
David Nolan Jr., Transportation Planner
3225 Main Street (Route 6A)
PO Box 226
Barnstable MA 02630-0226

Sent by facsimile to the attention of David Nolan Jr., Transportation Planner:
FAX: 508-362-3136

Electronic mail "email"—please put "UPWP" in the subject line and send to:
david.nolan@capecodcommission.org

Comments / Questions received on this UPWP:

A Public Comment Summary Grid will be attached that presents a summary of the comments received during the 21-day public comment period. The comments will be presented in their entirety to the Cape Cod MPO during their May 26, 2020 meeting where the body considered the comments. Consideration of the comments will be detailed in the meeting minutes for that meeting. The response and any action taken by the MPO will be summarized in this table. Discussion of UPWP activities was also included in the previous MPO and CCJTC meetings.

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APPENDIX D: LIST OF STAFF AND ESTIMATED PERCENTAGE OF TIME ALLOCATED TO MASSDOT FUNDED (PL) TASKS IN THE FY 2021 UPWP

Staff Name and Position	Percentage of Time
Steven Tupper, Transportation Program Manager	85%
Lev A. Malakhoff, Senior Transportation Engineer	85%
Colleen Medeiros, Transportation Engineer	85%
David Nolan, Transportation Planner	85%
Martha Hevenor, Planner II	50%
Chloe Schaefer	25%
Historic (Hevenor)	5%
Land Use (Schaefer)	15%
Water Resources (Pasakarnis)	2%
GIS (Reynolds, Prahm, Bremer)	20%
Legal (Wielgus, Daley)	5%
Community Outreach/Title VI (Hevenor, Wielgus)	5%
Climate Change (White)	10%
Natural Resources/Environment (Hevenor)	5%
Economic Development (Schaefer)	5%
Seasonal Traffic Technicians	100%

APPENDIX E: FFY 2021 FUNDING SUMMARY

Commission staff has updated budget allocations based off a review of previous funding lines from past UPWP years.

Appendix E: Federal Fiscal Year 2021 Funding Summary

	FHWA PL funds	MDOT (match)	FTA Sec 5303	CCC	Other	Task Total	Percent
Task 1 Mgt & Support of the Planning Process & Certification Activities							
1.1	Unified Planning Work Program	\$20,000	\$5,000			\$25,000	3.2%
1.2	Transportation Improvement Program	\$35,000	\$8,750			\$43,750	5.6%
1.3	CCJTC and MPO Activities	\$30,000	\$7,500			\$37,500	4.8%
1.4	Environmental Justice/Title 6	\$20,000	\$5,000			\$25,000	3.2%
1.5	Public Participation Plan	\$18,000	\$4,500			\$22,500	2.9%
1.6	Regional Transportation Plan	\$25,000	\$6,250			\$31,250	4.0%
Total for Task 1		\$148,000	\$37,000			\$185,000	23.6%
Task 2 Data Collection & Analysis Activities							
2.1	Traffic Data Collection Program	\$45,000	\$11,250			\$56,250	7.2%
2.2	Performance Measures	\$25,000	\$6,250			\$31,250	4.0%
2.3	Transportation database management	\$30,000	\$7,500			\$37,500	4.8%
2.4	Pavement Management/Stormwater	\$20,000	\$5,000			\$25,000	3.2%
2.5	Healthy Transportation	\$20,000	\$5,000			\$25,000	3.2%
2.6	Geographic Information Systems	\$35,000	\$8,750			\$43,750	5.6%
Total for Task 2		\$175,000	\$43,750			\$218,750	27.9%
Task 3 Short and Long Range Planning							
3.1	Route 28 East Hyannis Corridor Study	\$47,500	\$11,875			\$59,375	7.6%
3.2	Transportation Safety: RSAs/Route 6 Safety	\$40,000	\$10,000			\$50,000	6.4%
3.3	Rail Trail Crossing & Traffic Signal Inventories	\$45,000	\$11,250			\$56,250	7.2%
3.4	Managed Retreat Best Practices	\$30,000	\$7,500			\$37,500	4.8%
3.5	Follow up on Previous Studies	\$35,000	\$8,750			\$43,750	5.6%
Total for Task 3		\$197,500	\$49,375			\$246,875	31.5%
Task 4 Technical Assistance Activities							
4.1	Transit Planning		\$11,250	\$45,000		\$56,250	7.2%
4.2	Support for Passenger Rail Service		\$2,625	\$10,500		\$13,125	1.7%
4.3	Transit Data Collection and Analysis		\$7,713	\$30,852		\$38,565	4.9%
4.4	Other Technical Assistance Requests	\$20,567	\$5,142			\$25,709	3.3%
Total for Task 4		\$20,567	\$26,730	\$86,352		\$133,649	17.0%
Task 5 CCC Planning and Regulatory Activities							
5.1	Regulatory			\$17,500			
5.2	Planning			\$65,500			
5.3	Other Transportation Activities			\$68,000			
Total for Task 5				\$151,000			
Totals		\$541,067	\$156,855	\$86,352		\$784,274	100%
Key:							
MDOT = Massachusetts Department of Transportation							
FHWA = Federal Highway Administration							
FTA = Federal Transit Administration							
CCC = Cape Cod Commission							
CCRTA = Cape Cod Regional Transit Authority							
PL = Planning funds							
RSAs = Road Safety Audits							
Sec 5303 = Federal Transit Administration Planning Funds							

APPENDIX F: AMENDMENTS/ADJUSTMENTS

Amendments/Adjustments to the plan are presented in this appendix.

Analyses presented in the body of the document and the preceding appendices reflect the projects and funding amounts as May 26, 2020, the endorsement date of the plan.

Cape Cod Unified Planning Work Program for FFY2021

Coordination will be facilitated by regular meetings with CCRTA staff to discuss ongoing transit studies and inclusion of transit in Cape Cod Commission corridor studies. Projects may be reviewed and assisted by consultants in coordination with CCRTA staff.

Proposed Products

A report, map or memo may be drafted and released as a public document. Public outreach will be performed under the guidance of the Cape Cod Commission Public Participation Plan and in coordination with CCRTA staff.

Evaluation of CCRTA transit routes; letters and memoranda as required; continued identification and development of congestion and intermodal management strategies; updated and expanded website of transportation information, reports and memoranda as required. Several possible products include:

- Traveler information via Internet
- Promotion of transportation alternatives
- ITS plans for Cape Cod Canal Area, including real-time traveler information
- ITS plans for Hyannis area
- Summary reports of updates to CMS database
- Technical memoranda reporting analyses of travel patterns and traffic condition prediction methodology
- ITS coordination with other regions
- Updated "Coordinated Human Service Transportation Plan for the Barnstable Urbanized Area"
- Assessment of effect of the recently implemented MassDOT Route 6 ITS project on Freight Operators

Previous Products:

Previous transit planning has been performed under specific tasks included in corridor and other regional transportation studies. Project specific to transit performed by the Cape Cod Commission are listed but not limited to as follows;

- 2019 Coordinated Public Transit – Human Service Transportation Plan (under development)
 - Draft prepared in FFY 20, may be adopted in 2020 or 2021 pending presentation to MPO
- 2016 Eliminating Transit Barriers
- 2015 Comprehensive Service Assessment
- 2015 Buzzards Bay Commuter Rail Local Impacts Report
- 2014 Coordinated Public Transit – Human Service Transportation Plan
- 2013 Closing the Gaps

*Cape Cod Unified Planning Work Program for FFY2021*Schedule: Continuous throughout the year

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$ 56,250

TASK 4.2 – SUPPORT FOR PASSENGER RAIL SERVICE

Objective: To support planning and introduction of commuter rail feeder service to Bourne connecting to MBTA commuter rail in coordination with the MBTA, MassDOT, Town of Bourne and CCRTA. This task includes identifying the needs of the commuter community and feasibility of extending commuter rail from Middleborough, 18 miles along existing track. Previous studies summarized reports and analyzed impacts to local intersections considering the introduction of commuter rail to Buzzards Bay under assumptions provided in previous documents.

Products:

Products may include memorandums that update the public and planners on the progress of commuter rail including summarizing ongoing studies, design efforts or funding allocations.

Schedule: Continuous throughout the year

Beneficiary Community: Bourne

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$13,125

TASK 4.3 – TRANSIT DATA COLLECTION AND ANALYSIS

Objective:

Working with the CCRTA, the goal is to collect and map data on bus stops, routes, and ridership for all CCRTA routes. Consideration and inclusion of the MassDOT engineering directives and design guidelines and Transit Asset Management (TAM) plans will be explored.

Cape Cod Unified Planning Work Program for FFY2021

Procedures:

Commission staff, along with the assistance of the RTA, Steamship Authority (SSA) and Hy-Line Cruises, will conduct ridership surveys on SSA and Hy-Line vessels from Hyannis to Nantucket to understand the percentage of commuters using these ferry services. Surveys will be collected on random representative days throughout the year and all passengers on all ferries will be surveyed the day a survey is being conducted. All data will be presented to the Federal Transit Authority (FTA).

Products:

GIS application that shows the ridership, stop amenities and other regional datasets as requested by the CCRTA. The product will be used to identify gaps in the pedestrian network and high ridership stops that do not contain amenities consistent with the transit stop buildout.

A database of all data collected on SSA and Hy-Line ferries and a memo to be prepared for FTA documenting the percentage of commuters on all ferries.

Schedule: Continuous throughout the year

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$38,565

TASK 4.4 – OTHER TECHNICAL ASSISTANCE REQUESTS

Objectives: To provide the state, the towns, and the region with technical transportation assistance, as needed.

Previous Work:

- Hyannis Parking Study, 2013
- Preparation of signal warrant analyses, review of local transportation improvement alternatives, preparation of local safety studies
- Wellfleet Fire Station access/egress recommendations, 2007
- West Chatham Route 28 Improvements, 2008
- Traffic Calming Techniques identified for local roads in Truro (2011)

Procedures:

Assist towns with infrastructure improvements including pedestrian, bicycle, transit rider shelter locations, roadway reconfigurations, corridor studies, etc. Potential locations

Cape Cod Unified Planning Work Program for FFY2021

include Route 28/Bearses Way in Barnstable (capacity and safety improvements), Shank Painter Road in Provincetown (corridor improvements), and Route 28 in Harwich (pedestrian, bicycle and transit improvements).

Products: Letters, reports, memoranda, and analyses

Schedule: Continuous throughout the year

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$ 25,709

DRAFT Cape Cod Unified Planning Work Program for FFY2021

Schedule: Ongoing

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$31,250

TASK 2.3 – TRANSPORTATION DATABASE MANAGEMENT/MODELING

Objectives: To maintain and improve databases of Cape Cod transportation information including roadway geometry, traffic volumes (motor vehicles, bicycles, pedestrian), and other. To provide transportation information for Cape Cod to local and state officials, transportation professionals, and the public. To perform highway capacity analyses as needed. To continue to develop and calibrate computerized travel demand forecasting databases and models for Cape Cod. To continue integration with Geographic Information System (GIS) data to provide a platform for GIS-based traffic counts, congested link summaries, and accident summaries.

Previous Work:

Draft VISSIM models for Harwich Center and Yarmouth Road/Willow Street (Barnstable)

- Geo-located Cape Cod crash database for 2004–2013
- Online mapping of traffic counting data

Procedures:

- Integrate new records when available; maintain database, develop subroutines for analysis. When details are needed for specific locations, town crash records may be obtained and reviewed. CCC staff will contact MassDOT to request latest crash records. Conduct public outreach to member communities. Respond to data and information requests from the public, transportation professionals, and local, regional, and state officials. Participate in analyses of and obtain latest Pictometry data and software.
- Review and utilize available socio-economic, employment, population, and housing data for base year and forecast year data. Utilize existing traffic volume and transit data to determine existing travel demands. Utilize existing transportation models for sub-regions of Cape Cod. Improve transfer methods of data between CCC Geographic Information System (GIS) services and

DRAFT Cape Cod Unified Planning Work Program for FFY2021

transportation modeling effort. Expand transportation demand model to include Saturday morning element and to explicitly include public transportation used. Additional modeling efforts include the use of Synchro/Sim-Traffic software. Construction of Synchro models includes development of a computerized roadway/intersection network. Inputs include turning movements and roadway link traffic volumes, roadway and intersection geometry, and signal timing and phasing.

- Update and modernize transportation databases for compatibility with other in-house and state databases and tools. The Commission currently maintains its transportation-related data in a legacy database system that performs a number of functions including traffic count schedule management, data storage and analysis, and output of summary statistics. CCC staff, with the support of a consultant, will convert the database to a Microsoft SQL platform while maintaining and improving its functionality and increasing its efficiency and accessibility. The consultant support will account for \$20,000 of the budget within this task. The database migration (and the consultant effort) will begin in September 2020 and be completed by October 2021.

Products:

- Crash, roadway geometry, roadway traffic volumes, intersection turning movements data, and Pictometry information database
- Reports, letters, and memoranda as required
- Updated regional transportation model based on latest available demographic information, reports of results, and summaries
- Models will be used to support Task 3 and other regional planning and TIP activities

Schedule: Ongoing

Beneficiary Communities: All

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$31,250

TASK 2.4 – PAVEMENT MANAGEMENT

TASK 3.1 – ROUTE 28 EAST HYANNIS CORRIDOR STUDY

Background

Route 28 on Cape Cod is a major regional transportation route that runs from Bourne to Orleans, connecting many village centers and providing the main transportation route on the southern side of Cape Cod. The portion of Route 28 being examined in this study stretches from the intersection of Yarmouth Road in Barnstable to the intersection of East Main Street in Yarmouth. The intersection of Route 28 and Yarmouth Road was programmed for reconstruction in the 2019 and 2020 Transportation Improvement Program (TIP) and construction should be commencing in the coming years. In addition, a segment of Route 28 in Yarmouth from East Main Street to the Parkers River bridge is programmed as a future TIP resurfacing project for 2023. This project includes resurfacing Route 28 and upgrading sidewalks, wheelchair ramps, and driveway aprons as well as providing bicycle accommodations throughout the corridor. Linking these two important projects by studying the half mile that separates them is important to both towns and the Cape as whole.

Congestion is a noted issue in the corridor, especially during the peak summer season. This section of Route 28 leads into Hyannis where access to Cape Cod Hospital, the Cape Cod Regional Transit Authority, Steamship Authority and Hy-Line Cruises, and Barnstable Municipal Airport are critical. Another concern is the signalized intersection of Route 28 and East Main Street. The Route 28 East Hyannis Corridor Study will examine potential geometric and intersection improvements for this intersection. Also, of key concern is accommodation for all road users including motorists, pedestrians, bicyclists, and transit users. This is a heavily used corridor for non-motorized users looking to access their jobs, retail destinations, and public transportation from their neighborhoods.

Commission staff had originally planned to start and complete this study as part of the FFY 2021 UPWP, but given the unforeseen circumstances surrounding the COVID-19 pandemic, staff was unable to accomplish needed outreach portions for the project to be successful.

Funding under this task may also be used to support other priority tasks related to the Congestion Management Plan and to respond to the need to adapt to the unique transportation demands caused by COVID-19.

Description of Services

Cape Cod Unified Planning Work Program for FFY2021

The Cape Cod Commission, under the Unified Planning Work Program, will conduct a transportation planning study for the study area with the following study goal: Develop alternatives that will provide safe and convenient access within the study area for all users of the roadway system including pedestrians, bicyclists, and motorists.

Project Limits

The study area consists of Route 28 from Yarmouth Road (Barnstable) in the west to East Main Street (Yarmouth) in the east.



Figure 1 –East Hyannis Route 28 study area

Task A: Project Initiation

Commission staff will gather past studies and develop a plan for analysis of the study area. This task will include meeting with Commission staff and a consultation meeting with Town of Barnstable and Yarmouth staff and MassDOT District 5. Commission staff will also consult with Cape Cod Regional Transit Authority staff.

Product: Final Scope of Work and Public Participation Plan and kickoff meeting summary

Task B: Data Collection/Mapping

Commission staff will gather data including crash locations, roadway geometry, traffic volumes, pedestrian/bicycle connections and land use information. At a minimum, traffic volume data will be collected at multiple locations along Route 28 and approaching roadways.

Commission staff will visit the study area to evaluate and photograph conditions. Town staffs will be invited to attend the site visit.

Cape Cod Unified Planning Work Program for FFY2021

Task C: Public Informational Meeting

Commission staff will prepare for and host a public informational meeting in or near the study area where opportunities and constraints along the corridor will be identified. The meeting will include a brief presentation including information gathered as part of the first two tasks and focus on input from the stakeholders in attendance at the meeting.

The Commission staff will provide meeting materials, including sign-in sheets, and comment forms. Cape Cod Commission staff representatives at the meeting will include at least two key personnel knowledgeable of the project. The Town of Barnstable will secure the locations, dates, times, and advertising for the meetings in coordination with the Town of Yarmouth.

Product: Summary of Listening Session and Public Comments

Task E: Concept Development and Refinement

Information collected during the previous task will be reviewed with Town of Barnstable staff, the Town of Yarmouth staff and Cape Cod RTA staff and preliminary concepts will be developed. Conceptual design plans will illustrate options for corridor improvements with a minimum of 3 alternatives. One of these alternatives will be the “no-build” scenario and will form the basis of comparison for any of the “build” alternatives.

Product: Preliminary Concepts and Summary of Feedback

Task F: Public Review of Concepts

After review of the preliminary concepts by Commission, MassDOT District 5, Town and CCRTA staff, the preliminary concepts will be presented at a public meeting. Feedback on the preliminary concepts will be used to refine those concepts.

Product: Summary of Public Meeting

Task G: Draft and Final Report

Concepts will be refined based on public comments and feedback from Town, MassDOT District 5, CCRTA, and Commission staff.

Refined concepts will be prepared as part of a draft report. The draft report will also include an analysis of each alternative’s impact on traffic flow and safety.

All the information and comments received will be compiled into a final report document and delivered to MassDOT, the Towns of Barnstable and Yarmouth, and the Cape Cod RTA.

Schedule:

Cape Cod Unified Planning Work Program for FFY2021

The schedule for this effort allows for completion elements of the project by October 2021 with others to be completed under the FFY2022 UPWP. Milestones include coordination meetings with the Cape Cod Joint Transportation Committee and updates to the Cape Cod Metropolitan Planning Organization.

- Needed data collection (FY 2020) – Summer of 2020 and 2021
- Review of methodology/project initiation: Winter 2021/Spring 2021
- Problem identification and development of alternatives: Spring 2021/Summer 2021
- Public meetings, alternatives analysis, and report writing will be completed under the FFY2022 UPWP

Beneficiary Community: Barnstable and Yarmouth

<u>Funding Source</u>	<u>Amount</u>
FHWA/MassDOT	\$68,750

TASK 3.2 – TRANSPORTATION SAFETY

Objectives:

To conduct and assist with Roadway Safety Audits (RSAs) at MassDOT identified high crash locations across Cape Cod, as well as assisting municipalities with any other small technical assistance needs that arise.

Previous Work:

Roadway Safety Audits

Barnstable Road Safety Audits

- Route 6A at Mary Dunn Road/Indian Trail (2019)
- Iyannough Road (Route 132) at Cape Cod Community College/Cape Cod Conservatory Intersection (2014)
- Route 28 at Osterville-West Barnstable Road (2012)
- Iyannough Road (Route 28) at Yarmouth Road (2012)
- Meetinghouse Way (Route 149)/Route 6 Ramps (2010)
- Route 28 (Falmouth Road)/Bearses Way (2009)

Cape Cod Unified Planning Work Program for FFY2021

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