CAPE COD COMMISSION

Cape Cod Metropolitan Planning Organization (MPO)

Unified Planning Work Program for Transportation Planning Activities

(October 1, 2012 – September 30, 2013)

CAPE COD METROPOLITAN PLANNING ORGANIZATION

Unified Planning Work Program for Transportation Planning Activities

October 1, 2012 – September 30, 2013

Endorsed: June 25, 2012

Cape Cod Metropolitan Planning Organization Members

Richard Davey, Secretary and Chief Executive Officer, Massachusetts Department of Transportation (MassDOT)
Francis A. DePaola, Administrator, MassDOT Highway Division
Ronald Bergstrom, Chair, Cape Cod Regional Transit Authority
Peter Graham, Cape Cod Commission
Frederick Chirigotis, President, Barnstable Town Council
William Doherty, Barnstable County Commissioners
Michael Richardson, Mashpee Selectman, for Bourne, Falmouth, Mashpee, and Sandwich
Curtis Sears, Yarmouth Selectman, for Dennis and Yarmouth
Sims McGrath, Orleans Selectman, for Brewster, Chatham, Harwich, and Orleans
Austin Knight, Provincetown Selectman, for Eastham, Provincetown, Truro, and Wellfleet
Jason Steiding, Mashpee Wampanoag Tribal Council

Transportation Advisory Group

George Allaire, Chairman, Cape Cod Joint Transportation Committee

Cape Cod Commission Staff Contact

Glenn Cannon, Technical Services Director

Cape Cod Metropolitan Planning Organization Endorsement DATE: June 25, 2012

The UPWP development process is being used to satisfy the public hearing requirements of the FTA's Section 5307 program and this public notice of public involvement activities and time established for public review and comments on the UPWP will satisfy the FTA Program of Projects requirements.

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 expressed herein do not necessarily state or reflect those of the United States Department of Transportation.

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CAPE COD METROPOLITAN PLANNING ORGANIZATION (MPO)
Unified Planning Work Program (UPWP)
October 1, 2012 through September 30, 2013

The signatures to follow certify that the Cape Cod Metropolitan Planning Organization (MPO), at their meeting on June 25, 2012, hereby approves 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, 2012 through September 30, 2013.

Richard Davey, Secretary/Chief Executive Officer – Massachusetts Department of Transportation (MassDOT)

Francis A. DePaola, Administrator
Massachusetts Department of Transportation (MassDOT) Highway Division

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Sims McGrath
Brewster, Chatham, Harwich, Orleans

Jason Steiding
Mashpee Wampanoag Tribal Council

Austin Knight
Eastham, Provincetown, Truro, Wellfleet

CAPE COD JOINT TRANSPORTATION COMMITTEE (CCJTC) MEMBERS

Roger Parsons	Barnstable
Rick Tellier	Bourne
Robert Bersin, PE	Brewster
Paul Lagg	Chatham
Joseph Rodricks, PE	Dennis
Neil Andres	Eastham
Marlene McCollem	Falmouth
Lincoln Hooper	Harwich
Catherine Laurent	Mashpee
Mark Budnick	Orleans
David Gardner	Provincetown
Paul S. Tilton, PE	Sandwich
Charleen Greenhalgh	Truro
Mark Vincent	Wellfleet
George R. Allaire, PE	Yarmouth
Dr. Edward Gross	Bicycle Representative

CCJTC EX-OFFICIO MEMBERS

Tom Cahir	Cape Cod Regional Transit Authority
Paul Maloney, PE	Federal Highway Administration
William Gordon, PE	Federal Transit Administration
Callida Cenizal	Massachusetts Department of Transportation
Tim Kochan	MassDOT, Highway Division, District 5
Edward DeWitt	Association to Preserve Cape Cod

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Introduction

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This 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 SAFETEA-LU and federal planning regulations. The UPWP describes all significant transportation planning activities planned on Cape Cod over the twelve (12) month period, 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 – efforts to update and maintain the Regional Transportation Plan for Cape Cod, a certification activity that requires a new plan every four years and development of the Congestion Management Program for the region. Also 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.

Appendix – efforts that are awaiting grant funding that may be initiated during the UPWP period, including several efforts proposed by the National Park Service.

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 eight SAFETEA-LU 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: "Create a transportation system that reinforces local development, land use, economic, cultural, and historic preservation goals." 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 and security: "Create a transportation system that provides safe travel options for people and freight, and protects users from natural and external threats." Safety is of such importance that it is recognized in its own chapter of the RTP.

3. INCREASE THE SECURITY OF THE TRANSPORTATION SYSTEM FOR MOTORIZED AND NONMOTORIZED USERS

The primary goal of the RTP is focused on safety and security: "Create a transportation system that provides safe travel options for people and freight, and protects users from natural and external threats." Security is of such importance that it is recognized in its own chapter 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 its goal: "Connect village centers, economic and employment centers, and points of interest using multiple coordinated modes of transportation in a direct and efficient manner so that people and goods can get from where they are to where they are meant to go."

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 supports this planning factor through three goals: "Create a transportation system that maintains, protects, and enhances the natural environment of Cape Cod"; "Create a transportation system that reinforces local development, land use, economic, cultural, and historic preservation goals"; and "Base projects and programs on an objective, transparent and inclusive decision-making process in cooperation with federal, state, regional, and local transportation agencies, government officials, businesses and citizens." 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 and 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 goal: "Connect village centers, economic and employment centers, and points of interest using multiple coordinated modes of transportation in a direct and efficient manner so that people and goods can get from where they are to where they are meant to go." 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 and seek to meet with stakeholders representing the freight shipping community.

7. PROMOTE EFFICIENT SYSTEM MANAGEMENT AND OPERATION

The RTP supports this planning factor through three goals: "Optimize travel time throughout the transportation system for people and freight by pursuing strategies to reduce congestion in areas where it exists and taking proactive measures to prevent congestion in currently free flowing areas"; "Preserve, maintain, and modernize the existing transportation system"; and "Base projects and programs on an objective, transparent and inclusive decision-making process in cooperation with federal, state, regional, and local transportation agencies, government officials, businesses and citizens."

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8. EMPHASIZE THE PRESERVATION OF THE EXISTING TRANSPORTATION SYSTEM

The RTP supports this planning factor through two goals: "Optimize travel time throughout the transportation system for people and freight by pursuing strategies to reduce congestion in areas where it exists and taking proactive measures to prevent congestion in currently free flowing areas" and "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.

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 SAFETEA-LU and federal planning regulations, and to obtain MPO endorsement of the UPWP. To prepare progress reports, as needed.

Previous Work: Previous UPWPs (most recent MPO endorsed UPWP: August, 2011)

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.

Products: Unified Planning Work Program for Transportation Planning Activities for the period October 1, 2012 to September 30, 2013. 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 UPWP anticipated submission to MPO and CCJTC, July 2013
- Final UPWP anticipated submission to MPO, August 2013
- Monthly progress reports
- Annual Report

Funding/Staffing breakdown:

Funding Source	Amount	CCC Staffing
FHWA/MassDOT	$15,000	5 person-weeks
FTA (5303)	$1,000	0.3 person-weeks
CCC	$250	0.1 person-weeks

TASK 1.2 - TRANSPORTATION IMPROVEMENT PROGRAM (CERTIFICATION ACTIVITY)

Objectives: To prepare a program of transportation improvement projects that is consistent with SAFETEA-LU, 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 four-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.

Previous Work: "Cape Cod Transportation Improvement Programs (TIPs)," and amendments as needed, 1988 to present; latest endorsed (TIP Amendment, February 2012) document covers the period of federal fiscal years 2012–2015.

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 schedule of TIP development.

I – PREPARATION OF THE DRAFT TIP

A) General

1. The TIP is a staged, multi-year, intermodal program of transportation projects which are consistent with the Regional Transportation Plan (RTP). It is the programming document to implement FHWA and Federal Transit Administration (FTA) Regional Transportation Plan projects.

2. Insure involvement of local officials and citizens through the Cape Cod Joint Transportation Committee and the Public Participation Plan

3. Provide assistance to municipalities in advancing TIP projects

4. Coordinate with MassDOT District 5, and the MassDOT Boston Office of Transportation Planning in developing project advancement

5. Include project within financial estimates (and other items)

B) Development of the four-year program of projects according to a uniform statewide format.

1. Update the list of transit and highway projects that are expected to require federal transportation funds during the active fiscal years of the TIP.

2. The list of projects may include information such as the following:

a. The official MassDOT identifying project title
b. Project description
c. Estimated total cost
d. Proposed sources of federal and non-federal funds.

3. The total costs of projects seeking federal funds in each program year shall be in line with anticipated federal and state funds.

C) Public Participation

- Per the MPO approved Public Participation Plan.

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II – TIP APPROVAL

The TIP documents will be reviewed and endorsed by the MPO. The endorsed products will serve as a portion of the required air quality consistency documentation necessary for USDOT (FHWA/FTA) and EPA conformity determinations.

III – MODIFICATION/AMENDMENT

A) Amendments to the TIP require MPO approval.

B) Administrative adjustments to the TIP may be approved by the CCC Executive Director, with appropriate notification to the MPO.

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.

Funding/Staffing breakdown:

Funding source	Amount	CCC Staffing
FHWA/MassDOT	$37,625	12.5 person-weeks
FTA (5303)	$3,500	1 person-week
CCC	$875	0.3 person-weeks

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TASK 1.3 - CCJTC AND MPO ACTIVITIES/PUBLIC PARTICIPATION PROGRAM

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.

Previous Work:

- Past maintenance of 3C process, including support to the CCJTC, the MPO, and member agencies
- Update of the Public Participation Plan (June 2007)

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 (PPP) in transportation planning for Cape Cod

    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

Products:

- Viable 3C process, including CCJTC and public participation program
- Revision of PPP, as necessary
- 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

Funding/Staffing breakdown:

Funding Source	Amount	CCC Staffing
FHWA/MassDOT	$50,000	16.5 person-weeks
FTA (5303)	$4,000	1.5 person-weeks
CCC	$1,000	0.3 person-weeks

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TASK 1.4 – ENVIRONMENTAL JUSTICE/TITLE VI

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 integrate the basic principles of Environmental Justice into the 3C Transportation Planning Process, including Limited English Proficiency, as necessary. To develop and maintain a Title VI Civil Rights program for the Cape Cod MPO. To cooperate with stakeholders in the development of the Public Transit Human Services Transportation Plan. To engage the Mashpee Wampanoag Tribe in transportation planning. To account for Environmental Justice efforts within each task as appropriate.

Previous Work: Attendance at preliminary meetings with MassDOT and FHWA to discuss environmental justice requirements and receive guidance on ensuring compliance. Preparation of updates to the Cape Cod Regional Transportation Plan including information and strategies to ensure Environmental Justice.

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

Products:

- Viable Title VI Civil Rights program for the Cape Cod MPO
- Incorporation of environmental justice principles into MPO activities

Schedule: Ongoing procedures

Funding/Staffing breakdown:

Funding Source	Amount	CCC Staffing
FHWA/MassDOT	$35,000	11.5 person-weeks
FTA (5303)	$4,000	1.5 person-weeks
CCC	$1,000	0.3 person-weeks

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TASK 1.5 – ACCESS TO JOBS/JOBS ACCESS REVERSE COMMUTE & NEW FREEDOM PROGRAMS

Objective: To coordinate the Jobs Access Reverse Commute (JARC) and New Freedom (NF) Programs for the Cape Cod urbanized area. The JARC program instituted as part of the Welfare to Work program. The New Freedom program funds innovative measures to serve people with disabilities seeking reliable and safe transportation beyond Americans with Disabilities Act requirements.

Previous Work: Coordination with CCRTA, the Cape Organization for the Rights of the Disabled, and other agencies with Access to Jobs and Welfare to Work programs.

Activities: As the designated recipient for JARC and NF funds, the Cape Cod Commission shall see that the following are developed:

- Identification of service gaps such as geographic restrictions and limited hours (JARC)
- Identification of needs for enhanced assistance, extended hours, and improved scheduling (NF)
- Development of criteria for evaluating proposals to use JARC and NF funding

Products: Coordinated Plan

Schedule: Per MassDOT guidance and federal requirements

Funding/Staffing breakdown:

Funding Source	Amount	CCC Staffing
FTA (5303)	$2,500	1 person-week
MassDOT/FTA (5316 & 5317)	$ 16,900	5.5 person-weeks
CCC	$625	0.2 person-weeks
FTA ITEM CODE 44.23.01		

TASK 1.6 – REGIONAL TRANSPORTATION PLAN

(Certification Activity)

Objectives: To maintain and update the Regional Transportation Plan for Cape Cod, in conformance with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and successor acts, consistent with the goals and requirements of the Cape Cod Commission, towns, the MassDOT, FTA, and the FHWA, considering all modes of transportation and both short- and long-range elements.

Previous Work:

- Ten (10) year needs assessment prepared in October 1989
- Regional Policy Plan for Cape Cod, August 1991
- Long Range Transportation Plan, September 1993
- Long Range Transportation Plan Amendments, September 1994
- Regional Policy Plan for Cape Cod, November 1996
- Regional Transportation Plan, approved by MPO, March 1997
- Regional Transportation Plan, approved by MPO, January 2001
- Regional Policy Plan for Cape Cod, April 2002
- Regional Transportation Plan, approved by MPO, August 2003
- Regional Transportation Plan, approved by MPO, March 2007
- Regional Policy Plan for Cape Cod, 2009
- Regional Transportation Plan, approved by MPO, August 2011

Procedures: Updates to Regional Transportation Plan (RTP). Potential amendment to RTP in 2012-2013 to include recommendations from Hyannis Access Study and the Willow Street/Yarmouth Road Corridor Study and Cape Cod Canal area efforts. Includes RTP conformity analysis and reassessment of fiscal constraint. Ongoing public outreach will include workshops and participation at meetings of local officials and issue-oriented groups focused on the environment and accessibility. These efforts will further involve Cape Cod environmental organizations and strengthen the link between transportation impacts and environmental analysis. Work with communities to identify Growth Incentive Zones and Economic Centers, promote mixed-use development, transit-oriented development, and identify appropriate transportation infrastructure to support these areas.

Products:

- Updates and amendments as necessary (e.g., amendment to include Hyannis Access Study recommendations)
- Presentation materials, maps, website downloads for meetings and workshops

Schedule: To be determined

Funding/Staffing Breakdown:

Funding Source	Amount	CCC Staffing
FHWA/MassDOT	$ 12,835	4.5 person-weeks
FTA (5303)	$ 5,000	1.5 person-weeks
CCC	$ 1,250	0.4 person-weeks

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.

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, 1984–2011. Traffic counting reports and appendices (2010 versions most recently):

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

Procedures: For the summer of 2012, over 250 counts will be scheduled across Cape Cod's 15 towns. 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. 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 2012. 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 (www.gocapecod.org/counts)

Schedule: Report on counts taken in 2011 submitted January 2012

Funding/Staffing breakdown:

Funding Source	Amount	CCC Staffing
FHWA/MassDOT	$62,500	21 person-weeks

TASK 2.2 – TRANSPORTATION DATABASE MANAGEMENT/MODELING/TRAVEL DEMAND FORECASTING

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 continue to develop and calibrate computerized travel demand forecasting databases and models for Cape Cod, including year 2035 forecasts. 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 2004–2008
- Online mapping of traffic counting data: http://www.gocapecod.org/counts/googler/allcape_gm.htm
- Transportation model, developed in 1999/2000 for base year of 1997
- Transportation model, updated in 2010

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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 alternate modes. 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

Funding/Staffing breakdown:

Funding Source	Amount	CCC staffing
FHWA/MassDOT	$33,750	11.5 person-weeks

TASK 2.3 – 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.

Previous Work:

- FY 2012 data collection (pending) include approximately 200 "point" assessments collected during installation of automatic traffic recorder installation – outputs include updated databases and mapping.
- FY 2012 data collection (pending) includes corridor-based pavement assessments (windshield surveys) for 33% of the municipally-owned federal-aid roadway network – outputs include updated databases and mapping.
- FY 2012 review of town-based pavement management efforts.
- Pavement Management: 2011 Status Report (2012 report pending)
- Eastham, Pilot Pavement Management Study, December 1990
- Bourne, Preliminary Pavement Management Report, April 1992
- Participation on technical coordination committees for Pavement Management
- Special Statewide pavement management systems effort, 1994

Procedures: Existing conditions determination will be conducted through "windshield" surveys of roadways. 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. The rating system will be consistent with MassDOT standards and standards that other Massachusetts' RPAs are using.

Products: Assessment of pavement management needs

Schedule:

January-March 2013	Evaluation of existing data, coordination with communities, review of methodologies.
March-April 2013	Schedule & coordination of data collection
May-August 2013	Data Collection
September 2013	Status Report

Funding/Staffing breakdown:

Funding Source	Amount	CCC Staffing
FHWA/MassDOT	$ 32,000	10.5 person-weeks

TASK 2.4 – 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

Funding/Staffing breakdown:

Funding Source	Amount	CCC Staffing
FHWA/MassDOT	$ 19,203	6.5 person-weeks

TASK 2.5 – CLIMATE CHANGE RISK AND VULNERABILITY ASSESSMENT OF TRANSPORTATION INFRASTRUCTURE

Objective: To provide a baseline risk and vulnerability assessment of critical transportation infrastructure and assets to climate change impacts within our coastal region. This assessment is proposed in response to the FHWA's policy objective of incorporating climate change adaptation strategies in transportation planning efforts, and will be developed consistent with FHWA's conceptual risk assessment model.

This risk and vulnerability assessment will be conducted primarily by Commission staff as a research project. The expertise of regional and local planners', transportation engineers, and emergency response professionals will aide in determining the criticality of a range of modes and assets consistent with the asset categories within FHWA's conceptual model. The risk and vulnerability assessment will build upon the 2010 Regional Multi-Hazard Mitigation (MHM) Plan's hazard identification process and Risk and Vulnerability Assessment Map (RVAM) analysis. In particular, the critical facilities inventories of the Regional & Local MHM Plans will be examined, refined and expanded relevant to transportation related infrastructure and assets. Climate change projections including, but not limited to, increases in heavy precipitation, inland flooding, storm surge and coastal erosion, will be examined in relation to the critical transportation infrastructure and asset inventory.

Development of this baseline risk and vulnerability assessment will serve as a first step toward promoting climate change adaptation strategies that ensure continued integrity and resilience of our regional transportation infrastructure and good stewardship of transportation funding. This baseline would be updated every 5 years to reflect changes in underlying data. Development of an Adaptation Plan for Critical Transportation Infrastructure is an important next step to begin, as a separate effort, after the baseline is completed.

Previous Work:

- FHWA's conceptual risk assessment model and pilot projects (on-going)
- FEMA certified Barnstable County Regional Multi-Hazard Mitigation Plan (2010)
- On-going development of geographic land use information for transportation planning
- Northeast LiDAR Project (2010 – 2012)

Procedures: Utilize the FHWA's conceptual model to define critical infrastructure and assets, develop inventory and assess risk and vulnerability. Staff will conduct a survey of regional and local experts to assist in defining critical infrastructure and assets. Existing critical facilities inventories in the Regional and Local MHM plans will also be refined and expanded as appropriate. Commission staff will analyze new topography data (LiDAR), SLOSH zones, FIRM's, groundwater GIS data layers, and other data as appropriate to define critical infrastructure and assets. Near and long term climate change projections in our region for annual temperature change (change in F°); seasonal precipitation (% change); relative sea level rise, and storm activity will be utilized in order to asses risk and vulnerability.

Products: Critical Transportation Infrastructure & Asset Inventory, Critical Transportation Infrastructure RVAM & Report

Schedule: Continuous throughout the year

Funding/Staffing breakdown:

Funding Source	Amount	CCC Staffing
FHWA/MassDOT	$ 25,000	8.5 person-weeks

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

TASK 3.1 – CONGESTION MANAGEMENT (BOURNE ROTARY)

Problem Identification: One of the most serious traffic congestion/safety problems on Cape Cod occurs at the Bourne Rotary. Traffic congestion at the Bourne Rotary affects the quality of life for residents of Bourne, visitors to Cape Cod, and emergency response time through-out the Upper Cape. The Bourne Rotary congestion affects the residents of Bourne throughout the year; traffic is routinely stopped on MacArthur Boulevard and Sandwich Road during winter evening peak hours.

The congestion at the Bourne Rotary also has an adverse effect on the economic development of Bourne. Traffic queues from the Bourne Rotary routinely back-up through Belmont Circle and Scenic Highway (north of the Cape Cod Canal). This traffic congestion deters residents and visitors from visiting Downtown Bourne. Town Officials are currently seeking designation as a Growth Incentive Zone for Downtown Bourne. Bourne Rotary traffic congestion has a negative effect on economic development of the Bourne Rotary area and MacArthur Boulevard, as well the Falmouth area.

A review of the "Barnstable County Intersections of Critical Safety Concern" (Cape Cod Commission, 2010) lists the Bourne Rotary as one of eight "Barnstable County Pedestrian Crash Clusters." Two non-injury pedestrian crashes were listed for the years 2002-2008. Using 2006-2008 data supplied by MassDOT, the Bourne Rotary is identified as a Barnstable County high-crash location under several criteria:

- Number of Crashes – Rank #8 (71 crashes)

- Equivalent Property Damage Only – Rank #10 (EPDO* 115)
- Crash Rate – Rank #32 (1.21 crashes per million entering vehicles)

**Equivalent Property Damage Only (EPDO) calculation multiplies 1 times the number of Property Damage Only crashes, 5 times Injury Crashes, and 10 times Fatal Crashes.*

The Bourne Rotary serves as one of two primary interchanges to Cape Cod communities on the south side of the Cape Cod Canal (the other being Interchange 1 south of the Sagamore Bridge). All traffic crossing the Bourne Bridge must pass through this facility. Recent traffic counts collected by MassDOT and the Cape Cod Commission show the Bourne Rotary serving tens of thousands of motorists throughout the year, especially in the summer:

- Bourne Bridge – 59,665 vehicles per day (July 2010)
- Route 28 (MacArthur Blvd) – 43,308 vehicles per day (July 2009)
- Sandwich Road – 25,952 vehicles per day (July 2010)
- Trowbridge Road – 8,444 vehicles per day (July 2010)

Study Goal: The Cape Cod Commission, under the 2013 Unified Planning Work Program, will conduct a transportation planning study for the study area shown below 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.

Study Area: The primary study area consists of the Bourne Rotary and roadways leading thereto: Bourne Bridge, MacArthur Boulevard, Sandwich Road, and Trowbridge Road. A secondary study area consists of the remainder of MacArthur Boulevard south to the Otis Rotary and will be examined in future phases of this effort.

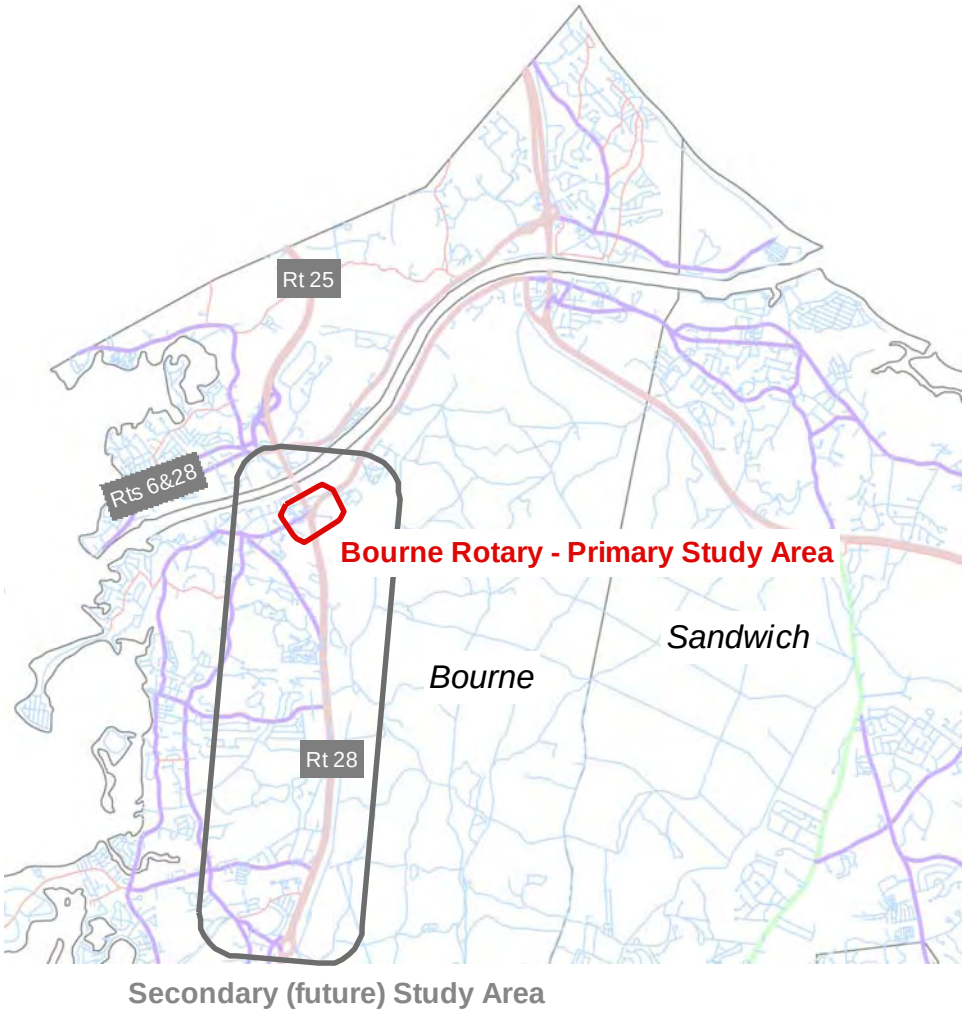


FIGURE 1 - STUDY AREA MAP

Literature Review: The Cape Cod Commission will undertake a review of previous efforts that may support the goals of this study. These efforts include:

- The draft Canal Area Transportation Study prepared by Rizzo Associates, Inc. for MHD dated December 21, 1998, and the subsequent draft studies done by staff at the Cape Cod Commission, the most recent dated August 22, 2001
- Route 3/Route 6 Sagamore Grade Separation Revised Environmental Assessment/Final Environmental Impact Report (EOEA #11731) dated October 31, 2003
- Bourne Scenic Highway Study and Canal Area Study – TransCAD Technical Assistance: Cape Cod Travel Demand Forecasting Model dated February 2000 – Louis Berger Group, Inc.
- EOEA Build-out Analysis for Cape Cod
- Canal Area Traffic Study dated December 22, 2004 by the Massachusetts Highway Department
- Buzzards Bay Village Comprehensive Transportation Plan study and recommendations, 2007
- Project Notification Form, Bourne Rotary Modification, Cape Cod Commission, 2011
- Cape Cod Commission Study Design for Canal Area Long-Range Transportation Study, 2009

Data Collection – Traffic Forecasting: A key task of this study will be the collection of needed data. Data collection will include adjustment of existing traffic counting data if available or new traffic counts collected at the following locations:

Automatic Traffic Recorder (ATR) Locations:

- Bourne Bridge
- Route 28 (south of Bourne Rotary)
- Sandwich Road Connector (east of Bourne Rotary)
- Trowbridge Road (west of Bourne Rotary)

In addition, MassDOT maintains permanent traffic counting stations at both canal bridges and on Route 3 north of the Bourne town line.

Turning Movement Count Locations:

- Sandwich Road at Sandwich Road/Bourne Rotary Connector
- Trowbridge Road at Sandwich Road

Origin-Destination Study:

- Using available staff, manual observations of each entering roadway will be conducted to track the exiting roadway of these vehicles. Results of these sample observations will be combined with ATR data to derive percentage and quantity of vehicles traveling from and to each rotary roadway. Observations will occur at a representative design hour.

Traffic safety information (crash locations) will be collected from state and local sources to produce maps, tables and charts. Crash diagrams will be prepared to identify patterns (location, time of day, crash type) at the Bourne Rotary.

Using traffic assignment methods such as those included in travel demand forecasting software such as TransCAD or other techniques that are used to estimate traffic flows on study area roadways, CCC will prepare maps and charts that identify traffic flows for the existing year and a thirty-year forecast future year of 2042.

CAPE COD COMMISSION

Public Participation: The Cape Cod Commission will facilitate a kick-off meeting with stakeholders and interested public. A Task Force will be created to facilitate project direction, development of alternatives and the preferred alternative to replace the Bourne Rotary. The meetings will be held in the town of Bourne. In addition, the following methods may be used to communicate study progress and receive public input:

- Questionnaires/online surveys
- Informational handouts/flyers
- Online postings at

www.capecodcommission.org/departments/technicalservices/transportation

- Progress updates at monthly meetings of the Cape Cod Joint Transportation Committee and scheduled meetings of the Cape Cod Metropolitan Planning Organization.
- Presentations at local boards (e.g., Selectmen, Planning, Chambers of Commerce, etc.)
- Promotion of contact information and reception of public input via telephone, fax, email, or regular mail

Development of alternatives: Based on estimated traffic operations identified for the future forecast year and input received from the public participation process, the Cape Cod Commission will develop and analyze a minimum of four alternatives. One of these alternatives will be the "no-build" scenario and will form the basis of comparison for any of the "build" alternatives.

Examples of potential alternatives may include:

- Improve traffic flow and safety of existing rotary with pavement markings & signage
- Roundabout Retrofit (modify Bourne Rotary to conform to latest principles of modern roundabout design).
- Grade separation (various configurations of ramp systems and access to local roads)

- Traffic management (e.g., ramp metering, temporary turn restrictions)

Evaluation, criteria, and recommendations: Each alternative will be evaluated for its impact on traffic flow and safety. General criteria that may be applied include:

- Change in average travel speeds
- Queuing
- Safety impacts (e.g., change in number of conflicting traffic movements & expected traffic demand at each)
- Environmental impacts (air quality, intrusion near wetlands, etc.)
- Right-of-Way impacts (need to acquire property for construction of alternative)
- Expected cost to construct

By reviewing each alternative's potential benefits in concert with its costs and other detriments, a preferred alternative will be identified.

Products: Results will be published in a written report to be made available online at www.capecodcommission.org in addition to printed copies for interested parties. Other study materials will be produced and made available via internet, mailings, public meetings etc. including maps and charts, handouts and flyers.

Schedule & Level of Effort: The schedule for this effort allows for a final completion by September 2013. Milestones include coordination meetings with the Cape Cod Joint Transportation Committee (or designated subcommittee thereof) and updates to the Cape Cod Metropolitan Planning Organization.

- Needed data collection (FY 2012) – Summer of 2012
- Review of methodology/project initiation: November 2012

- Public meeting with Stakeholders: January 2013
- Problem identification and development of alternatives – review with CCJTC: March 2013
- Analysis of Alternatives – review with CCJTC: May 2013
- Draft report/public meeting: July 2013
- Final report: September 2013

Funding/Staffing breakdown:

Funding Source	Amount	CCC Staffing
FHWA/MassDOT	$50,000	16.5 person-weeks
FTA (5303)	$4,571	1.5 person-weeks
CCC	$1,143	0.4 person-weeks

TASK 3.2 – TRANSPORTATION SAFETY (BELMONT CIRCLE)

Problem Identification: Some of the most serious traffic congestion/safety problems on Cape Cod occur at the Belmont Circle in Buzzards Bay in the Town of Bourne. Traffic congestion at the Belmont Circle affects the quality of life for residents of Bourne, visitors to Cape Cod, and emergency response time through-out the Upper Cape. Traffic congestion at the Belmont Circle affects residents of Bourne throughout the year; traffic is routinely stopped on Scenic Highway (Route 6) entering the circle during off-season peak hours.

The congestion at the Belmont Circle also has an adverse effect on the economic development of Bourne. Traffic queues from the circle routinely back-up on Scenic Highway (Rt 6 north of the Cape Cod Canal). This traffic congestion deters residents and visitors from visiting Downtown Bourne. Town Officials are currently seeking designation as a Growth Incentive Zone for Downtown Bourne.

Using 2006-2008 data supplied by MassDOT, the Belmont Circle is identified as a Barnstable County high-crash location under several criteria:

- Number of Crashes – Rank #13 (54 crashes)
- Equivalent Property Damage Only – Rank #11 (EPDO* 110)
- Crash Rate – Rank #24 (1.38 crashes per million entering vehicles)
- Equivalent Property Damage Only Rate – Rank #26 (2.81 EPDO crashes per million entering vehicles)

**Equivalent Property Damage Only (EPDO) calculation multiplies 1 times the number of Property Damage Only crashes, 5 times Injury Crashes, and 10 times Fatal Crashes.*

The Belmont Circle serves as one of two primary interchanges to Cape Cod communities on the north side of the Cape Cod Canal (the other being Route 6/Route 3 Interchange 1 north of the Sagamore Bridge). A large amount of traffic crossing the Bourne Bridge must pass through this facility. Recent traffic counts collected by MassDOT and the Cape Cod Commission show the Belmont Circle serving tens of thousands of motorists throughout the year, especially in the summer:

- Bourne Bridge – 58,467 vehicles per day (July 2011)
- Route 6 Scenic Highway under the Bourne Bridge – 33,556 vehicles per day (July 2011)
- Route 25 Ramp north of Belmont Circle – 37,213 vehicles per day (July 2009)
- Route 6 Bypass east of St. Margaret Street – 7,816 vehicles per day (June 2011)
- Main Street Routes 6&28 west of Belmont Circle – 20,016 vehicles per day (July 2011)
- Head of the Bay Road north of Belmont Circle – 4,592 vehicles per day (May 1996)

Study Goal: The Cape Cod Commission, under the 2013 Unified Planning Work Program, will conduct a transportation planning study for the study area shown below 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.

Study Area: The study area consists of the Belmont Circle and roadways leading thereto: Bourne Bridge ramps, Route 6 Scenic Highway, Route 6 Bypass, Main Street Routes 6&28, and Head of the Bay Road. Additionally, the intersection of Nightingale Road and Route 6 Scenic Highway is included.

FIGURE 2 - STUDY AREA MAP

Literature Review: The Cape Cod Commission will undertake a review of previous efforts that may support the goals of this study. These efforts include:

- The draft Canal Area Transportation Study prepared by Rizzo Associates, Inc. for MHD dated December 21, 1998, and the subsequent draft studies done by staff at the Cape Cod Commission, the most recent dated August 22, 2001
- Bourne Scenic Highway Study and Canal Area Study – TransCAD Technical Assistance: Cape Cod Travel Demand Forecasting Model dated February 2000 – Louis Berger Group, Inc.
- EOEA Build-out Analysis for Cape Cod
- Canal Area Traffic Study dated December 22, 2004 by the Massachusetts Highway Department
- Buzzards Bay Village Comprehensive Transportation Plan study and recommendations, 2007
- Cape Cod Commission Study Design for Canal Area Long-Range Transportation Study, 2009?

Data Collection – Traffic Forecasting: A key task of this study will be the collection of needed data. Data collection will include adjustment of existing traffic counting data if available or new traffic counts collected at the following locations:

Automatic Traffic Recorder Locations:

- Bourne Bridge (MassDOT permanent counting station)
- Route 6 Scenic Highway east of the Belmont Circle
- Route 25 Ramp north of the Belmont Circle
- Route 6 Bypass west of the Belmont Circle

- Main Street Routes 6&28 west of the Belmont Circle
- Head of the Bay Road north of the Belmont Circle

Origin-Destination Study:

- Using available staff, manual observations of each entering roadway will be conducted to track the exiting roadway of these vehicles. Results of these sample observations will be combined with ATR data to derive percentage and quantity of vehicles traveling from and to each rotary roadway. Observations will occur at a representative design hour.

A Turning Movement Count (Origin-Destination study) for the overall operations at the Belmont Circle was under taken in February 2012 (see following figure). An O-D Study will be scheduled for the "design hour" during the summer of 2012. The design hour corresponds to Thursday, June 30 at 3 p.m. which was the 30th highest hour of 2011 at the Bourne Bridge.

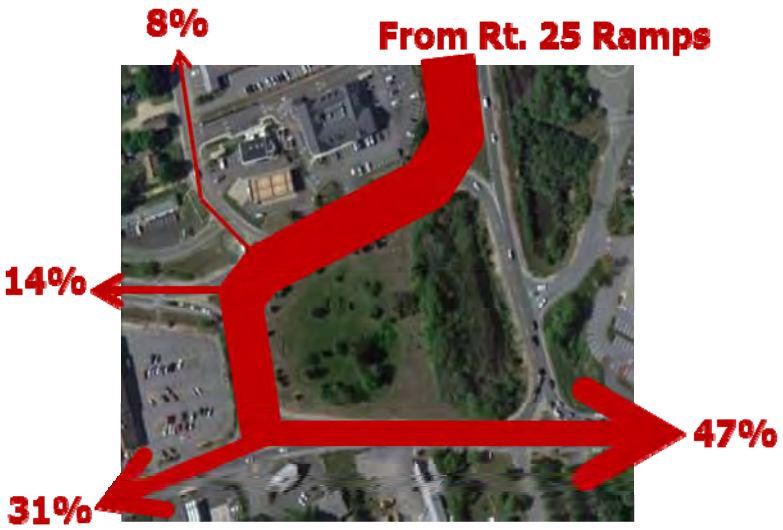


FIGURE 3 - ORIGIN-DESTINATION SAMPLE RESULTS - FEBRUARY 2012

Traffic safety information (crash locations) will be collected from state and local sources to produce maps, tables and charts. Crash diagrams will be prepared to identify patterns (location, time of day, crash type) at the Belmont Circle.

FIGURE 4 - COLLISION DIAGRAM OVERVIEW

Using traffic assignment methods such as those included in travel demand forecasting software such as TransCAD or other techniques that are used to estimate traffic flows on study area roadways, CCC will prepare maps and charts that identify traffic flows for the existing year and a twenty-year forecast future year of 2032.

CAPE COD COMMISSION

Public Participation: The Cape Cod Commission will facilitate a kick-off meeting with stakeholders and interested public. A Task Force will be created to facilitate project direction, development of alternatives and the preferred alternative to improve the Belmont Circle. The meetings will be held in the town of Bourne. In addition, the following methods may be used to communicate study progress and receive public input:

- Questionnaires/online surveys
- Informational handouts/flyers
- Online postings at:

www.capecodcommission.org/departments/technicalservices/transportation

- Progress updates at monthly meetings of the Cape Cod Joint Transportation Committee and scheduled meetings of the Cape Cod Metropolitan Planning Organization.
- Presentations at local boards (e.g., Selectmen, Planning, Chambers of Commerce, etc.)
- Promotion of contact information and reception of public input via telephone, fax, email, or regular mail

Development of Alternatives: Based on estimated traffic operations identified for the future forecast year and input received from the public participation process, the Cape Cod Commission will develop and analyze a minimum of four alternatives. One of these alternatives will be the "no-build" scenario and will form the basis of comparison for any of the "build" alternatives.

Examples of potential alternatives may include:

- Improve traffic flow and safety of existing rotary with pavement markings & signage
- Roadway modifications per recommendations of the Buzzards Bay Village Comprehensive Transportation Plan (2007)
- Grade separation (various configurations of ramp systems and access to local roads)

- Safety & traffic flow improvements at individual junctions (traffic signalization or roundabouts).

- Traffic management (e.g., ramp metering, temporary turn restrictions)

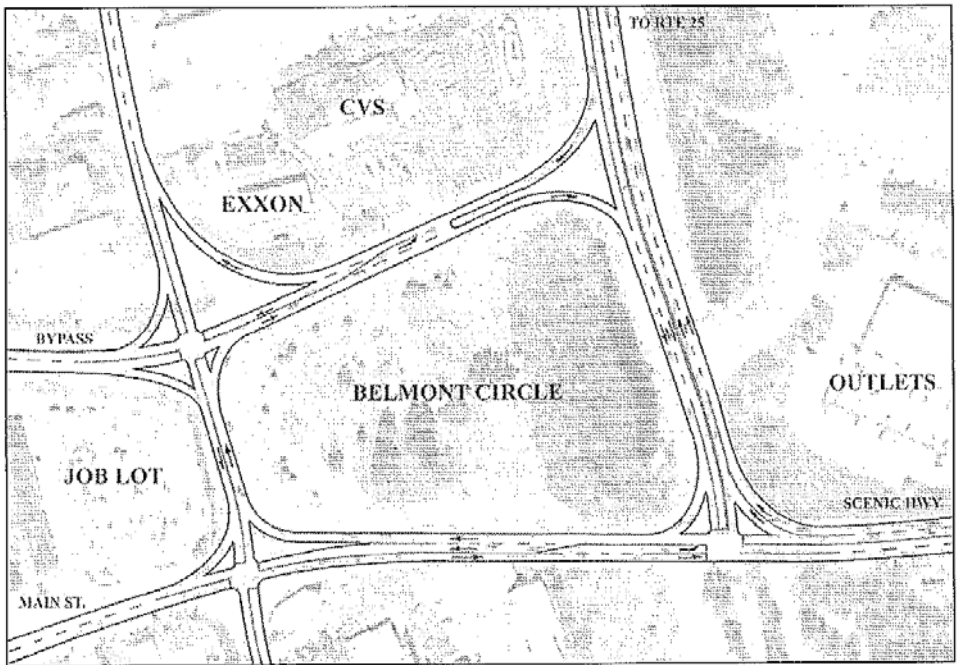


FIGURE 5 - POTENTIAL ROADWAY CONFIGURATION

Source: Buzzards Bay Village Comprehensive Transportation Plan

Evaluation, Criteria, and Recommendations: Each alternative will be evaluated for its impact on traffic flow and safety. General criteria that may be applied include:

- Change in through-trip travel times & distances

- Queuing

- Safety impacts (e.g., change in number of conflicting traffic movements & expected traffic demand at each)
- Environmental impacts (air quality, intrusion near wetlands, etc.)
- Right-of-Way impacts (need to acquire property for construction of alternative)
- Expected cost to construct

By reviewing each alternative's potential benefits in concert with its costs and other detriments, a preferred alternative will be identified.

Products: Results will be published in a written report to be made available online at www.capecodcommission.org in addition to printed copies for interested parties. Other study materials will be produced and made available via internet, mailings, public meetings etc. including maps and charts, handouts and flyers.

Schedule & Level of Effort: The schedule for this effort allows for a final completion by September 2013. Milestones include coordination meetings with the Cape Cod Joint Transportation Committee (or designated subcommittee thereof) and updates to the Cape Cod Metropolitan Planning Organization.

- Needed data collection (FY 2012) – Summer of 2012
- Review of methodology/project initiation: November 2012
- Public meeting with Stakeholders: January 2013
- Problem identification and development of alternatives – review with CCJTC: March 2013
- Analysis of Alternatives – review with CCJTC: May 2013
- Draft report/public meeting: July 2013
- Final report: September 2013

Funding/Staffing breakdown:

Funding source	Amount	CCC staffing
FHWA/MassDOT	$37,500	12.5 person-weeks
FTA (5303)	$3,429	1 person-week
CCC	$857	0.3 person-weeks

TASK 3.3 – LIVABLE/COMPLETE STREETS (ROUTE 28 IN YARMOUTH)

CAPE COD COMMISSION

Background: Route 28 in Yarmouth is one of three major regional east-west transportation corridors on Cape Cod, as well as a commercial destination for tourists and residents alike, with numerous attractions, businesses, hotels and restaurants. The roadway is often congested, particularly in the summer months. High traffic volumes, poor geometry, and a high number of curb cuts have raised concerns about transportation safety. A 2011 study by the Cape Cod Commission revealed this portion of Route 28 to be one of the densest locations in the region for pedestrian/bicycle accidents (20 between 2002 and 2007) with three high-crash locations in the study area. The corridor is used heavily by automobiles, cyclists and pedestrians; however, the current configuration of the roadway is focused on automotive use with numerous conflict points with pedestrians and cyclists. Curb cuts along the corridor impact traffic flow and non-automobile safety by creating conflict points and left turn movement backups. In some locations, the narrow right-of-way constrains safe bicycle and pedestrian use.

The town has been engaged in a planning process looking at land use and zoning changes for the area with a goal of creating a series of mixed use nodes along the corridor interspersed with areas of lower density. The town aims to better accommodate pedestrian and bicycle activity in the area and improve the character of the roadway with landscaping and other streetscape improvements. The roadway design is essential to the success of these town efforts, particularly at key intersections where redevelopment efforts may be focused.

The project team has selected an approximately 2 – mile section of Route 28 from West Yarmouth Road to Forest Road as a proposed study area (identified on the map on page 5). This 2-mile section will be the focus of a corridor study identifying “Livable Street” and “Complete Street” strategies that promote walkability, pedestrian safety, access management, and improved traffic safety and flow in the area. This effort aims to identify transportation improvement strategies for Route 28 that support the town’s vision for areas of concentrated mixed-use development along the corridor.

CAPE COD COMMISSION

This section of road has been identified by the town as a priority redevelopment area and contains a wide variety of conditions that could be replicated elsewhere along the corridor in the future.

Study Objectives: The purpose of this study is to explore transportation improvement alternatives that will reduce conflicts, improve traffic flow and incorporate multi-modal transportation options along the Route 28 corridor while furthering the creation of vibrant, pedestrian and bicycle oriented mixed-use centers along the roadway. The safe accommodation of pedestrians and bicycles has been previously identified by the Cape Cod Commission as critical to achieving the goals of the town to create nodes of mixed-use development. Complete streets design strategies will be incorporated into any alternatives proposed in addition to low impact development (LID) techniques to mitigate stormwater runoff.

The project aims to establish areas where pedestrian and bicycle connectivity can be improved and design changes can be incorporated to enhance safety. The project will explore the potential impact of proposed land use and zoning changes under consideration by the town and make recommendations for roadway changes that accommodate projected traffic volumes while accommodating all users of the roadway.

Previous Work:

- Adoption of the 2009 Cape Cod Regional Policy Plan setting forth standards for low-impact development. See: http://www.capecodcommission.org/RPP
- Route 6A Corridor Management Plan Update (2010)
- Green Streets plan for Route 6A (pending)
- Route 28 Report on land use/design concepts for Yarmouth (2011)
- Technical assistance to Yarmouth's ad-hoc committee on Route 28 rezoning (ongoing)

Procedures:

- Review previous traffic studies/reports

- Collect data including traffic volumes, roadway geometrics, quality and availability of bicycle and pedestrian facilities
- Create GIS maps of existing conditions based on data collection efforts
- Investigate access management strategies to improve traffic flow
- Develop Livable/Complete Street strategies for certain areas
- Conceptual design for roadway improvements at key intersections

Task 1: Project Initiation: Gather past studies, and in consultation with the town, develop a plan for analysis of the study area.

Task 2: Data Collection/Mapping: Gather appropriate mapping information and collect traffic related information, including accident locations, high crash locations, roadway geometry, traffic volumes and pedestrian/bicycle connections and accommodation.

Task 3: On-Site Reconnaissance: Visit study area to evaluate and photograph ground-level conditions.

Task 4: Identify Opportunities and Constraints: In consultation with the town and based on the prior tasks, develop a matrix of opportunities and constraints along the corridor and prioritize specific roadway intersections for detailed study.

Task 5: Public outreach: Engage the public to solicit input on problem areas and establish priorities for design changes.

Task 6: Initial design: Develop conceptual design plans that illustrate options for corridor improvements that incorporate complete streets designs and best practices.

Task 7: Public presentation: Present the conceptual design plans to the town and public at a public forum to solicit feedback and comment to assist in the refining of roadway improvements.

Task 8: Final report and plan: Compile information and comment received into final document and deliver to the town.

Products:

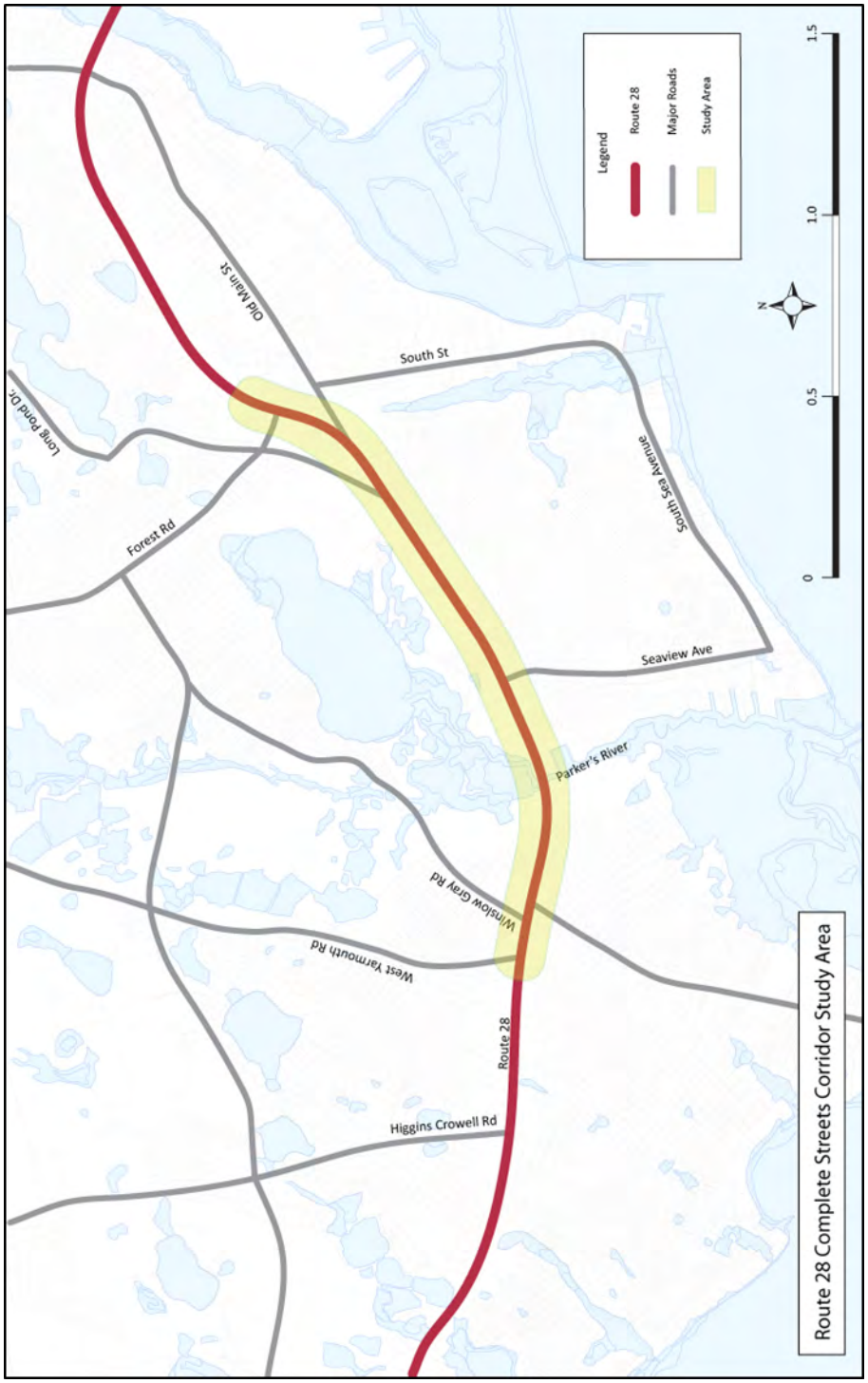
- Maps and illustrations identifying opportunities and constraints.
- Public outreach and facilitation to gather comment on priorities, alternatives.
- Draft report identifying alternatives for roadway improvements at key locations along the corridor.
- Final report with recommendations.

Schedule: October 2012 to September 2013

Funding/Staffing breakdown:

Funding source	Amount	CCC staffing
FHWA/MassDOT	$62,500	21 person-weeks
FTA (5303)	$5,714	2 person-weeks
CCC	$1,429	0.5 person-weeks

Task 3.3 Study Area



CAPE COD
COMMISSION

TASK 3.4 – CONNECTING TOWN CENTERS TO THE PEDESTRIAN/BYCICLE NETWORK

Objectives: To facilitate bicycling and walking as viable transportation modes within Barnstable County through development of connections from town centers to regional networks and identification of key areas appropriate for new or improved facilities.

Previous Work:

- Bicycle/Pedestrian LOS Study (pending)
- Pedestrian and Bicycling sections of Regional Transportation Plans
- Transit-accessible pathways online mapping project http://www.gocapecod.org/pathways
- Technical support for town-based bicycle routing
- In 2009, updated MassGIS state-wide bicycle maps for the Cape Cod region
- Ongoing work includes 2009 UPWP study of the Willow Street/Yarmouth Road Corridor that will include planning for the continuation of the Cape Cod Rail Trail from the Yarmouth town line south to the Hyannis Regional Transit Center
- The Harwich Bike Planning 2010
- A pedestrian/bicycle business enhancement for Sandwich Center
- The Draft Cape Cod National Seashore Integrated Bicycle Plan, 2010

Procedures:

- Data collection including specialized traffic counts at existing multi-use facilities, usage surveys, and efforts to identify origins/destinations of potential users
- Coordination with local planning officials to identify bicycling connections and integration of local bicycle/pedestrian networks

Products:

- Updates to Cape Cod Pathways network
- Mapping of proposed connections to regional bike networks and publication of bicycling and walking path information
- Draft & Final reports

Schedule: October 2012 to September 2013

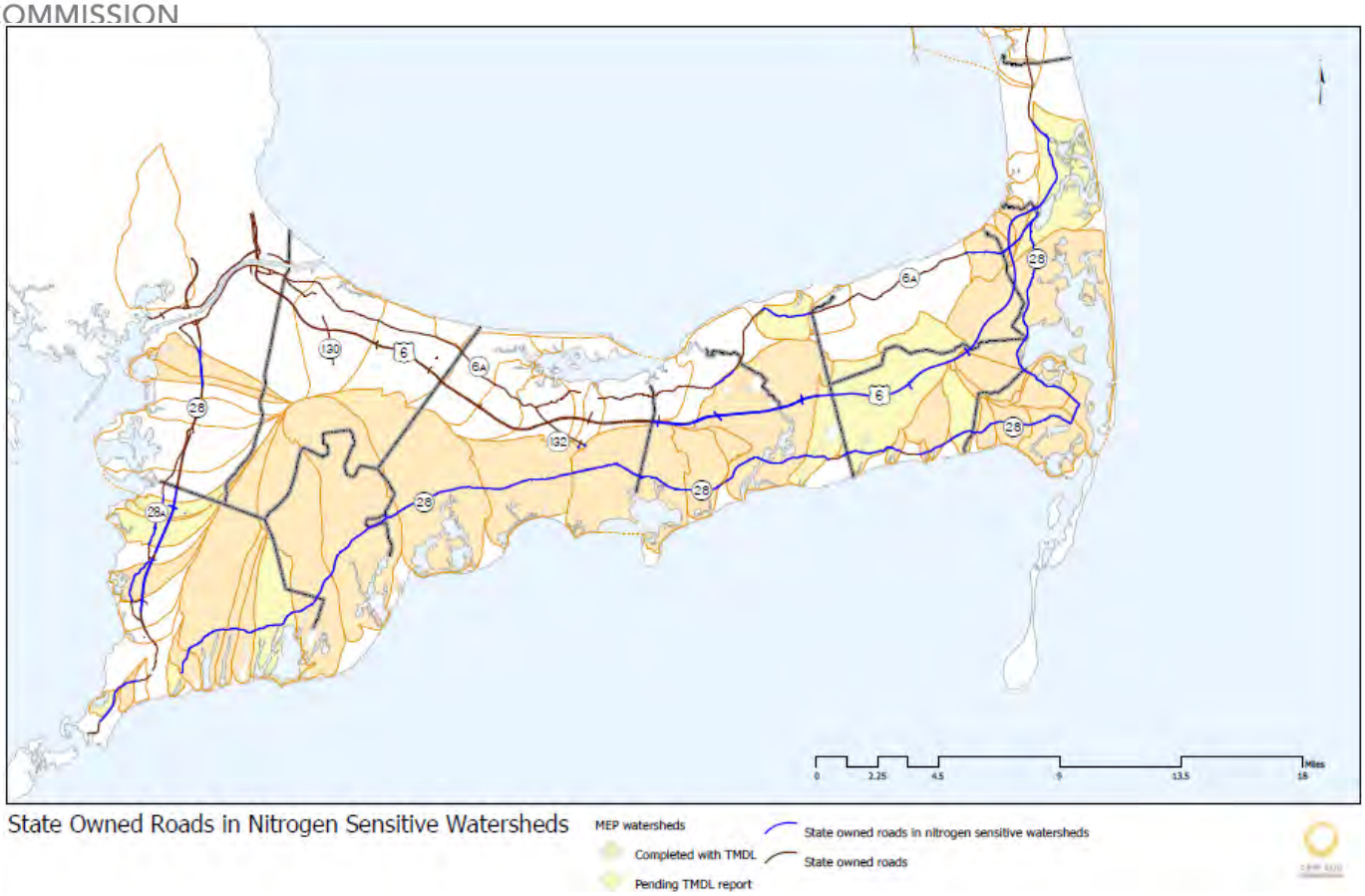
Funding/Staffing breakdown:

Funding source	Amount	CCC staffing
FHWA/MassDOT	$ 25,000	8.5 person-weeks
FTA (5303)	$2,286	1 person-week
CCC	$572	0.2 person-weeks

TASK 3.5 – ROUTE 6 HYDROPLANING

Background: Route 6 is the most traveled road on Cape Cod; however, the design of major portions of the roadway is antiquated and unsafe. Inadequate storm water management commonly results in ponding in several locations along the corridor. This situation presents a potential safety hazards for motorists. To date, no formal study has been conducted linking crashes on Route 6 to ponding conditions, but it is hypothesized that these hydroplaning crashes are quite prevalent.

The results of this initiative will be to quantify and analyze hydroplaning crashes on Route 6 and to provide suggestions to address this safety problem. Possible alternatives to be investigated include, but are not limited to construction of a pavement shoulder and improved storm water management practices. In all alternative analyses, careful attention will be paid to considering the most environmentally responsible solutions to storm water management. As can be seen in the following figure, significant portions of Route 6 pass through watersheds that contribute to nitrogen sensitive embayments; therefore, it is important that stormwater management include nutrient controls.



State Owned Roads in Nitrogen Sensitive Watersheds

The final product of the initiative will be a written report and a presentation to the Cape Cod Joint Transportation Committee (Cape Cod JTC) and to appropriate Massachusetts Department of Transportation (MassDOT) officials.

Task 1 – Route 6 Crash Analyses

The Cape Cod Commission staff will review and compile existing crash data to be supplied by MassDOT for Route 6. Particular attention will be paid to segments of the corridor identified as critical to this initiative.

Analysis will include but not be limited to consideration of location, weather, and roadway conditions at the time of each crash.

DELIVERABLES

The Final Report will document the results of the above crash analyses, including:

- Discussion of the history and recent trends in reported crashes on Route 6;
- Discussion of crashes by crash relevant crash characteristic;
- Maps of high crash segments along Route 6;
- Summary of Route 6 crash analyses.

Task 2 – Storm Water Management State of the Practice Review

The Cape Cod Commission staff will review existing documentation to ensure current state of practice for storm water management is considered. Particular attention will be paid to design standards, such as the Massachusetts Highway Project Development and Design Guide, that will govern final design of the roadway.

CAPE COD COMMISSION

DELIVERABLES

The Final Report will document the results of the above state of practice review, including:

- Discussion of the history and recent trends in storm water management;
- Summary of how current state of practice storm water management practices could be applied to Route 6.

Task 3 – Alternatives Development

Using the data, analyses, and the state of practice results generated in previous tasks, as well as input obtained during internal review, the Cape Cod Commission staff will develop alternatives to address the hydroplaning crash problem on Route 6.

These alternatives will be used to initiate for discussion with MassDOT as to the best approach to addressing this safety problem.

DELIVERABLES

The Final Report will document the results of the above alternative development, including:

- List and discussion of potential alternatives;
- List and discussion of preferred alternatives;
- Summary of how preferred alternatives address the safety problems in an environmentally responsible manner.

Task 4 – Preparation of Written Report

The Cape Cod Commission staff will compile all pertinent information gathered in the previous tasks into a Final Report. The report will provide sufficient background for ease of understanding the nature of the problem

and the best approaches to address it. The report will serve as an important and tangible first step to making progress towards a solution to this safety issue.

Task 5 – Presentation of Findings to Cape Cod JTC & MassDOT

In order to take the next step in pursuit of a solution, Cape Cod Commission staff will present the findings of this initiative to the Cape Cod JTC (or designated subcommittee thereof) and to appropriate MassDOT officials. Together with MassDOT officials, the next steps of project implementation will be identified.

Products: Results will be published in a written report to be made available online at www.capecodcommission.org in addition to printed copies for interested parties. Additionally, many of the component maps and other graphics will be made available online as well.

Schedule & Level of Effort: The schedule for this effort allows for a final completion by May 2013. Milestones include coordination meetings with the Cape Cod Joint Transportation Committee (or designated subcommittee thereof).

- Route 6 Crash Analysis: Fall 2012
- Storm Water State of Practice Review: Winter 2012
- Alternatives Development: Spring 2013
- Final Written Report and Presentations: May 2013

Funding/Staffing breakdown:

Funding source	Amount	CCC staffing
FHWA/MassDOT	$ 25,000	8.5 person-weeks
FTA (5303)	$2,286	1 person-week
CCC	$572	0.2 person-weeks

CAPE COD
COMMISSION

TASK 3.6 – FOLLOW-UP ON PREVIOUS TRANSPORTATION PLANNING STUDIES

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

Previous Work:

- Hyannis Access Study Implementation and 2011 Regional Transportation Plan

Products:

- Hyannis Access Study Implementation Final Report
- 2012 Regional Transportation Plan outreach documents (summaries, mapping of projects)

Schedule: As needed

Funding/Staffing breakdown:

Funding source	Amount	CCC staffing
FHWA/MassDOT	$ 18,750	6.5 person-weeks
FTA (5303)	$1,714	0.5 person-weeks
CCC	$429	0.1 person-weeks

Task #4 – Other Technical Activities

ITEM CODE 41.17.00

TASK 4.1 – INTERMODAL COORDINATION, INTELLIGENT TRANSPORTATION SYSTEMS (ITS), AND TRAVEL SMART INITIATIVES

Objectives: To promote the most efficient, cost-effective and environmentally sound use of our transportation system, covering all modes of transportation. To advance the development of Transportation Management Center on Cape Cod. To work with state agencies in the advancement of Intelligent Transportation System initiatives for Cape Cod, including further development of ITS for the region. To assist in the advancement of improved rail, bus, and water transportation, including passengers and freight to/from and within the Cape Cod region. To enhance the integration and connectivity of the transportation system, across and between modes, for people and freight. To promote efficient system operation and management.

Previous Work:

- Assistance to the Cape Cod Transit Task Force and the Cape Cod Regional Transit Authority
- Development and continued participation in the promotion of the Flex Route bus service for the Outer Cape
- Marine Transportation Feasibility Study, 1998
- Intermodal and congestion management systems efforts
- Assistance in ITS efforts on Cape Cod. Participation in Farradyne Systems study, 1995
- Transportation website: www.gocapecod.org
- Assistance to the Cape Cod Chamber of Commerce with the development of the "Smart Guide"
- Development of the Five-year and Long-range Public Transportation Plans for Cape Cod

- Development of the Public/Private Partners Program
- ITS Existing Conditions Report, 2010

Procedures:

- Assistance to the Cape Cod Transit Task Force and the Cape Cod Regional Transit Authority
- Assistance to the Massachusetts Department of Transportation with the development of ITS for Cape Cod – efforts to include outreach to stakeholders, attendance at meetings, review of documents and other assistance
- Development of specific ITS criteria, goals and priorities consistent with the Cape Cod Regional Transportation Plan
- Evaluation and integration of under-utilized sources of transportation information, including the Cape Cod Regional Transit Authority automated vehicle locator and the Route 132 closed loop signal system
- Advancement of 511 Traveler Information System and other real-time transportation information systems
- Support for MassRides' initiatives

Products: 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

Schedule: Continuous throughout the year

Funding/Staffing breakdown:

Funding source	Amount	CCC staffing
FHWA/MassDOT	$ 12,500	4 person-weeks
FTA (5303)	$ 28,238	9 person-weeks
CCC	$ 7,060	2.5 person-weeks

TASK 4.2 – OTHER TECHNICAL ASSISTANCE REQUESTS

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

Previous Work:

- 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

Funding/Staffing breakdown:

Funding Source	Amount	CCC staffing
FHWA/MassDOT	$ 23,125	8 person-weeks

CAPE COD COMMISSION

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

TASK 5.1 – REVIEW AND COMMENT ON ENVIRONMENTAL NOTIFICATION FORMS, ENVIRONMENTAL IMPACT REPORTS, AND DEVELOPMENTS OF REGIONAL IMPACT

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 Massachusetts Highway Department/Public Private Development Unit (MassDOT - PPDU) in the implementation of mitigation strategies.

Previous Work: Previous work includes analysis, review, and comment on Environmental Notification Forms (ENFs), Environmental Impact Reports (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
- 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

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

Funding Source	Amount	CCC Staffing
CCC	$ 69,703	23 person-weeks

TASK 5.2 – 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

Objectives: To provide technical assistance in the development and implementation of LCPs and DCPCs, Growth Incentive Zones, Economic Centers, village center planning, and other CCC funded transportation efforts

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

Funding/staffing breakdown:

Funding Source	Amount	CCC Staffing
CCC	$ 25,685	8.5 person-weeks

TASK 5.3 – OTHER TRANSPORTATION ACTIVITIES

Objectives: To perform other transportation activities and transportation program management

Previous Work: Past transportation program management

Procedures: Flexible

Products: Viable transportation planning program

Schedule: Continuous throughout the year

Funding/Staffing breakdown:

Funding Source	Amount	CCC staffing
CCC	$ 48,701	16 person-weeks

Appendix A – Additional Planning Efforts

The following projects are funded from outside sources (primarily from grants) and are shown for informational purposes.

APPENDIX A.1 – PROVINCETOWN/TRURO/WELLFLEET BICYCLE MASTER PLAN

Objective: Develop a master plan for a network of bicycle routes in Provincetown, Truro and Wellfleet and an extension of the Cape Cod Rail Trail (CCRT) from South Wellfleet. The three towns are ideally situated for constructing this network because they are adjacent to existing trails in the National Seashore and the CCRT.

Previous Work:

- Integrated Bicycle Plan for Cape Cod, 2010
- Adoption of project scope by the Towns of Provincetown and Truro
- Rail Trail Extension Study, 1988

Procedures: Per CCNS Grant Application

Budget: $381,680

Schedule: Work would be completed by June 30, 2014. (50% in FFY 2013)

CAPE COD COMMISSION

APPENDIX A.2 – UPDATE 5-YEAR AND LONG-RANGE CAPE COD TRANSPORTATION PLANS

Objective: The 5-Year Plan developed in 2002 will be updated by the Cape Cod Regional Transit Authority (CCRTA). The Cape Cod Commission (CCC) will assist with this effort based on the following scope of work.

1. Existing Conditions and Trends: **SHORT RANGE TRANSIT PLANNING $40,000**
   This effort will include compiling the most recent demographic information available as well as recent planning and research done to support the Regional Policy Plan. This data will be developed to support the work of the CCRTA planning.

2. Develop Build Out Analysis for Cape Cod: **LONGTERM TRANS PLAN - SYSTEM LEVEL $80,000**
   This effort will develop future land use based on a build out analysis for Cape Cod. This analysis will also include scenarios for interim years based on the Land Use Vision Maps (LUVMs) and the recent Cape-wide Community VIZ land use scenario developed with the towns.

3. Multi-Modal Planning: **GENERAL DEVELOPMENT/COMPREHENSIVE $60,000**

   - The CCC developed a regional bicycle plan with the Cape Cod National Seashore that defined a regional system of routes. The CCC will develop a multi-model plan that coordinates pedestrian/bicycle routes with the transit routes developed by the CCRTA. The CCC will develop conceptual Cape-wide plans (alternatives), strategic implementation plan, and estimates for the priority pedestrian/bicycle projects.
   - CCC staff will develop unified regional signage standards for Cape Cod and develop signage plans for major regional routes including the Claire Saltonstall Bikeway.

- The CCC will provide support, as needed, using the GIS capabilities and the extensive CCC database to develop mapping, perform analyses and evaluate projects, and other related activities including development of potential bicycle and pedestrian connections with other transportation services.
- The CCC will develop a Public Participation Approach and conduct public meetings and workshops as necessary. The CCC will document these efforts and compile comments and suggestions. This effort is expected to be, primarily, coordination with the 15 Towns to incorporate their bicycle and pedestrian needs into the planning process both on a local and a regional basis. This coordination will include review of the Local Comprehensive Plans (LCPs) and working with the towns to assure consistency. This may include assistance with updating the transportation element of the town LCPs and their Land Use Vision Maps.

4. Program Management by CCRTA: **PROGRAM SUPPORT ADMINISTRATION: $20,000**

    - The CCC will provide at a minimum quarterly Financial and Milestone/Progress reports for this grant to CCRTA.
    - CCRTA will provide grant management for CCC through TEAM: provide quarterly reports to FTA, monitor project funds/status, revise project budget (if necessary), and close out the grant.

Previous work:

- License plate surveys conducted Spring and Summer 1999
- 2002 Five-Year Public Transportation Plan
- 2003 Long Range Public Transportation Plan

Procedures: Hold public informational and stakeholders meeting (as necessary) to update the existing Public Transportation Plan. Develop future transportation needs.

Products: Updated Public Transportation Plan for Cape Cod

Schedule: Project is expected to be complete by June 30, 2013

Budget: $200,000 (50% of the work will be done in FFY2013)

CAPE COD COMMISSION

FEDERAL FISCAL 2013 SPR AND PL FORMULA ALLOCATION

Federal Fiscal 2013 SPR and PL Formula Allocation

based on revised MARPA formula

12 apportionment $7,542,136 *ESTIMATED, full apportionment not released, March 1, 2012*

MPO (PL-Funded)		%	12 apportionment at 94.96% OA	FHWA Funds	NFA Funds	TOTAL FFY2013
Berkshire	YR 1	0.04926403	$371,693	$371,693	$92,923	$464,616
Boston (CTPS)	YR 1	0.34335965	$2,097,550	$2,097,550	$524,387	$2,621,937
(MAPC)	YR 1		$492,018	$492,018	$123,004	$615,022
Cape Cod	YR 1	0.06126872	$462,230	$462,230	$115,558	$577,788
Central Mass.	YR 2	0.08719251	$657,593	$657,593	$164,398	$821,991
Merrimack Valley	YR 1	0.07114080	$536,533	$536,533	$134,133	$670,667
Montachusett	YR 2	0.05890295	$444,237	$444,237	$111,059	$555,297
Northern Middlesex	YR 1	0.06756006	$509,679	$509,679	$127,420	$637,099
Old Colony	YR 2	0.07044230	$531,265	$531,265	$132,816	$664,082
Pioneer Valley	YR 1	0.09461633	$713,582	$713,582	$178,396	$891,978
Southeastern Mass.	YR 2	0.09619265	$725,471	$725,471	$181,368	$906,838
TOTAL		*1.00000000*	***$7,541,852***	***$7,541,852***	***$1,885,463***	***$9,427,315***
RPAs ($PR-Funded)		Decreased by 1.52% over 2012				
Franklin	YR 1	$361,556	$375,932	$375,932	$93,983	$469,915
Martha's Vineyard	YR 1	$216,045	$215,563	$215,563	$53,891	$269,454
Nantucket	YR 4	$186,155	$183,363	$183,363	$45,841	$229,204
TOTAL			***$774,858***	***$774,858***	***$193,715***	***$968,573***
	TOTAL (PL and SPR funded)		***$8,316,711***	***$8,316,711***	***$2,079,178***	***$10,395,889***

The recommended PL Allocation Formula as developed by the Massachusetts Association of Regional Planning Agencies and recommended by MassDOT (formerly the Executive Office of Transportation) is based upon the following three factors. These factors result in the percentages shown.

- 40% of available funds are equally divided among the 10 MPOs.
- 30% is allocated based upon each MPO's relative share of Urbanized Population.
- 30% is allocated based upon each MPO's relative share of Total Population.

All figures are based upon the 2000 Census.

MassDOT Office of Transportation Planning

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CAPE COD
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LIST OF SIGNIFICANT PLANNING STUDIES AND OTHER GRANTS

Significant Regional Transportation Planning Efforts by Cape Cod Commission	
Cape Cod TIP Amendment FFY 2012-2015	February 27, 2012
Cape Cod Traffic Counting Program 2011 Annual Report	March 2012
Falmouth Sandwich Rd at Carriage Shop Rd & Hatchville Rd (RSA)	September 2011
Brewster Route 124 at Tubman Road Road Safety Audit (RSA)	September 2011
Yarmouth Route 6 ramps at Union St / Station Avenue (RSA)	September 2011
Cape Cod Transportation Improvement Program (TIP) for Federal Fiscal Years (FFY) 2012-2015	August 2011
Cape Cod TIP Amendment FY11-14	May 2011
Cape Cod Unified Planning Work Program amendment for 2010	January 2011
A Plan for Improved Pedestrian and Bicycle Facilities in Harwich	January 2011
Cape Cod Traffic Counting Program 2010 Annual Report	January 2011
Cape Cod Unified Planning Work Program for 2010	August 2010
Cape Cod TIP FY11-14	August 2010
Barnstable County Intersections of Critical Safety Concern	July 2010
Cape Cod TIP Amendment FY10-13	August 2010
Cape Cod TIP Amendment FY10-13	July 2010
Cape Cod Traffic Counting Program 2009 Annual Report	January 2010
Barnstable Route 149 at Route 6 ramps Road Safety Audit (RSA)	January 2010
Yarmouth Old Town House Road at Forest Road (RSA)	January 2010
Cape Cod TIP Amendment FY10-13	December 2009
Cape Cod TIP FY10-13	September 2009
Dennis Route 134 at Route 6 ramps Road Safety Audit (RSA)	August 2009
Yarmouth Road/Willow Street (Barnstable) Corridor Study	2009
Route 6A Corridor Management Plan Update	2009
2009 Transportation Safety Report	2009

Congestion Management Program	Continuous
Environmental Justice (e.g., "Workrides," online translations, videos, etc.)	Continuous
Cape Cod implementation of MBTA "Charlie Card" in coordination with Boston MPO for commuter bus passes	Continuous
Sandwich Cotuit Road at Harlow Road Road Safety Audit (RSA)	June 2009
Mashpee Great Neck Rd. No. at Old Barnstable Road (RSA)	June 2009
Sandwich Route 6 Road Safety Audit (RSA)	June 2009
Barnstable Route 28 at Bearses Way Road Safety Audit (RSA)	May 2009
2008 Transportation Safety Report	May 2009
Cape Cod Unified Planning Work Program amendment for 2009	March 2009
Cape Cod Traffic Counting Program 2008 Annual Report	February 2009
Cape Cod TIP Amendment Year 2009 January 2009	February 2009
2009 Regional Policy Plan	January 2009
Cape Cod Transportation Data Collection Guide	November 2008
"Transportation and the Environment" Cape Cod Regional Transportation Plan Workshop	October 2008
Cape Cod TIP Amendment FY2007-2010	June 2008
Cape Cod Traffic Counting Program 2007 Annual Report	January 2008
Barnstable Route 28 Centerville Road Safety Audit (RSA)	October 2007
Cape Cod TIP Adjustment FY2007-2010	August 2007
Cape Cod Unified Planning Work Program for FY2008	July 2007
Cape Cod TIP Amendment FY2007-2010	June 2007
Mashpee Route 130 Road Safety Audit (RSA)	May 2007
Cape Cod Traffic Counting Program 2006 Annual Report	April 2007
2006 Transportation Safety Report	December 2006
Cape Cod Unified Planning Work Program for FY2007	August 2006
Cape Cod Transportation Improvement Program FY2007-2010	August 2006
Cape Cod TIP Amendment (FY2006-2010)	March 2006
Route 28 Safety & Traffic Flow Study	January 2006
Provincetown - Howland and Bradford Street Intersection Study	November 2005
Cape Cod Traffic Counting Program 2005 Annual Report	November 2008
Cape Cod Unified Planning Work Program for FY2006	August 2005
Cape Cod Transportation Improvement Program FY2006-2010	July 2005
Cape Cod Transportation Improvement Program Amendment FY2005-2009	May 2005
Cape Cod Transportation Improvement Program Amendment	April 2005

FY2005-2009	
Cape Cod Unified Planning Work Program for FY05 Amendment	February 2005
Cape Cod Traffic Counting Program 2004 Annual Report	November 2004
Cape Cod Unified Planning Work Program for FY05	August 2004
Cape Cod Transportation Improvement Program FY2005-2009	July 2004
Cape Cod Transportation Improvement Program Amendment FY2004-2008	June 2004
Cape Cod Transportation Improvement Program Amendment FY2004-2008	March 2004
Route 6 Safety & Traffic Study (Eastham, Wellfleet, Truro, Provincetown)	March 2004
Cape Cod Transit Support Facilities Design Prototypes (Cape Cod Commission and National Park Service)	February 2004
Cape Cod Traffic Counting Program 2003 Annual Report	December 2003
2003 Cape Cod MPO Regional Transportation Plan	August 2003
Cape Cod Unified Planning Work Program for FY04	August 2003
Cape Cod Transportation Improvement Program FY2004-2008	August 2003
Cape Cod Transportation Improvement Program Amendment	June 2003
Falmouth Steamship Authority Traffic Study (final draft)	February 2003
Cape Cod Traffic Counting Program 2002 Annual Report	December 2002
Cape Cod Unified Planning Work Program for FY03	August 2002
Cape Cod Transportation Improvement Program FY2003-2007	August 2002
Cape Cod Park & Ride Study	June 2002
Five-Year Public Transportation Plan (by CCC and the CC Transit Task Force)	June 2002
2002 Regional Policy Plan	April 2002
Marston Mills Recreational Fields Traffic Study	November 2001
Provincetown Bike Route Study	December 2000
Bicycle Safety Study - Provincetown	April 2000
A Strategic Plan for Expanded Cape Cod Ferry Service	January 2000
Harwich Route 39/137 Planning Study	May 1999
Conwell Street Corridor Safety Study	May 1999
BL-2 Internal Road Transportation Benefits & Detriments (Sandwich)	November 1998
Massachusetts Military Reservation Master Plan	September 1998
Cape Cod Marine Transportation Feasibility Study	June 1998
Veterans Memorial Elementary School (Provincetown) Pedestrian Safety Study	May 1998

Route 28 & 132 Traffic Circulation Study - Barnstable	August 1992
Route 28 Traffic Circulation Study - Yarmouth to Orleans	March 1992
Route 28 Traffic Circulation Study - Mashpee	December 1989
Route 28/MacArthur Blvd Traffic Study - Bourne	April 1989
10-year Needs Assessment - Summary List	October 1989
Route 6 - Alternatives - Dennis to Orleans	October 1986

Environmental Impact Reports and Traffic Impact Studies (by others):	
Community Health Center, Traffic Impact and Access Study	May 2011
Sturgis Charter Public School, Traffic Impact and Access Study	February 2011
Windrift Acres, Traffic Impact and Access Study	April 2010
BJ's Wholesale Club, Traffic Impact and Access Study	November 2009
The Villages at Barnstable, Barnstable, Traffic Impact and Access Study	May 2009
FW Webb, Barnstable, Traffic Impact and Access Study	February 2009
Wise Living at Woods Hole, Falmouth, Traffic Impact Technical Memorandum	June 2008
Provincetown Municipal Airport Commission, Traffic Operation Report and Parking Analysis	March 2008
Teledyne/Benthos, Falmouth, Traffic Impact Study	September 2007
Daniels Recycling Company, Orleans, Traffic Impact and Access Study	July 2007
CanalSide Commons 40B, Bourne, Traffic Impact Memorandum	July 2007
Forest Cove 40B, Falmouth, Traffic Impact Study	April 2007
Blanchard Liquors, Barnstable, Traffic Impact Technical Memorandum	March 2007
Parkers River Marine Park, Yarmouth, Traffic Study	October 2006
CVS, Yarmouth, Traffic Impact letter	June 2006
Independent Living Facility, Falmouth, Traffic Impact Technical Memorandum	April 2006
Orleans Toyota - O'Connor Road Traffic Impact Letter	April 2006
CCRTA Fare Study - Final Report (Draft)	March 2006
Strategic Plan for the Development of Flex Service	March 2006
Dunkin Donuts, Dennis, Traffic Impact Letter	March 2006
International Fund for Animal Welfare Transportation Report, Yarmouth	March 2006

Electronics Superstore, Hyannis, Traffic Impact Technical Memorandum	March 2006
Walgreen Pharmacy, Traffic Impact & Assessment Study, Yarmouth	February 2006
Cape Cod Cooperative Bank, Barnstable, Traffic Impact Technical Memo	December 2005
Mashpee Industrial Park, Traffic Impact Letter	November 2005
Mashpee Commons, Traffic Impact & Access Study	November 2005
Macmillan Pier Transportation Center Feasibility Study - Final Draft Report	January 2006
CVS, Bourne - Traffic Impact Technical Memorandum	October 2005
Cape End Manor, Traffic Impact Letter, Provincetown	September 2005
Canal Bluffs 40B, Bourne, Traffic Impact Letter	September 2005
Spring Bars Road 40B, Falmouth, Traffic Impact and Access Study	September 2005
Falmouth Housing Corporation, Traffic Impact and Access Study	September 2005
Bayside Seafood and Market, Brewster, Traffic Impact Assessment	August 2005
Dowcett Subdivision, Yarmouth, Traffic Impact Assessment	August 2005
Spring Bars Road 40B, Falmouth, Traffic Impact Assessment	July 2005
Bourne Elementary School, ENF	June 2005
Office Building, Hyannis, Traffic Impact Assessment	May 2005
Summerwoods 40B, Traffic Impact Letter, Harwich	April 2005
Integrated Solid Waste Mgt Facility, Bourne, Traffic Impact Assessment	January 2005
Riverview School, Sandwich, Traffic Impact Assessment	January 2005
Canal Place 40B, Bourne, Traffic Impact Report	January 2005
Orleans Shaw's (Traffic Impact & Access Study)	November 2004
Annie's Pasture 40B, Traffic Impact Assessment, Sandwich	November 2004
Eastham Town Beach Traffic Impact Assessment	September 2004
Lookout Ridge Subdivision, Traffic Impact Assessment, Sandwich	September 2004
Sandwich Shaw's (Traffic Impact & Access Study)	August 2004
Barnstable Airport Improvement Project, Hyannis, MA (Final EIR/Final EA)	May 2004
Proposed Cape Cod Hospital Expansion	March 2004
CanalSide Commons Development Traffic Impact and Access Study	March 2004
North Bay Partners Traffic Study - Barnstable	March 2004
Schooner Village 40B, Traffic Impact Assessment, Barnstable	January 2004
Sagamore Rotary Grade Separation (Revised EA/Final EIR)	October 2003

South Cape Village Supplemental EIR	October 2003
Alternative Transportation Facility Design Prototypes Workbook	September 2003
Sagamore Rotary Transportation Improvements Project (Environmental Assessment and Draft EIR)	June 2003
Mashpee Place (Final EIR)	May 2003
Wendy's Restaurant, Yarmouth, Traffic Impact & Access Study	June 2003
Cape Cod National Seashore Alternative Transportation Systems Long Range Planning Study	May 2003
Augat Self Storage Transportation Impact Assessment, Mashpee	March 2003
Harwich Commons Expansion, Traffic Impact & Access Study	March 2003
Dunkin Donuts, Traffic Study, Brewster	February 2003
Wellfleet Harbor Actors Theater (Traffic Impact & Access Study)	December 2002
Pleasant Bay Assisted Living, Traffic Study - Brewster	November 2002
Wise Living 40B, Traffic Impact & Access Study, Orleans	November 2002
Cape Cod Hospital Proposed Hadaway Road Ambulatory Campus	October 2002
Falmouth Hospital Expansion Traffic Impact Study	October 2002
Independence Medical Arts Traffic Impact Letter - Barnstable	October 2002
Sandwich Shaw's (Traffic Impact & Access Study)	August 2002
Mashpee Shaw's (Traffic Impact & Access Study)	August 2002
Rt 28 Mobil Gas Traffic Impact Letter - Yarmouth	July 2002
Truro Stop & Shop (draft EIR)	May 2002
Orleans Shaw's (Traffic Impact & Access Study)	January 2002
Long Pond Medical Traffic Impact Letter - Harwich	September 2001
Atlantis Supermarket (ENF)	September 2001
Harwich Shaw's (Traffic Impact and Access Study)	April and July 2001
Anchor Self Storage, Sight Distance & Trip Generation Analysis, Mashpee	May-June 2001
Flagship Self Storage, Traffic Assessment, Mashpee	May 2001
BJ's Wholesale Club	April 2001
Cotuit Landing - Barnstable (final)	November 2000
CanalSide Commons - Bourne (final)	October 2000
Brewster Farms Country Market, Traffic Report, Brewster	August 200
CanalSide Commons - Bourne (supplemental draft)	May 2000
Mashpee Commons - Mashpee (draft)	March 2000
South Cape Factory Outlet - Mashpee (final)	February 2000
Route 3 - South Weymouth to Bourne - Corridor Needs Analysis	May 1999

Silver Square Traffic Impact Assessment - Bourne	April 1999
South Cape Factory Outlet - Mashpee (draft)	April 1999
CanalSide Commons - Bourne (draft)	February 1999
Route 6 - Transportation Improvements Project Dennis to Orleans (draft)	October 1994

Feasibility/Conceptual Planning Studies (by others):	
Cape Cod National Seashore Bicycle Feasibility Study	August 2010
Cape Cod National Seashore ITS Implementation Plan	2010
Cape Cod National Seashore ITS Implementation Plan, Existing Conditions Report	2010
Cape Cod National Seashore Satellite Maintenance Study	2010
Cape Cod National Seashore Integrated Parking and Transit Study	2010
Hyannis Access Study	August 2008
Buzzards Bay Village Comprehensive Transportation Plan	June 2007
Buzzards Bay Commuter Rail Extension Feasibility Study	January 2007
Sagamore Rotary Grade Separation Study	March 1998
Conceptual Design & Feasibility Study for a New Route 6 Interchange in the Town of Barnstable	January 1998

Other CCC Planning Grants:
US Dept of Housing & Urban Development - HOME program
Coastal Zone Management - Mass Bays Program
EPA - Wastewater Planning
EOEA - District Local Technical Assistance
DEP - U. Mass. School for Marine Science & Technology
NPS - Outer Cape Maintenance Study
NPS - Outer Cape Parking & Transit Study
NPS - Integrated Bicycle Study
NPS - Intelligent Transportation Implementation Plan
Monomoy Refuge - Monomoy Access Study

CAPE COD COMMISSION

LIST OF STAFF AND ESTIMATED PERCENTAGE OF TIME ALLOCATED TO MASSDOT FUNDED (PL) TASKS IN THE 2013–2014 UPWP

Staff Name and Position	Percentage of Time
Patty Daley, Deputy Director	5%
Glenn Cannon, PE, Technical Services Director	30%
Lev A. Malakhoff, Senior Transportation Engineer	85%
Priscilla N. Leclerc, Senior Transportation Planner	85%
Clay Schofield, PE, Transportation Engineer	40%
Steven Tupper, Technical Services Analyst	50%
Sharon Rooney, Chief Planner	5%
Phil Dascombe, Senior Community Design Planner	5%
Sarah Korjeff, Planner II (Historic Preservation Specialist)	5%
Tabitha Harkin, Special Projects Coordinator (Landscape Design Specialist)	5%
Cape Cod Commission – other Planning Staff	5%
Cape Cod Commission GIS Staff	5%
Seasonal Traffic Technicians	100%

Seasonal Traffic Counting Technician(s) – approximately 10 person-weeks (100%)

FY2013 Funding Summary

		FHWA PL funds	MDOT PL (match)	FTA Sec 5303	MDOT/FTA Sec 5316 Sec 5317	FTA Sec 5307	CCC	Other	Task Total
Task 1	**Mgt & Support of the Planning Process & Certification Activities**								
1.1	Unified Planning Work Program	$12,000	$3,000	$1,000			$250		$16,250
1.2	Transportation Improvement Program	$30,500	$7,625	$3,500			$875		$42,500
1.3	CCJTC and MPO activities/Public Participation Program	$40,000	$10,000	$4,000			$1,000		$55,000
1.4	Environmental Justice/Title 6	$28,000	$7,000	$4,000			$1,000		$40,000
1.5	Access to Jobs/Job Access Reverse Commute/New Freedom			$2,500	$16,900		$625		$20,025
1.6	Regional Transportation Plan	$10,268	$2,567	$5,000			$1,250		$19,085
	Total for Task 1	$120,768	$30,192	$20,000	$16,900		$5,000		$192,860
Task 2	**Data Collection & analysis activities**								
2.1	Traffic Counting Program	$50,000	$12,500						$62,500
2.2	Transportation database management	$27,000	$6,750						$33,750
2.3	Pavement Management	$25,600	$6,400						$32,000
2.4	Geographic Information Systems	$15,362	$3,841						$19,203
2.5	Climate Change Analysis	$20,000	$5,000						$25,000
	Total for Task 2	$137,962	$34,491						$172,453
Task 3	**Short and long range planning**								
3.1	Congestion Management (Bourne Rotary)	$40,000	$10,000	$4,571			$1,143		$55,714
3.2	Transportation Safety (Belmont Circle)	$30,000	$7,500	$3,429			$857		$41,786
3.3	Livable/Complete Streets (Route 28 in Yarmouth)	$50,000	$12,500	$5,714			$1,429		$69,643
3.4	Connecting Town Centers to the pedestrain/bicycle network	$20,000	$5,000	$2,286			$572		$27,858
3.5	Route 6 Hydroplaning	$20,000	$5,000	$2,286			$572		$27,858
3.6	Follow up on Previous Studies	$15,000	$3,750	$1,714			$429		$20,893
	Total for Task 3	$175,000	$43,750	$20,000			$5,000		$243,750
Task 4	**Other technical activities**								
4.1	Intermodal Coordination & ITS	$10,000	$2,500	$28,238			$7,060		$47,798
4.2	Other Technical Assistance Requests	$18,500	$4,625						$23,125
	Total for Task 4	$28,500	$7,125	$28,238			$7,060		$70,923
Task 5	**CCC Planning and regulatory activities**								
5.1	Regulatory						$69,703		
5.2	Planning						$25,685		
5.3	Other transportation activities						$48,701		
	Total for Task 5						$144,089		
Appx.	**Additional Planning Efforts**								
A.1	Provincetown/Truro/Wellfleet Bicycle Master Plan							$190,840	
A.2	Update 5-Year and Long-Range Cape Cod Transportation Plans							$100,000	
	Total for Additional Tasks							$290,840	
	Totals	**$462,230**	**$115,558**	**$68,238**	**$16,900**		**$161,149**	**$290,840**	
	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								
	Sec 5303 = Federal Transit Planning Funds								
	*Task 4.3 - expenditures not included in totals								
	TRIP - Paul S. Sarbanes Transit in Parks Program								
	PLHD=Public Lands Highway Discretionary								

CAPE COD COMMISSION

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