CAPE COD
COMMISSION

2016 REGIONAL TRANSPORTATION PLAN

# Technical Appendix G: Congestion Management Plan

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# Technical Appendix G: Congestion Management Plan

Any urban area with a population over 200,000 is considered a Transportation Management Area, which subjects it to additional planning requirements under the U.S. DOT's Surface Transportation Program. The Cape Cod Region has been designated as a Transportation Management Area (TMA) following the 2000 Census. Under the federal statutes that define the MPO processes and requirements, these conditions make the establishment of a Congestion Management Program (CMP) a requirement of the Cape Cod Metropolitan Planning Organization (MPO).

## CONGESTION MANAGEMENT AND MAP-21

Federal legislation that contains requirements for transportation plans, programs and projects includes the current legislation: *Moving Ahead for Progress in the 21st Century* (MAP-21) and the outgoing legislation: *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU) as well as the *Clean Air Act Amendments of 1990*. Following guidance developed under the current legislation, the Cape Cod MPO is in the process of updating the region's CMP. While the actions included in the existing CMP are generally in line with federal guidance the process will be updated to follow the structure of the following eight action items:

- Develop Regional Objectives
- Define CMP Network
- Develop Multimodal Performance Measures
- Collect Data/Monitor System Performance
- Analyze Congestion Problems and Needs
- Identify and Assess Strategies
- Program and Implement Strategies
- Evaluate Strategy Effectiveness [1]

## CONGESTION MANAGEMENT PROGRAM BACKGROUND

Congestion Management Programs are intended to be a systematic way of:

- Monitoring, measuring, and diagnosing the causes of congestion on a region's multi-modal transportation system;
- Evaluating and recommending alternative strategies to manage or mitigate regional congestion; and

[1] Congestion Management Process: A Guidebook. Federal Highway Administration. April 2011. Report No. FHWA_HEP_11_011.

- Monitoring and evaluating the performance of strategies implemented to manage or mitigate congestion.

The CMP is also intended to be a planning tool to help reduce mobile source emissions and improve regional air quality. To support this planning tool, monitoring of transportation system performance is an ongoing activity for the Cape Cod region.

"Congestion" is defined as travel time or delay in excess of that normally incurred under light or free-flow travel conditions. There are two primary types identified for congestion and a successful congestion management program should address both types of congestion. The two types of congestion are:

1. Recurring congestion that tends to be concentrated into short time periods, such as "rush hours" and is caused from excessive traffic volumes resulting in reduced speed and flow rate within the system, and

2. Non-recurring congestion caused from unforeseen incidents (road accidents, spills, and stalls) which affect the driver behavior to a considerable extent.

Critical to the concept of congestion management is the understanding that the acceptable system performance may vary by type of transportation modes and systems, geographic location, season, and/or time of day. The CMP must reflect parameters that identify the degree to which travel time and/or delays are within locally acceptable standards of mobility to meet the needs of individual states or metropolitan areas.

Significant Legislative Elements:

The CMP shall be developed, established, and implemented as part of the metropolitan planning process in accordance with 23 CFR 450.320(c). The statute includes the following requirements:

1. Methods to monitor and evaluate the performance of the multimodal transportation system, identify the causes of congestion, identify and evaluate alternative actions, provide information supporting the implementation of actions, and evaluate the efficiency and effectiveness of implemented actions.

2. Definition of parameters for measuring the extent of congestion and for supporting the evaluation of the effectiveness of congestion-reduction and mobility-enhancement strategies for the movement of people and goods. Since levels of acceptable system performance may vary among local communities, performance measures and service thresholds should be tailored to the specific needs of the area and established cooperatively by the State, affected MPO(s), and local officials in consultation with the operators of major modes of transportation in the coverage area.

3. Establishment of a program for data collection and system performance monitoring to define the extent and duration of congestion, to help determine the causes of congestion, and to evaluate the efficiency and effectiveness of implemented actions. To the extent possible, existing data sources should be used, as well as appropriate application of the real-

time system performance monitoring capabilities available through Intelligent Transportation Systems (ITS) technologies.

4. Identification and evaluation of the anticipated performance and expected benefits of appropriate traditional and nontraditional congestion management strategies that will contribute to the more efficient use of existing and future transportation systems based on the established performance measures. The following categories of strategies, or combinations of strategies, should be appropriately considered for each area:
    - Transportation demand management measures, including growth management and congestion pricing;
    - Traffic operational improvements;
    - Public transportation improvements;
    - ITS technologies; and,
    - Where necessary, additional system capacity.

5. Identification of an implementation schedule, implementation responsibilities, and possible funding sources for each strategy (or combination of strategies) proposed for implementation.

6. Implementation of a process for periodic assessment of the efficiency and effectiveness of implemented strategies, in terms of the area's established performance measures. The results of this evaluation shall be provided to decision makers to provide guidance on the selection of effective strategies for future implementation.

Modeled after FHWA guidance, the Cape Cod CMP includes the following eight action items:

- Develop Regional Objectives
- Define CMP Network
- Develop Multimodal Performance Measures
- Collect Data/Monitor System Performance
- Analyze Congestion Problems and Needs
- Identify and Assess Strategies
- Program and Implement Strategies
- Evaluate Strategy Effectiveness [2]

<u>Air Quality Non-attainment Areas</u>

In a Transportation Management Area (TMA), such as the Cape Cod region which is designated as being a non-attainment area for ozone, the federal statute also requires that the CMP perform an analysis of all reasonable travel demand reduction and operational management strategies for a corridor in which a proposed project will result in a significant increase in capacity for single-occupant vehicles (SOVs). This includes adding general purpose lanes to an existing highway or constructing a new highway and should consider multimodal strategies. If the analysis demonstrates that travel demand reduction and operational management strategies

[2] Congestion Management Process: A Guidebook. Federal Highway Administration. April 2011. Report No. FHWA_HEP_11_011.

cannot fully satisfy the need for additional capacity in the corridor and additional SOV capacity is warranted, then the CMP shall identify all reasonable strategies to manage the SOV facility effectively, or to facilitate its management in the future.

Other travel demand reduction and operational management strategies appropriate for the corridor, but not appropriate for incorporation into the SOV facility itself shall also be identified through the CMP. All identified reasonable travel demand reduction and operational management strategies shall be incorporated into the SOV project or committed to by the State and MPO for implementation.

## SYSTEM MONITORING AND DATA COLLECTION

A number of tasks are being performed annually to monitor traffic on Cape Cod.

The data collected in the monitoring process will be continually compared to the measures developed to define congestion. The comparison will be used to identify congested areas and trigger an investigation into the nature of the demand problems. These demand issues are expected to include regional traffic flows, local traffic generators, geometric problems, and access problems.

The following programs are currently underway and will continue. These existing programs are anticipated to provide the bulk of the data for the CMP.

### Traffic Counting Program

The Cape Cod Commission, funded by MassDOT, has been collecting traffic data since 1984. This data includes traffic volumes on key roadway segments around Cape Cod and turning movement counts collected at key intersections. The traffic counting program is established in a systematic way to provide historic data at key locations as resources allow. Counts are also made to support traffic studies and, in areas of concern, to identify congested situations. Development of the annual traffic counting program is done in consultation with the Cape Cod Joint Transportation Committee. The principal product of this effort is the annual traffic counting report.

The traffic counting program will continue to provide data for the CMP. Examination of changes in traffic volume will be done and trends will guide further investigation of traffic problems as part of the CMP. As the traffic counting program is defined each spring, counts to investigate suspected or identified congestion areas will be included. In addition, counts will be programmed to monitor congestion in areas where CMP initiatives are in place.

### Travel Time Analysis

Travel time has been monitored on a limited basis. Recently, GPS technology has made developing and recording travel time studies easier. Opportunities to use data provided by the automatic vehicle locators on all CCRTA vehicles is currently being explored. It is expected that this data will be useful in identifying congested areas and congested travel time periods on many

of the Cape's major traffic corridors. Additional GPS travel time studies will be recommended to support the CMP investigations especially in identifying problem areas within a corridor. For limited analyses the Cape Cod Commission is exploring the use of "Blue Toad" detection. This involves the installation of roadside Bluetooth detectors (Bluetooth is the name given to short-range wireless connectivity included in many portable communications devices such as cell phones). By recording the time and location of unique Bluetooth identifying codes, it is possible to automatically calculate the up-to-the-minute average time of travel between two points. These types of data are currently in use by MassDOT and provided to motorists via roadside message boards and signs.

Park-and-Ride Usage

Park and Ride lot counts are conducted routinely at the three MassDOT lots in the Cape Cod region and occupancy developed in terms of capacity. A detailed study was performed to determine use of the two primary lots in Barnstable and Sagamore including determining overnight use and use by the day of week and time of year. The use and occupancy of the Cape's park-and-ride lots will continue to be monitored.

Transit Usage

Ridership data is collected routinely by the mobile data computers linked to the fare boxes on the entire fixed route CCRTA system. The ridership on the demand response services (B-Bus) is also recorded by the CCRTA. This data has not been studied by the Cape Cod Commission and development of detailed transit use and patterns of travel will be incorporated into the CMP.

## CRITERIA FOR MEASURING CONGESTION

Criteria, measures of congestion, and the CMP are currently under development and these must be designed to respect the Regional Transportation Plan (RTP) goals and the philosophy designed to preserve the valued aspects of Cape Cod. This will likely make the standards adopted in many other regions unacceptable for Cape Cod.

Cape Cod is a unique place with extreme fluctuations in traffic over the course of a year due to the recreational nature of the region. The sensitive ecologic and aesthetic nature of the region have long been cherished and this has been reflected in the goals developed for the RTP.

The philosophy of the Cape Cod RTP is not to build to accommodate the peak season demand but to provide adequate transportation for year-round travel and to provide and promote alternatives to the automobile. This philosophy is different from the majority of the regions in Massachusetts and across the nation. The philosophy of the Plan places much more emphasis on management of traffic and providing alternatives to the automobile for transportation rather than accommodating traffic demand.

The development of congestion criteria will be done initially as a separate exercise along with a public process to develop measures consistent with the philosophies in the RTP. The measures

will be included in the RTP to allow review of these measures and potential updates on a periodic basis in conjunction with the review of the RTP goals and objectives.

Measures of seasonal as well as year round congestion need to be developed through the traffic counting program in addition to monitoring of the travel times as well as transit usage. Development of relative conditions and trends between seasonal demand and winter demand periods must also occur to help determine appropriate strategies for addressing congestion

Develop Measures of Roadway Congestion

Thresholds for determining acceptable levels of service will be proposed on the basis of volume to capacity ratios and reviewed in terms of defining the extent of congestion or to what extent these levels of service are exceeded on the Cape. Additional measures of congestion are to be defined in terms of delay. Travel time analysis and intersection studies will be used to identify the locations and corridors that exceed these thresholds.

In addition to the levels of traffic, measures of scenic and ecologic value will be included in the criteria for defining congestion. These criteria will help guide the solutions proposed to resolve identified congestion.

Develop Measures of Public Transportation Congestion

Public transportation is becoming increasingly important for Cape Cod. More than half (51 percent) of Cape households are considered "low income" according to the *Barnstable County Affordable Housing Needs Analysis* (Barnstable County Human Services Department, 1999) and alternatives to owning cars is becoming more important. The percentage of the population over 65 was 23.1% in the 2000 census and this segment of the population is growing. Many elders have difficulty driving and are becoming reliant on alternative forms of transportation.

Development of measures of congestion and effectiveness for various modes of public transportation on Cape Cod and related solutions to identified problems must be consistent with the goals (shown in the following table) developed by the Cape Cod Transit Task Force in the 5-Year Plan for public Transportation developed in 2002.

Table 1 - Cape Cod Transit Task Suggested Measures of Effectiveness

| Goal | Description |
|---|---|
| 1. | Reduce automobile dependency by providing mobility options. |
| 2. | Mitigate seasonal traffic by promoting travel to the region without cars, and by providing seasonal public transportation options. |
| 3. | Meet the needs of the year-round population for public transportation, especially the needs of those who are "transit-dependent" and in need of human services. |
| 4. | Develop coordination, communication, and cooperation between regional public transportation providers. |
| 5. | Incorporate smart growth and land use planning decisions into the development of public transportation. |

## ANALYSIS

The data collected in the monitoring process will be continually compared to the measures developed to define congestion. The comparison will be used to identify congested areas and trigger an investigation into the nature of the demand problems.

These demand issues are expected to include regional traffic flows, local traffic generators, geometric problems, and access problems. The annual traffic studies pursued by the Cape Cod MPO staff will be guided by the CMP and target areas for further study.

- Identify Areas of Roadway Congestion
- Identify Areas of Transit Congestion

To further facilitate public comment, the Cape Cod Commission has created an online questionnaire to assist in identifying congested locations. The results of the questionnaire are included in the main body of the RTP.

## DEVELOP STRATEGIES TO ADDRESS IDENTIFIED PROBLEMS

The following subsections include descriptions of the process to be used to produce CMP strategies.

### RECOMMENDATIONS

The results of the CMP will include the generation of studies to address issues that exceed the criteria developed to define transportation congestion for the region. These studies will produce recommendations that will be included in the RTP and TIP processes to be considered for construction or implementation.

Proposed Products

Develop CMP projects from the CMP Study recommendations and include them in the evaluation process for the region's RTP and TIP.

### RECOMMENDATIONS FOR LOCATION SPECIFIC ACTIONS/STUDIES

Recommendations to the MPO to address issues that exceed the criteria developed to define transportation congestion for the region will generally come from studies conducted by the Cape Cod Commission transportation staff. Recommendations may also be developed by the towns and the CCRTA. All recommended projects and strategies will be evaluated by the Commission and the Cape Cod Joint Transportation Committee using the MassDOT evaluation criteria and with the RTP goals. Based on these evaluations, the CMP projects will be considered by the MPO for inclusion in the RTP and compete for funding within the TIP.

### RECOMMENDATIONS FOR REGIONAL ACTIONS/STUDIES

Some congestion problems will need to be addressed on a corridor-wide or system basis or require significant investments. Studies or remedial actions will be recommended to the MPO for their consideration and potential inclusion in the TIP or the UPWP. Projects with regional significance may become an initiative of the Statewide Transportation Program. These proposed projects may require a more extensive evaluation with regard to conformity with the Massachusetts State Implementation Plan (SIP). These projects may also become Transportation Control Measures (TCMs) and included as such in the SIP submitted to EPA.

## CONGESTION MANAGEMENT REPORTING

The CMP is an ongoing program that documents the region's mobility concerns. The CMP contains the most recent performance monitoring information for the regional transportation system. The information and general analysis of the system, using the criteria defined in the CMP and RTP processes, will provide the basis for the Cape Cod Commission Transportation staff and the Cape Cod Joint Transportation Committee to make recommendations. These recommendations will be made to the Cape Cod MPO as congestion reducing and mobility enhancing actions to be considered in the MPO planning and programming processes. The main means of providing congestions information is via the Cape Cod Commission's Transportation Information Center on the internet:

www.capecodcommission.org/congestion

The following figure is a screen capture of the main Congestion Management webpage on the website. Users have access to traffic cameras, speed maps, automated bus locators, trip planners and a number of other tools to identify and avoid congestion.

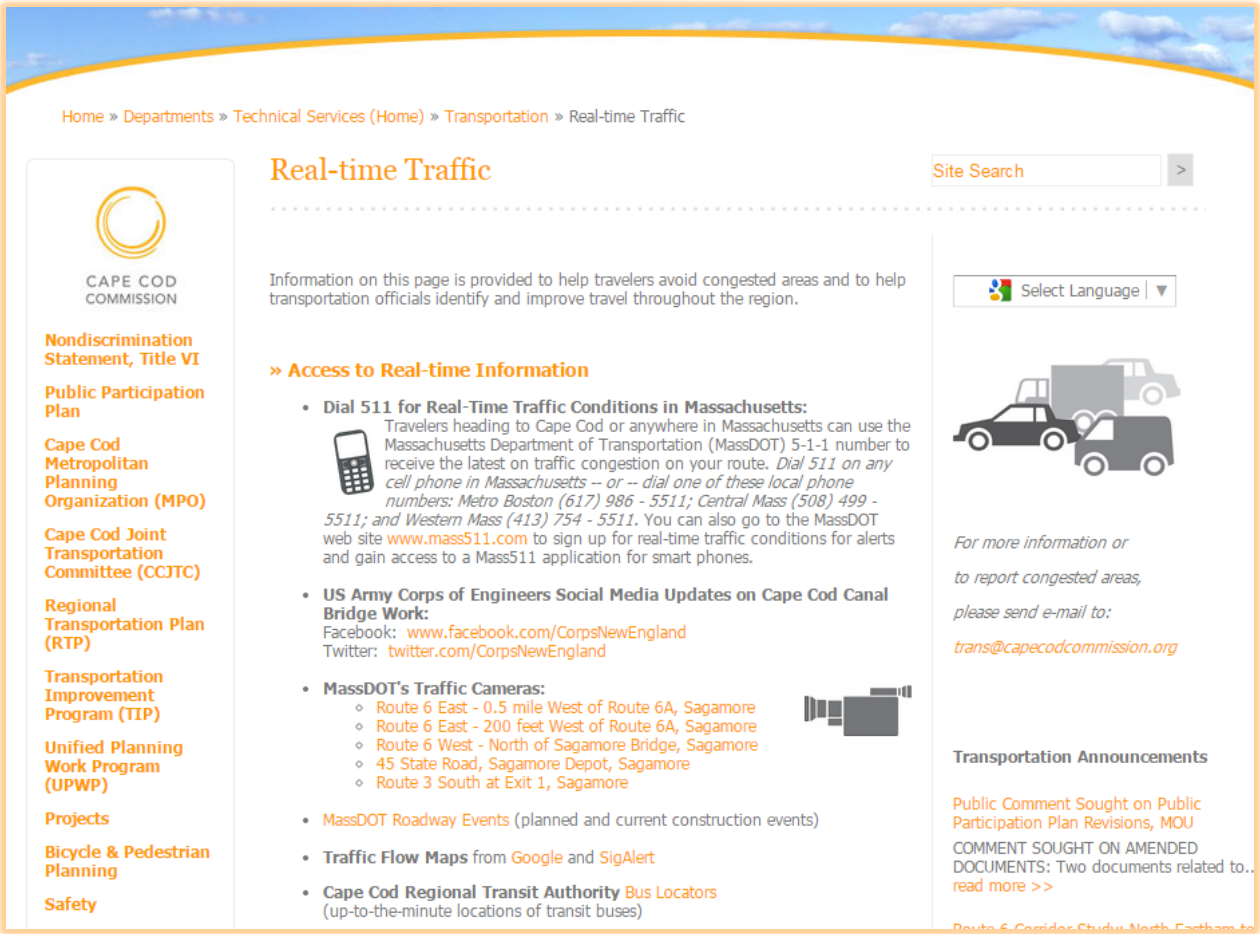


FIGURE 1 – CONGESTION MANAGEMENT WEBSITE MAIN PAGE

## SUMMARY OF 2014 TRAFFIC COUNTING ACTIVITIES

The traffic counting program is the base data source for developing trends in traffic growth and potential for growth in traffic congestion. The following information is from the *Cape Cod 2014 Traffic Counting Report* to be published in early 2015. The full report and access to mapped traffic counts are available at:

www.capecodcommission.org/counts

The Massachusetts Department of Transportation (MassDOT) maintains six permanent counter locations on or near Cape Cod on some of the more heavily trafficked roads. The following table displays those six locations with their ten-year growth, ten-year average annual growth, and one-year growth rate (2013-2014).

TABLE 2 - GROWTH RATES - PERMANENT COUNTING STATIONS AND BRIDGE CROSSINGS

| Permanent Traffic Counting Station | 10 Year Total Growth | 10 Year Average Annual Growth Rate | One Year Growth Rate 2013-2014 |
|---|---|---|---|
| #15: Rt 6 E of Rt 149 (Ex. 5) | -6.76% | -0.70% | n/a |
| #20: Rt 3 N of Bourne TL | 16.0% | 1.49% | 0.30% |
| #707: Bourne Bridge | -0.97 | -0.10% | 1.90% |
| #708: Sagamore Bridge | 1.8% | 0.17% | -2.32% |
| #709: Rt 28 E of Higgins Crowell | -11.2% | -1.19 | -0.95 |
| #7351: Rt 28 W of Old Post Rd | -7.03% | -0.73% | -1.67 |

*Source: MassDOT*

It is important to note that growth is based on summer traffic volumes, not off-season values.

TABLE 3 - CAPE COD SUMMER TRAFFIC GROWTH (2004-2014)

| Region | Number of Comparisons | 10 Year Total Growth | 10 Year Average Annual Growth Rate |
|---|---|---|---|
| **Upper Cape** | 115 | 1.23% | 0.12% |
| **Mid-Cape** | 113 | -7.37% | -0.77% |
| **Lower Cape** | 74 | -5.66% | -0.59% |
| **Outer Cape** | 68 | -5.77% | -0.60% |
| **All Roads** | **370** | **-3.20%** | **-0.33%** |

"Upper" = Bourne, Sandwich, Falmouth, Mashpee
"Mid" = Barnstable, Yarmouth, Dennis
"Lower" = Harwich, Chatham, Brewster, Orleans
"Outer" = Eastham, Wellfleet, Truro, Provincetown

*Source: Cape Cod Traffic Counting Report*

## EXISTING CONGESTION INDICATORS

The Cape Cod Center for Sustainability in their *Cod Sustainability Indicators Report* has developed a number of factors that bring together social, economic, and environmental indicators to be tracked over time. While no single indicator is able to give the entire picture, tracking representative indicators in many areas provides an overall sense of trends and of the Cape's progress toward becoming a sustainable region. This report has developed the following indicators for traffic and transit.

### TRAFFIC

The Cape Cod Center for Sustainability traffic congestion indicator is based on average annual daily bridge crossings over the Sagamore and Bourne bridges. While there are many possible indicators of congestion, bridge traffic is easy to measure, provides data on long-term trends, and has significant implications for traffic Cape wide, as many who bring their cars across the bridge use them for virtually all local or regional trips.

Bridge crossings have been rising steadily for most of the past 32 years.

Traffic data have been collected at permanent count stations at both bridges since 1972. Carrying roughly twice as many vehicles today as in 1972, the story of traffic over the bridges is the story of traffic on Cape Cod.

As shown in the figure below, both summer and annual average daily traffic (ADT) over the bridges showed an overall upward trend from the early 1970's through the early 2000's,

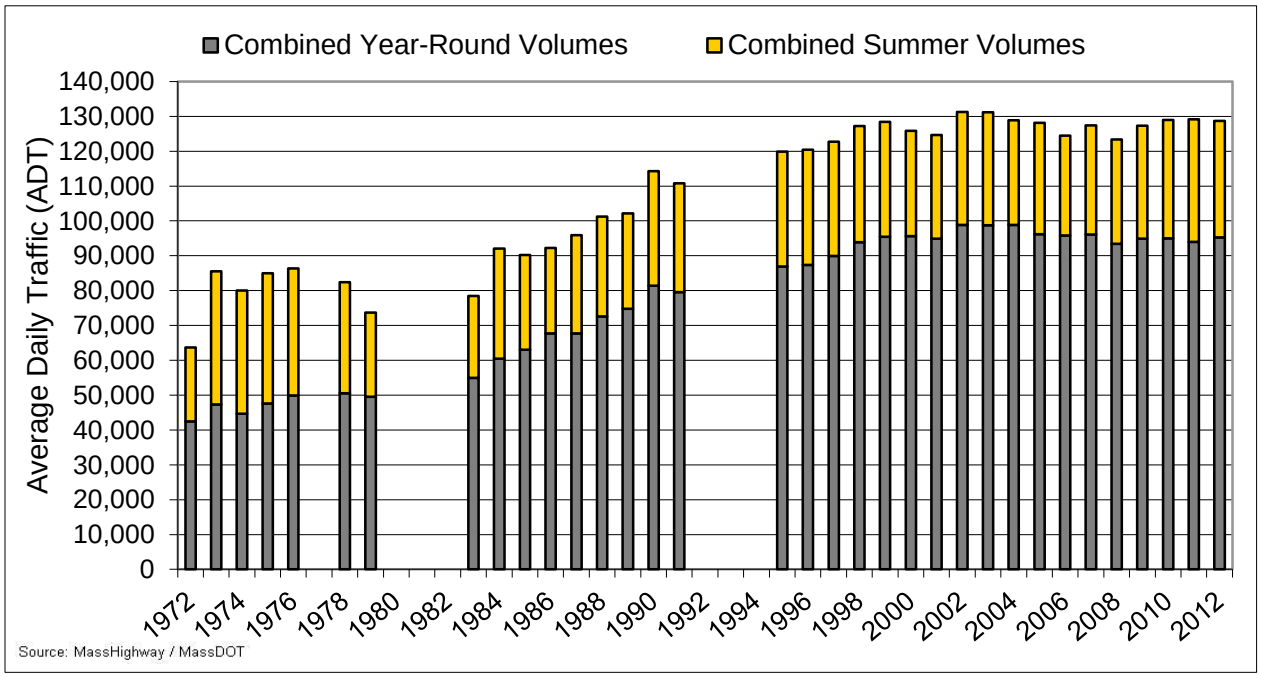


FIGURE 2 – COMBINED AVERAGE DAILY TRAFFIC OVER BOURNE AND SAGAMORE BRIDGES

reaching a maximum in 2002. Traffic volumes, on average, dropped from 2002 to 2007 before trending slightly upward in recent years. This figure has not been updated since 2012 because traffic counters have not been able to supply consistent data throughout the year.

Seasonal traffic trends over the bridges have also changed considerably over the years. Since 1972, traffic has tended to be more spread out over 12 months as opposed to concentrated during the summer months. As shown in the following figure this trend, along with the overall increase in traffic, has resulted in 2011 traffic volumes throughout almost the entire year in excess of 1972 traffic volumes in the summer.

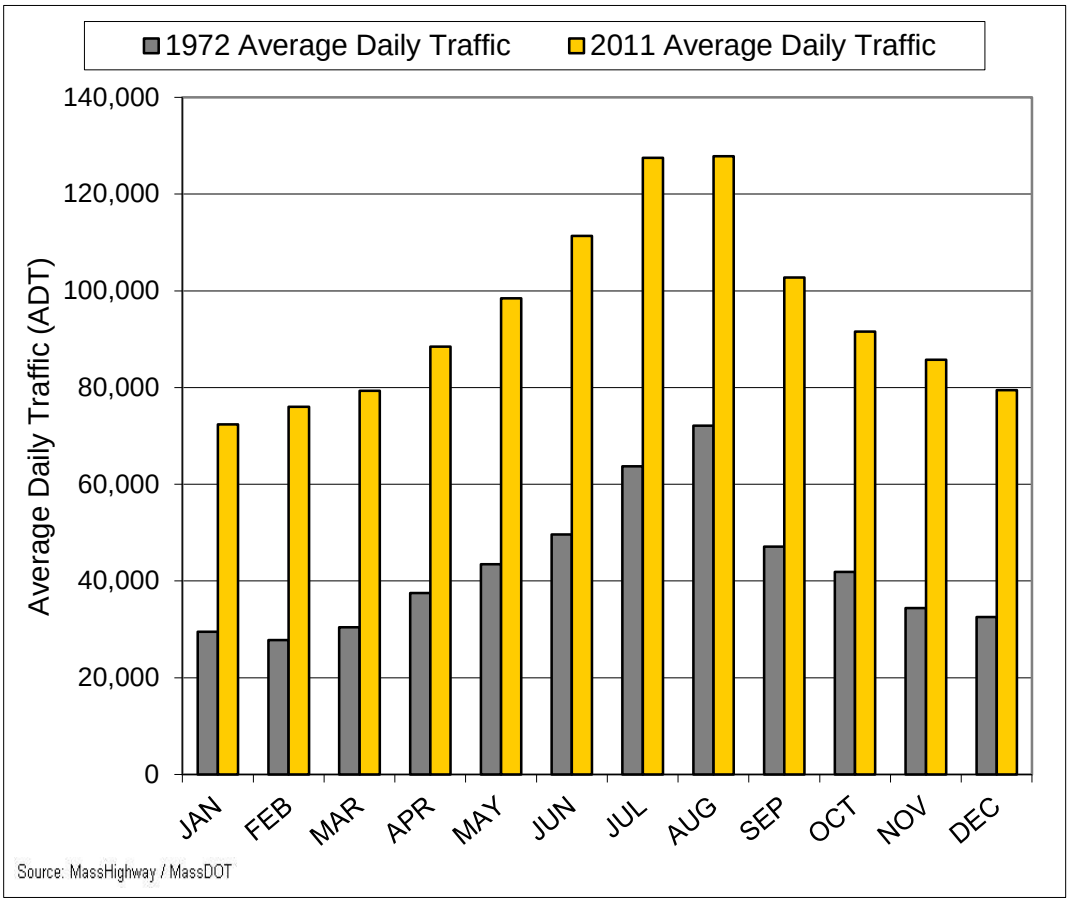


FIGURE 3 - HISTORIC MONTHLY ADT CHANGES AT THE CAPE COD CANAL BRIDGES

The figure below shows daily traffic volumes from Memorial Day in May until Labor Day in September at the Bourne and Sagamore Bridges. Weekend volumes are shown with shaded dark lines and weekday volumes are shown with lightly shaded lines. Weekends are defined as Friday through Sunday. Data suggests that traveling mid-week has the least chance for delays and traveling on Friday has the highest chance for delays. The highest summer volumes recorded were on August 8th at 65,686 crossings on the Bourne Bridge and 79,161 crossing on the Sagamore Bridge. The lowest summer volumes were recorded on July 4th at 35600 crossing on the Bourne Bridge and 41583 crossings on the Sagamore Bridge. The low vehicle volumes on July 4th contradict the extraordinary amount of people visiting Cape Cod that weekend, but suggest that travel on the day of holidays is relatively calm because most visitors travel in the days prior or afterwards.

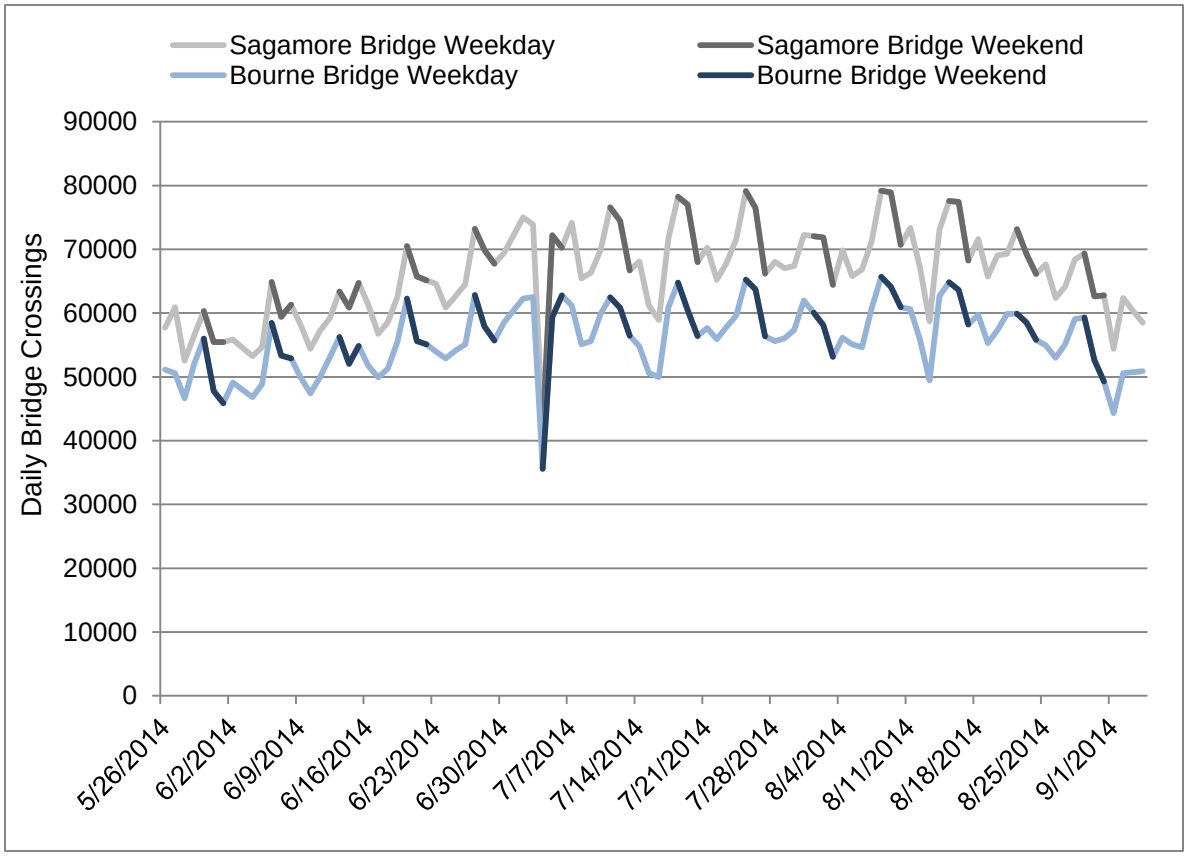


FIGURE 4: WEEKEND VS. WEEKDAY TRIPS ACROSS THE CAPE COD CANAL BRIDGES

The figure below compares the total monthly vehicle traffic in both directions on the Bourne and Sagamore Bridges in 2014. The Sagamore Bridge was consistently crossed more each month. In the summer months, both bridges received increased traffic and the difference in usage between the bridges increased. The Sagamore Bridge data are incomplete up to May 2014. The absence of data for the other months limited the extent of analysis.

The different usage of the two bridges shows a similar trend when examining directional volumes, as shown by the figure below. More vehicles cross the Sagamore Bridge than the Bourne Bridge each month. During certain months, the northbound traffic on the Bourne Bridge is comparable in number to the southbound traffic on the Sagamore Bridge. This could suggest that travelers may use different bridges to travel to and from their Cape Cod destination. The access to and from the Canal roadways to the bridges varies in each crossing direction

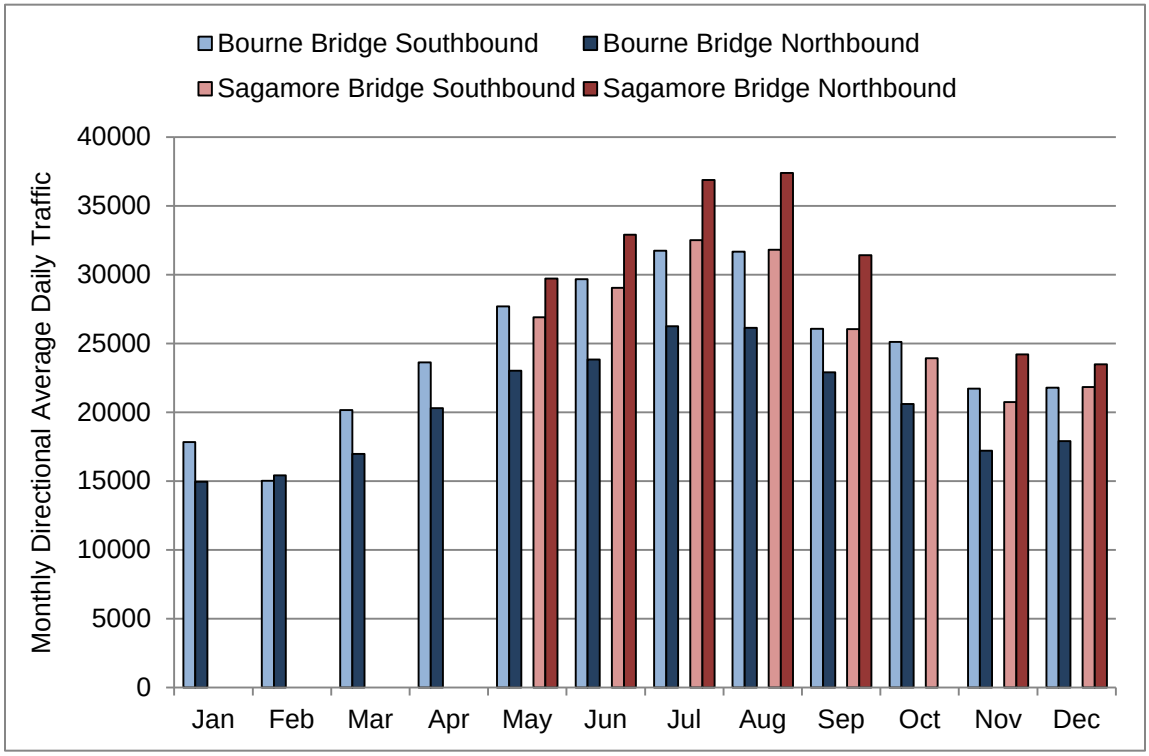


FIGURE 5: MONTHLY DIRECTIONAL AVERAGE DAILY TRAFFIC AT THE CAPE COD CANAL BRIDGES

MassDOT remote counting stations located on Route 28 in the towns of Barnstable and Yarmouth show useful insight into traffic trends in the Mid Cape area in 2014. The figure below show the summer average daily traffic (ADT) for each hour of the day at the locations of Route 28 east of Higgins Crowell Road and Route 28 west of Putnam Avenue. The data shows that during the summer there was typically more traffic on Route 28 at the location in Barnstable east of Putnam Avenue in Cotuit than in the Location in Yarmouth East of Higgins Crowell Road, except between the hours of 6pm and 9pm.

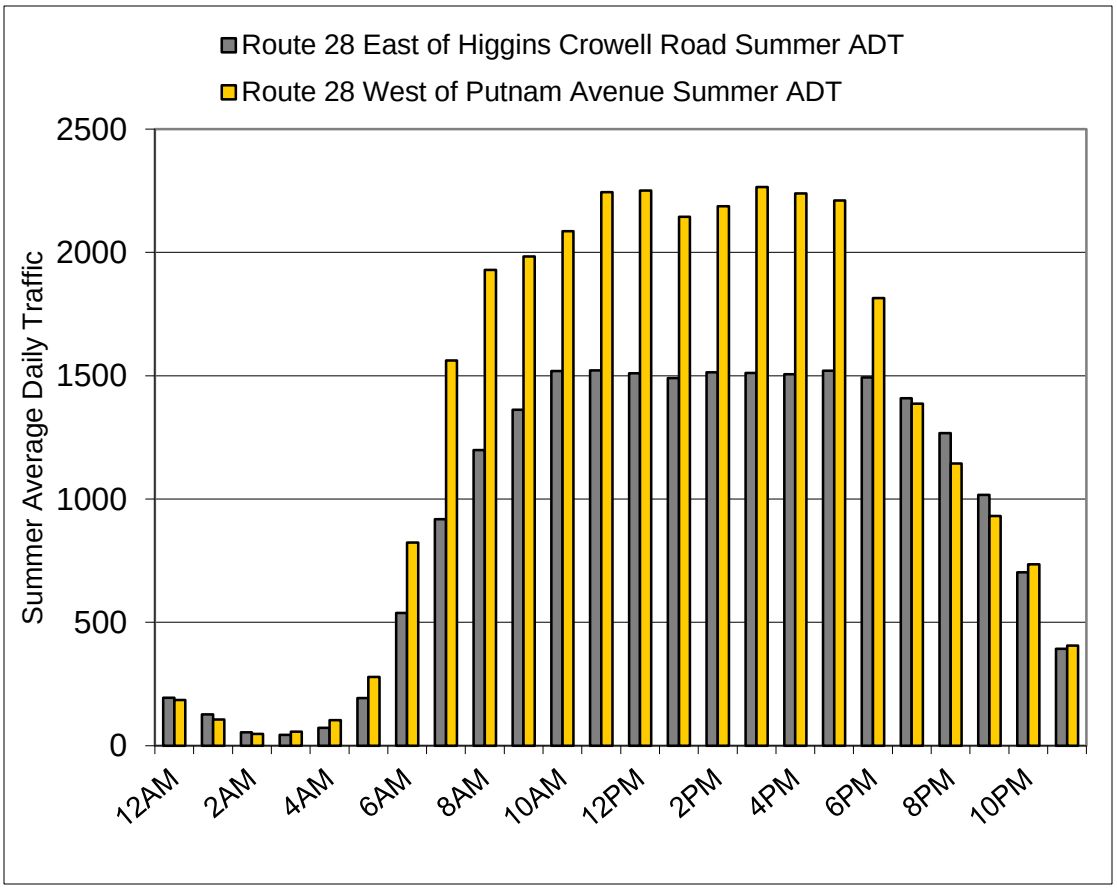


FIGURE 6: HOURLY SUMMER DATA AT MASSDOT PERMANENT COUNTING STATIONS ON ROUTE 28

The graph below shows the monthly volumes that were counted by Cape Cod Commission permanent counting stations. The chart only includes months that more than a day of missing data. The intersection at Route 28 and Lumbert Mill Road in Barnstable showed the highest volumes of the three locations in each month except July and August. This location had the most consistent volume year round. The intersections in Harwich, Route 124 at Queen Anne Road and Route 137 at Route 39 showed a larger increase in volume during the months of July and August. The monthly total for July and August for the Route 137 at Route 39 intersection showed highest volumes of the three locations.

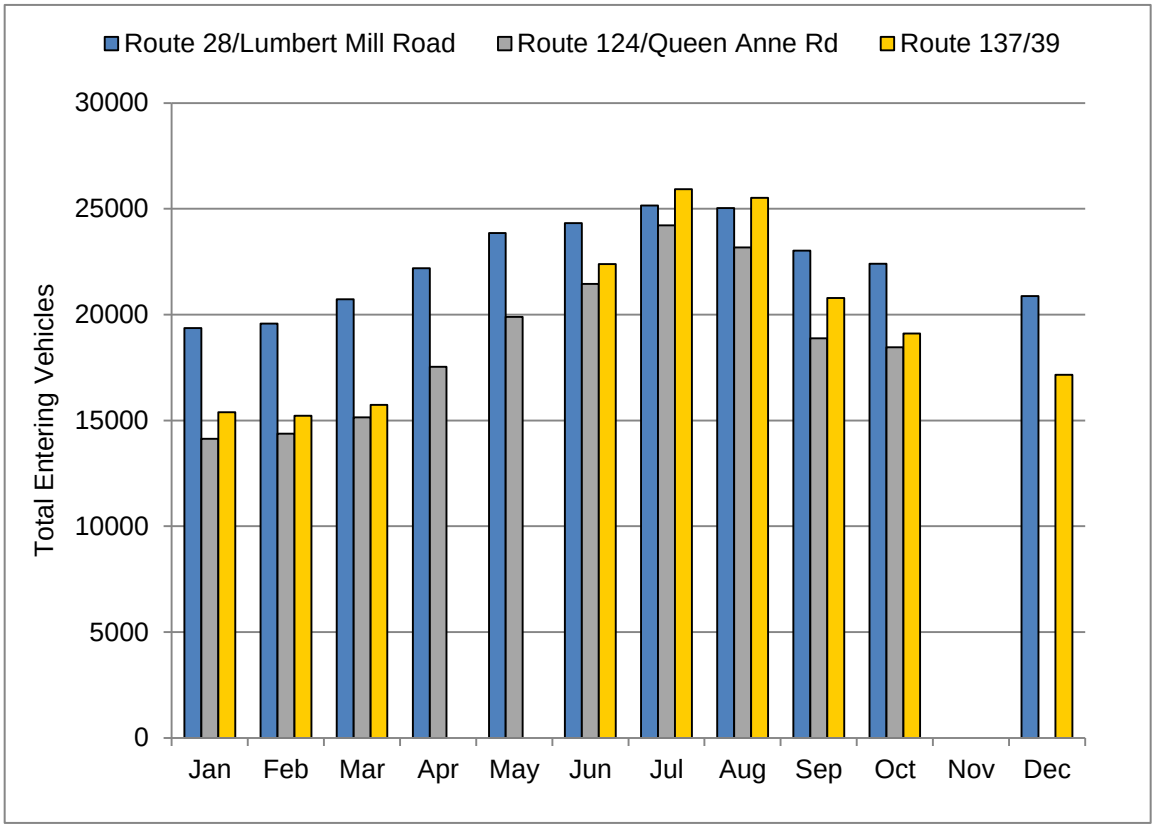


FIGURE 7: MONTHLY TRAFFIC VOLUMES RECORDED AT CAPE COD COMMISSION PERMANENT COUNTING STATIONS

## GAS PRICES

Gas prices have varied significantly and affect the use of the automobile and transit. The following Massachusetts retail price/gallon data (as of April 2014) is from www.gasbuddy.com.

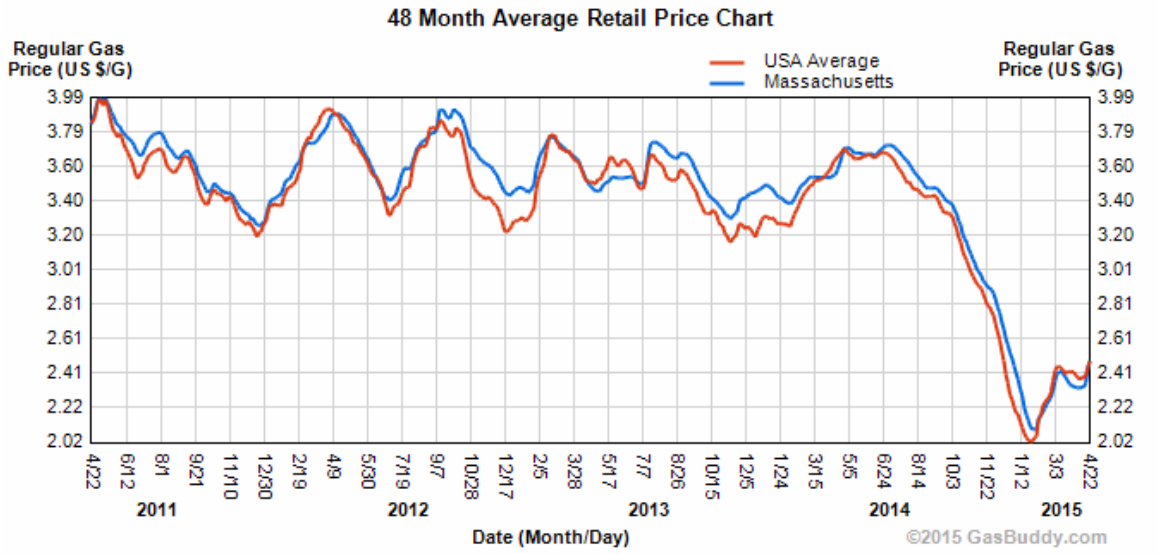


FIGURE 8 - MASSACHUSETTS AND USA GAS PRICES

## VOLUME TO CAPACITY RATIO OF CAPE COD ROADS

The following figures present Level of Service information for many Cape Cod locations based on the volume to capacity ratio. The thresholds for these ratios are shown in the following table:

| Symbol | V/C Ratio Threshold | Level of Service (LOS) |
|---|---|---|
| ● | 0.8 | C or Better |
| ● | 0.9 | D |
| ● | 1.0 | E |
| ● | >1.0 | F |

The Level of Service (LOS) calculations are performed for locations where the CCC has collected summer traffic counting data. The traffic volumes used represent a consistent summer weekday 4-5 p.m. peak hour. Roadway capacities were extracted from the Cape Cod travel demand forecasting model and originated from the Office of Transportation Planning at MassDOT.

Roadway LOS only shows part of the congestion picture. In many cases traffic congestion bottlenecks occur at intersections. Intersection analyses are more complicated and performed on a case-by-case basis. Such locations are often identified through public input and consultations with local traffic officials such as CCJTC members.

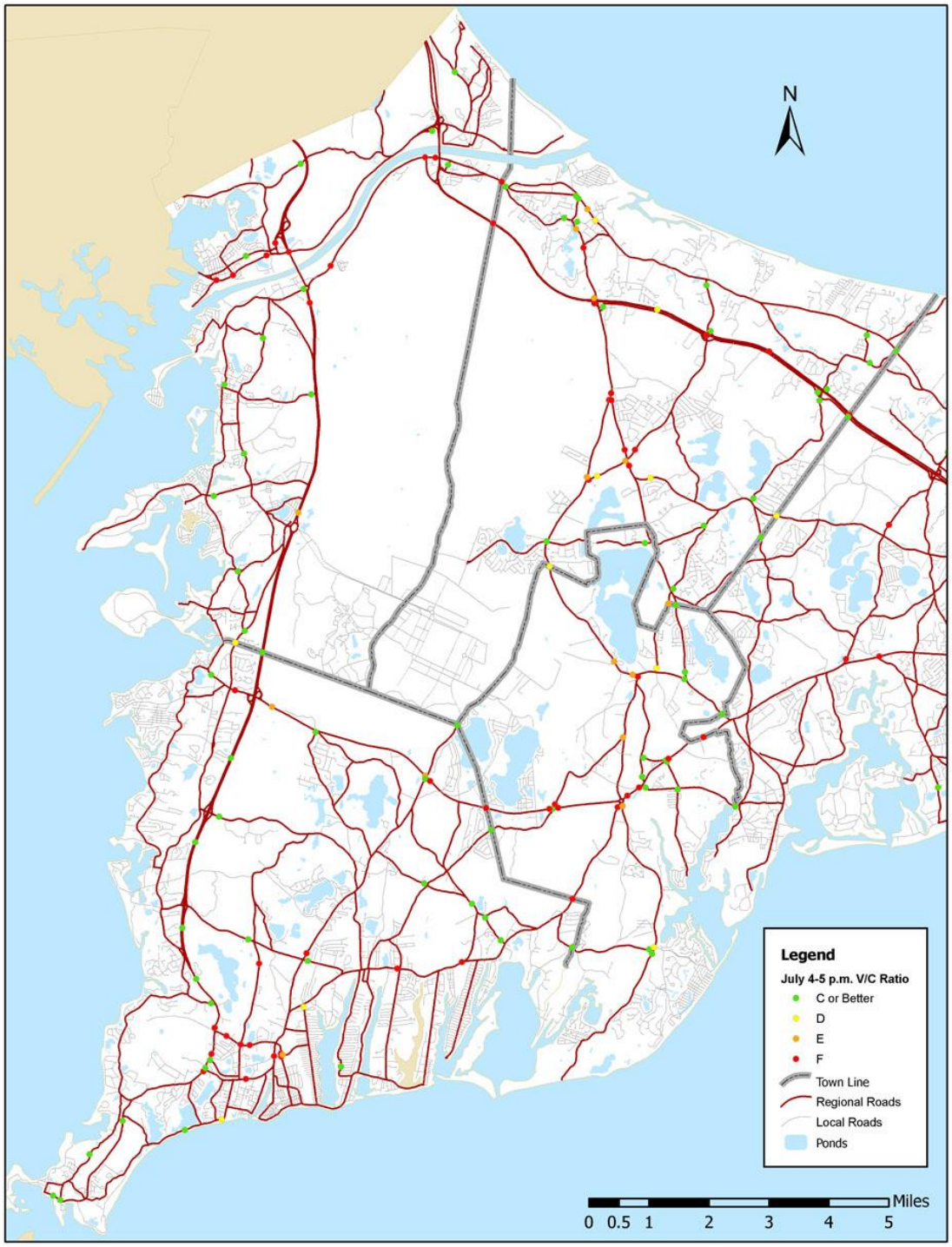


FIGURE 9 - UPPER CAPE COD V/C RATIOS

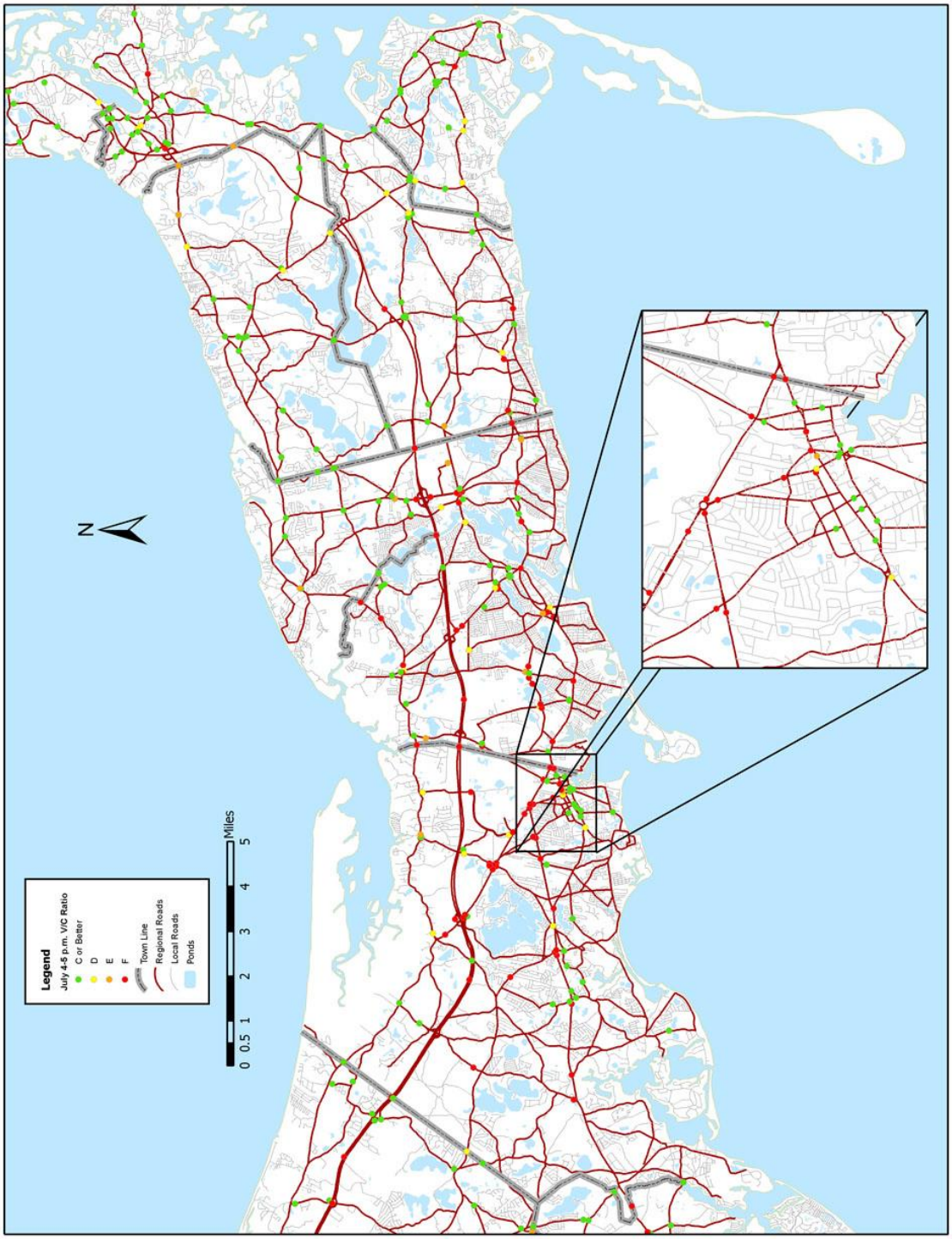


FIGURE 10 - MID-CAPE COD V/C RATIOS

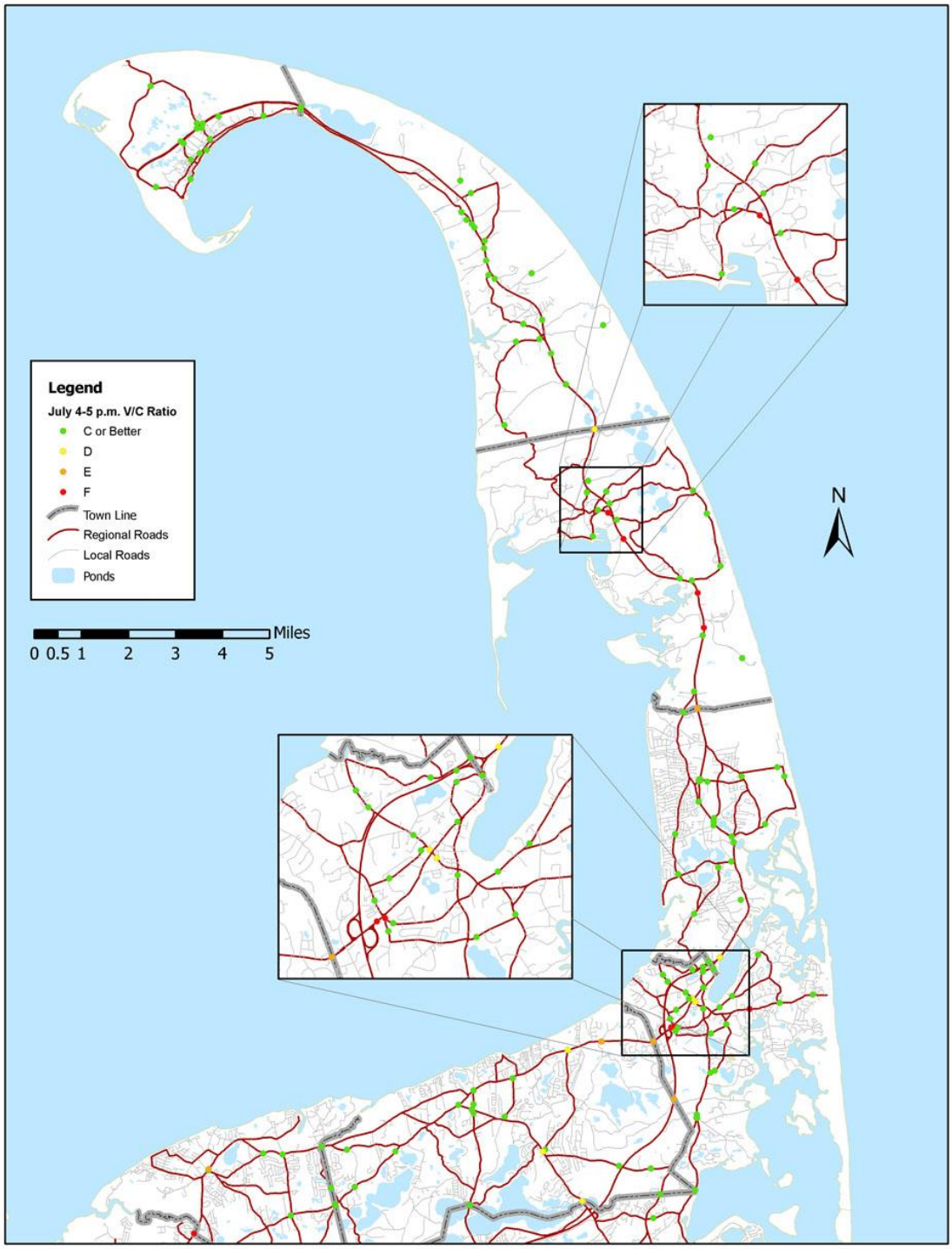


FIGURE 11 - OUTER CAPE COD V/C RATIOS

## TRAVEL TIME CORRIDORS

The following figure shows travel time information on selected major corridors on Cape Cod (e.g., Route 28, Route 6A, and Route 6 in the Outer Cape). The CCC has collected speed data on the color-coded segments. The above graphic shows the observed speed divided by the speed limit of each road segment. (Observed speeds were collected at various times of the day during summer weekdays). Road segments color coded green include a ratio of 1.0 – this represents travel speeds matching the speed limit. Heavily congested roadways are represented in red (speed/speed limit ranges from 0.11-0.50).

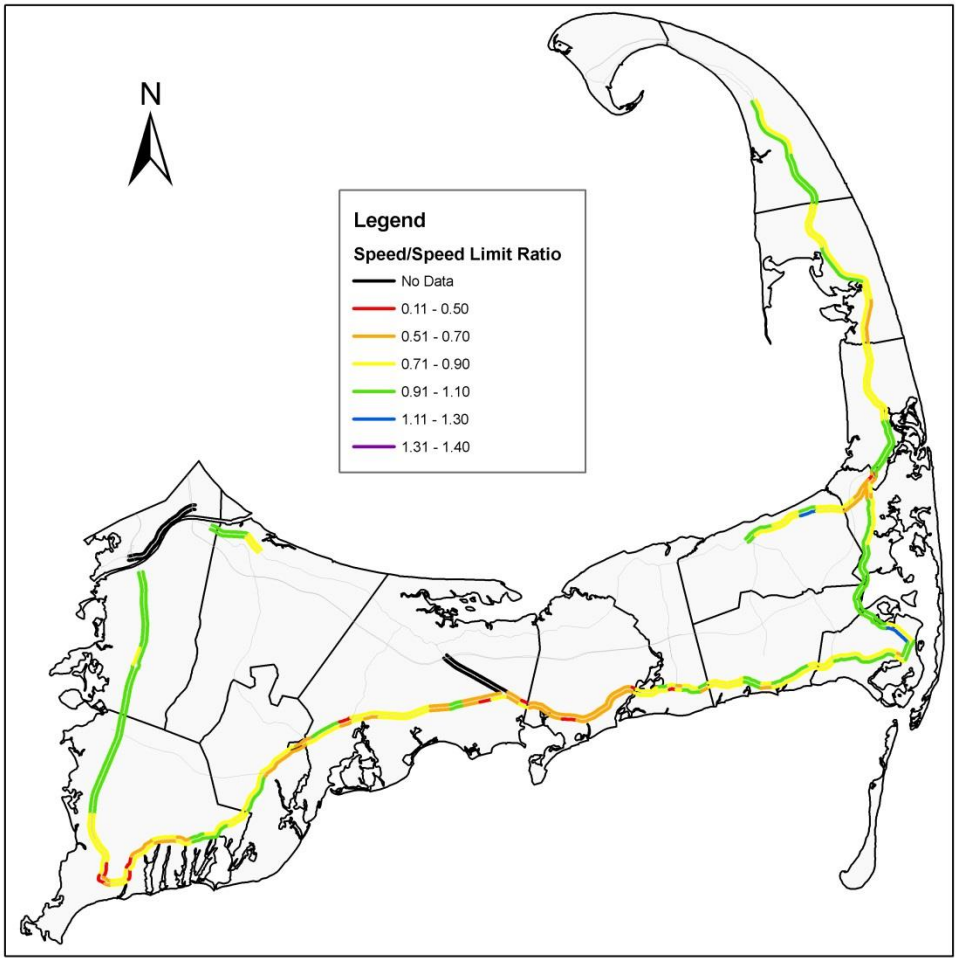


FIGURE 12 - RATIO OF SPEED/SPEED LIMIT ON SELECTED CAPE COD ROADS

## TRANSIT GROWTH

The indicator used by the Cape Cod Center for Sustainability to monitor transit, measures the total number of riders using public transit annually. This indicator measures local and regional

(on-Cape) ridership on public transit systems, but does not measure the ridership on private carriers or commuters to Boston.

This measure of annual ridership documents one aspect of the alternatives to the automobile. The Outer Cape *Flex* service was introduced on June 1, 2006 and was more successful than anticipated and will be monitored for trends in future years.

System-wide Ridership

Transit has seen a steady growth in ridership over the past decades as shown in Figure 13.

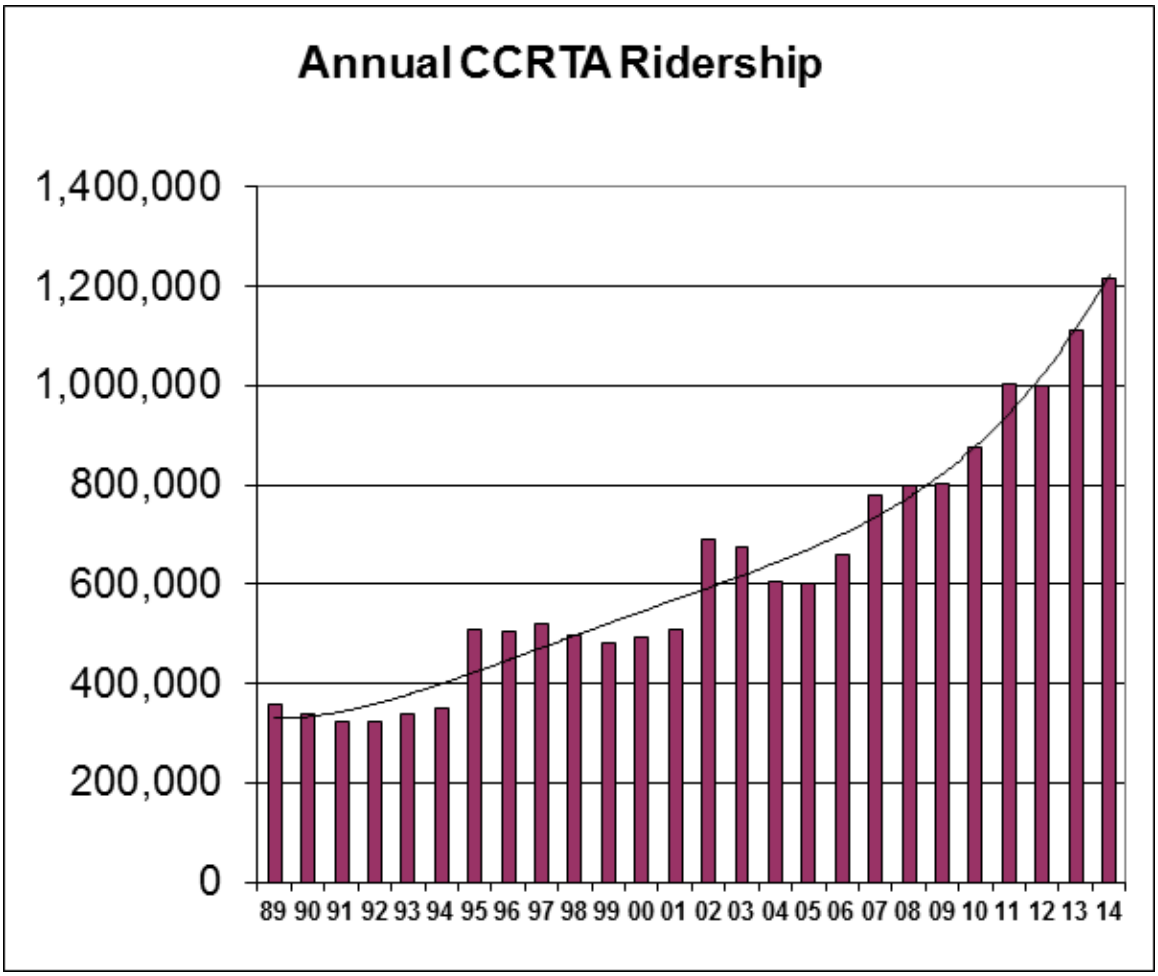


FIGURE 13 - RIDERSHIP ON CAPE COD REGIONAL TRANSIT AUTHORITY
Source: CCRTA

CAPE COD COMMISSION

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