

2.3.1 Transportation

Introduction

Separated from a major metropolitan region and the rest of Virginia by miles of water, Eastern Shore residents have always considered transportation an important topic of concern. The major transportation facilities serving the Shore are a vital link to the markets, services, amenities, and visitors that contribute to the local economy and quality of life. The distance and cost associated with travel to the Eastern Shore are also considered by many residents to be an important factor in the continued preservation of the Shore's rural atmosphere and significant natural resources.

This topic report will explore current conditions, assets, needs and issues of concern in Eastern Shore transportation through an examination of the Chesapeake Bay Bridge Tunnel, U.S. Route 13, and other important topics.

Current Conditions and Trends

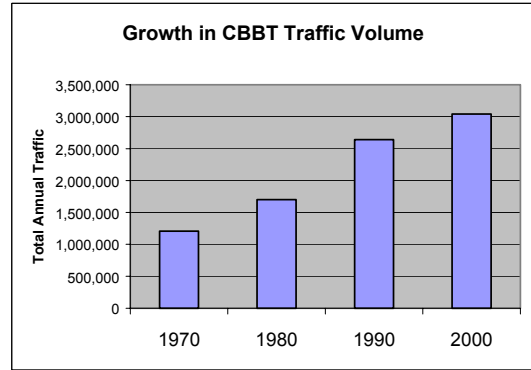
The Chesapeake Bay Bridge Tunnel

Opened in 1964, the Chesapeake Bay Bridge Tunnel (CBBT), spans the lower Chesapeake Bay providing the only direct link between the Eastern Shore of Virginia and the City of Virginia Beach, other cities in the Hampton Roads region, and other portions of the Commonwealth. The CBBT carries U.S. Route 13, one of the primary highways on the Delmarva Peninsula, and is 23 miles in total length --17.6 miles in length from shore to shore making it the largest bridge-tunnel complex in the world. The crossing consists of a series of low-level trestles with high level spans and two tunnels to allow for ship passage in navigational channels. Prior to 1999 the span offered two travel lanes, in 1999 a parallel span was opened to provide two additional lanes to the facility. The tunnel segments were not twinned in that project—traffic is reduced to one lane each way in each of the two one-mile tunnel segments.

Toll plazas are located at both ends of the facility for collection of tolls in each direction of travel. The current cost for Class 1 vehicles (two-axle, four-tire vehicles) is \$10, increased from \$9 in 1991 and \$8 in 1982. This is the highest toll for a bridge crossing in the nation. Larger vehicles are charged higher rates for crossings. Most vehicles using the CBBT fall into the Class 1 category. The average toll collection per vehicle in 2000 was \$12.12. Currently and throughout the history of the CBBT, no discount toll rates are available for frequent users of the facility.

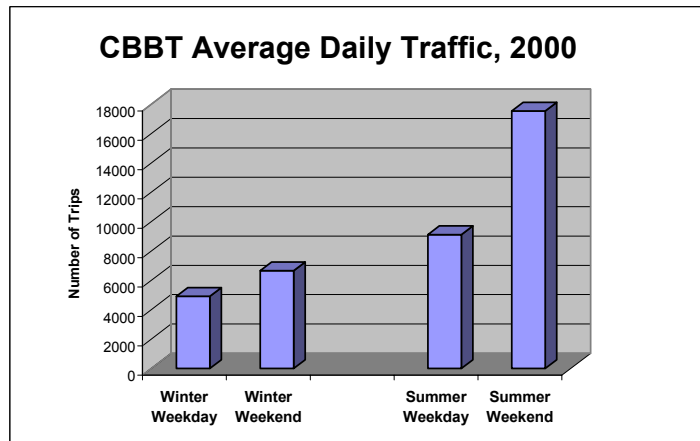
Growth in Traffic

Annual traffic on the CBBT has nearly tripled since its opening in 1964. The facility accommodated 1.1 million trips in its first full year of operation in 1965. In 2000, over 3 million vehicles crossed the span yielding an average annual daily traffic (AADT) count of 8,336. In its history of operation yearly compound growth rate in traffic is approximately 2.9 percent. Total traffic has increased nearly 15 percent since 1990. (Source: CBBT, 2001)



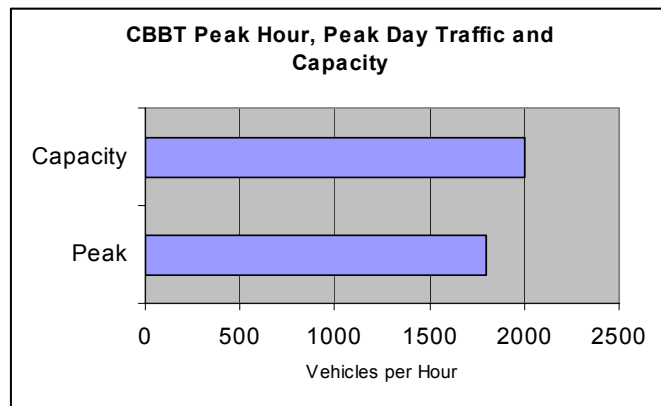
Seasonal and Daily Variation

There is significant variation in average daily traffic on the CBBT based on the season and day of the week. Summer traffic is 2 to nearly 4 times greater than travel during the winter months. Weekend traffic is 100 percent greater than the average weekday during the winter and 50 percent of the average weekday rate during the summer. On the first weekend in July 2000, bridge crossings reached a peak of nearly 22,000 vehicles in a one-day period. (Source: CBBT, 2001)



Peak Capacity

The volume of traffic at the peak hour on the peak day (usually the mid-afternoon of a holiday weekend) of CBBT operation is approaching the capacity of the facility in the one-lane tunnel segments. Comparing peak hour, peak day conditions to *Highway Capacity Manual* standards shows a Level of Service rating of E (on a scale of A to F) indicating very congested conditions. Currently,

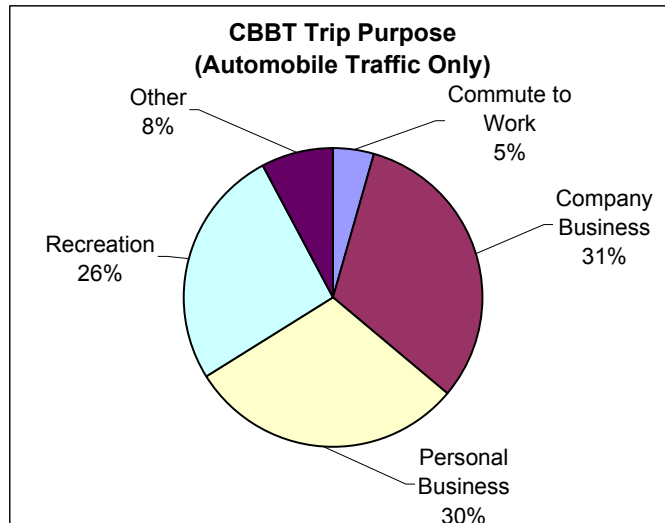


congestion is not a significant problem on other hours on the peak day or on other days of the year. As traffic on the CBBT grows, however, congestion during peak periods may also grow. Such peak period congestion can be expected on a facility of this sort.

(Source: CBBT, *Highway Capacity Manual Special Report 209*)

Trip Purpose

In a recent roadside survey of Virginia registered automobiles conducted for the CBBT Commission, respondents reported the purpose of their trip across the span. In all, only about 5 percent of trips were commutes to work. An additional 31 percent of trips were non-commute business-related trips. The majority of respondents indicated that their trip was for personal business, recreation, or other purposes. The survey revealed that same day round trips

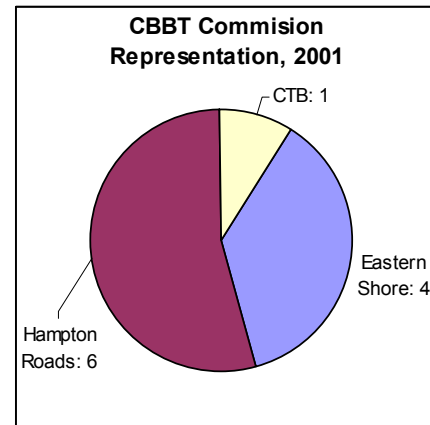


were less prevalent than one-way trips: 23 percent of respondents indicated that their trips could be considered a round trip. CBBT traffic counts indicate that approximately 12 percent of all trips across the span are trips by heavy trucks.

(Source: CBBT; Wilbur Smith Associates, 2000)

CBBT Commission

The operation of the CBBT is overseen by an 11-member board, that since legislation passed in 1998 will have its members appointed by the Governor. The board is currently composed of 10 representatives of Eastern Shore and Hampton Roads communities and one representative of the Commonwealth Transportation Board. There are 4 representatives from the Eastern Shore, 2 from each county, and 6 representatives from Hampton Roads, including Virginia Beach, Portsmouth, Chesapeake, Hampton, Norfolk and Newport News.



Toll Change Process

To effect a change in the toll a simple majority of Commission members must vote in favor of a proposal at an open meeting of the Commission. A recent resolution by the state legislature encouraged the CBBT postpone any decision on the toll change until Fall 2001 so that the Eastern Shore counties may submit independent recommendations to the CBBT Commission.

Potential CBBT Capital Improvements

In recent years the CBBT Commission completed the addition a new span to provide two additional extra lanes on the bridge portions of the facility. The addition of a second set of tunnels is a capital improvement that may be undertaken in the future for reasons of traffic safety, emergency redundancy, congestion relief, and the need to provide for deeper channel drafts for bay harbor access. The need for or feasibility of these improvements has not yet been studied.

Overview of CBBT Revenue and Bond Issues

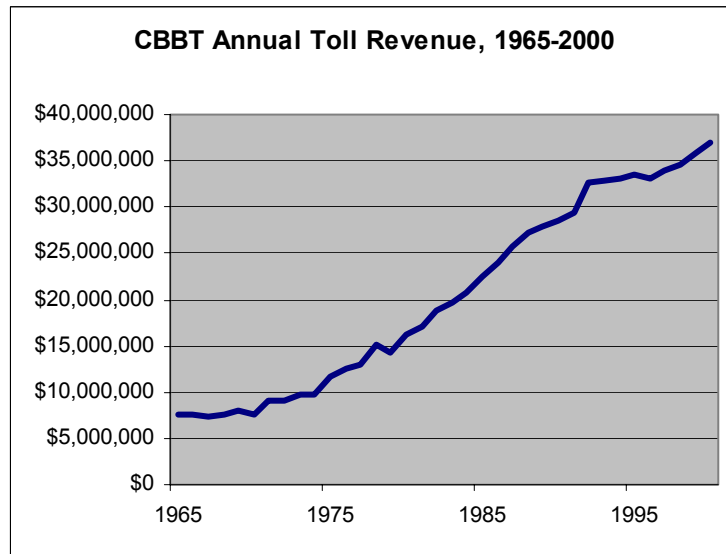
The CBBT funded the construction of the original span through the issuance of revenue bonds in 1960. The CBBT was able to construct the parallel crossing through the issuance of additional revenue bonds in 1991 and 1995 that refunded the original bond issue, providing new money for construction, and established a general fund to establish equity for construction. During calendar year 2000, \$10,780,000 of the revenue bonds were redeemed at maturity, leaving \$239,900,000 of par bonds outstanding at 12/31/00.

Toll revenues in recent years on the CBBT have been in conformity with the bond resolutions that authorized the issuance of the bonds. Toll revenues have exceeded the amounts expended for operating expenses, maintenance expenses, and bond interest and principal debt service. During calendar year 2000, net income after the aforementioned expenditures was \$11,500,000. This net income increased unrestricted equity in the CBBT as of 12/31/00 to \$49,200,000.

Continued increases in unrestricted equity, barring future capital improvements and extraordinary maintenance project expenditures, may enable the CBBT Commission to retire the outstanding debt 10-15 years before the final scheduled maturity date of 2025.

Summary of CBBT Financial Statement, Calendar Year 2000

(\$ Millions)	Calendar Year <u>2000</u>	Calendar Year <u>1999</u>
Toll Revenue	36.9	35.8
Other Operating Revenue	2.2	0.9
Interest Income	3.8	3.8
Total Revenue	42.9	40.5
Operating Expenses	8.6	8.1
Reserve Maintenance	2.1	1.1
Debt Service (Bond Interest)	13.4	13.6
Total Expenses	24.1	22.8
Net Income	18.8	17.7
Change in Investment Value	2.2	-0.9
Change in Fund Balance	21.0	16.8
Fund Balance (excluding equity)	49.2	
Outstanding Bond Principal	240.0	
Total Debt Service (to 2025)	403.1	

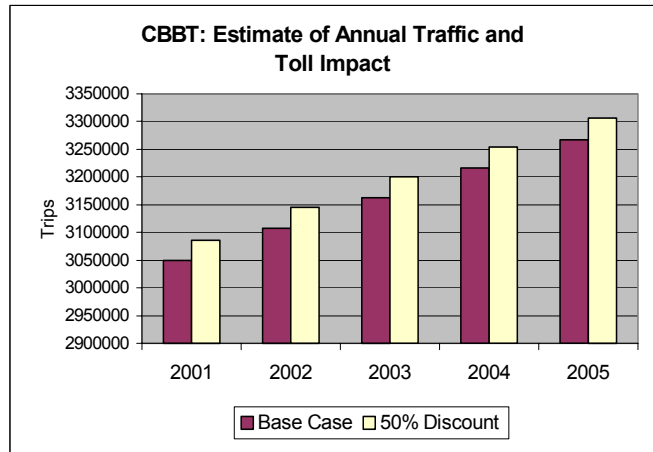


Note: Several toll increases occurred between 1975 and 1991

Future Traffic Volumes and Previously Studied Toll Scenarios

In a study commissioned for the CBBT, estimates of future increases in annual traffic on the span were coupled with an analysis of traffic impacts related to a toll discount. Traffic volumes were estimated to increase over 7 percent from 2001 to 2005, with annual volumes in 2005 in excess of 3.2 million trips. A 50 percent discount for same-day round trips was estimated to result in an additional 1 percent increase in volume resulting in over 3.3 million annual trips.

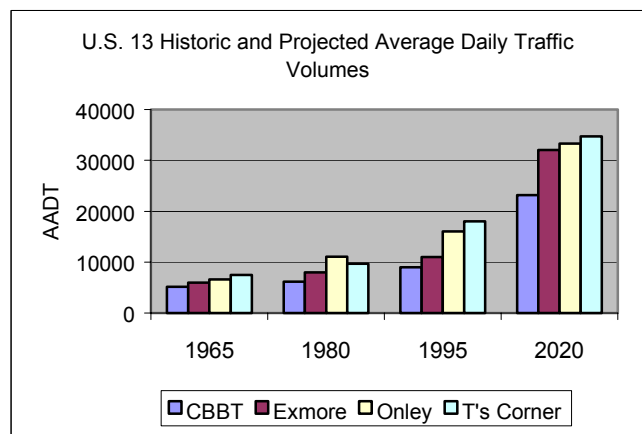
(Source: Wilbur Smith Associates 2000)



U.S. 13 Corridor

U.S. Route 13, a four-lane highway with signalized intersections, is the principal travel route on the Eastern Shore, providing a connection to Hampton Roads and the rest of Virginia via the CBBT to the south, and Maryland and Delaware to the north. The highway, which runs the 68-mile length of the Eastern Shore, serves local traffic and also provides an alternate to the congested Interstate 95 for through travel between the Carolinas, Southeastern Virginia, and the Northeast. It is estimated that through traffic on the route averages over 5,500 vehicles per day or 30 to 50 percent of total traffic. Through traffic is expected to double through 2020.

Depending on location, traffic volumes on U.S. 13 grew from 75 percent to 145 percent in the period 1965 to 1995 with average daily volumes in 1995 ranging from 9,000 to 18,000 trips. During this period traffic volumes grew the most in Accomack County, where population and commercial activity have been centered, and more modestly in the vicinity of the CBBT. Estimates of the highest traffic volumes anticipated for 2020 range from 23,000 to 34,000 trips, representing 92 to 190 percent growth over 1995. (Source: US 13 Corridor Plan, 1999)



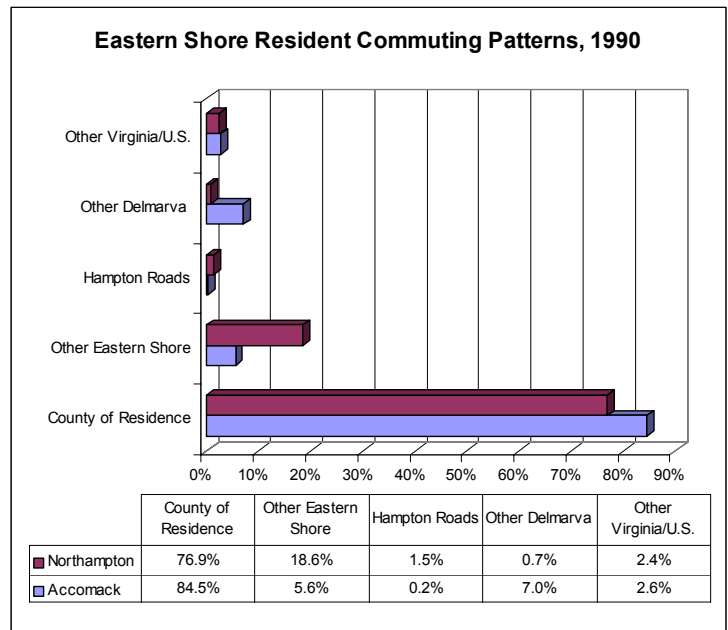
To address the anticipated growth in traffic volumes, the Accomack-Northampton Planning District Commission and the Virginia Department of Transportation are conducting a series of studies to determine need and evaluate alternatives for highway improvements in the U.S. 13 corridor. Due to the projected volume of future traffic and the safety and congestion problems that will bring, participants in the study have rejected the “no-build” option. Corridor improvements considered in the first phase of the study included:

- Existing Corridor Improvements (turn lane, median, shoulder and access management improvements)
- Bypasses and Improvements (limited access bypasses in selected locations)
- New Corridor (new limited access expressway)

The Existing Corridor Improvements alternative was found to be the preferred transportation option given the adequacy of its capacity, the lower cost, and the limited impacts it is expected to generate.

Regional Commuting Patterns

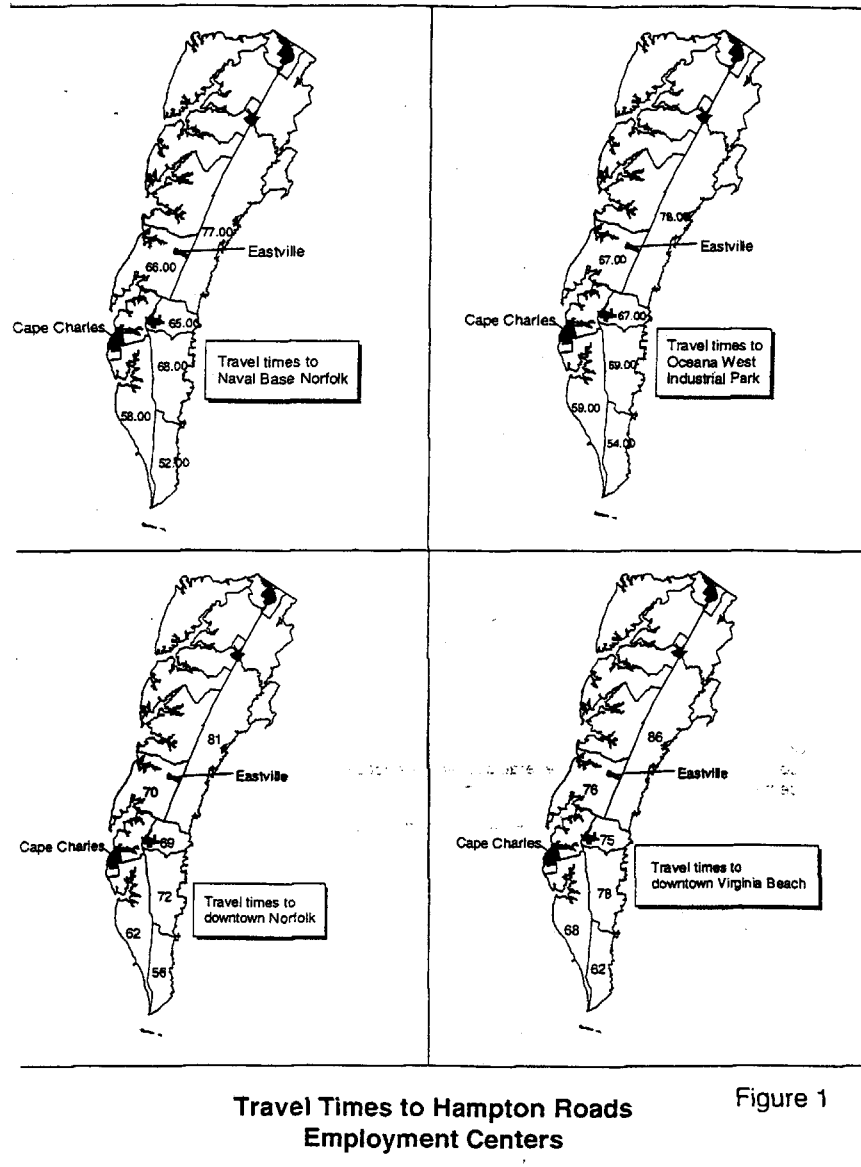
An examination of journey-to-work data from the 1990 Census indicates that most Eastern Shore residents commute to jobs in their own county or on other parts of the Shore. Over 90 percent of the working population of Accomack residents and 95 percent of the working population of Northampton residents work on the Eastern Shore. Reflecting the greater number of job opportunities available in Accomack, 18 percent of Northampton residents commute to that county for work. In 1990, less than 2 percent of Shore residents commuted to Hampton Roads via the CBBT. This is comparable to the number of Hampton Roads residents



working in Northampton and consistent with survey data from 2000 on commute trips across the CBBT. A much higher proportion (over 7 percent) of Shore residents (nearly all from Accomack County) work in locations in Delmarva Maryland or southern Delaware. A similar number of Delmarva residents commute to work in Accomack. (Source: 1990 Census Transportation Planning Package, BTS, 1995)

Travel Times to Hampton Roads Employment Centers

As suggested by the journey-to-work data presented above, travel times to Hampton Roads employment centers are lengthy from Northampton and far in excess of normal commute times for the region for Accomack residents. A study prepared for VDOT estimated travel times from locations within Northampton to important Hampton Roads employment centers such as Norfolk Naval Base, Oceana West Industrial Park and downtown Norfolk and Virginia Beach. The analysis indicates uncongested travel times of 50 to 75 minutes for points south of Eastville, assuming an average 35 mile per hour speed on U.S. 13 and the CBBT.



(Source: VDOT, Michael Baker Jr. Inc., 2000)

Special Topics

In addition to information relating to CBBT and U.S. Route 13 there are other special topics in transportation important to the issue.

- **Heritage Trail/Wayfinding-** The Eastern Shore is rich in many scenic, historic, natural, cultural and recreational sites, however these sites are not connected or promoted in an effective way. Signage is nonexistent and in many cases maps and guidebooks are outdated. In response to the increased interest in heritage tourism, Northampton County is developing a Heritage Trail with VDOT Transportation Enhancement funds. Accomack County is pursuing a similar plan. The trail is slated to be marked driving/bicycling route along scenic back roads linking historic sites, natural areas and recreational facilities. Included will be the towns of Chincoteague, Parksley, Accomack, Onancock, Onley, Wachapreague, Belle Haven, Exmore, Nassawadox, Eastville, Cheriton, and Cape Charles.
- **Transit** –A transit service offering flexible destination service from the Eastern Shore to Hampton Roads was initiated in 1998 but cancelled in April, 2000 due to lack of ridership. The fare was \$3 each way, offering a substantial discount over the CBBT private auto toll.
- **Traffic Safety** -An average of 600 vehicular accidents occurs on the Eastern Shore annually. About twice as many accidents occur in Accomack County as in Northampton County.
- **Emergency Routes**-U.S. Route 13 provides a primary emergency routes for rescue squads and medical services along the Eastern Shore and also serves as a storm evacuation route. As traffic increases on the roadway, response time may be decreased due to these services conflicting with local and through traffic.
- **Pedestrian and Bicycle Facilities**-The Shore offers an environment suitable for bicycling, which has become an increasingly popular mode of transportation. The town of Chincoteague has adopted a bicycle plan and both Accomack and Northampton Counties are pursuing bicycle plans as well. There is a need for paved shoulders, safety signs and proper crossing areas. Bicycling is not permitted on the CBBT.

Several pedestrian accidents have occurred recently along U.S. Route 13 as people crossed the highway to shop at shores or visit neighbors. Improvement in safety is necessary and residents in Exmore have proposed a pedestrian overpass at the Route 183 crossing to improve safety. Increased levels of speed enforcement, safety signs, lighting, and proper pavement marking have also been requested by residents.

- **Farm Vehicles** -Farm equipment, such as tractors, harvesting equipment and farm trucks use U.S. Route 13 to access the agricultural fields along the Eastern Shore. This equipment is usually quite large and moves slowly, causing a safety problem for other motorists. At times, these slow moving vehicles cause a great deal of danger in the evenings, especially if their lights are not working. Special roadway provisions and proper safety equipment are important for these vehicles.
- **Tourist Travel** - U.S. Route 13 is a major roadway for tourists traveling to the shoreline areas in Virginia and North Carolina. Businesses along U.S. Route 13 also have the opportunity to serve tourists visiting the Shore or passing on their way to Hampton Roads and other destinations.
- **Eastern Shore Railroad** -The Eastern Shore Railroad extends for a total of 64.3 miles from Pocomoke City, Maryland to Cape Charles, Virginia and connects via a rail barge to Little Creek and Norfolk. This Railroad is a freight-only common carrier railroad. It is primarily a through route for bulk shipments such as coal, stone, fuel, fertilizer, chemicals, grain and animal feed, to and from the Delmarva Peninsula but also serves a variety of local customers.
- **Accomack County Airport**-The recently improved Accomack County Airport is located adjacent to the Accomack County Industrial Park near the town of Melfa, The airport hosts private planes and charter services; no commercial flights are available. The airport has a 7,000-foot concrete runway and currently handles about 10,000 takeoffs and landings per year
- **Ferry Access** -A proposal for auto, truck and passenger ferry services connecting the counties of Lancaster, Northumberland, Richmond and Westmoreland to the Eastern Shore was recently proposed by the Northern Neck Planning District Commission. Potential ferry terminal sites were examined between Crisfield, Maryland and Cape Charles, Virginia. The primary markets for this ferry service on the Chesapeake Bay include freight and goods movement, tourists, I-95 corridor travelers, commuters, and residents. VDOT has funded a Phase II ferry study.

Assets/Resources

In terms of transportation, the Eastern Shore is perhaps best characterized as a geographically remote area with relatively good transportation access. The area has several assets and resources related to transportation.

- **Good Accessibility** – Although separated from the rest of the state by the Chesapeake Bay, the Eastern Shore enjoys a good level of access to Hampton Roads via the CBBT. With the addition of a second span, safety and congestion concerns have been reduced, and it is currently possible to cross the span with

limited congestion delays during most periods of peak use. Southern Maryland is accessible to Accomack via U.S. 13 and a significant number of residents of both states travel to work and other destinations using that route.

- **Limited Congestion** – Although steadily increasing, traffic volumes throughout much of the Shore have not yet reached a level that would cause significant and regularly occurring congestion.
- **Freight Access** – The Eastern Shore is accessible to other regions for freight traffic via the CBBT, U.S. Route 13, and the Eastern Shore Railroad. CBBT traffic figures for 2000, indicate that 15 to 20 percent of trips across the span on weekdays are made by heavy trucks. The Eastern Shore railroad serves a number of local and regional businesses with several car float trips per day.

Needs and Deficiencies

Deficiencies in the transportation system and needs for the future include:

- **Cost of Travel** – The distance between the Eastern Shore and Hampton Roads and the toll assessed in each direction combine to create significant time and monetary travel costs for trips to and from Hampton Roads. Time and money costs for travel from Accomack to Maryland are lower in comparison.
- **Single Lane CBBT Tunnel Segments** – The CBBT tunnel segments allow only for one travel lane in each direction—a constraint that may cause increased safety and congestion concerns as traffic at the facility increases. Congestion is currently experienced at limited times during the peak season. There is no reasonable contingency for travel during tunnel emergencies.
- **Ship Channel Depths** - The current depth of the ship channels above the CBBT tunnels may not be adequate to accommodate the next generation of container ships, or other vessels, potentially limiting access to Hampton Roads and other Chesapeake ports in the future. Further study is necessary to determine the maximum depth of the channels given the current tunnels and the needs of Chesapeake ports and the potential vessels that may visit.
- **Limited Air Access** – Regular commercial airline service to the Accomack County Airport is not currently available. Air travelers must arrive or depart from Norfolk or Salisbury, Maryland.

Issues of Concern

A review of CBBT data, recent transportation studies and county comprehensive plans suggest several issues of concern related to transportation on the Eastern Shore.

- **Potential for CBBT Commuter Toll Discount** - Potential impacts related to a CBBT commuter toll discount are of special concern to Eastern Shore residents and are the subject of this study.
- **Representation and the Decision Making Process** – Public comments related to the potential for a CBBT commuter toll discount indicate that many residents are concerned about the Eastern Shore’s level of representation on the CBBT Commission, and the extent of public involvement and consultation in the toll discount decision-making process.
- **Timeline for Bond Payoff and Ultimate Disposition of CBBT toll** – In the absence of further capital or major maintenance projects, the potential exists for surplus funds to be used for bond repayment 10-15 years before the 2025 maturity date, reducing the need for a toll on the facility and raising the possibility that VDOT will assume the responsibility for the facility as a free crossing.
- **Preserving and Enhancing Levels of Accessibility** – As use of the transportation system grows it will become important to examine the operations and capacity of the transportation network to ensure continued accessibility to jobs, recreational and cultural amenities, personal services and advanced medical care, and markets for Eastern Shore businesses. Economic development and quality of life are tied to the functioning of the transportation system.
- **Preserving and Enhancing the U.S. 13 Corridor** – Anticipated increases in population, business activity and traffic on the CBBT and U.S. 13 will increase the potential for development along U.S. 13. Planning for this growth will involve consideration of several factors including:
 - Setback requirements and the number and location of curb cuts/highway access points.
 - Site plan review regulations and policies to promote clustering of development
 - Sign ordinance review to regulate the type and appearance of signs for highway businesses.
 - Safety improvements including turn lanes, shoulders and medians
- **Traffic Safety/Emergency Routes** – Traffic safety is always an important consideration as traffic volumes increase. Rates of traffic accidents have been

increasing in several locations along the U.S. 13 Corridor. The functioning of the Corridor is also important because as the single major access route for Shore it serves as a vital emergency service route and storm evacuation route.

Issues of Special Concern to Low Income Residents

- **Job Access** - In one of the poorest regions of the state, ensuring access to jobs in terms of skill level and geographic proximity is as important as promoting the quantity and quality of job opportunities. Promoting regional balance in job opportunities and reducing congestion, travel cost, and other barriers to travel are especially important for low income residents in rural areas without the population densities to support transit.
- **Metro-Area Access** - Low-cost access to Hampton Roads amenities and services is also an important concern for those whose incomes are limited.
- **Direct and Indirect Displacement** – When an increase in accessibility or a decrease in travel cost promotes a change in the composition of employment opportunities, the expansion of tourist and second home industries, or conversion of farmland to other uses, lower income residents can be priced out of areas that were formerly affordable. Traditional jobs can be replaced with positions of lower pay or differing skill and educational requirements. Maintenance of a job base and affordable housing for residents can be an important concern even as fortunes generally improve in a region's economy.
- **Equitable Distribution of Benefits and Burdens** – In planning for transportation improvements or policy changes on the Eastern Shore, consideration should be given to the distribution of benefits (mobility, accessibility, safety, lower cost) and burdens (displacement impacts, socioeconomic changes, resource impacts) to ensure that all community groups are treated equitably.

Transportation and its Connection to Other Major Topic Areas

In each of the remaining Major Topic Reports, the relationship between changes in the transportation system and the topic area is outlined. In general, changes in the transportation system may result in effects that can be classified into three broad categories. Specific examples of these effects will be developed during the public involvement and impact phases of this study using the information presented in these topic reports.

- **Direct Effects** – effects caused by the action and occurring at the same place and time (example: increased travel across the facility attributable to lower commuter costs).

- ***Indirect Effects*** – effects caused by the action occurring later in time or farther removed in distance, but still reasonably foreseeable (example: impacts to natural resources, the local economy, and the local community arising from residential and related commercial development induced by a reduction in travel costs between Hampton Roads and the Eastern Shore)
- ***Cumulative Effects*** – the impact on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (example: the direct and indirect impacts of a toll change examined in the context of other trends and activities in the region).