



INDIAN RESERVATION ROADS
INVENTORY UPDATE
AND
LONG RANGE TRANSPORTATION
PLAN UPDATE

Prepared For:

**MASHPEE WAMPANOAG
TRIBE**



JUNE 2013

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INTRODUCTION

The Bureau of Indian Affairs (BIA), in accordance with the 1983 Memorandum of Agreement (MOA) between the BIA and the Federal Highway Administration, requires transportation plans to identify and meet transportation needs of Indian tribes nationwide. The MOA and subsequent updates state that the BIA shall carry out a transportation planning process for Indian Reservation Roads (IRR) to support its road construction and improvement program. This *Long Range Transportation Plan Update for the Mashpee Wampanoag Tribe* was initiated by the Mashpee Wampanoag Tribe through the Transportation Planning Program and Public Law (P.L.) 93-638.

Indian Reservation Roads (IRR) are public roads, including roads on the Federal Aid System, that are located within or provide access to an Indian reservation, Indian trust land, or restricted Indian land that is not subject to fee title alienation without the approval of the Federal Government. This includes Indian and Alaska Native villages, or Oklahoma communities in which Indians and Alaskan natives reside; whom the Secretary of the Interior has determined are eligible for services generally available to Indians under Federal laws specifically applicable to Indians. Roads systems within the IRR include:

- **BIA Roads System** - existing and proposed IRRs for which the BIA has or plans to obtain legal right-of-way. The BIA has the primary responsibility to improve and maintain this system. Changes to this system must be supported by tribal resolution.
- **BIA Reservation Development Roads System** - existing public highways and proposed routes for which the BIA has, or plans to obtain, a legal right-of-way and which serve the development needs of Indian reservations and Alaska Native villages.
- **Other BIA Branch Roads** - existing routes under the jurisdiction of other Branches of the BIA such as Forestry and/or Facilities Management.
- **Highway Trust Fund Road System** - existing BIA routes or sections of routes that were constructed or improved using Highway Trust Funds.
- **Tribal Road System** - those public roads whose rights-of-way (ROW) are under the jurisdiction of a tribe.
- **County or Township Road System** - public roads whose ROW are under the jurisdiction of a county, township, or road district.
- **State Highway System** - public highways under the jurisdiction of a state.
- **Other Federal Agency Public Roads** - public roads whose ROW are under the jurisdiction of various Federal agencies, such as the Bureau of Land Management, Forest Service, National Park Service, Bureau of Reclamation, or others.
- **Other Public Roads** - roads that are owned and maintained by others (includes Petroleum and Mining, Utility Company, or any other agencies, groups or enterprises) that are open for public travel.

PURPOSE AND SCOPE

This *Long-Range Transportation Plan Update (LRTP Update)* was prepared by PAIKI to meet the Mashpee Wampanoag Tribe's goal of identifying and inventorying roads eligible for the IRR system in order to secure funding for needed transportation improvements. This *LRTP Update* is intended to update and supplement prior Long-Range Transportation Plan (LRTP) documents prepared on behalf of the Mashpee Wampanoag Tribe, including the *Transportation Plan for the Mashpee Wampanoag Indian Tribe* prepared by ASCG, Incorporated of New Mexico (2008). This *LRTP Update* presents a plan to improve existing transportation facilities and develop new transportation opportunities for the Tribe.

The Mashpee Wampanoag Tribe falls within the jurisdiction of the BIA's Eastern Region Office (ERO) in Nashville, Tennessee. The methodologies and contents of this study must be reviewed and accepted by the ERO - Division of Transportation to fulfill the requirements set forth in Moving Ahead for Progress in the 21st Century Act, Public Law 112-141 more commonly referred to as MAP-21.

The purpose of the update is basically the same as that identified by ASCG in the 2008 Transportation Plan:

- Identify, evaluate and determine present and future public transportation needs.
- Provide a 20-year transportation plan.
- Develop a prioritized listing of recommended road improvement/construction projects to meet current and projected (20-year) transportation needs.

The Mashpee Wampanoag Tribe is planning for the future use and development of its tribal land as well as that of surrounding areas. Any change in the existing land use would generate new traffic, causing an impact on the Tribe's IRR System. The objective of this study is to develop a plan for providing transportation facilities that will enable tribal leaders to take advantage of desirable economic opportunities, protect reservation resources, strengthen cultural traditions, promote self-sufficiency and sustainable development, and enhance the use of the reservation's land by its residents.

This study considers the potential transportation impacts of existing and planned tribal development projects to establish a prioritized list of transportation needs. This type of study usually includes the following tasks:

- Prepare an IRR inventory comparison table that will be used for proposing revisions to the IRR inventory.
- Identify obvious hazards that exist on/along the IRR system.
- Identify and evaluate present and future transportation needs.
- Develop transportation system alternatives.
- Develop road improvement project descriptions.
- Estimate road improvement project costs.
- Develop road construction priorities/Tribal Transportation Improvement Program.
- Evaluate future road construction program.
- Evaluate road maintenance needs.
- Evaluate social and economic factors associated with proposed roadway improvements.
- Provide a long-range transportation plan that prioritizes short- and long-term transportation improvement projects.

ORGANIZATION OF THE STUDY

The preparation of this *L RTP Update* consists of Phases I, II, and III.

Phase I - Data Collection

This phase involved the collection of data to be used in the analysis of the existing system and the development of a proposed transportation plan. In March 2013 consultants undertook a windshield survey of tribal facilities and roads on and providing access to the tribal properties. Consultants met with tribal representatives to present information about the project and request assistance with data gathering. In addition, consultants met other key tribal personnel to arrange future contacts to gather information.

Other research was conducted to determine whether there are state, regional, and/or county transportation projects planned or underway in the vicinity of or on Mashpee Wampanoag tribal lands.

Also in this phase, part one of the three-part transportation plan was prepared. Part one provides a summary of the existing tribal transportation network, land use on the tribal lands, and tribal demographics.

Phase II – IRR Inventory Update

In Phase II the tribe's existing IRR Inventory is compared with the newly collected road inventory data collected from March 2013 (see Section 2.1, *Roadway Inventory*) to establish recommendations for updating the Tribe's road inventory. Phase II of the transportation plan summarizes the new roadway inventory, explains changes between the old and new inventory, and presents an Inventory Comparison Listing table that compares existing and updated inventory data.

Phase III – Analysis of Transportation Needs

In this phase, roadway capacities, levels of service, travel speeds, safety standards, and adequacy design standards are analyzed. These analyses determine deficiencies of the existing transportation system and identify future transportation needs.

This phase also includes a survey of community attitudes regarding future transportation needs and planning through an ongoing dialogue with tribal officials, tribal staff, and BIA personnel.

Phase III lists and evaluates social and economic factors associated with the proposed improvements to existing routes (or sections of routes) and new road construction. It also describes individually identified and prioritized road improvement projects, justifications, costs to construct, and general time frames for implementation.

Some of the factors considered in this evaluation include:

- The number of enterprises and/or small businesses located on a route.
- The number of existing homes served by a route.
- The classification of each route.

Mashpee Wampanoag Tribe Long Range Transportation Plan Update

This final phase also includes the preparation of a recommended listing of proposed transportation improvement projects, and project descriptions, for Tribal Council review and prioritization. This prioritized list of projects (Priority List) and the Tribal Resolution approving this list are then submitted to the BIA. Tribal Priority Lists are analyzed and used by the BIA, in lieu of a Tribal Transportation Improvement Program (TTIP), to generate an IRR TIP for the tribes that identify anticipated preconstruction and construction project costs and the disbursement of funds for pre-construction and construction activities based on the Tribe's annual percent share of IRR program Funds. Section 3.2.2 – Proposed Projects lists the transportation improvement projects approved for funding by the Tribal Council.

The Tribe also has the option of generating a four-year Tribal TIP, which is a multi-year, financially constrained, list of proposed transportation projects that identifies anticipated preconstruction and construction project costs and the disbursement of funds for pre-construction and construction activities based on the Tribe's annual percent share of IRR program Funds. Additional information on the development of a Tribal TIP is contained in Section 3.2.5 - Transportation Improvement Program (TIP).

Data for use in the preparation of this transportation plan were obtained from tribal officials, on-site reconnaissance, and other sources—principally the following:

- Bureau of Indian Affairs website <http://www.bia.gov>
- Federal Highway Administration website <http://fhwa.dot.gov>
- *Transportation Plan for the Mashpee Wampanoag Indian Tribe*, ASCG Incorporated of New Mexico, 2008.
- Mashpee Wampanoag Tribe web site: www.mashpeewampanoagtribe.com
- Massachusetts Department of Transportation: www.massdot.state.ma.us/
- *Cape Cod 2012 Regional Transportation Plan*; Cape Cod Metropolitan Planning Organization
- *Cape Cod Transportation Improvement Program Amendment Federal Fiscal Years 2013-2016*; Cape Cod Metropolitan Planning Organization
- *2012 Old Colony Regional Transportation Plan*; Old Colony Metropolitan Planning Organization
- *2013-2016 Old Colony Transportation Improvement Program (TIP)*; Old Colony Metropolitan Planning Organization
- United States Census Bureau: <http://www.census.gov>
- United States Geological Survey: www.usgs.gov
- National Highway Traffic Safety Administration: www.nhtsa.gov
- National Oceanic and Atmospheric Administration : www.noaa.gov

MASHPEE WAMPANOAG TRIBE OVERVIEW

The Mashpee Wampanoag are one of three surviving tribes of the original sixty-nine in the Wampanoag Nation. The other two tribes still living on their original homelands are the Wampanoag Tribe of Gay Head (Aquinnah) on Martha's Vineyard and the Herring Pond Tribe in Bourne. The Marshpee (later called Mashpee) tribe was under the oversight of English missionaries for nearly 200 years. The reservation period in Mashpee officially began in 1677 and restricted our freedom until 1868. From that time up until around 1975 the tribe ran the town government of Mashpee. New residents overwhelmed the area around that time and took control of the town government with an easy five to one vote. Today the Mashpee Indian population is in the area less than 10% of the total.

Economically the tribe has adapted and managed in a number of different ways besides hunting, fishing, and planting. During the 17th and 18th centuries the Mashpee were involved in the fur, rope, timber, and sassafras trade. In the 19th and early 20th centuries Mashpee Wampanoag men were engaged in the whaling industry sailing the Atlantic, Pacific, Arctic and Indian Oceans. Those mariners were usually out to sea for at least a year at a time hunting whales. Smoked herring were exported to Europe from Mashpee during the 20th century. The cranberry industry and a broom factory in Mashpee also once provided local employment. Today most Mashpee Natives are employed in the building and health care industries or working for the tribe in a variety of professions. Subsistence farming, fishing, and hunting are still practiced by tribal members.

The Mashpee Wampanoag Tribe has both traditional and conventional leadership for their people. The Mashpee Wampanoag Tribe is a federally recognized tribe (2007), allowing it to actively participate in federal programs designed for Indian Nations. They maintain a government to government relationship with all federal agencies to support the health, education, and welfare needs of the tribe. Their traditional leadership includes the Chief and his Circle of advisors, Medicine Man, and Clan Mothers. The Chief and Medicine Man have permanent seats at the Tribal Council table to ensure cultural concerns are included in decision-making. Tribal members seek advice, ceremony, and social justice from these leaders.

The tribe currently has multiple parcels of land within Barnstable and Plymouth Counties and the Town of Mashpee. Figures 1 and 2 illustrate the general location and boundaries of the various Mashpee Wampanoag tribal lands.

**Maspee Wampanoag Tribe
Long Range Transportation Plan Update**

**Figure 1
Location Map – Barnstable County Tribal Lands
(Land Boundaries Shown in Purple)**



**Masphee Wampanoag Tribe
Long Range Transportation Plan Update**

**Figure 2
Location Map – Plymouth County Tribal Lands
(Land Boundaries Shown in Purple)**



PART 1 - EXISTING CONDITIONS

1.1 Physical Characteristics

Most of the Mashpee Wampanoag Tribe's land holdings are within Barnstable County on Cape Cod, the easternmost portion of Massachusetts. The Tribe also has land base within adjoining Plymouth County. The elevations of the general Cape Cod project area range from 100' to sea level.

Cape Cod and its associated landscape are the result of glacial movement of the Laurentide ice sheet. Over 20,000 years ago the Cape Cod area was covered by this glacier. As the glacier receded and the ice melted, the seas rose. The seas then eroded at the remaining glacial deposits forming the Cape and its unique terrain.

The climate of the region is characterized in Table 1.1 below. This data is taken from the Hyannis Barnstable Municipal Airport climate station. These historical data indicate July is the hottest month with temperature ranges of 63°F to 79°F and an average of 71.5°F. January, the coldest month, has daily temperatures averaging 30°F with a range of 22°F to 38°F.

Precipitation is fairly constant throughout the year with monthly averages of 3 to 4 inches. The average annual total precipitation is approximately 48 inches.

Table 1.1 – Historical Climate Data

1981 - 2010 Climate Normals				
Month	Avg. Precip. (inches)	Min. Temp. (°F)	Max. Temp. (°F)	Avg. Temp (°F)
January	4.03	22.2	38.5	30.4
February	3.52	24.2	40.2	32.2
March	4.97	29.9	45.4	37.6
April	4.51	37.5	54.4	46.0
May	3.50	47.3	64.3	55.8
June	3.55	57.8	73.1	65.4
July	3.24	63.1	79.9	71.5
August	3.63	62.2	78.6	70.4
September	3.87	54.4	71.6	63.0
October	4.11	44.1	62.2	53.1
November	4.48	36.6	53.0	44.8
December	4.28	27.6	43.6	35.6

Source: National Oceanic and Atmospheric Administration www.noaa.gov

1.2 Demographics and Development

Transportation systems have long been a vital and necessary part of society. Therefore, the evaluation of existing transportation network or projection of future transportation needs requires an understanding of existing land use, future land use, economic activity, and development trends.

1.2.1 Population and Housing Characteristics

The Tribe was not counted as American Indian and Alaska Native in the 2010 Census and therefore no US Census Bureau Data exists for the Tribe. The Tribal Enrollment Department has provided the following enrollment data in Table 1.2 below.

Table 1.2 – Massachusetts Tribal Enrollment

Massachusetts Tribal Enrollment by County	
County	Population/Enrollment
Barnstable	1,112
Bristol	145
Norfolk	42
Plymouth	170
Suffolk	96
TOTAL	1,565

Source: Mashpee Wampanoag Tribe Enrollment Department, April 2013

In addition to the Massachusetts tribal members there are enrolled members in other states bringing the current 2013 enrollment to 2,703 members total.

Population projection data for the Tribe has been determined by evaluating historical enrollment information from 1925 to 2012 and presuming a growth rate based upon this historical information. These projections are provided in Table 1.3.

Table 1.3 –Tribal Population Projections

Projected Tribal Enrollment	
Year	Population/Enrollment
2014	2,733
2015	2,763
2020	2,914
2025	3,064
2030	3,211

Source: Mashpee Wampanoag Tribe Enrollment Department, April 2013

There is currently no tribal housing but a tribal housing department is in the development. A parcel has been designated for the potential construction of forty plus (40+) homes. This sixty-nine (69) acre parcel is located off Meeting House Road.

1.2.2 Land Ownership

As previously discussed the Mashpee Wampanoag have tribal lands in both Barnstable and Plymouth Counties. All of these lands have applications for trust pending. Table 1.4 identifies the various parcels of tribal land.

Table 1.4 –Tribal Land Holdings

Tribal Land Holdings		
Map ID#	Parcel Name	Acreage of Parcel
1	Parsonage Property	2.0396
2	Museum Property	0.6429
3	Proposed Housing Property	69.416
4	Equestrian Property	30.7731
5	Cemetery Property	7.1158
6	Tribal Complex Property	65.10819
7	Middleborough Property	545.6659
8	Project First Light Property	150.25

Source: Mashpee Wampanoag Tribe Buildings, Grounds and Roads Department, April 2013

1.2.3 Existing Land Use

A windshield survey of existing land uses on and surrounding tribal properties was conducted by PAIKI's staff in March 2013. *Map A, Existing Conditions*, illustrates the generalized existing land uses and road conditions. The majority of the tribal land exists within developed communities and rural residential areas. There is a variety of commercial, office, industrial, agricultural and residential usage within the surrounding study area.

The tribe has a small agricultural operation on the 30 acre parcel wherein approximately 1 acre is used for vegetable gardening. An aquaculture and shellfish farm is operated by the Tribe on 12.6 acres in two separate off-shore locations. There are currently no industrial businesses on tribal lands. The Tribal Administration Building is nearing the completion of construction on one of the parcels. Two of the parcels, the Middleborough Property and the Project First Light Property, have been proposed for casino/resort development. The remaining land usages include residential, agricultural, historical preservation and a cemetery.

1.2.4 Land Use Control

The Mashpee Wampanoag Tribe applies and enforces its sovereign tribal law for jurisdiction over its tribal lands in various statutes, including land use, zoning, building codes, environmental matters, taxation, civil litigation and associated regulations.

Given the Tribe's proximity and land integration within other local communities and jurisdictions; other land use restrictions, requirements and zoning ordinances may be applicable to development opportunities. Other such municipal requirements must be considered and consultation with the appropriate agencies should be undertaken prior to any significant development.

1.2.5 Law Enforcement.

The Mashpee Wampanoag Tribe has no tribal police department or criminal court system. Criminal law enforcement is provided by the Mashpee Police Department, the Massachusetts State Police and the Massachusetts Department of Public Safety.

1.3 Transportation System

This section describes the road system used by tribal members. While emphasis is on the road system, public transit and other service routes are also addressed. Sections 1.3.1 through 1.3.10 present discussions of the existing and proposed IRR System roads that serve the various tribal lands. Map A shows the existing land uses and the transportation system serving tribal lands — including existing tribal and proposed IRR System roads.

1.3.1 Existing Roadway System

Tribal lands are served by a variety of state highways, county roads, city streets and interstate highways. Public roads serving the Tribe are constructed and maintained by Barnstable County, Plymouth County, the Town of Mashpee, the State of Massachusetts and other local municipalities. Selected characteristics of the existing IRR System are presented in Table 1.5. Note that “Existing IRR System” refers to the IRR System prior to the 2013 Inventory Update.

**Table 1.5
Selected Characteristics of Existing IRR System**

Route #	Route Name(s)	Class	Length (mi)	Width (ft)	Existing Status
0001	Horse Farm Service Road	5	0.2	8	Official
6001	Willis Work Road	5	1.0	8	In-Process
6002	McGregor's Road	5	1.0	16-22	Official
6003	Great River Rown Landing	5	0.4	22	Official
6004	Tide Run Road	5	0.8	20	In-Process
6005	Great Neck Road	5	3.5	20-28	Official
6006	Red Brook Road, Wading Place Road, Alma Road	5	1.2	10-24	In-Process
6007	Daniels Island Road, Popponesett Island Road	5	0.8	10-16	In-Process
6008	Old Dock Lane, Punkhorn Lane, Heron Way	5	1.1	8-16	In-Process
6009	Godfrey Road, Barbary Circle	3	0.4	16	In-Process
6010	Great Hay Road	5	1.3	8	In-Process
6011	Amy Brown Road	5	0.4	8-12	In-Process
6012	Monomoscoy Road	4	1.6	20-24	Official
6013	Red Brook Road	4	2.0	24-32	Official
6014	Great Hay Road, Mercantile Way	5	1.7	10-22	Official
6015	Route 60, Waquoit Landing Road	3	0.9	10-14	Official
6016	Quinaquesset Avenue, School Street	4	2.4	20-28	Official
6017	Sampson's Mill Road, Old Kings Road	4	1.3	16-22	Official
6019	Dunrobin Road	3	0.5	30	In-Process
6020	Cape Drive	3	0.4	18	In-Process
6021	Route 60	5	0.2	19	In-Process

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**Table 1.5
Selected Characteristics of Existing IRR System
(continued)**

Route #	Route Name(s)	Class	Length (mi)	Width (ft)	Existing Status
6022	Main Street	4	0.8	22	Official
6023	Meeting House Road	4	1.7	22	Official
6024	Noisy Hole Road	3	1.5	8-18	In-Process
6025	Park Place	3	0.4	18	In-Process
6026	Great Neck Road	4	2.1	20-24	Official
6027	Cotuit Road	4	3.7	22	Official
6028	State Highway 28	2	15.9	22-48	Official
6029	Ashumet Road, Hope Pole Road	4	2.0	18	Official
6030	Turner Road	5	0.2	12	Official
6031	Old Barnstable Road	4	3.8	18-20	Official
6032	Lowell Road	4	0.8	20	Official
6033	Ter Heun Drive, Jones Road	4	1.8	22-26	Official
6035	Route 60	5	0.1	8	Official
6036	Meadowbrooke Lane	5	0.6	24	Official
6037	Summer Street, Precinct Street	5	2.3	20-24	Official
6038	Indian Cemetery Road, Maintenance Access Road	5	0.4	10-12	Official
6039	Tribal Admin. Parking	9	0.1	99	Official
6040	PowWow Loop Road	5	0.2	NP	Official
6041	Proposed Housing Road #1	3	0.8	37	Official
6044	State Highway 44	4	4.2	44	Official
6105	State Highway 105	2	1.9	24	Official
6130	State Highway 130	4	2.3	20	Official
6151	State Highway 151	2	6.6	28	Official
6200	State Highway 28, Interstate 95	2	36.5	28-76	Official
TOTAL MILES			113.8		

1.3.2 Functional Classification of Roadways

Roads are classified or grouped into integrated systems by the functions they perform with regard to moving traffic and providing property access. Each road is ranked by its relative importance and the function it is intended to serve. Within the IRR system there are two types of road classification systems: State Highway Classifications and BIA Road Classifications. Both the state and the BIA use functional classification as the basis for classifying their roads. However, the criteria used to determine specific classifications differ between the two systems.

1.3.2.1 Generalized Functional Classification Definitions

Functional classification identifies the role each street or highway should play in channeling traffic through a rural or urban environment in a logical and efficient manner. The three general functional classification categories are Arterials, Collectors, and Local Roads. An arterial's function is to move through-traffic at high speeds over long distances with limited land access. Collector roads move traffic from local streets to arterial roads. Local roads or streets move traffic at relatively low speeds and provide access to adjacent property.

Urban and rural areas have fundamentally different characteristics with regard to density and types of land use, density of street and highway networks, nature of travel patterns, and the way in which these elements are related. Consequently, urban and rural functional systems are classified separately. Urban systems are composed of urban principal arterials, urban collectors, and urban local roads. Rural systems are composed of rural principal arterials, rural minor arterials, rural collectors, and rural local roads. General definitions of the three general functional classifications, along with desirable characteristics, are given below.

Arterials carry relatively large volumes of traffic through the state and to major destinations such as work sites or commercial centers. Arterials fall into two categories: principal and minor. Principal (major) arterials include federal and interstate highways, and state highways that serve all urban areas with a population greater than 50,000, and state highways that serve a majority of areas with populations of 25,000 or more. Minor arterials provide interstate and inter-county service to cities and towns with populations of less than 25,000, and attractions that draw travel over long distances. Principal arterials usually have four traffic lanes (two lanes in each direction), provide left-turn lanes at most intersections, and are separated by a median or continuous left-turn lane. Minor arterials may only have two traffic lanes and generally provide left-turn lanes at major intersections. A minimum right-of-way width of 100 to 150 feet is desirable for an arterial, although wider rights-of-way are needed for arterials with more than four lanes.

Collectors generally serve intra-county and regional travel that has shorter travel distances than that supported by arterials. Collectors also provide a balance between mobility and land access by generally permitting access to all abutting properties. There are two categories of collectors: major and minor. Major collectors provide service to any county seat or community not served by an arterial road and serve other traffic generators of intra-county importance: regional parks, consolidated schools, agricultural areas, shipping points, etc. Minor collectors are spaced at intervals consistent with population density. They collect traffic from local roads and provide access to all developed areas within a reasonable distance of a higher classified road. A minimum right-of-way width of 80 to 100 feet is desirable for a collector.

Local Roads comprise the balance of the road network and carry low volume, low-speed traffic. The primary function of a local road is to provide access to individual parcels of property. Local roads usually serve residential areas and may also serve scattered businesses and industrial sites that generate modest traffic. A minimum right-of-way of 60 to 80 feet is desirable for a local road.

1.3.2.2 State Highway Classifications

Functional classification of roads has been used by state highway departments for many years for a variety of important highway functions: assigning jurisdictional responsibility, determining cost allocations, allocating funds to local units of government, and establishing appropriate

design standards. Prior to the enactment of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), it became apparent that the 20-year-old federally mandated functional classifications needed modification to be reclassified before the establishment of a National Highway System (NHS). Although routinely updated by states, functional classifications were no longer consistent among the states and it was agreed that they should be reclassified before a national highway system was established. As a result, Congress included Section 1006(c) in ISTEA, which required the states to reclassify their roads and streets under oversight of the Federal Highway Administration, by September 30, 1996.

1.3.2.3 BIA Road Classifications

The BIA road system has eleven classes of routes: seven vehicular and four non-vehicular. Functional classification is used by the BIA to group roads into a specific vehicular class based on the existing or anticipated function of the road. The road classes are then combined with the traffic characteristics of the road to select criteria and standards for the adequate design of the facility. Definitions of the eleven BIA road system classes are given below, together with the list of roads the existing IRR inventory includes in each class. Proposed changes to the existing IRR inventory are described in Part Two, Inventory Update.

Class 1 roads are major arterial roads that provide an integrated network to serve traffic between large population centers. They generally do not have stub connections, have more than two lanes of traffic, and carry an average traffic volume of 10,000 vehicles per day (vpd) or more. There are no Class 1 roads on the current Mashpee Wampanoag's IRR System.

Class 2 roads are rural minor arterial roads that provide an integrated network serving traffic between larger population centers, and generally do not have stub connections. They serve traffic between large population centers and may also link smaller towns and communities to major destination areas that attract travel over long distances. They are generally designed for relatively high overall speeds with minimum interference to through traffic, and carry less than 10,000 vpd. Class 2 routes provide for at least inter-county or interstate travel and are spaced at intervals consistent with population density. Class 2 roads identified on the current Mashpee Wampanoag's IRR System are:

- *State Highway 28 (BIA Route 6028)*
- *State Highway 105 (BIA Route 6105)*
- *State Highway 151 (BIA Route 6151)*
- *Interstate-195/I-495/Highway 28 (BIA Route 6200)*

Class 3 routes are streets and roads that are located within communities and serve residential or other urban settings. These roads correspond to the Local Roads category in the state highway classification. The Class 3 routes within the Mashpee Wampanoag's current IRR System include:

- *Punkhorn Point Road/Heron Way (BIA Route 6008)*
- *Godfrey Road/Barbary Circle (BIA Route 6009)*
- *Route 60 (BIA Route 6015)*
- *Dunrobin Road (BIA Route 6019)*
- *Cape Drive (BIA Route 6020)*
- *Noisy Hole Road (BIA Route 6024)*
- *Park Place (BIA Route 6025)*

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- *Proposed Housing Roads (BIA Route 6041)*

Class 4 routes are rural major collectors that collect traffic from rural local roads. The Class 4 routes within the Mashpee Wampanoag's current IRR System include:

- *Monomoscoy Road (BIA Route 6012)*
- *Red Brook Road (BIA Route 6013)*
- *Quinaquesset Avenue/School Street (BIA Route 6016)*
- *Sampson's Mill Road/Old King's Road (BIA Route 6017)*
- *Main Street (BIA Route 6022), Meeting House Road (BIA Route 6023)*
- *Great Neck Road (BIA Route 6026)*
- *Cotuit Road (BIA Route 6027)*
- *Ashumet Road/Hoop Pole Road (BIA Route 6029)*
- *Old Barnstable Road (BIA Route 6031)*
- *Lowell Road (BIA Route 6032)*
- *Ter Huen Drive/Jones Road (BIA Route 6033)*
- *State Highway 44 (BIA Route 6044)*
- *State Highway 130 (BIA Route 6130)*

Class 5 routes are local rural roads that may include section line and stub-out roads that collect traffic for arterial roads and make connections within the grid of the Indian Reservation Roads System. Such routes may serve areas around villages or provide access to farming areas, schools, tourist attractions or various small enterprises. This class also includes roads and vehicular trails for administering forests, grazing areas, mining and oil operations, recreation, or other purposes. There are non-vehicular routes defined as non-road type paths, trails, walkways and other designated types of routes for public use by foot traffic, bicycles, trail bikes, or other uses. Many of the roads on the current Mashpee Wampanoag's IRR System are Class 5 routes and are specifically identified as:

- *Horse Farm Service Road (BIA Route 0001)*
- *Willis Work Road (BIA Route 6001)*
- *McGregor's Road (BIA Route 6002)*
- *Great River Rown Landing Road (BIA Route 6003)*
- *Tide Run Road (BIA Route 6004)*
- *Great Neck Road Road (BIA Route 6005)*
- *Red Brook Road/Wading Place Road/Alma Road (BIA Route 6006)*
- *Daniel's Island Road/Popponesset Island Road (BIA Route 6007)*
- *Old Dock Lane (BIA Route 6008), Great Hay Road (BIA Route 6010)*
- *Amy Brown Road (BIA Route 6011)*
- *Great Hay Road/Mercantile Way (BIA Route 6014)*
- *Route 60 (BIA Route 6021)*
- *Turner Road (BIA Route 6030)*
- *Route 60 (BIA Route 6035)*
- *Meadowbrooke Lane (BIA Route 6036)*
- *Summer Street/Precinct Street (BIA Route 6037)*
- *Indian Cemetery Road/Maintenance Access Road (BIA Route 6038)*
- *Great Hay Road (BIA Route 6010)*
- *Pow Wow Loop Road (BIA Route 6040).*

Class 6 routes are city minor arterial streets that are located within communities and provide access to major arterials. This is a relatively new classification in the IRR System and there are no Class 6 roads on the Mashpee Wampanoag's IRR System.

Class 7 routes are city collector streets that are located within communities and provide access to city local streets. This is a relatively new classification in the IRR System and there are no Class 7 roads on the Mashpee Wampanoag's IRR System.

Class 8 routes are non-road type projects such as paths, trails, walkways, and other routes for public use by foot traffic, bicycles, trail bikes, snowmobiles, all-terrain vehicles, or other non-vehicular traffic. There are no Class 8 roads on the Mashpee Wampanoag's IRR System.

Class 9 routes encompass other transportation facilities such as parking facilities adjacent to IRR routes and scenic byways such as rest areas, other scenic pullouts, ferry boat terminals, and transit terminals. There one Class 9 route on the Mashpee Wampanoag's IRR System and that is:

- *Tribal Administration Parking (BIA Route 6039)*

Class 10 routes are defined as airstrips that are within the boundaries of the IRR System and are open to the public. These airstrips are included for inventory and maintenance purposes, only. There are no Class 10 roads on the Mashpee Wampanoag's IRR System.

Class 11 indicates an overlapping of a previously inventoried section, or sections of a route, and is used to indicate that it is not to be used for accumulating needs data. This class is used for reporting and identification purposes only. There are no Class 11 roads on the Mashpee Wampanoag's IRR System.

1.3.3 Drainage Features and Bridges

Bridges are an integral part of the transportation network in Massachusetts and the Cape Cod region in particular. The Federal Highway Administration's National Bridge Inventory (NBI) identifies bridges by state and county. It further identifies those structures deemed structurally deficient or functionally obsolete. The most recent NBI listing for Massachusetts is provided on Table 1.6.

The Patrick-Murray Accelerated Bridge Program undertaken by MassDOT represents a \$3 billion investment in Massachusetts bridges. This program will greatly reduce the number of structurally deficient bridges in the state system, while creating thousands of construction jobs on bridge projects.

To complete this program MassDOT and the Department of Conservation and Recreation (DCR) will rely on the use of innovative and accelerated project development and construction techniques. As a result, projects will be completed on-time, on-budget and with minimum disruption to people and to commerce.

Since 2008, the number of former MassHighway and DCR structurally deficient bridges has dropped from 543 to 436, a decline of 19.7%. As of January 1, 2013 the ABP Program has completed 121 bridge projects, with another 48 bridge projects currently in construction, and an additional 20 bridge projects scheduled to start construction within the next year. Over the course of the eight year program, well over 200 bridges are planned to be replaced or repaired.

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**Table 1.6
Massachusetts – National Bridge Inventory Listing**

MASSACHUSETTS								
County	# Bridges	# SD	#FO	Tot Def	Area	SD Area	FO Area	Def Area
BARNSTABLE (001)	104	10	48	58	64,520	14,189	24,890	39,079
BERKSHIRE (003)	427	39	104	143	120,440	6,554	47,522	54,076
BRISTOL (005)	384	51	138	189	339,293	113,296	107,948	221,244
DUKES (007)	5	3	2	5	2,661	2,389	272	2,661
ESSEX (009)	386	39	142	181	375,741	67,794	98,268	166,062
FRANKLIN (011)	289	56	60	116	120,528	35,708	26,781	62,489
HAMPDEN (013)	424	47	191	238	467,139	40,476	173,264	213,740
HAMPSHIRE (015)	253	32	79	111	82,829	13,001	24,312	37,313
MIDDLESEX (017)	775	95	339	434	565,017	68,315	258,195	326,510
NANTUCKET (019)	2	0	2	2	318	0	318	318
NORFOLK (021)	331	24	182	206	191,820	15,619	102,294	117,913
PLYMOUTH (023)	283	23	106	129	142,293	10,690	52,648	63,339
SUFFOLK (025)	387	58	198	256	784,877	158,943	366,788	525,731
WORCESTER (027)	986	114	390	504	488,107	47,576	214,614	262,190
County Code Null	2	2	0	2	161	161	0	161
TOTALS	5,038	593	1,981	2,574	3,745,746	594,711	1,498,114	2,092,825
Area is in SqM SD = Structurally Deficient FO = Functionally Obsolete								

Source: www.fwaha.dot.gov/bridge/nbi

There are currently ten (10) bridges on the Mashpee Wampanoag's IRR System:

- *Daniel's Island Road Bridge (BIA Route 6007 - Section 830)*
- *Bridge #BO1006AEC (BIA Route 6016 - Section 820)*
- *Bridge #M1805445 (BIA Route 6044 - Section 820)*
- *Bridge #Fo320264 (BIA Route 6151 - Section 820)*
- *Bridge #Fo302945N/Fo (BIA Route 6200 - Section 840)*
- *Bridge #Fo303045R/Fo (BIA Route 6200 - Section 860)*
- *Bridge #Fo303245W/Fo (BIA Route 6200 - Section 880)*
- *Bridge #CEPMEDMA2 (BIA Route 6200 - Section 900)*
- *Bridge # M18049460 (BIA Route 6200 - Section 940)*
- *Bridge #M18017463 (BIA Route 6200 - Section 960).*

None of the bridges on the existing IRR System are listed on the November 2012 Active Project Listing of the MassDOT Accelerated Bridge Program.

1.3.4 Postal Delivery Routes

The most proximal US Postal Service facility for the Tribe is located at 11 Market Street in Mashpee. Mail delivery services are provided to individual residences and the tribal facilities. Given this fact many of the routes on the Mashpee IRR System are considered postal delivery routes.

1.3.5 School Bus Routes

Masphee Wampanoag children attend multiple local schools managed by independent districts throughout the region. Each of these districts provides their own transportation services and identifies their own bus routes. The wide encompassing nature of these various routes impacts all of roads within the Mashpee Wampanoag IRR System and therefore all must be considered potential bus routes.

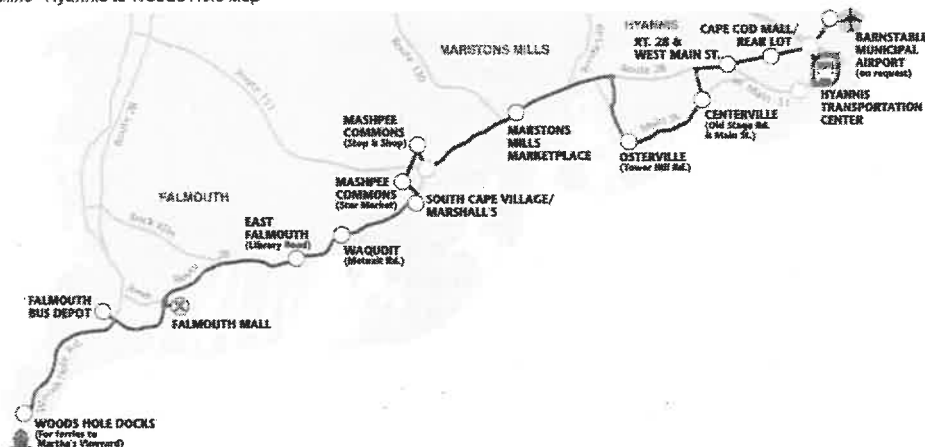
1.3.6 Transit Routes

Public transit exists throughout the project study area in a variety of forms. Bus service, ferries and passenger rail service are available to residents. Each of these means of travel is discussed in the following text.

Bus Service

The Cape Cod Regional Transit Authority (CCRTA) provides daily bus service throughout the area. There are multiple fixed route schedules. The majority of the tribal lands would be served by the “SeaLine” route. This fixed route operates Monday through Friday, from 5:30 a.m. to 8:15 p.m, and Saturday from 9:00 a.m. to 8:15 p.m. leaving downtown Hyannis at the Hyannis Transportation Center travelling to the Woods Hole docks in Falmouth. The SeaLine travels from downtown Hyannis, along Route 28 to Centerville and Osterville Centers, to Mashpee Commons, Falmouth Center, and the Falmouth bus terminal to Woods Hole. Passengers may board the SeaLine at any of the scheduled bus stops or they may flag the bus down anywhere along the bus route. The SeaLine connects at the Hyannis Transportation Center with the H2O Line, the Barnstable Villager, and the P&B/Bonanza bus service to Boston/Providence. In the summer the SeaLine also connects with the Hyannis Area Trolley at the HTC and the WHOOSH Trolley at the Falmouth Mall. A map of the SeaLine route is provided below.

Sealine - Hyannis to Woods Hole Map



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There are intercity bus routes also available from the Hyannis Transportation Center. The Plymouth & Brockton Bus offers service from Hyannis to Sagamore, Plymouth, Kingston, Rockland, Boston (South Station and Logan Airport). P&B also provides service to Harwich, Orleans, Eastham, Wellfleet, Truro and Provincetown from Hyannis.

The Peter Pan Bus Line Service from Hyannis to Barnstable, Sagamore, New Bedford, Fall River, Providence, RI and New York City.

Passenger Rail Service

The Cape Cod Regional Transit Authority also operates the CapeFLYER. The CapeFLYER is a weekend passenger train service from Boston to Cape Cod that operates from Memorial Day to Labor Day. The CapeFLYER offers transportation to Hyannis from South Station, Braintree, Middleborough and Buzzards Bay. Amenities include: onboard concessions, free Wi-Fi, wheelchair accessibility and bike transit. There are many transportation connections available to get from the train to the final destination.

Ferries

There are multiple ferries that provide transit to Martha's Vineyard and Nantucket. Steamship Authority and Hy-Line Cruises offer ferry transit from Hyannis. Connections from the various bus routes and the CapeFLYER can be made at the Hyannis Transportation Center.

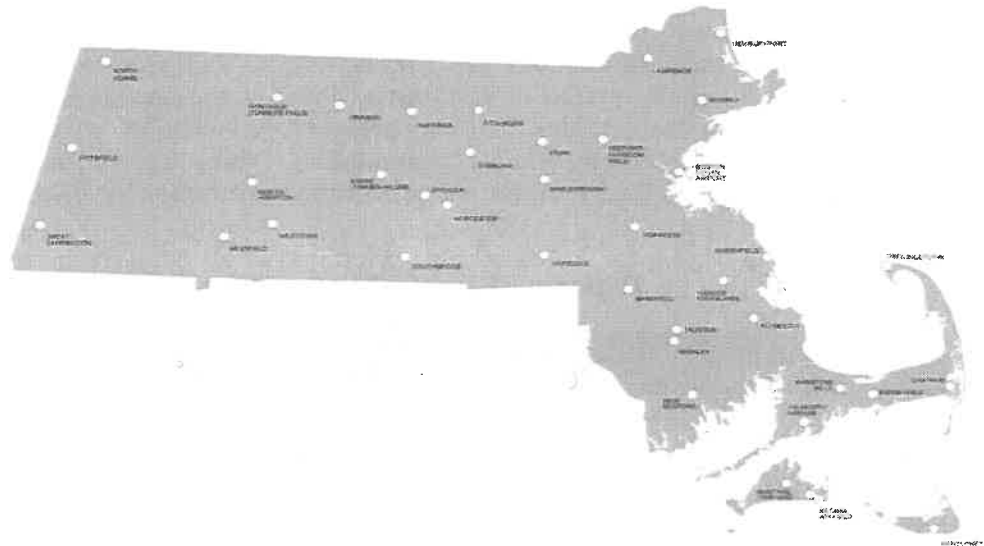
1.3.7 Regional Transportation

Airports

The adjacent map from the Massachusetts Department of Transportation illustrates the locations of all of the public use airports within Massachusetts.

The closest airport is the Barnstable Municipal Airport. It is centrally located in the heart of Cape Cod and is the primary terminal for air transportation in the area. It is located just off Route 6 and Route 28. The airport offers commercial service between Hyannis and Nantucket. The primary carriers are Island Airways and Nantucket Airlines.

The airport has two runways. Runway 15/33 is grooved asphalt, 5242 feet long by 150 feet wide, and has a precision approach on Runway 15. The second runway, 6/24, is 5425 feet long, 150



feet wide, and grooved as well. Runway 24 has instrument capabilities. Both runways have high intensity runway edge lighting and a medium intensity approach lighting system.

Barnstable Municipal offers a variety of services. Jet fuel is available and an airport restaurant operates seven days a week. There is also an air cargo company on site, flight training, and avionics services.

Boston Logan International Airport is New England's largest transportation center on a 1,700 acre footprint of land. The airport has a fire department, a police department, a power plant, two hotels, a non-denominational chapel and 27 acres of landscaping along the roadways and terminals.

Logan Airport has four passenger terminals, A, B, C and E, each with its own ticketing, baggage claim, and ground transportation facilities. The terminals are connected to the central parking garage by a walkway system. In all, there are 94 gates with contact jet bridges and nine regional jet gates at the airport and more than 40 airlines fly nonstop to more than 100 domestic and international destinations.

1.3.8 Traffic Control

Traffic control devices are signs, signals, markings, and devices placed on, or adjacent to a street or highway by an authority having jurisdiction to regulate, warn, or guide traffic. Because tribal lands are located throughout several communities, traffic control is provided by a myriad of agencies in the form of signage, striping, traffic signals and the like.

1.3.9 Accident Data

The National Highway Traffic Safety Administration (NHTSA) maintains various safety related information on roads throughout the United States. The most recent report available for Massachusetts is for the period of 2007-2011. Some of the key statistics from this report are presented in the following tables. Table 1.7 presents statewide fatality data by crash type. Table 1.8 lists fatality data by county relative to population. Table 1.9 provides accident data specific to Barnstable County and Table 1.10 provides the same information for Plymouth County.

Table 1.7 – Fatal Accident Data by Crash Type

Massachusetts Fatalities by Crash Type						
Crash Type	2007	2008	2009	2010	2011	
TOTAL FATALITIES (all crashes)	434	364	340	347	337	
Single Vehicle	296	264	221	230	208	
Involving a Large Truck	28	23	20	19	30	
Involving Speeding	143	97	77	83	103	
Involving a Rollover	95	69	77	60	67	
Involving a Roadway Departure	236	165	172	149	162	
Involving an Intersection	82	77	81	111	76	

Source: National Highway Traffic Safety Administration www.nhtsa.gov

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Table 1.8 – Fatal Accident Data by County Based on Population (Top Ten Counties)

Massachusetts Fatalities by County – Per 100,000 Population					
County	2007	2008	2009	2010	2011
Bristol	9.54	7.87	6.76	8.93	8.93
Barnstable	13.74	7.83	6.94	7.87	8.81
Berkshire	7.58	10.66	12.19	10.68	8.43
Worcester	8.12	7.08	5.41	6.76	6.49
Plymouth	8.60	9.79	5.07	5.85	5.83
Essex	5.47	3.95	5.14	4.16	5.61
Hampden	8.24	6.28	6.91	7.33	5.61
Franklin	13.97	9.78	1.40	7.01	5.59
Norfolk	5.64	4.08	5.40	5.06	4.29
Middlesex	4.17	3.79	4.28	3.06	3.36

Table 1.9 – Fatal Accident Data for Barnstable County

Fatality Type	Fatalities					Fatalities Per 100,000 Population				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Total Fatalities (All Crashes)*	30	17	15	17	19	13.74	7.83	6.94	7.87	8.81
(1) Alcohol-Impaired Driving (BAC=.08+) Fatalities	13	5	5	7	5	5.95	2.30	2.31	3.24	2.32
(2) Single Vehicle Crash Fatalities	15	13	9	13	11	6.87	5.99	4.17	6.02	5.10
(3) Large Truck Involved Crash Fatalities	4	2	0	1	1	1.83	0.92	0.00	0.46	0.46
(4) Speeding Involved Crash Fatalities	13	8	7	5	4	5.95	3.69	3.24	2.31	1.85
(5) Rollover Involved Crash Fatalities	11	1	4	1	1	5.04	0.46	1.85	0.46	0.46
(6) Roadway Departure Involved Crash Fatalities	13	13	6	6	11	5.95	5.99	2.78	2.78	5.10
(7) Intersection (or Intersection Related) Crash Fatalities	9	3	6	6	3	4.12	1.38	2.78	2.78	1.39
Passenger Car Occupant Fatalities	15	8	8	4	11	6.87	3.69	3.70	1.85	5.10
Light Truck Occupant Fatalities	8	2	3	2	3	3.66	0.92	1.39	0.93	1.39
Motorcyclist Fatalities	4	3	3	5	1	1.83	1.38	1.39	2.31	0.46
Pedestrian Fatalities	2	2	1	5	4	0.92	0.92	0.46	2.31	1.85
Bicyclist (or Other Cyclist) Fatalities	1	1	0	0	0	0.46	0.46	0.00	0.00	0.00

Table 1.10 – Fatal Accident Data for Plymouth County

Fatality Type	Fatalities					Fatalities Per 100,000 Population				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Total Fatalities (All Crashes)*	42	48	25	29	29	8.60	9.79	5.07	5.85	5.83
(1) Alcohol-Impaired Driving (BAC=.08+) Fatalities	18	19	5	8	10	3.69	3.87	1.01	1.61	2.01
(2) Single Vehicle Crash Fatalities	29	38	15	19	22	5.94	7.75	3.04	3.83	4.42
(3) Large Truck Involved Crash Fatalities	3	1	1	3	1	0.61	0.20	0.20	0.61	0.20
(4) Speeding Involved Crash Fatalities	11	16	6	8	7	2.25	3.26	1.22	1.61	1.41
(5) Rollover Involved Crash Fatalities	8	10	3	8	4	1.64	2.04	0.61	1.61	0.80
(6) Roadway Departure Involved Crash Fatalities	23	28	8	16	13	4.71	5.71	1.62	3.23	2.61
(7) Intersection (or Intersection Related) Crash Fatalities	12	12	5	6	7	2.46	2.45	1.01	1.21	1.41
Passenger Car Occupant Fatalities	19	26	11	15	14	3.89	5.30	2.23	3.03	2.81
Light Truck Occupant Fatalities	7	11	3	10	4	1.43	2.24	0.61	2.02	0.80
Motorcyclist Fatalities	11	5	5	2	5	2.25	1.02	1.01	0.40	1.00
Pedestrian Fatalities	5	5	3	2	4	1.02	1.02	0.61	0.40	0.80
Bicyclist (or Other Cyclist) Fatalities	0	1	2	0	1	0.00	0.20	0.41	0.00	0.20

Source: National Highway Traffic Safety Administration www.nhtsa.gov

1.3.10 Bicycle and Pedestrian Facilities

The 2008 Long Range Transportation Plan recommended that the Tribe develop a pedestrian trails plan. It stated that “trails can be developed in every region, connected to a variety of natural resources and made accessible for a wide diversity of users”. This recommendation continues to be applicable.

Barnstable County and the Cape Cod Commission are working to create a regional network of walking trails. This network is called Cape Cod Pathways. Upon its completion, the Cape Cod Pathways will extend from Provincetown to Falmouth and Bourne. It will provide a connection between the seashore and the Cape's wooded interior, between the peninsula's historic villages and remaining backcountry.

In the area of Mashpee the following are trail and trail locations:

- South Cape Beach State Park
- Lowell Holly Reservation
- John's Pond Conservation Area
- Mashpee River Woodlands
- South Mashpee Pine Barrens Conservation Area
- Jehu Pond Conservation Area
- Quashnet River Corridor
- Besse Bog Conservation Area

1.3.11 Roadway Hazards and Safety Issues

No specific roadway hazards associated with tribal lands were identified by the Tribe. This does not however mean roadway hazards and safety concerns do not exist throughout the study area.

The Cape Cod 2012 Regional Transportation Plan 2012-2035 (CCRTP) as prepared by the Cape Cod Commission provides extensive discussion on specific intersections and roads of concern. Since tribal members must travel on many of these same roadways, the hazard/safety issues discussed in this Plan are relevant to the Mashpee Wampanoag Tribe. The CCRTP presents a series of tables involving both crash rates and equivalent property damage. The Plan also discusses other symptomatic safety concerns such as driver age, tourism impacts, and bicycle safety. Furthermore, it presents recommendations and potential strategies to address the concerns.

Questionnaires solicited during the development of the CCRTP asked responders to identify the worst regional safety concern. The most frequent responses identified specific locations on Route 6 or Route 6 in general. The next most frequent response was Route 28. Respondents were also asked to identify the top three areas that have the worst local safety concerns. The adjacent Table 1.11 is from the CCRTP lists these *Top Local Safety Concerns*.

Table 1.11 – Top Local Safety Concerns

Town	Location #1	Location #2
Barnstable	Rt 28	Main St
Bourne	MacArthur Blvd	Bike/Pedestrian Safety
Eastham	Rt 6 (left turns)	Samoset Rd/Cape Cod Rail Tr
Falmouth	Rt 28 Teaticket Hwy	Woods Hole Rd/Locust St
Harwich	Rt 39/Pleasant Bay Rd	Rt 28/Sisson Rd
Mashpee	Mashpee Rotary	Rt 28/Quinnacuissett
Oriens	Rt 6A/Rt 28	Main St/Old Colony Way
Truro	Rt 6 (left turns)	Rt 6 (passing on right)
Yarmouth	Station Ave (between Old Townhouse Rd & Rt 6)	Rt 28

(Responses as of 8/23/2010)

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The table below, also from the CCRTP, lists the *Top Locations Based on Number of Crashes*. A quick review of this information reinforces the consensus that Route 6 and Route 28 are high safety concern areas with 6 of the top 10 locations on Route 6 and 3 of the top 10 on Route 28.

Table 1.12 – Top Location Based on Number of Crashes

Rank	Intersection	Town	Crash #
1	Route 6 (Mid-Cape Highway) @ Route 132 (Yanough Road) - Exit 6,	Barnstable	128
2	Route 6 (Mid-Cape Highway) @ Route 134 (East West Dennis Road) - Exit 9,	Dennis	99
3	Ottis Air Force Base Rotary @ Rt 28 / Sandwich Rd / Connerly Ave,	Bourne	88
4	Route 6 (Mid-Cape Highway) @ Willow Street - Exit 7,	Yarmouth	86
5	Route 6 (Mid-Cape Highway) @ Route 149 (Prospect Street) - Exit 5,	Barnstable	83
6	Route 6 (Mid-Cape Highway) @ Station Avenue - Exit 8	Yarmouth	78
7	Route 6 (Mid-Cape Highway) @ Route 130 (Forestdale Road) - Exit 2,	Sandwich	73
8	Bourne Rotary @ Rt 28 / Sandwich Rd / Trowbridge Rd	Bourne	71
9	Route 25 @ Bourne Bridge	Bourne	68
10	Route 28 (Falmouth Road) @ Beases Way,	Barnstable	60
11	Route 28 (Falmouth Road) @ Route 149 (Prospect Street),	Barnstable	56
12	Route 6 (Mid-Cape Highway) @ Chase Rd - Exit 4,	Sandwich	55
13	Belmont Rotary @ Rt 28 / Rt 6 / Rt 6 Bypass / Head of the Bay Rd	Bourne	54
14	Route 28 (Falmouth Road) @ South County Road,	Barnstable	52
15	Route 28 (Yanough Road) @ Yarmouth Road,	Barnstable	48
16	Route 134 (East West Dennis Road) @ Upper County Road,	Dennis	48
16	Route 6 (Mid-Cape Highway) @ Route 124 (Pleasant Lake Avenue) - Exit 20	Harwich	44
16	Route 6 (Mid-Cape Highway) @ Ousker Meeting House Rd - Exit 3,	Sandwich	44
19	Route 28 (Falmouth Road) @ Ostersville West Barnstable Road	Barnstable	43
19	Route 132 (Yanough Road) @ Shoot Flying Hill Road,	Barnstable	43
21	Airport Rotary @ Rt 132 / Rt 28 EB/WB / Barnstable Rd,	Barnstable	42
22	Route 132 (Yanough Road) @ Phinneys Lane,	Barnstable	40
23	Route 132 (Yanough Road) @ Independence Road / Enterprise Road,	Barnstable	36
24	Eastham Rotary @ Rt 6A/28 / Rt 6, Smith Ln,	Eastham	35
24	Route 28 @ Route 151 (Nathan Ellis Highway)	Falmouth	35
24	Route 28 (Falmouth Road) @ Old Stage Road,	Barnstable	35
27	Route 28 (Chatham Road) @ Route 5A (Cranberry Highway),	Orleans	33
28	Maspee Circle @ Rt 28 / Rt 151 / Great Neck Rd	Maspee	32
29	Route 28 (Falmouth Road) @ Pitchers Way	Barnstable	31
29	Route 28 (Falmouth Road) @ Lincoln Road	Barnstable	31
31	Sandwich Road @ Adams Street	Bourne	30
32	Route 134 (East West Dennis Road) @ Market Place	Dennis	27
33	Theophilus F. Smith Road @ Cumberland Farm / Patriot Square SD	Dennis	25
33	Route 6A (Sandwich Road) @ Sagamore Bridge Connector	Bourne	25
33	Route 28 (Main St / Yanough Rd) @ East Main Street,	Yarmouth	25
36	Route 28 (Falmouth Road) @ Phinneys Lane,	Barnstable	24
36	Route 151 (Nathan Ellis Highway) @ Sandwich Road	Falmouth	24
36	Route 28 (Main Street) @ Depot Street	Dennis	24
36	Route 28 (Main Street) @ Route 134 / Swan River Road,	Dennis	24
40	Route 6 WB Off ramp @ Route 6 (Scenic Highway)	Bourne	22
40	Route 6 (GAR Hwy) @ Brackett Road / Old County Road,	Eastham	22
40	Route 6 (Mid-Cape Highway) @ Route 6A (Cranberry Highway) - Exit 12	Orleans	22
40	Route 6 (Mid-Cape Highway) @ Route 137 (Long Pond Road) - Exit 12,	Harwich	22
40	Station Avenue @ Whites Path,	Yarmouth	22
43	Back Island Road @ West Yarmouth Road	Yarmouth	20
45	Sandwich Road @ Brick Kiln Road	Falmouth	20
45	Station Avenue @ Old Town House Road	Yarmouth	20
45	Route 130 (Forestdale Road) @ Cotuit Road	Sandwich	20
49	Main Street @ Tanset Road	Orleans	19
49	Spring Barn Road @ Worcester Court	Falmouth	19
49	Route 28 (Teabicket Highway) @ Stop and Shop SD	Falmouth	19
49	Route 134 (East West Dennis Road) @ Bob Crowell Rd / Hermod Ln / Agway SD	Dennis	19

Source: MassDOT 2006-2008 Crash Data and Towns of Barnstable County

PART TWO - IRR INVENTORY UPDATE

Proposed revisions to the existing Mashpee Wampanoag's IRR Inventory are subject to the approval of the Tribe and the BIA.

2.1 Roadway Inventory

In March 2013, PAIKI staff performed a field survey of the Tribe's existing IRR System as well as roads proposed to be added to the Mashpee Wampanoag's IRR System. The task included a Global Positioning System (GPS) survey. The data describes the physical characteristics and condition of each road, and records, among other data:

- Identification (including length, class, location, etc.)
- Roadway section
- Inventory status (including date of update)

An inventory data form was developed to expedite fieldwork. Field inventory data was then transferred to the BIA inventory forms. To make changes to the IRR Inventory, PAIKI's inventory data is first reviewed by the Tribe and the BIA Regional Roads Office. Following the review and comment process, the Tribal Council, through formal resolution, accepts the data and refers it to the BIA Regional Roads Office for approval as the "2013 Inventory Update." The data (one sheet per section of each route) provides information regarding the physical characteristics and condition of each road, and includes a color photo of each section inventoried. The inventory data forms are located in the Indian Reservation Roads Inventory Data that has been provided to the Tribe and BIA.

Table 2.1 summarizes the proposed IRR System based on the 2013 Inventory Update with proposed revisions in mileage, classification of surface type shown in yellow highlight. New routes or sections proposed for addition to the inventory are shown in green highlight.

Section 2.1.6 discusses existing and proposed IRR System road mileage, including additions, deletions, and corrections to mileage data based on the 2013 Inventory Update.

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**Table 2.1
2013 Inventory Update—Mashpee Wampanoag IRR System**

2013 Inventory Update		2013 Inventory	Existing Inventory	2013 Inventory	Existing Inventory	2013 Inventory	Existing Inventory	Section Name
Route	Section	Class		Length		Surface Type		
0001	010	5	5	0.1	0.2	1	9	Horse Farm Service Road
Route Length Subtotal:				0.1	0.2			
6001	810	5	5	0.1	0.1	9	9	Willis Work Road
6001	820	5	5	1.1	0.9	9	9	Willis Work Road
Route Length Subtotal:				1.2	1.0			
6002	810	5	5	0.4	0.3	5	4	McGregor's Road
6002	820	5	5	0.1	0.1	4	4	McGregor's Road
6002	830	5	5	0.6	0.6	5	4	McGregor's Road
Route Length Subtotal:				1.1	1.0			
6003	810	3	5	0.5	0.4	4	4	Great River Rown Landing
Route Length Subtotal:				0.5	0.4			
6004	810	3	5	0.9	0.8	4	4	Tide Run Road
Route Length Subtotal:				0.9	0.8			
6005	810	6	5	2.1	0.8	5	4	Great Neck Road
6005	820	6	5	2.7	2.7	5	5	Great Neck Road
Route Length Subtotal:				4.8	3.5			
6006	810	3	5	0.5	0.4	5	4	Red Brook Road
6006	820	3	5	0.3	0.3	4	4	Wading Place Road
6006	830	3	5	0.1	0.4	4	4	Alma Road
6006	840	3	5	0.1	0.1	4	4	Alma Road
Route Length Subtotal:				1.0	1.2			
6007	810	3	5	0.4	0.4	9	1	Daniels Island Road
6007	820	3	5	0.3	0.3	4	1	Daniels Island Road
6007	830	3	5					Daniels Island Road
6007	840	3	5	0.1	0.1	4	4	Popponesett Island Rd
Route Length Subtotal:				0.8	0.8			
6008	810	3	5	0.2	0.2	4	4	Old Dock Lane
6008	820	3	3	0.3	0.3	4	4	Punkhorn Point Road
6008	830	3	3	0.1	0.3	9	9	Punkhorn Point Road
6008	840	3	3	0.1	0.3	4	4	Heron Way
Route Length Subtotal:				0.7	1.1			
6009	810	3	3	0.2	0.2	4	4	Godfrey Road
6009	820	3	3	0.2	0.2	4	4	Barbary Circle
Route Length Subtotal:				0.4	0.4			
6010	810	5	5	1.3	1.3	9	9	Great Hay Road
Route Length Subtotal:				1.3	1.3			
6011	810	3	5	0.1	0.1	4	4	Amy Brown Road
6011	820	3	5	0.2	0.2	1	3	Amy Brown Road
6011	830	5	5	0.1	0.1	9	9	Amy Brown Road
Route Length Subtotal:				0.4	0.4			

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2013 Inventory Update		2013 Inventory	Existing Inventory	2013 Inventory	Existing Inventory	2013 Inventory	Existing Inventory	Section Name
Route	Section		Class	Length		Surface Type		
6012	810	3	4	1.4	1.4	5	4	Monomoscoy Road
6012	820	3	4	0.2	0.2	5	4	Monomoscoy Road
Route Length Subtotal:				1.6	1.6			
6013	810	7	4	0.5	0.5	5	5	Red Brook Road
6013	820	7	4	0.2	0.1	5	4	Red Brook Road
6013	830	7	4	1.4	1.4	5	4	Red Brook Road
Route Length Subtotal:				2.1	2.0			
6014	810	3	5	0.1	0.1	5	4	Great Hay Road
6014	820	5	5	1.1	1.1	9	1	Great Hay Road
6014	830	5	5	0.4	0.4	9	9	Great Hay Road
6014	840	5	5	0.1	0.1	5	5	Mercantile Way
Route Length Subtotal:				1.7	1.7			
6015	810	3	3	0.1	0.1	9	9	Route 60
6015	820	3	3	0.8	0.8	4	4	Waquoit Landing Road
Route Length Subtotal:				0.9	0.9			
6016	810	7	4	1.7	1.6	5	5	Quinaquesset Avenue
6016	820	7	4					Quinaquesset Avenue
6016	830	7	4	0.8	0.8	5	4	School Street
Route Length Subtotal:				2.5	2.4			
6017	810	3	4	0.5	0.5	5	4	Sampson's Mill Road
6017	820	3	4	0.4	0.4	4	4	Sampson's Mill Road
6017	830	3	4	0.4	0.4	4	4	Old Kings Road
Route Length Subtotal:				1.3	1.3			
6019	810	3	3	0.5	0.5	4	4	Dunrobin Road
Route Length Subtotal:				0.5	0.5			
6020	810	3	3	0.4	0.4	5	4	Cape Drive
Route Length Subtotal:				0.4	0.4			
6021	810	3	5	0.2	0.2	4	4	Route 60
Route Length Subtotal:				0.2	0.2			
6022	810	7	4	0.4	0.4	5	4	Main Street
6022	820	7	4	0.6	0.4	5	4	Main Street
Route Length Subtotal:				1.0	0.8			
6023	810	7	4	1.7	1.7	5	4	Meeting House Road
Route Length Subtotal:				1.7	1.7			
6024	810	5	3	0.3	0.3	9	9	Noisy Hole Road
6024	820	3	3	0.5	0.6	4	4	Noisy Hole Road
6024	830	5	3	0.4	0.4	9	4	Noisy Hole Road
6024	840	3	3	0.2	0.2	4	4	Noisy Hole Road
Route Length Subtotal:				1.4	1.5			
6025	810	3	3	0.4	0.4	4	4	Park Place
Route Length Subtotal:				0.4	0.4			
6026	810	7	4	1.6	1.6	5	4	Great Neck Road
6026	820	7	4	0.5	0.5	5	4	Great Neck Road
Route Length Subtotal:				2.1	2.1			

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2013 Inventory Update		2013 Inventory	Existing Inventory	2013 Inventory	Existing Inventory	2013 Inventory	Existing Inventory	Section Name
Route	Section		Class	Length		Surface Type		
6027	810	7	4	1.3	1.3	5	4	Cotuit Road
6027	820	7	4	0.9	0.9	5	4	Cotuit Road
6027	830	7	4	0.6	0.9	5	4	Cotuit Road
6027	840	7	4	2.2	0.6	5	4	Cotuit Road
Route Length Subtotal:				5.0	3.7			
6028	810	1	2	3.5	3.5	5	5	State Highway 28
6028	820	1	2	7.9	7.8	5	5	State Highway 28
6028	830	1	2	0.6	0.6	5	5	State Highway 28
6028	840	1	2	0.3	0.4	5	5	State Highway 28
6028	850	1	2	0.4	0.3	5	5	State Highway 28
6028	860	1	2	3.1	3.3	5	5	State Highway 28
Route Length Subtotal:				15.8	15.9			
6029	810	5	4	0.7	0.7	4	4	Ashumet Road
6029	820	3	4	1.3	1.3	5	4	Hoop Pole Road
Route Length Subtotal:				2.0	2.0			
6030	810	5	5	0.2	0.2	3	3	Turner Road
Route Length Subtotal:				0.2	0.2			
6031	810	7	4	1.4	1.0	5	4	Old Barnstable Road
6031	820	7	4	2.9	2.8	5	4	Old Barnstable Road
Route Length Subtotal:				4.3	3.8			
6032	810	7	4	0.8	0.8	5	4	Lowell Road
Route Length Subtotal:				0.8	0.8			
6033	810	3	4	0.9	0.9	5	5	Ter Heun Drive
6033	820	3	4	0.3	0.3	5	5	Ter Heun Drive
6033	830	7	4	0.3	0.3	5	5	Jones Road
6033	840	7	4	0.3	0.3	5	5	Jones Road
Route Length Subtotal:				1.8	1.8			
6035	810	5	5	0.1	0.1	9	9	Route 60
Route Length Subtotal:				0.1	0.1			
6036	810	3	5	0.5	0.6	5	5	Meadowbrooke Lane
Route Length Subtotal:				0.5	0.6			
6037	810	5	5	0.3	0.2	5	5	Summer Street
6037	820	5	5	2.1	2.1	4	4	Precinct Street
Route Length Subtotal:				2.4	2.3			
6038	810	5	5	0.1	0.1	5	4	Indian Cemetery Road #1
6038	820	5	5	0.1	0.1	5	4	Indian Cemetery Road #2
6038	830	5	5	0.1	0.1	5	1	Indian Cemetery Road #3
6038	840	5	5	0.1	0.1	5	4	Maintenance Access Road
Route Length Subtotal:				0.4	0.4			
6039	810		9	0.1	0.1	3	3	Tribal Admin. Parking
Route Length Subtotal:				0.1	0.1			
6040	810		5	0.2	0.2	0	0	PowWow Loop Road
Route Length Subtotal:				0.2	0.2			

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2013 Inventory Update		2013 Inventory	Existing Inventory	2013 Inventory	Existing Inventory	2013 Inventory	Existing Inventory	Section Name
Route	Section		Class	Length		Surface Type		
6041	810		3	0.4	0.4	0	0	Proposed Housing Rd #1
6041	820	3	3	0.1	0.1	0	0	Proposed Housing Rd #2
6041	830	3	3	0.3	0.3	0	0	Proposed Housing Rd #3
Route Length Subtotal:				0.8	0.8			
6044	810	2	4	2.2	2.1	5	5	State Highway 44
6044	820	2	4					State Highway 44
6044	830	2	4	2.2	2.1	5	5	State Highway 44
Route Length Subtotal:				4.4	4.2			
6105	810	4	2	1.9	1.9	5	5	State Highway 105
Route Length Subtotal:				1.9	1.9			
6130	810	6	4	2.3	2.3	5	5	State Highway 130
Route Length Subtotal:				2.3	2.3			
6151	810	2	2	0.5	0.5	5	5	State Highway 151
6151	820	2	2					State Highway 151
6151	830	2	2	6.1	6.1	5	5	State Highway 151
Route Length Subtotal:				6.6	6.6			
6200	810	6	2	0.5	0.5	5	5	State Highway 28
6200	820	2	2	0.7	0.8	5	5	State Highway 28
6200	830	1	2	1.1	0.8	5	5	State Highway 28
6200	840	1	2					State Highway 28
6200	850	1	2	1.6	1.3	5	5	State Highway 28
6200	860	1	2					State Highway 28
6200	870	1	2	2.0	1.6	5	5	State Highway 28
6200	880	1	2					State Highway 28
6200	890	1	2	7.1	7.0	5	5	State Highway 28
6200	900	1	2					State Highway 28
6200	910	1	2	2.8	2.1	5	5	Interstate 195
6200	920	1	2	7.3	8.2	5	5	Interstate 195
6200	930	1	2	1.0	7.2	5	5	Interstate 495
6200	935	1	2					Interstate 495
6200	940	1	2	3.9	4.3	5	5	Interstate 495
6200	945	1						Interstate 495
6200	950	1		2.6		5		Interstate 495
6200	955	1						Interstate 495
6200	960	1		3.9		5		Interstate 495
6200	965	1						Interstate 495
6200	970	1		0.5		5		Interstate 495
6200	975	1						Interstate 495
6200	980	1		0.6		5		Interstate 495
6200	985	1	2					Interstate 495
6200	990	1	2	2.1	2.7	5	5	Interstate 495
Route Length Subtotal:				37.7	36.5			
6201	810	5		0.3		9		Pi Park Way
Route Length Subtotal:				0.3	0.0			
6202	810	9		0.1		1		Parking Lot
Route Length Subtotal:				0.1	0.0			

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2013 Inventory Update		2013 Inventory	Existing Inventory	2013 Inventory	Existing Inventory	2013 Inventory	Existing Inventory	Section Name
Route	Section		Class	Length		Surface Type		
6203	810	3		0.4		5		Quashnet Road
Route Length Subtotal:				0.4	0.0			
6204	810	3		0.7		5		Lovells Lane
Route Length Subtotal:				0.7	0.0			
6205	810	6		2.2		5		Main Street
6205	820	6		1.0		5		South Street
Route Length Subtotal:				3.2	0.0			
6206	810	9		0.1		4		Parking Lot
Route Length Subtotal:				0.1	0.0			
6207	810	1		0.5		5		State Route 140
Route Length Subtotal:				0.5	0.0			
6208	810	1		2.1		5		State Route 24
6208	820	1						State Route 24
6208	830	1		0.3		5		State Route 24
Route Length Subtotal:				2.4	0.0			
6209	810	1		0.6		5		US 44
6209	820	1		1.9		5		US 44
6209	830	1						US 44
6209	840	1		0.6		5		US 44
6209	850	1		1.0		5		US 44
Route Length Subtotal:				4.1	0.0			

Among the key objectives of the 2013 Inventory Update is to identify mileage corrections for routes on the IRR System; and to identify reservation roads and bridges that should be added to, or deleted from, the IRR System or renumbered to more logically reflect their relationship with intersecting roads. The following sections of this report describe the proposed changes to the existing IRR System that are based on the data gathered during the Inventory Update.

2.1.1 Mileage Corrections to the Mashpee Wampanoag IRR Inventory—BIA Routes

Table 2.2 lists the mileage corrections that are proposed for the Mashpee Wampanoag's IRR Inventory. Most of these corrections are the result of enhanced mapping data and technologies currently available versus when the 2008 inventory was compiled. The enhanced accuracy creates much of the minor corrections necessary in the 2013 Inventory Update. There were a couple of significant corrections that cannot be attributed to this technology innovation, and corrected mileages have been provided for those sections.

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**Table 2.2
2013 Inventory Update—Proposed Mileage Corrections**

2013 Inventory Update		Existing BIA Inventory		2013 Inventory	Existing Inventory	Net Mileage Correction (miles)	Section Name
Route	Section	Route	Section	Length (miles)			
0001	010	0001	010	0.1	0.2	-0.1	Horse Farm Service Road
6001	820	6001	820	1.1	0.9	0.2	Willis Work Road
6002	810	6002	810	0.4	0.3	0.1	McGregor's Road
6003	810	6003	810	0.5	0.4	0.1	Great River Rown Landing
6004	810	6004	810	0.9	0.8	0.1	Tide Run Road
6005	810	6005	810	2.1	0.8	1.3	Great Neck Road
6006	810	6006	810	0.5	0.4	0.1	Red Brook Road
6006	830	6006	830	0.1	0.4	-0.3	Alma Road
6008	830	6008	830	0.1	0.3	-0.2	Punkhorn Point Road
6008	840	6008	840	0.1	0.3	-0.2	Heron Way
6013	820	6013	820	0.2	0.1	0.1	Red Brook Road
6016	810	6016	810	1.7	1.6	0.1	Quinaquesset Avenue
6022	820	6022	820	0.6	0.4	0.2	Main Street
6024	820	6024	820	0.5	0.6	-0.1	Noisy Hole Road
6027	830	6027	830	0.6	0.9	1.6	Cotuit Road
6027	840	6027	840	2.2	0.6	1.6	Cotuit Road
6028	820	6028	820	7.9	7.8	0.1	State Highway 28
6028	840	6028	840	0.3	0.4	-0.1	State Highway 28
6028	850	6028	850	0.4	0.3	0.1	State Highway 28
6028	860	6028	860	3.1	3.3	-0.2	State Highway 28
6031	810	6031	810	1.4	1.0	0.4	Old Barnstable Road
6031	820	6031	820	2.9	2.8	0.1	Old Barnstable Road
6036	810	6036	810	0.5	0.6	-0.1	Meadowbrooke Lane
6037	810	6037	810	0.3	0.2	0.1	Summer Street
6044	810	6044	810	2.2	2.1	0.1	State Highway 44
6044	830	6044	830	2.2	2.1	0.1	State Highway 44
6200	820	6200	820	0.7	0.8	-0.1	State Highway 28
6200	830	6200	830	1.1	0.8	0.3	State Highway 28
6200	850	6200	850	1.6	1.3	0.3	State Highway 28
6200	870	6200	870	2.0	1.6	0.4	State Highway 28
6200	890	6200	890	7.1	7.0	0.1	State Highway 28
6200	910	6200	910	2.8	2.1	0.7	Interstate 195
6200	920	6200	920	7.3	8.2	-0.9	Interstate 195
6200	930	6200	930	1.0	7.2	-6.2	Interstate 495
6200	940	6200	950	3.9	4.3	-0.4	Interstate 495
6200	990	6200	970	2.1	2.7	-0.6	Interstate 495
				62.5	65.6	-3.1	

2.1.2 Roads to be added to the Mashpee Wampanoag IRR Inventory

During the 2013 Inventory Update there were multiple routes identified for addition to the current IRR System. These roads to be added are identified by classification below.

Class 1 - PAIKI inventoried four (4) additional Class 1 roads for inclusion with the 2013 Inventory Update. These are as follows:

- *Interstate 495 (Route 6200 – multiple sections -7.6 miles total)*
- *State Route 140 (Route 6207 – Section 810 – 0.5 mile)*
- *State Route 24 (Route 6208 – multiple sections – 2.4 miles total)*
- *US 44 (Route 6209 – multiple sections – 4.1 miles).*

Class 2 - PAIKI inventoried no additional Class 2 facilities during the 2013 Inventory Update.

Class 3 - PAIKI inventoried two (2) additional Class 3 roads for inclusion with the 2013 Inventory Update. These are as follows:

- *Quashnet Road (Route 6203 –Section 810 -0.4 mile)*
- *Lovells Lane (Route 6204 – Section 810 – 0.7 mile)*

Class 4 - PAIKI inventoried no additional Class 4 facilities during the 2013 Inventory Update.

Class 5 - PAIKI inventoried one (1) additional Class 5 road during the 2013 Inventory Update. This route is as follows:

- *Pi Park Way (Route 6201 – Section 810 – 0.3 mile)*

Class 6 - PAIKI inventoried one (1) additional Class 6 road during the 2013 Inventory Update. This route is as follows:

- *Main Street/South Street (Route 6205 – Sections 810 &820 – 3.2 miles total)*

Class 7 - PAIKI inventoried no additional Class 7 facilities during the 2013 Inventory Update.

Class 8 - PAIKI inventoried no Class 8 facilities during the 2013 Inventory Update.

Class 9 - PAIKI identified two additional Class 9 routes during the 2013 Inventory Update process. These total 0.2 mile and are as follows:

- *Route 6202 – Section 810*
- *Route 6206 – Section 810*

Class 10 and Class 11 - PAIKI inventoried no Class 10 or 11 routes during the 2013 Inventory Update.

2.1.3 Roads to be deleted from the Mashpee Wampanoag IRR Inventory

No roads are proposed for deletion from the Mashpee Wampanoag IRR Inventory.

2.1.4 Bridges to be added to the Mashpee Wampanoag IRR Inventory

Four (4) bridges are proposed to be added to the Mashpee Wampanoag IRR Inventory. All of the bridges are located on Interstate 495 and are specifically identified below:

- *Route 6200 – Section 945 – Bridge # Not Provided – Length 140 feet*
- *Route 6200 – Section 955 – Bridge # M18049460 – Length 190 feet*
- *Route 6200 – Section 965 – Bridge # Not Provided – Length 43 feet*
- *Route 6200 – Section 975 – Bridge # M18017463 – Length 247 feet*

2.1.5 Bridges to be deleted from the Mashpee Wampanoag IRR Inventory

There are no bridges proposed for deletion from the Mashpee Wampanoag IRR Inventory.

2.1.6 Summary of Existing and Proposed IRR System Road Mileage

The existing Mashpee Wampanoag IRR System total mileage is **113.8** miles as previously indicated on Table 1.6. The proposed additions to the IRR system total **19.4** miles as listed in Section 2.1.2. The proposed mileage corrections indicated in Table 2.2 result in a correction of **minus 3.1** miles. Therefore, based on the 2013 Inventory Update the proposed total mileage for the Mashpee Wampanoag IRR System is **130.1** miles

A copy of the Inventory Comparison List accompanying the Tribe’s road inventory update submittal to the BIA, through the Road Inventory Field Data System (RIFDS) application, and a copy of the strip map for the proposed route, is contained in **Appendix A**.

2.2 Existing Traffic Volumes

For most of the roads in the Tribe’s IRR inventory, there is traffic volume data available from MassDOT. Additional traffic volume data was obtained by ASCG of New Mexico during the 2008 Inventory. For other sections not having available data default traffic volumes have been assumed. Table 2.3 below identifies those routes and sections having defined traffic data and the source of the same. These data have been used to update the current IRR Inventory.

**Table 2.3
2013 Inventory Update—Traffic Volume Data**

Route	Section	Route Name	Source	ADT	% Trucks	ADT Year
6002	830	McGregor's Road	ASCG	419	4%	2007
6005	810	Great Oak Road	MASSDOT TDMS 7338	12100	2%	2011
6005	820	Great Neck Road	ASCG	6138	9%	2007
6006	810	Red Brook Road	ASCG	3197	9%	2007
6007	820	Daniels Island Road	ASCG	440	7%	2007
6012	810	Monomoscoy Road	ASCG	604	7%	2007
6013	810	Red Brook Road	ASCG	2445	7%	2007
6013	820	Red Brook Road	MASSDOT TDMS 256614	2900		2005
6013	830	Red Brook Road	ASCG	1891	7%	2007

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Route	Section	Route Name	Source	ADT	% Trucks	ADT Year
6014	810	Great Hay Road	ASCG	145	7%	2007
6014	840	Mercantile Way	ASCG	304	8%	2007
6015	820	Waquoit Landing Road	ASCG	616	21%	2007
6016	810	Quinaquasset Avenue	ASCG	1802	4%	2007
6016	820	Bridge	MASSDOT TDMS 256771	2000		2006
6016	830	School Street	ASCG	1884	5%	2007
6017	810	Sampson's Mill Road	ASCG	408	4%	2007
6017	830	Old Kings Road	ASCG	793	14%	2007
6020	810	Cape Drive	ASCG	687	4%	2007
6022	810	Main Street	ASCG	1673	6%	2007
6023	810	Meeting House Road	ASCG	1076	7%	2007
6024	810	Noisy Hole Road	ASCG	594	8%	2007
6026	810	Great Neck Road	ASCG	9060	8%	2007
6026	820	Great Neck Road	ASCG	13507	15%	2007
6027	810	Cotuit Road	MASSDOT TDMS 255973	3900		2004
6027	820	Cotuit Road	MASSDOT TDMS 257942	5800		2006
6027	830	Cotuit Road	MASSDOT TDMS 256884	3400		2005
6027	840	Cotuit Road	ASCG	11470	9%	2007
6028	810	State Highway 28	MASSDOT TDMS 7211	19411	3%	2011
6028	820	State Highway 28	MASSDOT TDMS 7351	25723		2011
6028	830	State Highway 28	MASSDOT TDMS 7351	25723		2011
6028	840	State Highway 28	MASSDOT TDMS 7351	25723		2011
6028	850	State Highway 28	MASSDOT TDMS 7133	15237	3%	2011
6028	860	State Highway 28	MASSDOT TDMS 7133	15237	3%	2011
6029	810	Ashumet Road	ASCG	641	6%	2007
6031	810	Old Barnstable Road	MASSDOT TDMS 7215	2495		2011
6031	820	Old Barnstable Road	ASCG	7120	11%	2007
6032	810	Lowell Road	ASCG	5461	6%	2007
6033	820	Ter Heun Drive	MASSDOT TDMS 239135	6000		2002
6033	830	Jones Road	MASSDOT TDMS 7216	14122	11%	2011
6037	810	Summer Street	MASSDOT TDMS 240676	2300		2002
6044	810	State Highway 44	MASSDOT TDMS 7108	15676	2%	2011
6044	820	Bridge	MASSDOT TDMS 7108	15676	2%	2011
6044	830	State Highway 44	MASSDOT TDMS 7108	15676	2%	2011
6130	810	State Highway 130	MASSDOT TDMS 7220	7765	3%	2011
6151	810	State Highway 151	MASSDOT TDMS 240449	16300		2005
6151	820	Bridge	MASSDOT TDMS 240449	16300		2005
6151	830	State Highway 151	MASSDOT TDMS 7328	18300	3%	2010

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Route	Section	Route Name	Source	ADT	% Trucks	ADT Year
6200	810	State Highway 28	MASSDOT TDMS 240446	21400		2002
6200	820	State Highway 28	MASSDOT TDMS 240446	21400		2002
6200	830	State Highway 28	MASSDOT TDMS 235372	15300		2006
6200	840	Bridge	MASSDOT TDMS 235372	15300		2006
6200	850	State Highway 28	MASSDOT TDMS 252015	20400		2005
6200	860	Bridge	MASSDOT TDMS 252015	20400		2005
6200	870	State Highway 28	MASSDOT TDMS 7323	24000		2010
6200	880	Bridge	MASSDOT TDMS 7323	24000		2010
6200	890	State Highway 28	MASSDOT TDMS 7321	39700	6%	2010
6200	900	Bridge	MASSDOT TDMS 707	42466		2011
6200	910	Interstate 195	MASSDOT TDMS 7185	56656		2011
6200	920	Interstate 195	MASSDOT TDMS 7185	56656		2011
6200	930	Interstate 495	MASSDOT TDMS 7116	64100	7%	2011
6200	935	Bridge	MASSDOT TDMS 7116	64100	7%	2011
6200	940	Interstate 495	MASSDOT TDMS 7116	64100	7%	2011
6200	945	Bridge	MASSDOT TDMS 7100	45815	8%	2011
6200	950	Interstate 495	MASSDOT TDMS 7100	45815	8%	2011
6200	955	Bridge	MASSDOT TDMS 7100	45815	8%	2011
6200	960	Interstate 495	MASSDOT TDMS 7111	45484	11%	2011
6200	965	Bridge	MASSDOT TDMS 7111	45484	11%	2011
6200	970	Interstate 495	MASSDOT TDMS 7111	45484	11%	2011
6200	975	Bridge	MASSDOT TDMS 7111	45484	11%	2011
6200	980	Interstate 495	MASSDOT TDMS 7023	52553	10%	2011
6200	985	Bridge	MASSDOT TDMS 7023	52553	10%	2011
6200	990	Interstate 495	MASSDOT TDMS 7110	53275		2011
6205	810	Main Street	MASSDOT TDMS 7329	20197		2010
6205	820	South Street	MASSDOT TDMS 7330	8641		2010
6207	810	State Route 140	MASSDOT TDMS 6056	36770		2011
6208	810	State Route 24	MASSDOT TDMS 6072	6144		2011
6208	820	Bridge	MASSDOT TDMS 6072	6144		2011
6208	830	State Route 24	MASSDOT TDMS 6072	6144		2011
6209	810	US 44	MASSDOT TDMS 6071	19037	3%	2011
6209	820	US 44	MASSDOT TDMS 6071	19037	3%	2011
6209	830	Bridge	MASSDOT TDMS 6071	19037	3%	2011
6209	840	US 44	MASSDOT TDMS 7174	22808	4%	2011

PART THREE - THE TRANSPORTATION PLAN

3.1 Tribal Development Plans

Enhanced economic opportunities on tribal land are a common purpose for Native American Tribes throughout the United States. Economic independence and the potential for a higher standard of living for tribal members are the primary goals. The Mashpee Wampanoag Tribe seeks the same for its members and as such has identified a series of development plans.

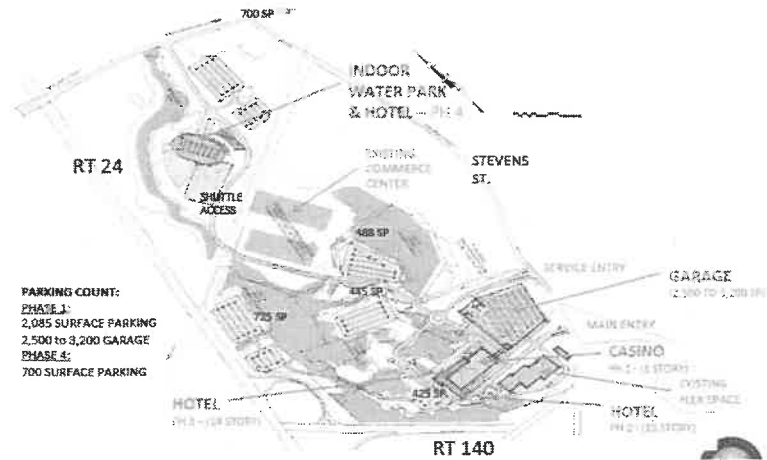
Short and long term development plans identified by the Tribe are incorporated into this report in the following sections. These plans, when completed, will have impacts on the existing roadway network. Access roads and other related transportation improvements will have to be completed for these projects. Future additions to the IRR Inventory may also to be anticipated as a result of the development projects. Specific proposed improvements are described in Section 3.2.2 and are graphically depicted on the enclosed *Map B - Proposed Road Conditions*.

The Mashpee Wampanoag Tribe has identified the following as key economic development opportunities and/or community services enhancements.

- Project First Light – a casino/resort facility in Taunton
- Commercial Oyster/Shellfish Business in Popponesset Bay
- Tribal Housing – 40+ Units on Existing Parcel
- Substance Abuse Treatment Facility in Mashpee

Project First Light

The Tribe's proposal for a destination resort & casino in Taunton is a major component of their economic development plan. Phase I of the plan calls for over 150,000 square feet of casino space housing more than 3,000 slot machines and over 150 table games. There would be accompanying restaurant and retail space. Future phases of the work incorporate a hotel and water park. The adjacent proposed rendering is a from the Tribe's April 2012 Project First Light Presentation located on the Tribe's website.



The project is proposed for a 150 acre tract of land in Taunton, MA. The Tribe has an application for trust pending on the land with the BIA. The Tribe has negotiated an Intergovernmental Agreement (IGA) with the City of Taunton that identifies the various legal and administrative requirements of the parties. There are significant transportation related mitigation activities within the IGA. Some of this mitigation will result in projects on IRR System Roads. These will be discussed in later sections.

The Tribe's 2012 Presentation identifies the following as key benefits of the multi-phase development:

- 1000 union construction and related support jobs with an estimated \$230 million in construction payroll
- More than 2500 permanent jobs and careers with over \$80 million in annual payroll
- \$120 million in direct and indirect economic benefit to Taunton and the region annually
- Tens of millions more in operational support spending for goods and services in the community.

Commercial Shellfish Business

The Mashpee Wampanoag Tribe's Natural Resources Department (NRD) manages two shellfish grants located in Popponesset Bay in Mashpee, Massachusetts totaling 12.6 acres. The current aquaculture project was funded by a Tribal Wildlife Grant from the U.S. Fish & Wildlife Service in 2009, with funding used to pay for personnel, supplies and equipment necessary to start the operation.

The project is called the "Popponesset Bay Restoration Project", and was started to mitigate the effects of nitrogen loading in the bay that has caused a loss of habitat and several species of shellfish. The project has shown positive results in preventing further degradation of water quality surrounding the Tribe's project area, wild oysters are now growing in spots around the bay and revenue has been generated from the sale of shellfish. It has provided employment opportunities for tribal members working directly on the farm, as well as commercial fishermen that harvest the wild oysters and other shellfish around the bay. A commercial business has been created for the Tribe as they now market and sell their oysters as "First Light Oysters". The oysters are available at several established restaurants and markets in Boston, New York City and Mashpee.

Also, in April of 2012, the Tribe's NRD was the recipient of the U.S. Environmental Protection Agency's Environmental Merit Award for the Popponesset Bay Restoration Project. The NRD has begun planning efforts on the construction of a Hazard Analysis & Critical Control Points (HACCP) facility that would license the Tribe to move from harvesters to wholesalers, and give the Tribe the ability to sell their shellfish to restaurants, fish markets and directly to customers at their facility. A location has been identified for this HACCP facility and the construction of this facility will require transportation system improvements.

Housing Development

The Tribe has identified a parcel of land for a 40+ unit housing development for tribal members. The Tribe does not currently have any tribal housing but does have a Tribal Housing Department. The Housing Department is overseen by a 7 person member Board of Housing Commissioners. The long term goal of the Department is to develop affordable housing and programs to tribal members.

A roadway system for this development has been proposed and those roads are on the current IRR Inventory. The construction of these proposed roads will be necessary to promote this development concept.

Substance Abuse Treatment Facility

The Tribe has a goal of establishing its own substance abuse treatment facility. It is anticipated this would be an outpatient treatment facility offering a myriad of services for tribal members. The facility would likely be located near the Tribal Headquarters.

3.1.1 Growth Assumptions for the Years 2015 and 2030

Table 1.3 previously presented indicates a projected population of 2,763 for the year 2015 and a population of 3,211 for the year 2030. These projections suggest an almost 20% increase in the Tribe’s population throughout the course of the LRTP planning period.

It is also anticipated the Tribe will make additional requests for fee-to-trust land conversions to the Federal Government. These additional tribal lands will likely require transportation related improvements.

Regional growth plans will also have an impact on the Tribe and the Tribe’s transportation system. The previously discussed Cape Cod 2012 Regional Transportation Plan (CCRTP) provides projection information on employment, number of households and population out to the year 2035 in 5-year intervals. Some of the highlights of this data are as follows:

Table 3.1 – Massachusetts and Cape Cod Growth Projections

	Massachusetts			Cape Cod Region		
	2010	2020	2030	2010	2020	2030
Population	6,547,629	6,840,800	7,131,600	215,888	236,000	256,000
Employment	3,111,600	3,331,500	3,395,400	88,900	98,000	102,000
Households	2,547,075	2,751,100	2,912,700	95,755	106,000	117,000

Population in the Town of Mashpee is projected to increase from the 2010 level of 6,118 to 7,560 in 2020 and then to 9,060 in 2030. Over the 20 year period the Town of Mashpee is projected to have an almost 50% population increase.

3.2 Recommended Transportation Improvements

This LRTP Update for the Mashpee Wampanoag Tribe outlines existing conditions, identifies transportation needs, and presents an integrated set of proposed roadway improvements for the Tribe. The plan also includes policies and related actions necessary to implement the plan, and identifies the government agencies and private entities that have programmed funds to carry out the improvements.

The Mashpee Wampanoag 2008 LRTP identified the following evaluation criteria for determining appropriate transportation improvements. These criteria were divided into four sections and those four are still applicable to this update:

- Traffic Operations
- Community Impacts
- Economic Impacts
- Construction.

The criteria were then further described by ASCG of New Mexico in the 2008 document as follows:

Traffic Operations

- *Traffic Operations* – this is a measure of traffic operational characteristics. Objective measures include capacity, level of service, delay, and progression efficiency.
- *Network Completion* – This measure assesses whether or not the project closes gaps in the transportation network.
- *Traffic Safety* – Traffic safety is a measure of expected conflict points and improvement of existing problems.

Community Impacts

- *Displacement* – This is a measure of the magnitude of displacement that would be necessary to construct the project.
- *Aesthetics* – This measure assesses whether the project is visually pleasing.
- *Environmental Impact* – This is a measure of each project’s impact on the environment, including noise, air quality and wetlands.
- *Community Support* – This is a measure of how much opposition or support there may be for the project.

Economic Impacts

- *Local Access* – This criterion measure the level of directness, convenience and availability of access to existing and future development. Emergency access is included in this measure.
- *Economic Development Opportunities* – This criterion assesses the impact of the project on future development opportunities (i.e. does the project change or encourage the potential for access for future development?).

Construction

- *Ability to Phase* – This measure assesses whether or not the project lends itself to being constructed in phases, or if it would have to be constructed as one project.
- *Constructability* – This is a measure of how difficult it would be to construct the projects, looking at the need to relocate utilities, change drainage facilities, or alter a railroad crossing.
- *Relative Cost* – This is a comparison of costs to obtain any necessary right-of-way and to construct improvement for the project.
- *Right-of-Way* - This measure assesses the availability of right-of-way for the project and the potential costs associated with right-of-way acquisition.

These criteria have been used to determine appropriate recommendations for the Tribe’s IRR System. Consideration has been given to the changes that have occurred since the 2008 plan was prepared as well as to growth projections and planned economic development.

3.2.1 Proposed Roads to be added to the Mashpee Wampanoag IRR Inventory

Roads planned for addition to the IRR Inventory have been previously identified and are summarized by road classification below:

Class 1

- *Interstate 495 (Route 6200 – multiple sections -7.6 miles total)*
- *State Route 140 (Route 6207 – Section 810 – 0.5 mile)*
- *State Route 24 (Route 6208 – multiple sections – 2.4 miles total)*
- *US 44 (Route 6209 – multiple sections – 4.1 miles).*

Class 3

- *Quashnet Road (Route 6203 – Section 810 -0.4 mile)*
- *Lovells Lane (Route 6204 – Section 810 – 0.7 mile)*

Class 5

- *Pi Park Way (Route 6201 – Section 810 – 0.3 mile)*

Class 6

- *Main Street/South Street (Route 6205 – Sections 810 & 820 – 3.2 miles total)*

Class 9

- *Route 6202 – Section 810*
- *Route 6206 – Section 810*

3.2.2 Proposed Transportation Projects

In the 2008 LRTP there were no specific projects identified. It was recommended that the tribal allocation be carried over. The planning dollar allocation was requested as was the continuation of any available maintenance funding.

The Tribe does have specific projects identified now and they must develop a priority projects listing for the same. The projects on this list may be revised, deleted, or expanded in the future. The projects on the priority list must be ranked according to tribal preference. The prioritized list must then be approved by Tribal Resolution for inclusion in the LRTP Update Final Report. The transportation projects proposed to date are described below. The projects are in priority order and are illustrated on *Map B, Proposed Road Conditions*.

1. **Construction of Route 6041 - Sections 810, 820 & 830 (Proposed Housing Roads)** – these are proposed roads that have been on the IRR inventory since 2008 and are currently being designed. A Housing Department has been established by the Tribe and the construction of the roads will facilitate the development of the existing tribal housing property.
2. **Construction of Route 6040 - Section 810 (Pow Wow Loop Road)** – access to cultural resource site
3. **Construction of Route 6202 – Section 810 (Parking Lot)** – parking lot construction for the new wastewater treatment plant
4. **Re-Construction of Route 6206 – Section 810 (Parking Lot)** – rehabilitation of existing parking lot for the cemetery property
5. **Construction of Route 6201 – Section 810 (Pi Park Way)** – this is a route proposed for the 2013 inventory update and provides a connection into the tribal housing property.
6. **Construction of Emergency Vehicle Access Road for Clinic** (*route proposed for 2014 inventory addition – not shown on Map B*)
7. **Rehabilitation of Trail from Connecting Pow Wow Ground to Long House** (*route proposed for 2014 inventory addition – not shown on Map B*)

FUTURE PRIORITIES

The proposed **Project First Light** casino/resort is a significant component of the Tribe's future economic development scheme. As such any associated transportation related improvements would also be a primary priority for the Tribe's. The project is still contingent upon approval of a trust application from the BIA. This application is pending and a decision is projected by the end of 2013. The Tribe must continue to make planning considerations for the development hence inclusion of it within this LRTP Update as an economic development opportunity.

Project First Light has progressed to a point that an Intergovernmental Agreement (IGA) has been reached with the City of Taunton. This IGA identifies numerous responsibilities of both parties. One of the components of the IGA is various traffic improvements. Section 7.0 of the IGA states as follows:

“The Tribe shall be responsible for the payment of all costs of improvements to transportation infrastructure including, but not limited to, road construction, bridges, road maintenance and traffic signals necessitated by the Project. The objective of such traffic improvements is to construct a road system by which traffic to and from the Project can have direct ingress and egress to the Subject Property via a major roadway without having to navigate through minor or residential roads within the City roadway network system and to provide integrated road system improvements that will mitigate adverse traffic impacts caused by the Project and to allow safe flow of traffic to and from the Project particularly on Stevens Street and along Route 140 and Route 24 servicing the Project and other state and local roads without adverse impact to the City. The Tribe shall ensure that in no event may it cause the public road system to operate below a level of service "D" for intersection delay during peak traffic hours. Level of service "D" standards shall be determined based upon the most recently adopted version of the Highway Capacity Manual Transportation Research Board. The timing, amount, implementation and cost of the traffic improvements set forth on Exhibit C hereto shall be negotiated in good faith by the City and the Tribe within 90 days of the date of this Agreement or such longer period of time as the Parties may agree and such traffic improvements set forth on Exhibit C shall be adjusted to reflect the results of such negotiations. Prior to the Opening Date, the Tribe at its sole cost shall cause to be constructed or otherwise implemented the traffic improvements set forth on Exhibit C hereto, as such exhibit may be adjusted as a result of negotiations by the Parties”

The Exhibit C referenced above lists numerous specific proposed transportation improvement projects. These projects are fully described and graphically depicted on attachments to the IGA more specifically identified as Figures C-1, C-2, C-3 and C-4. Each of the proposed transportation projects identifies the impacts from the casino/resort as well as a calming or mitigation measure for each.

Should the trust application be approved and Project First Light moves forward there will be the need to update the existing IRR inventory to include additional routes associated with this destination resort/casino facility. Some of the projects within the Taunton IGA could become priority projects and require the revision of the current priority projects listing.

3.2.2.1 Massachusetts DOT and Cape Cod Commission Proposed Transportation Projects

The Cape Code Commission in addition to developing a Regional Transportation Plan has established a Transportation Improvement Plan (TIP) for the years 2013-2016. There are several projects listed on this TIP that impact roads within the IRR System. In the text below some of the highlighted construction projects are identified. There are numerous other planning studies and mass transit programs identified within the TIP but these are not fully discussed.

Year 2013

- **MassDOT Project # 607263** Barnstable- Bourne- Sandwich; Installation of Variable Message Boards And Cameras n Routes 6, 25 and 28 (Cape Cod Regional ITS)
- **MassDOT Project # 602213** Orleans; Roundabout Improvements at Routes 28 & 6a
- **MassDOT Project # 605671** Falmouth; Intersection Improvements at East Falmouth Highway (Route 28), Davisville Road & Old Meetinghouse Road and Intersection Improvements at Teaticket Highway (Route 28) and Jones Road/Worcester Court
- **MassDOT Project # 606286** Bourne-Sandwich; Resurfacing of Route 6 (Mid-Cape Highway)
- **MassDOT Project # 603690** Chatham; Bridge Replacement, C-07- 01, Bridge Street Over the Mitchell River

Year 2014

- **604488** Dennis-Yarmouth; Cape Cod Rail Trail Extension, From Route 134 to Yarmouth, includes 3 Bridges
- **606390** Sandwich; Bridge Replacement, S- 04-001, Cranberry Highway (Rte. 6a) over Scorton River
- **606719** Barnstable; Hyannis Memorial Walkway –Sidewalk Reconstruction & Streetscaping on Pearl St, From Main St. to South St. Hyannis
- **606178** Bourne; Resurfacing & Safety Upgrading On Route 28 (General Macarthur Boulevard)

Year 2015

- **606164** Harwich; Reconstruction of Route 124 (Pleasant Lake Avenue), From Headwaters Drive to Brewster T.L.
- **606394** Barnstable; Intersection Improvements @ Route 28 (Falmouth Road) & Bearse's Way

Year 2016

- **606461** Orleans; Intersection Improvements @ Route 6a & Main Street & Route 28 & Main Street
- **606596** Chatham; Improvements on West Main Street (Route 28), from George Ryder Road to Barn Hill Road
- **606272** Barnstable; Intersection Improvements At Iyannough Road (Route 28) and Yarmouth Road
- **606179** Dennis - Harwich - Brewster - Orleans; Resurfacing And Related Work on Rt. 6

3.2.3 Government Agency Responsibilities

Since different government entities are responsible for different roads, the funding for the improvements previously described may fall within the jurisdiction of different agencies. Proposed improvements under the jurisdiction of the county or state are included in a state transportation planning process by which they are placed by priority in a five-year Transportation Improvement Program (TIP).

3.2.4 IRR Construction Funding

The BIA receives Highway Trust Funds (HTF) from the Federal Highway Administration (FHWA) – Federal Lands Highway Office (FLHO), and distributes funds to the various Regional Offices based on an allocation formula. Reauthorization of HTF for Indian Reservation Roads (IRR) construction began on December 18, 1991, when the President signed the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. ISTEA authorized \$1,114,000,000 to the BIA for road construction from Fiscal Year 1992 through Fiscal Year 1997.

Long before that, however, the Surface Transportation Act of 1982 authorized the BIA's use of HTF for Indian Reservation Roads, but specified that funds were to be allocated to the BIA based on the relative needs of the reservations. In response to this requirement, the BIA developed a "Relative Need" formula to determine regional office road construction allocations. This "Relative Need" formula was approved in 1993 and phased in during fiscal years 1993 through 1996.

On June 9, 1998, Congress approved the Transportation Equity Act for the 21st Century (TEA-21), which authorized \$225,000,000 for the IRR Program in FY 1998 and \$275,000,000 for the IRR Program for FY 1999 through FY 2003. TEA-21 eliminated the one percent set-aside of State bridge funds for the IRR Highway Bridge Rehabilitation and Replacement Program (HBRRP). Instead, it required that \$13,000,000 of each year's IRR Program funding be allocated for bridge rehabilitation and replacement.

TEA-21 also required that a new formula be developed, though the negotiated rule making process, for the distribution of IRR funds to Indian tribes beginning in FY 2000. A Negotiated Rule Making Committee was established in February 1999 to review and modify regulations for the IRR Program and develop a new funding formula. In November 2002, two formulas were published in the Federal Register for general Comment. Following the comment period, the formula committee refined the funding formula and recommended to the Assistant Secretary of Indian Affairs a formula for final rule. The final rule was published in the Federal Register as 25 C.F.R. Part 170 for comment, after which it was sent to the Office of Management and Budget (OMB) for acceptance. The final rule, with its applicable funding formula, regulations, and timelines, became effective on November 13, 2004.

Safe, Accountable, Flexible and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), codified in Title 23 U.S.C. and 25 C.F.R. Part 170 previously authorized funding for tribal transportation programs. Congress passed this legislation in 2005 and it was due to expire in 2009. However, Congress granted a series of extensions of the SAFETEA-LU transportation funding while the House and Senate sought to resolve difference over future financing. There were a total of ten extensions granted to maintain funding.

Then on July 6, 2012, President Obama signed into law P.L. 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21) to extend and ultimately replace SAFETEA-LU. MAP -

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21 provides funding for surface transportation programs at over \$105 billion for fiscal years (FY) 2013 and 2014. MAP-21 represents a milestone for the U.S. economy – it provides needed funds and, more importantly, it transforms the policy and programmatic framework for investments to guide the growth and development of the country's vital transportation infrastructure.

The FHWA overview of MAP-21 highlights the following key elements of the law. It states that MAP-21

- *Strengthens America's highways* - MAP-21 expands the National Highway System (NHS) to incorporate principal arterials not previously included. Investment targets the enhanced NHS, with more than half of highway funding going to the new program devoted to preserving and improving the most important highways -- the National Highway Performance Program.
- *Establishes a performance-based program* - Under MAP-21, performance management will transform Federal highway programs and provide a means to more efficient investment of Federal transportation funds by focusing on national transportation goals, increasing the accountability and transparency of the Federal highway programs, and improving transportation investment decision-making through performance-based planning and programming.
- *Creates jobs and supports economic growth* - MAP-21 authorizes \$82 billion in Federal funding for FYs 2013 and 2014 for road, bridge, bicycling, and walking improvements. In addition, MAP-21 enhances innovative financing and encourages private sector investment through a substantial increase in funding for the TIFIA program. It also includes a number of provisions designed to improve freight movement in support of national goals.
- *Supports the Department of Transportation's (DOT) aggressive safety agenda* - MAP-21 continues the successful Highway Safety Improvement Program, doubling funding for infrastructure safety, strengthening the linkage among modal safety programs, and creating a positive agenda to make significant progress in reducing highway fatalities. It also continues to build on other aggressive safety efforts, including the Department's fight against distracted driving and its push to improve transit and motor carrier safety.
- *Streamlines Federal highway transportation programs* - The complex array of existing programs is simplified, substantially consolidating the program structure into a smaller number of broader core programs. Many smaller programs are eliminated, including most discretionary programs, with the eligibilities generally continuing under core programs.
- *Accelerates project delivery and promotes innovation* - MAP-21 incorporates a host of changes aimed at ensuring the timely delivery of transportation projects. Changes will improve innovation and efficiency in the development of projects, through the planning and environmental review process, to project delivery.

Under MAP-21 the *Tribal Transportation Program* provides \$450 million annually in 2013 and 2014 for projects that improve access to and within Tribal lands. This program generally continues the existing Indian Reservation Roads program, while adding new set-asides for tribal bridge projects (in lieu of the existing Indian Reservation Road Bridge program) and tribal safety projects. It continues to provide set-asides for program management and oversight and tribal transportation planning.

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Funds will be allocated among the Tribes using a new statutory formula based on tribal population, road mileage and average tribal shares of SAFETEA-LU IRR funding. For the new formula, tribal shares are determined as follows, using FY 2012 national tribal transportation facility inventory data and the most recent population data on American Indian/Alaska Native Reservation or Statistical Area, as computed under the Native American Housing Assistance and Self-Determination Act of 1996 (NAHASDA, 25 USC 4101 et seq.):

- 27% on eligible road miles
- 39% on tribal population
- 34% divided equally among the 12 Bureau of Indian Affairs (BIA) regions and then distributed among Tribes in that region based on each Tribe's average FY 2005-FY 2011 formula distribution compared to that region's total FY 2005-FY 2011 distribution.

The new formula is to be phased in over a 4-year transition period as follows:

- FY 2013 – 80% of funds distributed based on tribal shares in FY 2011, with remainder using the new formula.
- FY 2014 – 60% of funds distributed based on tribal shares in FY 2011, with remainder using the new formula.
- FY 2015 – 40% of funds distributed based on tribal shares in FY 2011, with remainder using the new formula.
- FY 2016 and thereafter – 20% of funds distributed based on tribal shares in FY 2011, with remainder using the new formula.

MAP-21 also authorizes the *Tribal High Priority Projects Program*, a discretionary program modeled on an earlier program that was funded by set-aside from the Indian Reservation Roads Program. MAP-21 provides \$30 million per year from the General fund (subject to appropriation) for this new program.

These funding amounts are used by Tribes and/or the Regional Offices to develop a 4 to 5 Year Transportation Improvement Program (TIP) for the use of these funds, that uses the current year Tribal share amount as the planning amount for the following years.

The Mashpee Wampanoag Tribe's estimated share of the BIA-ERO's IRR construction and planning amount for fiscal year 2013 is \$964,686. This amount is for all project-related costs, which include: design and right-of-way surveys, right-of-way acquisition, environmental and archeological clearances, engineering services, construction, and contract monitoring.

3.2.5 Transportation Improvement Program (TIP)

The BIA Regional Office is required to produce and submit an annual four-year IRR-TIP for each Tribe within its jurisdiction to BIADOT and FHWA for review and approval. The current year TIP amount for each Tribe must equal their current year allocation, and the TIP amounts for the +1, +2 + 3 years must be within plus or minus ten percent (± 10) of their current year allocation. The IRR-TIP is generated by the Control Schedule/Transportation Improvement Plan System (CSTIPS) program which is used to enter relevant project information and yearly cost estimates for project activities.

A Tribal TIP is a multi-year, financially constrained, list of proposed transportation projects to be implemented during a 3 to 5 year period on roads with or providing access to Indian trust land. It is developed from a Tribal transportation improvement priority list and must be

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consistent with the Tribe's Long Range Transportation Plan. Projects on the Tribal TIP must be on a route in the IRR inventory. It may also contain projects funded by the Tribe and other Federal, State, and/or township DOT's initiated by or developed in cooperation with the Tribe. Only those projects approved by the sponsoring governmental entity may be included in a Tribal TIP. Tribal TIP's containing IRR funded projects need to be submitted to the BIA Regional Office for inclusion in the IRR TIP and must contain relevant project information needed by the BIA to enter the project in the IRR TIP.

IRR funded projects identified in the Tribal TIP are reviewed by the Regional BIA Office to insure that they contain sufficient project information to create or update a project in the IRR TIP, and that the project totals are within plus or minus ten percent (± 10) of the Tribe's annual share of IRR funds. Acceptable Tribal TIP projects are included in the IRR TIP unchanged. Tribal TIPs requiring addition project information or that have project totals exceeding their annual share are returned to the Tribe for correction and resubmittal.