For consideration in developing the Univese of Projects for the 2016 RTP

CAPE COD COMMISSION

2012 REGIONAL TRANSPORTATION PLAN

Chapter 7: Analysis of Alternatives

Endorsed
August 22, 2011

- Transportation Programs;
- Transportation Projects;
- Smart Solutions; and
- Transportation Studies.

7.6.1 TRANSPORTATION PROGRAMS

Transportation Programs are intended to allow funding over the life of the plan (to 2035) for projects that are program-compatible but may not yet be specified. For example, the most important program, Roadway Maintenance, is expected to have numerous individual projects associated with it but these cannot be specifically identified at this time. The following table presents a priority listing of Transportation Programs. Priorities were developed through public input and consultation with Cape Cod Commission, Cape Cod Joint Transportation Committee members, and refinements requested by the Cape Cod Metropolitan Planning Organization. Some of the following headings are used in the table:

RTP#	**I**ndex number used for reference. Numbers followed by an "S" are funded through a program sponsored by the Cape Cod National Seashore.
Type Rank	For "Type," each alternative is listed as one of the following: Program, Project, Smart Solution, or Study. Ranking based on importance (#1 being most important). Unranked alternatives are also supported. Non-supported projects have been eliminated from the listing.
Town	Geographic area.
Title	Short listing.
Description	Longer description
Category	Some alternatives may also benefit other categories (e.g., many "Highway" alternatives also have benefits to "Safety" alternatives. "Highway" may also have congestion and mobility benefits as well).
Ann. Cost	estimated recurring operating cost or average funding allocation (may vary from year to year)
Start Cost	One time cost (e.g., construction cost or capital purchase)
Total Cost	Calculation of Start Cost + Ann. Cost x 23 Years

RTP#	Type Rank	TOWN	Title	Description	Category	Ann. Cost /yr ($K)	Start Cost ($K)	Total Cost ($K)
3000	Program 1	Capewide	Roadway Rehabilitation & Reconstruction	Roadway resurfacing, rehabilitation, and reconstruction	Highway	360,000		8,280,000
3020	Program 2	Capewide	Bridge	Bridge Replacement/Reconstruction	Bridge	9,000		207,000
3001	Program 3	Capewide	Intersection Improvements	Intersection Improvements, including roundabouts, to address safety and congestion relief. Includes left-turn lanes & phases at signalized intersections	Highway	800		18,400
3009	Program 3	Capewide	Cape-wide Intelligent Transportation Systems (ITS)	Design and implement real-time transportation monitoring and notification technologies at facilities throughout Cape Cod. Includes highway and transit users traveling to and within Barnstable County.	ITS/ Management	2,500		57,500
3022	Program 5	Capewide	Bicycle/Pedestrian Projects	Bicycle and/or pedestrian facilities and programs. Includes development of a regional bike network, bike lane construction, bicycling accessibility improvements and amenities, pedestrian accessibility improvements and sidewalk network expansion.	Bicycle/ Pedestrian	2,000	3,125	49,125
3021	Program 6	Capewide	Transit Operating	Transit Operating Assistance	Transit	3,050		70,150
3023	Program 7	Capewide	Transit Capital	Transit Capital Needs	Transit	2,150		49,450
3018	Program 8	Capewide	Railway Infrastructure	Maintain & provide rail infrastructure	Rail	2,000		46,000
3015	Program 9	Capewide	Additional CCRTA Service	Public transit shuttles connecting villages along Route 6A from Sandwich to Orleans, Provincetown-Orleans Shuttle, etc.	Transit	750		17,250
3024	Program 10	Capewide	Travel Demand Management/Transportation Systems Management (TDM/TSM)	Travel Demand Management/Transportation Systems Management projects (TDM/TSM). Includes support of Transportation Management Associations (TMAs). Provide assistance to employers and institutions for the development and coordination of alternative transportation options for employees and patrons.	ITS/ Management	50		1,150
3320	Program 10	Capewide	Local Transportation Centers	Construct intermodal transportation centers in Buzzards Bay, Orleans, etc.	Transit	166		3,818
3034	Program 12	Capewide	Underground Utilities/Pole Relocation	Remove above ground utilities adjacent to roadways and install them underground or away from roadsides to improve safety where appropriate	Safety	3,000		69,000
3007	Program 14	Capewide	Traffic Calming	Promote the installation of Traffic Calming features at appropriate locations	Safety	100		2,300
4020	Program 16	Capewide	MBTA-Compatible Electronic Fare Systems on Transit and Inter-City Buses	Electronic fare system (EFS) on all CCRTA vehicles, interoperable with Massachusetts Bay Transit Authority.	Transit	200		4,600
3014	Program 17	Harwich to Truro	Flex Parking	Construct or designate parking areas for The Flex transit service	Multi-Modal	75		1,725
3028	Program 17	Capewide	Park-and-Ride Lot Management	Monitor parking usage of parking facilities at Barnstable (Exit 6), Sagamore, Harwich (Exit 10); identify & acquire new facilities, expansions as necessary	Multi-Modal	10		230
4021	Program 17	Capewide	Construction of Enhanced Bus Shelters	Build intelligent, accessible, and energy efficient Cape Cod style bus shelters that provide real-time customer information and amenities.	Transit	36		900
3011	Program 20	Capewide	Access Management	Eligible for all state and local numbered routes. Curb cut consolidation, medians, other access improvements	ITS/ Management	300		6,900

RTP#	Type Rank	TOWN	Title	Description	Category	Ann. Cost /yr ($K)	Start Cost ($K)	Total Cost ($K)
3035	Program 21	Capewide	Congestion Management	Consider peak period pricing at strategic locations to provide funding for transportation needs	ITS/ Management	-47,000	5,000	-1,076,000
3012	Program 22	Capewide	Cape-wide Flex Service	Expand Flex bus service throughout Cape Cod	Transit	100		2,300
3027	Program 23	Sandwich, Barnstable, Yarmouth, Dennis, Brewster, Orleans	Route 6A/Scenic Byways	Corridor Management Plan update and implement recommended improvements. Includes connection of sidewalks (on both sides in villages), "Sharrow" pavement markings for bike accommodation. For report, see www.gocapecod.org/6Away	Highway	10	125	355
3002	Program	Capewide	Land Conservation	Strategic purchase of land to reduce sprawl and inefficient allocation of transportation resources. Also used to acquire land for improvement of intersections and protection of operations at new interchanges	ITS/ Management	1,000		23,000
3004	Program	Capewide	Transit Marketing & Education	Implement education programs and marketing activities to support public transit	Transit	50		1,150
3005	Program	Capewide	Safe Routes to Schools	Installation of sidewalks and provide other improvements and programs to promote safe routes to schools	Bicycle/ Pedestrian	30		690
3019	Program	Capewide	Red Light Running Cameras	Support legislation to allow installation of red-light running cameras at high-crash signalized intersections	Safety	200		4,600
3025	Program	Capewide	New Ferry Service	Passenger ferries connecting Cape Cod harbors	Ferry	250		5,750
3033	Program	Capewide	Vegetation Management	Implement a comprehensive program to trim/remove vegetation from encroaching areas	Safety	450		10,350
3036	Program	Capewide	Street Lighting	Install street lighting in woody areas where appropriate	Safety	10,000		230,000
3037	Program	Capewide	Bus Service Amenities	Provide bus schedule signage & related amenities	Transit	150		3,450
3040	Program	Capewide	Low-Floor Loading Buses	Purchase/acquire low-floor loading buses for Cape Cod services	Transit	1,125		25,875
4008	Program	Capewide	Signal Preemption	Install and maintain signal preemption hardware at traffic signals to improve public safety vehicle access	Safety	225		5,175
4076	Program	Capewide	Mashpee Wampanoag Roadway & Transit Projects	Implement roadway& transit improvements to improve accessibility & mobility to and within tribal lands in Mashpee	Multi-Modal	200		4,600

7.6.2 TRANSPORTATION PROJECTS

Transportation Projects are alternatives specific to location and effect. The following table presents a priority listing of Transportation Programs. Priorities were developed through public input and consultation with Cape Cod Commission, Cape Cod Joint Transportation Committee members, and refinements requested by the Cape Cod Metropolitan Planning Organization. Some of the following headings are used in the table:

RTP#	Index number used for reference. Numbers followed by an "S" are funded through a program sponsored by the Cape Cod National Seashore.
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3802	Project 1	Barnstable	Hyannis Access Improvements	Improve access to downtown Hyannis per Hyannis Access Study. Construct 2 additional travel lanes w/landscaped median on Yarmouth Road to connect from existing 4-lanes in Yarmouth to Route 28 in Hyannis. Includes multi-use path and sidewalk.	Highway		50,000	50,000
3305	Project 2	Bourne	Rte 6 Reconfigure Interchange One	Improve westbound on-ramp near Sagamore Bridge during peak times for off-cape traffic flow: Route 6, Exit 1: Reconfigure WB on-ramp	Highway		11,500	11,500
3302	Project 3	Capewide	Cape Cod Rail Trail Extensions	Extend Cape Cod Rail Trail from Bourne to Provincetown via new bike path, including direct connection to Hyannis Transportation Center	Bicycle/ Pedestrian		74,000	74,000
4085	Project 4	Bourne	Route 25 Access Ramp Widening/Belmont Circle Modification	Widen Route 25 Ramps to 2 lanes in each direction. Modify Belmont Circle to 2-way travel. Construct pedestrian underpass at Route 25 Ramps. Per 2007 "Buzzards Bay Village Comprehensive Transportation Plan."	Highway		5110	5,110
4011	Project 5	Sandwich Barnstable Yarmouth	Route 6 Hydroplaning	Route 6 stormwater improvements to remove runoff from traveled way, including construction of shoulders as needed	Safety		10,000	10,000
3306	Project 6	Capewide	Year-Round Daily Rail Service	Implement year-round daily rail service from Hyannis to Buzzards Bay, Middleborough (connect to Boston), Providence, RI, (connect to T.F. Green Airport and N.Y. City)	Rail	1,000	3,000	26,000
3319	Project 6	Capewide	Transportation Management Center	Design & construct Operations Center to monitor traffic operations, issue real-time reports to traveling public, control variable message signs and coordinated traffic signals	ITS/ Management		6,450	6,450
3332	Project 8	Orleans, Eastham, Wellfleet, Truro, Provincetown	Rte 6 Improvements Orleans to Provincetown	Implement improvements in the corridor between Orleans and Provincetown per the *Rte 6 Safety and Traffic Flow Study*	Highway		5,000	5,000
3315	Project 9	Bourne	Otis Rotary Area Improvements	Construct safety improvements on Route 28/Connery Avenue/Route 28A at the Otis Rotary	Safety		5,000	5,000
3314	Project 10	Capewide	Permanent Traffic Counting Stations	Install permanent traffic counting stations at strategic locations Cape-wide, including remote-accessible detection at signalized intersections	ITS/ Management	5	175	290
4081	Project 10	Truro	Bus Stop Livability Enhancements	Livability enhancements / Improvements for bus stop area	Enhancements			1,000

RTP#	Type Rank	TOWN	Title	Description	Category	Ann. Cost /yr ($K)	Start Cost ($K)	Total Cost ($K)
3300	Project 12	Bourne	Scenic Highway Median Barrier	Complete construction of median barrier along Route 6 Scenic Highway from Edge Hill Road to Belmont Circle in Bourne	Safety		12,000	12,000
3338	Project 12	Barnstable	Osterville-Cotuit Bike Connection	Construct off-road connection south of Route 28 for bicycle-pedestrian access between Osterville and Cotuit	Bicycle/ Pedestrian		2,000	2,000
3362	Project 12	Mashpee	Mashpee Rotary Ring Roads	Construct connector roads outside of the Mashpee Rotary: from Great Neck Road South to Route 28 East Leg; from Great Neck Road North to Route 151	Highway		20,000	20,000
4023	Project 12	Provincetown	Shank Painter Rd Corridor Improvements	Corridor improvements including new sidewalks, curb cut consolidation, landscaping, bicycle lanes, etc.	Bicycle/ Pedestrian		2000	2,000
3312	Project 16	Bourne	Sandwich Road Parkway	Develop Sandwich Road into a 4 lane parkway with a landscaped median.	Highway		35,000	35,000
3359	Project 16	Eastham	Route 6/Gov. Prence Road Intersection Improvements	Install improvements at Route 6/Governor Prence Road intersection in Eastham	Safety		1,000	1,000
4086	Project 18	Bourne	Memorial Circle Reconfiguration (Routes 6/28, Main Street Buzzards Bay)	Convert Memorial Circle to 4-way Intersection; includes slip lane connection for eastbound Routes 6/28 to Main Street. Per 2007 "Buzzards Bay Village Comprehensive Transportation Plan."	Highway		1802	1,802
3304	Project 19	Bourne	Bourne Rotary Improvements	Reconfigure Bourne rotary to allow direct connection between Bourne Bridge to Route 28 (MacArthur Blvd). Interim improvements to improve flows at rotary entrances and exits by widening and pavement markings/signage.	Highway		50,000	50,000
3317	Project 19	Barnstable	Independence Park Bikepath	Connect western extension of Cape Cod Rail Trail through Independence Park (Barnstable) to Service Rd at Exit 6	Bicycle/ Pedestrian		7,000	7,000
3322	Project 19	Bourne	Rte 28 MacArthur Boulevard Improvements	Bourne - Construction of 2 new northbound lanes on Rte 28, reverse existing northbound, existing southbound becomes frontage road	Highway		20,000	20,000
3325	Project 19	Capewide	Variable Message Signs	Remote operated variable message signs installed along all major routes - Rte 6, Rte 28 in Bourne & Falmouth, Rte 25 Extension, Rte 3	ITS/ Management	10	1,000	1,230
3367	Project 19	Barnstable Boston	Barnstable-Boston Ferry Service	Ferry service: Barnstable to Boston	Ferry		15,000	15,000
3337	Project 24	Falmouth	Cross-Falmouth Bikepath	Bike path connection from E. Falmouth to Gifford St. to Shining Sea Bike Path	Bicycle/ Pedestrian		3,000	3,000

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3356	Project 24	Chatham	Bridge St Bridge Replacement	Replace Bridge Street/Mitchell River Bridge (Chatham)	Bridge		12,000	12,000
3390 s	Project 26	Provincetown	Provincetown Intermodal Gateway Project - Construction	Construct the Gateway	Enhancements		8,000	8,000
3389 s	Project 27	Provincetown	Provincetown Bicycle Path Ext	Develop ped/bicycle facility using a portion of the Rte. 6 ROW	Bicycle/ Pedestrian		1,000	1,000
3301	Project 28	Sandwich	Interchange Improvements Rte 6	Mid-Cape Hwy - Implement improvements to Route 6 Interchanges	Highway		38,200	38,200
3324	Project 29	Yarmouth Dennis Harwich Chatham	Rte 28 Multimodal Improvements: Hyannis-Dennis	Construction, marking, and signage of Bicycle facility along Route 28 from Hyannis - Dennis using existing pavement with minor widening. Connect/construct Route 28 sidewalks from Yarmouth to Chatham in Dennis & Harwich. Implement improvements per the Rte 28 Safety and Traffic Flow Study; Includes turning lanes, signal optimization. See report: www.gocapecod.org/outreach	Multi-Modal		10,000	10,000
3331	Project 29	Bourne	Scenic Highway/Rte 25 Connector Ramp	Develop a direct connection from Scenic Highway to Rte. 25 to divert traffic from the Belmont Circle.	Highway		10,000	10,000
3330	Project 31	Sandwich, Bourne	Bus-Only Lanes for Rte 3 & Rte 6	Provide bus-only lanes between both Exits "2" and the Sagamore Bridge for both Rte. 3 and Rte. 6. This is expected to be achieved by widening and strengthening the shoulder section	Transit		5,000	5,000
4087	Project 32	Bourne	Reconfigure Route 6/28 Bypass (Buzzards Bay)	Reduce road width to 1 travel lane in each direction; provide local access to cross-streets; construct multi-use path from Memorial Circle to Belmont Circle. Per 2007 "Buzzards Bay Village Comprehensive Transportation Plan."	Highway		4455	4,455
3303	Project 33	Barnstable	Route 132 Access Management	Construct traffic channelization, land acquisition, combine/eliminate driveways to improve traffic flow and safety from CC Mall to Phinneys Lane	Safety		5,000	5,000
3308	Project 34	Barnstable	Airport Rotary Traffic Improvements	Reconfigure Airport Rotary to improve traffic flow and safety. May include realignment of approaches and reduction of diameter to conform to modern roundabout design	Safety		900	900
3310	Project 35	Capewide	Canal Area Intelligent Transportation System	Expand transportation monitoring system to improve congestion & safety while providing real-time information Capewide & beyond	ITS/ Management		3,000	3,000

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3316	Project 36	Orleans	Rt 6A/Rt 28 Intersection Improvements	Per recommendations of 2006 Safety Study, install traffic signal or roundabout at intersection of Route 6A/Route 28/Canal Street in Orleans	Highway		1,000	1,000
3318	Project 37	Barnstable	Barnstable Roundabout	Improve traffic flow and safety of the Route 6A/Route132 intersection through channelization of traffic movements (roundabout)	Safety		1,000	1,000
3006	Project	Bourne, Sandwich	Cape Cod Canal Park-and-Ride Lot(s) Improvements	Construct new and/or expand existing Park-and-Ride facilities on both sides of the Cape Cod Canal near highway bridges	Multi-Modal		1,150	1,150
3326	Project	Capewide	Cape-wide Highway Advisory Radio	Provide travel information cape-wide via AM radio	ITS/ Management		250	250
3336	Project	Bourne	Bourne Central Bikepath	Relocate rail line to the east of MacArthur Blvd (Bourne,) convert existing rail to bikepath	Bicycle/ Pedestrian		10,000	10,000
3340	Project	Barnstable	Truck Staging at Route 6 Interchange	Construct truck transfer staging area near a Route 6 (e.g., Exit 6 or Exit 7) interchange for transfer of freight from large trucks to smaller trucks for destinations in the Hyannis Area. Consider rail freight transfer.	ITS/ Management		3,000	3,000
3342	Project	Capewide	Emergency Routes & Shelters Signage	Install signage indicating emergency routes and shelter locations	Security		150	150
3343	Project	Barnstable	Villager Bus (Red Line) Phinneys Lane	Reroute CCRTA Villager service (Red Line) to include direct service to or from Barnstable Village directly to Route 132 via Phinneys Lane	Transit	40		920
3345	Project	Barnstable	Villager Bus Service (Red Line) Split	Add CCRTA Villager service into two separate, coordinated lines	Transit	5		115
3349	Project	Dennis	Rte 28 Main St Bridge Rehabilitation	Rehabilitate Route 28 Main Street/Swan Pond River Bridge (Dennis)	Bridge		6,000	6,000
3350	Project	Bourne	Bourne Rotary - Falmouth /Sandwich Bus Services	Introduce public transit bus service between the Bourne Bridge area and Sandwich/ Falmouth (CMAQ funding)	Transit	276		6,351
3352	Project	Dennis	Upper County Rd Bridge Rehabilitation	Rehabilitate Upper County Road/Swan Pond River Bridge (Dennis)	Bridge		3,000	3,000
3353	Project	Wellfleet	Marconi Beach Road/Route 6 Intersection Signage	Add correct signage indicating "disappearing lane" at Marconi Beach Road/Route 6 intersection in Wellfleet	Highway		5	5
3354	Project	Wellfleet	Cemetery Road & Old Wharf Road/Route 6 Improvements	Reconstruct intersections to consolidate Cemetery & Old Wharf Rd at Route 6 in Wellfleet	Highway		500	500
3355	Project	Bourne	Cohasset Narrows Bridge Improvements & Traffic Management. Includes multi-use path	Repair bridge abutments, prepare and implement traffic management plans as part of repairs to the Cohasset Narrows Bridge in Bourne [***review schedule]	Bridge		300	300
3357	Project	Falmouth	Dillingham Av/Davis Straights Signalization	Install traffic signal at Dillingham Avenue/Davis Straights intersection in Falmouth	Highway		1,000	1,000
3358	Project	Yarmouth	Route 6A/Union Street Intersection Improvements	Route 6A/Union Street intersection improvements in Yarmouth	Highway		1,000	1,000

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3361	Project	Mashpee Barnstable	Left-Turn Lanes - Route 28	Construct turning lanes on Rte 28 from Route 130 to Orchard Road in Mashpee (esp. at Bowdoin Road)	Highway		500	500
3363	Project	Yarmouth	West Yarmouth Rt 28 Intersection Improvements	Construct intersection improvements at Route 28 & East Main Street in West Yarmouth	Safety		1,000	1,000
3364	Project	Capewide	HOV Lanes	Construct High-Occupancy Lanes at key segments of freeways such as Route 6, 3, 25, and 28.	Highway		10,000	10,000
3365	Project	Eastham	Align Roadways: Aspinet /Nauset	Align Aspinet Rd with Nauset Rd at Route 6(Eastham)	Safety		1,000	1,000
3366	Project	Falmouth	Left Turn Phase - Gifford/Jones	Add left-turn phase Gifford St/Jones Rd (Falmouth)	Highway		50	50
3368	Project	Falmouth and Hyannis to New Bedford	2 New Ferry Services	Provide new ferry services: New Bedford-Woods hole, New Bedford-Hyannis	Ferry	2,000	100,000	146,000
3370 s	Project	Capewide	Coast Guard Beach Shuttle Replacement - Phase 2	Replace existing vehicles - National Park Service	Transit		500	500
3371 s	Project	Capewide	Outer Cape ITS Operations Control Center	Design and build an initial control center to accommodate ITS deployment for the Outer Cape	ITS/ Management		250	250
3372 s	Project	Capewide	Information Kiosks	Procure, install, and enable public transportation information kiosks	ITS/ Management		200	200
3373 s	Project	Capewide	Variable Message Signs - Phase 1	Permit, and install variable message signs for the Outer Cape.	ITS/ Management		500	500
3374 s	Project	Capewide	Surveillance Cameras	Permit, and install surveillance cameras for the Outer Cape to observe traffic conditions and monitor Nat'l Seashore parking facilities.	ITS/ Management		50	50
3375 s	Project	Capewide	Highway Advisory Radio System	Permit and install a highway advisory system for the lower/outer Cape area.	ITS/ Management		200	200
3379 s	Project	Capewide	Upgrade Radio System for CCRTA Service	Improve communications systems and provide capacity to accommodate ITS components /Narrowband Radio.	ITS/ Management		150	150
3381 s	Project	Capewide	Parking Improvement Implementation - Phase 1	Develop inland parking for the National Seashore	Park & Ride		150	150
3384 s	Project	Capewide	Variable Message Signs - Phase 2	Permit, and install variable message signs for the Outer Cape.	ITS/ Management		500	500

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3385 s	Project	Capewide	Beach Shuttle Expansion	Acquire additional buses to accommodate inland National Seashore parking needs - National Park Service.	Transit		400	400
3388 s	Project	Provincetown	Provincetown Bicycle Path Ext - Phase I	Develop an extension from Race Point to McMillan Pier.	Bicycle/ Pedestrian		1,000	1,000
3391 s	Project	Capewide	Renewable Fuels Pilot Stations	Develop pilot stations for renewable fuels such as biodiesel and ethanol. Proposal includes one station in the Mid-Cape area and one in the Outer Cape area	Enhancements		999	999
4000	Project	Barnstable	CCRTA Bike Rental	Provide bike rental service at Hyannis Transportation Center	Bicycle/ Pedestrian			0
4001	Project	Eastham Orleans	Eastham Rotary Bike/Ped Accommodation	Add bike/ped accommodation to connect Orleans to Rock Harbor Rd & Rt 6 in Eastham via periphery of rotary	Bicycle/ Pedestrian			0
4003	Project	Sandwich	Bike Information Kiosk	Construct informational kiosk by Canal bikeway near Sandwich Marina	Bicycle/ Pedestrian			0
4006	Project	Eastham	Route 6 Complete Street	Route 6 in Eastham: add bike accommodation, improve sidewalks, bus turnouts & stops to create "Complete Street"	Highway			5,000
4010	Project	Bourne	Rail Connection at "Y"	Construct direct connection from Canal-side rail to Falmouth rail (eliminating need to lower Canal rail bridge)	Rail			0
4012	Project	Barnstable	West Main St Transit	Provide transit service along West Main Street from SeaLine connection at Rt 28 to downtown Hyannis	Transit			0
4013	Project	Falmouth	Falmouth Transit Improvements	Add service/stops to Surf Drive, Maravista Ave, Brick Kiln Rd, Jones Rd.	Transit			0
4015	Project	Capewide	Mobility Management Call Center	One-stop traveler call center to coordinate all travel modes and to manage eligibility and special requirements for human services.	Transit			0
4017	Project	Capewide	Expansion of Next-Gen Mobile Data Terminals to Paratransit	State-of-the-art displays, global positioning systems (GPS), automatic vehicle location (AVL) systems, in-vehicle navigation systems, digital driver manifests and mobile data collection.	Transit			0
4018	Project	Capewide	Next Bus Stop Announcements and Automatic Passenger Counting	Add technology to Mobile Data Terminals (MDTs) to provide next bus stop announcements/displays onboard. Includes automatic passenger counters.	Transit			0
4019	Project	Capewide	Web 2.0 Integrated Intermodal Traveler Information over the Web	Internet-based intermodal trip planning, displays at malls and terminals to provide real-time mapping of transit vehicles, estimated time of arrival (ETA). Includes real-time displays for major destinations and terminals, ETA displays at bus shelters, and smartphone applications	Transit			0
4024	Project	Brewster	Rt 124/Tubman Safety Improvements	Context-sensitive improvements to improve intersection safety	Highway			0
4027	Project	Barnstable	Rt 6A W. Barnstable Sidewalk	Construct sidewalk along Route 6A in W. Barnstable	Bicycle/ Pedestrian			0

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4028	Project	Barnstable	Route 28/Bearses Way Access Improvements	Intersection improvements including accommodation of bike/ped & public transportation amenities	Highway		2500	2,500
4029	Project	Barnstable	Rt 28/Yarmouth Rd Intersection Improvements	Construction of turning lanes and signal upgrades per Hyannis Access Study	Highway		2000	2,000
4030	Project	Bourne	Main Street (Buzzards Bay) Streetscaping Phase 3	Continue streetscaping improvements along Route 6/28 Main Street in Buzzards Bay	Enhancements			0
4032	Project	Bourne Sandwich	Rt 6 Resurfacing	Resurfacing and related work on Rt 6 from Sagamore Bridge to Sandwich/Barnstable TL	Highway		8000	8,000
4033	Project	Brewster	Rt 6A Resurfacing	Coldplaning/resurfacing of Rt 6A from Dennis T.L to Orleans T.L. in Brewster	Highway		6500	6,500
4034	Project	Dennis Harwich Brewster Orleans Eastham Wellfleet Truro Provincetown	Route 6 Stormwater Improvements	Route 6 stormwater improvements to remove runoff from traveled way, including construction of shoulders as needed from Dennis to Provincetown	Safety			0
4035	Project	Chatham	Rt 28/Crowell Rd/Depot Rd/Queen Anne Rd Intersection Improvements	Intersection improvements at Rt 28/Crowell Rd/Depot Rd/Queen Anne Rd in Chatham	Highway			0
4036	Project	Chatham	Rt 28 Corridor improvements	Access management improvements along Rt 28 from George Ryder Rd to Barnhill Rd	Highway			0
4037	Project	Falmouth	Rt 28/Old Meetinghouse Rd Intersection Improvements	Intersection improvements at Rt 28/Old Meetinghouse Rd in Falmouth	Highway		0	0
4038	Project	Falmouth	Rt 28/Jones Rd/Worcester Ct Intersection Improvements	Intersection improvements at Rt 28/Jones Rd/Worcester Ct in Falmouth	Highway		1500	1,500
4039	Project	Harwich	Rt 124 (Harwich) Reconstruction	Reconstruction of Rt 124 from Headwaters Dr to Brewster T.L. in Harwich	Highway		4000	4,000
4040	Project	Harwich	Rt 39 (Harwich) Reconstruction	Reconstruction of Rt 39 from Oak St to Brewster T.L. in Harwich	Highway			0
4041	Project	Orleans	Rt 6A/Main St Intersection Improvements	Intersection improvements at Rt 6A/Main St in Orleans	Highway			0
4042	Project	Orleans	Rt 28/Main St Intersection Improvements	Intersection improvements at Rt 28/Main St in Orleans	Highway			0
4044	Project	Sandwich	Rt 6A over Scorton River Bridge	Replace bridge: Rt 6A over Scorton River in Sandwich	Bridge		3000	3,000
4045	Project	Yarmouth	Old Townhouse Rd/Forest Rd Intersection Improvements	Intersection improvements at Old Townhouse Rd/Forest Rd in Yarmouth	Highway			0
4046	Project	Barnstable Bourne	Upper/Mid Cape Real Time Traffic Information System	Real Time Traffic Information System -- Design Build of year-round 24/7 Web based traffic information system based on cameras, sensors, with 511 to reduce road rage, congestion, and improve mobility and incident management through improved information	ITS/ Management		3000	3,000

RTP#	Type Rank	TOWN	Title	Description	Category	Ann. Cost /yr ($K)	Start Cost ($K)	Total Cost ($K)
4047	Project	Barnstable Yarmouth	Hyannis Access Bicycle/Pedestrian Improvements	Regional bicycle/pedestrian access in the Route 28/Yarmouth Road and Willow Street area between Hyannis Transportation Center and planned extension of the existing Cape Cod Rail Trail in Dennis-Yarmouth; Design build grade crossings of Willow Street and Railroad	Bicycle/ Pedestrian		13000	13,000
4048	Project	Brewster	Rt 124(Brewster) Reconstruction	Full depth reclamation Harwich Road / Rte 124	Highway		1500	1,500
4049	Project	Brewster	Rt 137(Brewster) Reconstruction	Full depth reclamation Long Pond Road / Rte 137	Highway		1900	1,900
4050	Project	Brewster	Stony Brook Rd, Rt 6A, Satucket Rd (Brewster) Reconstruction	Full depth reclamation Stony Brook Road, Rte 6A - Satucket Rd	Highway		600	600
4051	Project	Capewide	Rail Upgrade (Bourne +)	Buzzards Bay to Middleborough capital improvements for rail upgrade	Rail		6000	6,000
4052	Project	Capewide	Intercity Seasonal Connector-demonstration	Intercity Seasonal **Rail** Connector-demonstration	Transit		4000	4,000
4053	Project	Dennis	Rt 134/Airline Rd Roundabout	Route 134 at Airline Road, Intersection Improvements (roundabout)	Highway		600	600
4054	Project	Dennis	Old Wharf Rd (Dennis) reconstruction	Old Wharf Road, reconstruction, sidewalks, and drainage improvements	Highway		450	450
4056	Project	Dennis Harwich Brewster Orleans	Rt 6 Reconstruction	Route 6 National Highway System NHS, section with failing pavement	Highway		15000	15,000
4060	Project	Orleans	Rock Harbor Rd (Orleans) Reconstruction	Rock Harbor Road drainage improvements and roadway reconstruction	Highway		600	600
4061	Project	Orleans	Main Street (Orleans) Improvements	Main Street Sidewalk extension and reconstruction of Meeting House Road intersection	Bicycle/ Pedestrian		300	300
4062	Project	Provincetown	Commercial St (Provincetown) Reconstruction	Commercial Street Reconstruction	Highway		3500	3,500
4063	Project	Sandwich	Rt 130 Exit 2 Rt 6 Intersection Improvements phase 2	Route 130 Exit 2 Phase 2, WB exit ramp and Service Road intersection improvements	Safety		3000	3,000
4064	Project	Sandwich	Quaker Meetinghouse Rd Sidewalk	Quaker Meetinghouse Road Pedestrian Accessibility 3 miles of sidewalk	Bicycle/ Pedestrian		800	800
4065	Project	Sandwich	Quaker Meetinghouse Rd Resurfacing	Sandwich, Quaker Meetinghouse Road - 2 miles long, mill and pave	Highway		925	925
4066	Project	Capewide	MV Eagle Refurbishment	Woods Hole, Martha's Vineyard, and Nantucket Steamship Authority (SSA) MV Eagle Mid-Life Refurbishment	Ferry		5900	5,900
4067	Project	Capewide	Ferry Sewage Pump-out Systems	Vessel Sewage Pump-out Systems -- Installation of 3 land-side pump-out systems and vessel modifications in Woods Hole, Vineyard Haven, and Nantucket	Ferry		2700	2,700
4068	Project	Capewide	Passenger Loading Ramps	Passenger loading ramp modifications in Woods Hole, Vineyard Haven, Oak Bluffs, and Nantucket	Ferry		1600	1,600
4069	Project	Wellfleet	Chequessett Bridge	Chequessett Bridge Rehabilitation	Bridge		12000	12,000
4074	Project	Yarmouth	South Shore Dr (Yarmouth) Sidewalks	Yarmouth, Sidewalk improvements: South Shore Drive sidewalk- from Sea View Ave. to South Middle Beach	Bicycle/ Pedestrian		650	650
4075	Project	Yarmouth	Winslow Gray Rd (Yarmouth) Sidewalks	Yarmouth, Sidewalk improvements: Winslow Gray Rd. sidewalk 0.75 miles long from Buck Island Rd. to Long Pond Dr.	Bicycle/ Pedestrian		400	400

RTP#	Type Rank	TOWN	Title	Description	**Category**	Ann. Cost /yr ($K)	Start Cost ($K)	Total Cost ($K)
4078	Project	Eastham	Governor Prence Road reconstruction and improvements	Reconstruction to improve sub-surface, pavement, and multimodal accommodation	Safety			0
4079	Project	Dennis	Rt 6A (Dennis) Sidewalks	Route 6A sidewalks Yarmouth TL to Sesuit Neck Road	Bicycle/ Pedestrian		2,000	2,000
4080	Project	Dennis	Rt 134 (Dennis) Bike/Ped Accommodation	Route 134 state section sidewalks / pedestrian bicycle accommodation, existing gap	Bicycle/ Pedestrian		300	300
4082	Project	Harwich	Bike Path Connector	Bike Path Connection from Old Colony Rail Trail to Rt 28 & Beaches (Harwich)	Bicycle/ Pedestrian		500	500
4083	Project	Sandwich	Canal Connector Bike Path	Bike Path Connection from Cape Cod Canal to Sandwich Center	Bicycle/ Pedestrian		500	500

7.6.3 SMART SOLUTIONS CONSIDERED

"Smart Solutions" are alternatives that do not require major investments in capital or operations. These are called "Smart" Solutions because they do require thoughtful promotion and coordination of transportation services that for the most part already exist. The following table presents a priority listing of Smart Solutions. Priorities were developed through public input and consultation with Cape Cod Commission, Cape Cod Joint Transportation Committee members, and refinements requested by the Cape Cod Metropolitan Planning Organization. Some of the following headings are used in the table:

RTP#	**I**ndex number used for reference. Numbers followed by an "S" are funded through a program sponsored by the Cape Cod National Seashore.
Type Rank	For "Type," each alternative is listed as one of the following: Program, Project, Smart Solution, or Study. Ranking based on importance (#1 being most important). Unranked alternatives are also supported. Non-supported projects have been eliminated from the listing.
Town	Geographic area.
Title	Short listing.
Description	Longer description
Category	Some alternatives may also benefit other categories (e.g., many "Highway" alternatives also have benefits to "Safety" alternatives. "Highway" may also have congestion and mobility benefits as well).
Ann. Cost	estimated recurring operating cost or average funding allocation (may vary from year to year)
Start Cost	One time cost (e.g., construction cost or capital purchase)
Total Cost	Calculation of Start Cost + Ann. Cost x 23 Years

Note that for Smart Solutions, costs have not been estimated for the draft RTP.

RTP#	Type Rank	TOWN	Title	Description	Category	Ann. Cost /yr ($K)	Start Cost ($K)	Total Cost ($K)
3718	Smart Solution 1	Capewide	Zoning/Planning Support for Sidewalks	Improve zoning regulations & planning efforts to invest in sidewalks	Bicycle/ Pedestrian			0
3706	Smart Solution 2	Capewide	Remote Continuous Traffic Counting	Encourage installation of equipment at signalized intersections and other locations to conduct traffic counts throughout Cape Cod throughout the year using remotely-accessible detection equipment	ITS/ Management			0
3711	Smart Solution 3	Capewide	CCRTA/Steamship Authority Coordination	Coordinate schedules among the CCRTA SeaLine (Blue Line) and Steamship Authority Ferries	Transit			0
4014	Smart Solution 4	Bourne Wareham	CCRTA-GATRA Coordination	Coordinate schedules and service between GATRA and CCRTA	Transit			0
3708	Smart Solution 5	Capewide	Bicycling & Motorist Traffic Law Enforcement	Enforce traffic laws on bicyclists and motorists	Safety			0
4009	Smart Solution 6	Boston	Logan Intercity Bus Information	Provide real-time bus location information, schedules, fares etc. for service from Logan to Cape Cod	ITS/ Management			0
3705	Smart Solution 7	Capewide	Redesignate 195 & 495	Redesignate Route 25 Extension as Route 195 or Route 495 or Route 195/495	ITS/ Management			0
3704	Smart Solution 8	Capewide	Employer TDM Plans	Create incentives for employers to prepare and implement Travel Demand Management (TDM) plans (>25 Employees)	ITS/ Management			0
4005	Smart Solution 9	Falmouth	New Bedford-Martha's Vineyard Freight	To reduce traffic on Woods Hole Rd, operate barges between New Bedford and Martha's Vineyard to carry fuel trucks and garbage trucks.	Ferry			0
3700	Smart Solution 10	Capewide	Speed Management	Implement education, signage and enforcement to lower traffic speeds on roadways with speed-related safety problems	Safety			0
3715	Smart Solution 11	Capewide	Transit Education & Marketing on Local TV	Implement education programs and marketing activities on community-access television to support public transit	Transit			0
3702	Smart Solution 12	Capewide	Right-of-Way Preservation	Maintain rights-of-way for future transportation uses and to avoid future traffic generation	ITS/ Management			0
3713	Smart Solution 13	Capewide	Bus Users Incentives: Shopping Discounts	Provide shopping discounts to bus users	Transit			0
3717	Smart Solution 13	Capewide	Wi-Fi Hotspots	Install wireless internet services at strategic locations throughout Cape Cod	ITS/ Management			0
3701	Smart Solution	New Bedford	Promote Ferry Service from New Bedford		Ferry			0

RTP#	Type Rank	TOWN	Title	Description	**Category**	Ann. Cost /yr ($K)	Start Cost ($K)	Total Cost ($K)
3703	Smart Solution	Capewide	Vanpooling & Carpooling Incentives	Provide incentives to increase vanpooling and carpooling	ITS/ Management			0
3707	Smart Solution	Capewide	Carpooling "Stands/Stops"	Install signage and implement education & marketing program for the use of carpooling stands/stops" to promote higher occupancy vehicle use	ITS/ Management			0
3709	Smart Solution	Capewide	Rail Line Buffer Zone	Implement zoning protections to reduce future development for a distance of 100' along rail lines	Rail			0
3716	Smart Solution	Capewide	Vanpooling at Steamship Authority Lots	Permit use of Steamship Authority parking facilities for vanpooling	Multi-Modal			0

7.6.4 TRANSPORTATION STUDIES CONSIDERED

Transportation Studies are alternatives that have not been fully realized. From the public participation process, there have been many occasions on which a clear course of action is not revealed. In these cases, there may be many conflicting (and potentially infeasible) "solutions" proposed. Perhaps the only consensus is that there is in fact a problem worthy of further review. Therefore, this final category forms the basis for future planning efforts. These Transportation Studies provide the vehicle for generating Programs, Projects, and Smart Solutions.

The following table presents a priority listing of Transportation Studies. Priorities were developed through public input and consultation with Cape Cod Commission, Cape Cod Joint Transportation Committee members, and refinements requested by the Cape Cod Metropolitan Planning Organization. Some of the following headings are used in the table:

RTP#	**I**ndex number used for reference. Numbers followed by an "S" are funded through a program sponsored by the Cape Cod National Seashore.
Type Rank	For "Type," each alternative is listed as one of the following: Program, Project, Smart Solution, or Study. Ranking based on importance (#1 being most important). Unranked alternatives are also supported. Non-supported projects have been eliminated from the listing.
Town	Geographic area.
Title	Short listing.
Description	Longer description
Category	Some alternatives may also benefit other categories (e.g., many "Highway" alternatives also have benefits to "Safety" alternatives. "Highway" may also have congestion and mobility benefits as well).
Ann. Cost	estimated recurring operating cost or average funding allocation (may vary from year to year)
Start Cost	One time cost (e.g., construction cost or capital purchase)
Total Cost	Calculation of Start Cost + Ann. Cost x 23 Years

Note that costs for Studies are generally considered as one-time expenditures despite some studies which may be performed over two or more years.

RTP#	Type Rank	TOWN	Title	Description	Category	Ann. Cost /yr ($K)	Start Cost ($K)	Total Cost ($K)
3807	Study 1	Bourne, Army Corps	Cape Cod Canal Bridges Replacement/Expansion/Addition. Includes evaluation of Belmont Circle and Buzzards Bay Bypass and other roads.	Evaluation of future needs for highway crossings of Cape Cod Canal. Includes consideration of replacement or expansion of existing bridges; additional crossings	Highway		1,000	1,000
3803	Study 2	Falmouth, Mashpee, Barnstable, Yarmouth, Dennis, Harwich, Chatham	Southside Bike Route	Identify network (on- and off-road) for bike route from Woods Hole to Chatham	Bicycle/ Pedestrian		500	500
3809	Study 3	Capewide	Freight Study	Conduct a study of freight (quantities, origins, destinations, etc.)	ITS/ Management		250	250
3804	Study 4	Barnstable	Exit 6 Park-and-Ride Lot Expansion	Examine options at Exit 6 Park-and-Ride Lot such as parking structure or surface lot expansion to expand parking supply	Park & Ride		250	250
3811	Study 5	Capewide	Disaster/Emergencies/Security Plan	Develop plans to address disasters, emergencies, and security issues	Security		500	500
3816	Study 6	Barnstable, Mashpee, Falmouth	Hyannis-Falmouth Transportation Study	Identify needed roadway, public transit, and other modes' needed improvements for future travel demands between Hyannis and Falmouth	Highway		500	500
3832 s	Study 7	Capewide	Renewable Fuels Partnership Strategic Implementation Plan	Identify potential renewable fuel options, technologies, markets, and infrastructure needs to make use of biofuels both viable and sustainable	Enhancements		200	200
3829 s	Study 8	Capewide	Develop Origin/Destination Transit Mode Split Model	Create a transit model for Cape Cod	Transit		250	250
4026	Study 9	Sandwich Mashpee	Rt 130 Road Diet	Narrow travel lane width to reduce speeds and accommodate bicycles/ pedestrians	Safety			0
4007	Study 10	Eastham Orleans	Eastham Rotary Bypass	Relocate Rock Harbor Road access from Rotary to new Bridge Rd/Rt 6 signalized intersection. Convert rotary to roundabout	Highway			0
3805	Study 12	Bourne	Sagamore Bridge Speed Management	Identify measures to encourage safe speeds on Route 3 and Route 6 approaches to the Sagamore Bridge	Safety		350	350
4025	Study 12	Wellfleet	Rt 6 at Wellfleet/Eastham TL	Congestion mitigation where two NB lanes merge to one	Highway			0
4077	Study 14	Capewide	Mashpee Wampanoag Roadway & Transit Study	Identify roadway& transit improvements to improve accessibility & mobility to and within tribal lands in Mashpee	Multi-Modal			0
3822 s	Study 15	Capewide	Smart Card Study	Investigate current technologies, compatibilities with local planning, define potential partners, and make recommendations.	ITS/ Management		75	75
4004	Study 15	Bourne Falmouth	Falmouth-Wareham Bike Connection	Connect Falmouth bike paths to Bourne/Wareham town line at William Dalton Bridge including connection to Cod Canal bike paths	Bicycle/ Pedestrian			0

RTP#	Type Rank	TOWN	Title	Description	Category	Ann. Cost /yr ($K)	Start Cost ($K)	Total Cost ($K)
4084	Study 16	Barnstable	Rt 28 Corridor Study	Identify multimodal corridor improvements from Mashpee T.L. to Yarmouth T.L. along Route 28	Multi-Modal		750	750
3806	Study	Orleans	Rt 28/Rt 39 Intersection Improvements	Identify safety improvements at Route 28/Route 39/Quanset Road intersection in Orleans	Safety		100	100
3808 s	Study	Capewide	Flex Phase II Evaluation Study	Evaluate improvements and expansion of the Flex transit service.	Transit		30	30
3813	Study	Capewide	Railways for Transporting Emergency Supplies	Develop contingency plan to use railways for transporting supplies during emergencies	Security		75	75
3819 s	Study	Capewide	Evaluation of Existing Transit Info Software/Procurement	Evaluate customer information software to be used for a web-based system to support CCRTA operations	ITS/ Management		250	250
3820 s	Study	Capewide	Evaluation and refinement of Partner Program	Develop recommendations based on the public/private transportation provider coordination efforts.	ITS/ Management		100	100
3826 s	Study	Capewide	ITS Evaluation and Phase II Recommendation study	Evaluate ITS deployment and make recommendations.	ITS/ Management		150	150
3827 s	Study	Capewide	Evaluation of Customer Information Systems	Evaluate Customer Information Systems and make recommendations.	ITS/ Management		25	25
3828 s	Study	Capewide	Update 5-Year and Long Range Cape Cod Public Transportation Plans	Update the 2002 5-Year Plan and the 2003 Long Range Public Transportation Plan.	ITS/ Management		175	175
3830 s	Study	Capewide	Evaluation of Partner Program II	Continue the evaluation of the public/private carrier coordination program.	ITS/ Management		15	15