



CAPE COD  
COMMISSION

# INVEST Evaluation - Project Development & System Planning Modules



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## Table of Contents

Background	5
Project Development Module	5
Scoring Comments on the Project Development Module	7
Lessons Learned (PD Module)	12
System Planning Module	15
Scoring Comments on the System Planning Module	17
Lessons Learned and RTP Improvements Planned	22

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Image from Cape Cod Commission Regional Policy Plan



## Background

The Cape Cod Commission was selected to assess the INVEST software version 1.0, first to evaluate the Hyannis Access Implementation Study using the Project Development module, then to use the System Planning module to inform the development of the next Regional Transportation Plan. This report summarizes the process, scoring, comments, and lessons learned from each of the modules.

## Project Development Module (PD)

### Process:

The Cape Cod Commission compiled a team of 7 staff members with various backgrounds to evaluate the Hyannis Access Implementation Study using the Project Development module and the Urban Extended scorecard of the INVEST tool.

### Staff team members:

- Ryan Bennett, Energy Specialist
- Sarah Korjeff, Historic Preservation Specialist
- Lev Malakhoff, Senior Transportation Engineer
- Heather McElroy, Natural Resources Specialist
- Leslie Richardson, Economic Development Officer
- James Sherrard, Hydrologist
- Steven Tupper, Technical Services Planner

Two members of the team were assigned to individually analyze and score each of the 29 categories in the Project Development module of INVEST. Staff members then met together in a workshop setting on December 5, 2013 to discuss the scoring process and any comments they had on the process.



Staff agreed on scoring for each category and entered the scores in the on-line program, first using all 29 Urban Extended categories, and again creating a Custom program with 12 categories, eliminating those that address a later stage in project development or that address issues not found in the study area.

Staff compiled comments and suggestions related to overall scoring and individual issue areas within the Project Development module, and later discussed the comments with FHWA staff during a conference call on December 12, 2013.

### Project Scoring:

Hyannis Access Implementation Study Scoring under PD Module:

Full Module Score: 25 – “Not Rated” [38 points needed for Bronze]

All 29 criteria were included in this scoring. No points were received in the categories that focus on construction details and compliance.

Custom Module Score: 25 – “Bronze”

Twelve criteria that seem appropriate to this project were included in this custom module, which is fewer than the 19 “core criteria” described for the basic custom scorecard. The 12 criteria included were PD3, PD4, PD5, PD7, PD8, PD9, PD10, PD11, PD12, PD14, PD17, and PD18. The study likely could have earned a few more points if additional details were included related to energy efficiency, but many of the other unearned points either did not pertain to the situation or would have been very difficult to achieve in this region.

Given the study’s consideration of issues in the Regional Policy Plan for Barnstable County and the involvement of staff and community members from varied disciplines, a slightly higher rating for the study was expected.



## Scoring Comments on the Project Development Module

Overall, scoring was a useful exercise, giving an opportunity to think about the wide range of transportation projects and how they might be evaluated. In the scoring workshop, staff identified comments and suggestions related to the whole scoring process, as well as specific comments for individual criteria categories. Many focus on the need to adjust the measures for projects early in the design process. It should be noted that this Project Development evaluation was conducted before using the System Planning module, even though INVEST literature states that the intention to use the System Planning module first. Given the need to begin with the Project Development module in this case, it became apparent that some of the broader planning issues discussed in the System Planning Module do not seem to have been carried forward into the Project Development module.

### Overall Scoring Comments

- Adjust the Scorecard for Projects Early in the Design Phase – During the course of reviewing the Hyannis Access Study against the INVEST criteria, one continual comment surfaced: projects in the early design or conceptual design stages can't answer many of the criteria. Numerous criteria sections are geared toward projects with contract documents already in place, yet this project is not at that level of design and none of the Project Development scorecard options exempt the criteria related to construction specifications. The Project Development module should be more easily catered to projects that are in earlier stages of development, especially when project development is being done by a planning agency that does not have control over the contract documents. Perhaps two separate tracks could be considered – one for “project planning” and one for “project implementation” or engineered projects. Alternatively, it would be helpful to make it clear that a custom scorecard can be established for projects that are earlier in the design phase and do not have contract-level documents.
- Allow ‘Not Applicable’ Questions to be removed from scoring – When questions do not apply, the project is in effect penalized in the scoring. It would seem more appropriate to have the final score be based on



the points available for questions that apply. This could be accomplished by having a ‘does not apply’ option for each question with a description of when it does not apply. While similar in concept to the “custom core criteria,” that approach does not address the fact that within one criteria there are often some questions that apply and others that do not.

- **Consider Several Levels of Economic Analysis based on Project Cost or Size -**  
The expense of meeting certain criteria may not be realistic for smaller planning projects. Staff felt that some of the studies required (particularly in the economic section) were very costly and were not justified for a project of this scale. Perhaps there should be several levels of economic analysis considered, based on the project cost or on the size of the area impacted.
- **Reconsider the Balance of Points allocated –**  
Some issues that are of high importance on Cape Cod and are identified as goals in Barnstable County’s Regional Policy Plan have very few points associated with them, while other issues that are of limited relevance to the region earn many points. Habitat protection, bicycle access and pedestrian accessibility are important to our region because of our significant natural resource areas and heavy tourist demand, yet they earn few points. The balance of points also does not seem to reflect the priorities of a transportation planning professional – a project can receive up to 2 points for pedestrian accommodations, up to 2 points for bicycle accommodations, but up to 7 for accommodating freight. The scoring should recognize the size or breadth of the pedestrian or bicycle facility so that a facility that serves a large area and makes numerous connections receives more points than one serving a small area.
- **Allow Points for Protecting Undesignated Resources –**  
The current scoring only recognizes the value of avoiding impacts to resources if those resources have specific designations. There are numerous important historic, scenic and natural resources that have not been formally designated because of limited funding or manpower to complete the designation process. Some points should be available for protecting documented resources even if they do not have national designations.
- **Measure the Quality of Improvements, Not Studies Completed –**  
Several sections grant points for completing studies, but the studies do not necessarily indicate improvements in that area. With this approach, the projects that are well-analyzed get high scores regardless of whether





they actually meet sustainability objectives or whether the project has a positive outcome in terms of increasing safety or reducing impacts. The safety section was the primary area of concern, but economic development and habitat sections had similar concerns.

- **Some areas Need more Depth –**  
There is a good breadth of questions, but the depth is lacking on some. Intermodalism is not adequately covered in any of the sections. There are some questions on pedestrian accommodations, bicycle accommodations, and transit, but very few and they do not provide much detail.
- **Focus more on Smart Growth Principles –**  
It would be beneficial to consider several other Smart Growth principles in the scoring, such as resiliency and sea-level rise in coastal areas, contextual design/community character, and greenfield versus brownfield siting. Redevelopment is looked at in the same way as new development, but one is better linked to the goals of the triple bottom line. There is also very little consideration of project context or need. Points should not be awarded for something that isn't needed or does not fit into the context or setting of the place. Consideration should be given to serving Environmental Justice populations.

## Specific Criteria Scoring Comments

- **PD-1 Economic Analysis:** As noted in the Overall Scoring Comments, these are very expensive and time consuming analyses that are not appropriate for small scale projects in small communities. At this scale, data often doesn't exist or is of poor quality.
- **PD-2 Life-cycle Cost Analysis:** As above, this seems to be too expensive and time consuming an effort for a small project.
- **PD-4 Highway and Traffic Safety:** The question regarding 'Incorporate Human Factors Consideration' is great, but the options for answers are not. The first option is unclear as to what "published design and operational performance standards" are being referenced, and it seems to imply that following them is not a positive project attribute. The second option requires that interactions be evaluated, documented, and incorporated. It is unclear what that exactly means. If road safety audits were conducted does that qualify the project to receive those points, or is it something beyond that?



- **PD-6 Tracking Environmental Commitments:** It would have been difficult to create an implementation plan at this stage of project development. This is a good idea, but implementation may be complicated by the fact that the project developer (in this case, government) may not be the entity that follows through. A good implementation plan would likely require input by both the regulating body and the contractor responsible for construction.
- **PD-7 Habitat Restoration:** There is no habitat in this project area to restore or preserve. Since the project takes place within the existing footprint of developed areas, there is also no enhancement of habitat. Projects could propose a larger footprint and then scale back in order to get a point or two, but that would not be useful, so it is an imperfect measure. Might be worth considering a point for a project that occurs entirely within the existing disturbed footprint.
- **PD-8 Stormwater:** Stormwater systems are traditionally sized for a design event (i.e. 25 or 50 year event) and not for a percentage of annual volume. This is important, as studies show that the “first flush” contains the majority of contaminants affecting water quality. The questions under Water Quality should be adjusted to reflect design events in lieu of overall volume since volume discussions are best suited for the Flow Control Section. In addition, focus should be on anticipated removal efficiencies and not solely on captured surface area, with an additional column in Table 1 to reflect the “Percentage Reduction Achieved for Desired Contaminant.” The study in question did not calculate peak flow or duration and rather focused on capturing a 24 hour – 25 year event, which does not work well with the provided Flow Control metrics. For stormwater Best Management Practices, the target pollutant column in Table 4 should address nutrients as well as pollutants and should include the following constituents: TSS, TPH-D, N, DIN, TzN and TP. Clarification regarding the type of Wetland – surface, sub-surface, natural or constructed – would also be helpful. Finally, combining Infiltration/LID in the final column of Table 4 is confusing as many aspects of LID do not infiltrate. Sub-headings to describe the three overarching categories of BMP treatment – Conventional, Manufactured (Proprietary), and Low Impact Design – would help to clarify this in Table 4 and Table 5.
- **PD-9 Ecological Connectivity:** This is a good idea but, as noted in PD-7, there is some concern that a proponent could propose a larger build initially in order to get credit for redesigning the project down to avoid or minimize impacts.



- **PD-11 Bicycle Access:** In the final sentence under Scoring Requirements, credit can be given for shared bicycle accommodation “under certain circumstances,” but those circumstances are not explained anywhere. There are times when a dedicated facility is inconsistent with the context and a shared use lane is more appropriate. The text should clarify whether this is the intent.
- **PD-14 ITS for Systems Operation:** The point structure in this section is well-organized. The ability to get points for each individual component included up to a maximum is much better than the sections where points build (like PD-13) and if you did not incorporate the first component you cannot get credit for later components. Some terms such as “advanced signal systems” are not defined and should be since this term can have many interpretations.
- **PD-15 Historical, Archaeological and Cultural Preservation:** Points should be awarded for preservation/protection of cultural resources that have not been listed on the National Register of Historic Places. Many resources will never be listed on the National Register because of cost or manpower issues, so points should be based on the assessed significance of cultural resources preserved --regardless of whether they have been designated.
- **PD-16 Scenic, Natural or Recreational Qualities:** As with the comment directly above, it should be possible to earn points for protecting areas that have designated regional or local significance, not just State or National Scenic Byways. In addition, a decision to avoid construction in significant resource areas in the initial project design goals should be looked upon favorably.
- **PD-18 Site Vegetation:** Requiring no mechanical maintenance to earn a point seems a little extreme. A point could be achieved for maintenance that requires once or twice annual mowing. Grey-water irrigation could be expanded to include stormwater “irrigation” – a different source of water to similar limited impacts.
- **PD-25 Construction Environmental Training:** This is a good idea, but implementation may be complicated by the fact that the project developer (in this case government) may not be the entity that follows through and trains the crews onsite. A good construction training program would require input by both the regulating body and the contractor responsible for construction.



## Lessons Learned (PD Module)

The public participation process should be more thoroughly documented and should include representative examples of the materials presented at public meetings and included on the project website.

In future studies, reports should better articulate the land-use planning decisions that guide the baseline design of the project, such as the consideration of greenfield vs. brownfield development, environmental justice, and context sensitive design, all of which are supported by the Cape Cod Regional Policy Plan. In this case, the decision to focus on the existing development center and look outward (rather than focus on highway exits) led to more context-sensitive and sustainable alternatives being considered. Similarly, the decision to require a raised median to address safety concerns was made prior to the analysis described in the report. Both of these decisions should have been included in the study to fully document the decision-making process in regards to environmental protection and safety.

In future studies, more detailed information on the appropriate design of stormwater, energy systems, lighting, freight accommodations, ITS and pavement materials should be included to guide project design in later phases and construction documents. The study contained no discussion of the project's lighting and energy needs, but it certainly could have and (perhaps) should have. Energy Efficiency is an area where the report could have earned the full 8 points available under by including an evaluation of the energy needs of the project from lighting (1 point); specifying lighting facilities and systems that reduce (or will reduce) the projected energy consumption of the project (1 – 6 points); establishing a plan to audit energy use after project completion (1 point).



Pavement reduction and reuse strategies also could have earned more points, including: pavement preservation (1-4 points); reduce pavement materials (1-3 points); bridge preservation (2-4 points); retrofitting bridges (1-3 points); repurpose pavement or structures (1-3 points); reuse industrial by-products (2-3 points). There was little to no discussion in the Hyannis Access Study regarding these pavement strategies, which would presumably be more detailed in an engineered, design and construction plan and not at this conceptual stage. However, goals toward pavement reduction and reuse that capture these requirements would



be an appropriate addition to the study and increase the likelihood of meeting these targets at a future design stage. While methods to recycle pavement and concrete, and measuring the quantities recycled, are more appropriate scoring metrics for projects at a later stage of design, goals and targets in the area of Recycled Materials can be set in the early stage of design to help ensure these criteria are met. Similarly, setting a goal to Reduce Energy and Emissions in Pavement Materials by specifying low energy materials could earn up to 3 points. This would be an appropriate goal for a project in the conceptual stage. It may also be possible to earn points for Construction Waste Management if the Commonwealth of Massachusetts requirements for C&D waste, including % of waste diverted from landfills, meet the INVEST standard. MassDOT should be consulted to better understand how the INVEST criteria relate to state law, and whether projects at this early stage in the design process could assume points because of existing statutory requirements.





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Cape Cod 2012  
Regional Transportation Plan  
2012-2035

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## System Planning Module (SP)

### Process:

The Cape Cod Commission compiled a team of 8 staff members with various backgrounds to evaluate the Cape Cod Regional Transportation Plan using the System Planning module of the INVEST tool.

### Staff team members:

Martha Hevenor, Planner, Bicycle and Pedestrian Coordinator,  
Title VI Coordinator  
Sarah Korjeff, Planner/Historic Preservation Specialist  
Lev Malakhoff, Senior Transportation Engineer  
Heather McElroy, Natural Resources Specialist  
Leslie Richardson, Economic Development Officer  
Sharon Rooney, Chief Planner  
James Sherrard, Hydrologist  
Steven Tupper, Technical Services Planner

Two or more members of the team were assigned to individually analyze and score each of the 17 categories in the System Planning module of INVEST. Staff members each assessed their categories and then met together in a workshop setting on May 6, 2014 to discuss the appropriate scoring and any comments they had on the process.

Representatives of Federal Highway (FHWA) and Massachusetts Department of Transportation (MassA DOT) attended the scoring workshop. Attendees were Heather Holtzinger (FHWA-HQ), Michael Chong (FHWA-MA), Eileen Gunn (MassA DOT-Sustainability), and Kevin Wright (FHWA-MA). In addition, Cape Cod Commission Technical Services Director Glenn Cannon and Planner Caroline Harper participated in the workshop.

### Project Scoring:

Staff entered the scores on-line, based on consensus reached at the workshop. This resulted in a System Planning score of 99 for the Cape Cod Long Range Transportation Plan, giving the plan a Silver rating.



The following is a breakdown of the scoring received in each category.

- SP-1: Integrated Planning: Economic Development and Land Use (9 out of 15 points)
- SP-2: Integrated Planning: Natural Environment (5 out of 15 points)
- SP-3: Integrated Planning: Social (2 out of 15 points)
- SP-4: Integrated Planning: Bonus (not eligible)
- SP-5: Access and Affordability (0 out of 15 points)
- SP-6: Safety Planning (11 out of 15 points)
- SP-7: Multimodal Transportation and Public Health (7 out of 15 points)
- SP-8: Freight and Goods Movement (6 out of 15 points)
- SP-9: Travel Demand Management (6 out of 15 points)
- SP-10: Air Quality (8 out of 15 points)
- SP-11: Energy and Fuels (6 out of 15 points)
- SP-12: Financial Sustainability (15 out of 15 points)
- SP-13: Analysis Methods (7 out of 15 points)
- SP-14: Transportation Systems Management and Operations (13 out of 15 points)
- SP-15: Linking Asset Management and Planning (0 out of 15 points)
- SP-16: Infrastructure Resiliency (4 out of 15 points)
- SP-17: Linking Planning and NEPA (0 out of 15 points)

The score falls on the low end of the range for a Silver rating, with clear shortfalls in criteria SP-3, SP-5, and SP-16. There is also room for a lot of improvement in criteria SP-1 and SP-2. These low scores were generally the result of insufficient programs or information in the plan. Other criteria, such as SP-15 and SP-17, scored poorly because they do not translate well to a planning agency like ours which does not have responsibility for implementing construction projects. If these two criteria were removed from consideration or re-worked to apply more specifically to planning agencies, the overall score would presumably have been higher.

In general, we think that the result is a fair score given the shortfalls we identified. The issues and deficiencies that INVEST highlighted are consistent with those identified in our most recent Federal Highway certification review, especially in the areas of Title VI, resiliency and quantification measures. With increased attention to these areas, we believe the next Cape Cod Regional Transportation Plan can score much higher.





## Scoring Comments on the System Planning Module

Our comments are broken down into overall comments and criteria-specific comments or observations. The memo also includes a summary of changes we intend to make to the Regional Transportation Plan (RTP) based on our discussions during the INVEST evaluation.

### Overall Scoring Comments

- One of the most difficult aspects of scoring was determining whether to credit work done by the agency that is not clearly reflected in the Regional Transportation Plan (RTP). For example, if the RTP references the agency's regional land use plan but does not cite the specific policies, can they be considered? Similarly, if the agency provides technical assistance to towns that is not acknowledged in the RTP, can those projects be considered in the scoring? We assumed that the RTP would need to include the policies and analysis from the land use plan, as well as a narrative description of technical assistance projects for them to be considered, but additional guidance would be helpful.
- Unlike in the Project Development Module, several important resource areas are not specifically mentioned in the System Planning criteria (ie. no mention of historic resources, and no breakdown of specific natural resource types). Instead, all resources seem to fall into the broader category of Land Use, which leaves a lot of doors wide open. Unless projects are expected to go through both modules in their evaluation, it seems that the various resources should be addressed in both modules, and especially in the over-arching System Planning level. Relatedly, there should be a requirement in the Land Use section to identify any unique aspects of the planning region – such as coastal issues, tourism loads, environmental sensitivity, etc. – and address them.
- There are several sections (ie. SP-10, SP-15, SP-17) where points are earned for implementation or construction of projects, so they are not geared toward planning agencies like ours. These sections might be expanded to include criteria that planning agencies can apply, such as adoption of appropriate policies and improved coordination with state agencies responsible for implementation. This might address the question of how to carry forward sustainability recommendations to the agency that

does the implementation.

- There was some confusion about how to use the “scoring sources” at the end of each section. Not sure why they are at the end, and not included at the front with background for scoring requirements. This could be better clarified.
- You might want to evaluate some of the other Sustainability Indicator tools that are available, such as the Institute for Sustainable Infrastructure’s “Envision” tool. This tool is broader and might be a comparable measure. It would be helpful if these sustainability tools were consistent to avoid having many different measures to apply to different programs.

## Specific INVEST Criteria Scoring Comments

### SP-1: Land Use and Economic Development

- This criterion is difficult to score without knowing what is meant by “current requirements.” The federal perspective on this should be clarified, as states may have very different measures.
- Some specific resource criteria that were acknowledged in the Project Development section were missing from this section, perhaps due to concern about having too many criteria. If this is to form the basis for future planning, those issues should at least be presented here. Perhaps certain issue areas should be included based on the setting of the region, acknowledging the presence or absence of natural resources and heritage issues.

### SP-2: Natural Environment

- Under Sustainable Outcomes, we’re not sure measuring number of transportation projects that affect natural resources beneficially is realistic. Typically these projects are initiated in an effort to reach other goals – but it might be worth measuring those transportation improvements that are designed to solve transportation and environmental goals at the same time.
- It would be helpful to show examples of projects that enhance natural resources, so we have some ideas to go on. Note that getting people off the road and into alternate modes could be measured as a benefit for natural resources.
- Under develop and adopt Goals & Objectives, it may be more appropriate to earn an additional point for ‘surpassing’ requirements, not



for being ‘consistent,’ as that is already earning the base points.

#### SP-3: Social

- Difficult to score the first part because it is all or nothing. Perhaps there should be an option to earn 1 point for adopting shared community visions, but 2 points for linking them to sustainability goals or other measures that directly relate to transportation planning.
- The Sustainable Outcomes criterion should be changed so there is an option that is more applicable to planning agencies, since they are rarely involved in ‘implementation’/construction of investments.

#### SP-4: Integrated Planning: Bonus

We didn’t score high enough in previous sections to merit this bonus section. Not sure if an extra section is warranted for agencies that have already shown success with integrated planning in the first three sections.

#### SP-5: Access and Affordability

- As with some other sections, we seemed to want to give partial credit for some of these questions but that was not an option. Lev One of the scores scored one point for each of the three sections, due to use of census and geospatial data, as well as traffic counts and travel time studies, but the lowest amount allowed in each section was 2 or 3 points. We had some of the things required in each category, but not everything requested -- might have earned 2 or 3 points here for partial performance if allowed.

#### SP-6: Safety Planning

- Toward Zero Death Vision is a good goal, but it may be more appropriate to have an attainable step along the way. Perhaps other safety goals could be deemed an equivalent effort.
- Regarding, Statistically Sound Approaches to determine Safety Performance, it would help to be more specific about the use of models and the goals of these models.
- We felt that points should be awarded for taking concrete actions that improve safety not just for performing specific types of analysis.

#### SP-7: Multimodal Transportation and Public Health

- We address this section not just for the public health aspects, but also as a means of meeting environmental goals, limiting the need for roadway expansion in tourist season, and providing recreational and tourism opportunities. These reasons for pursuing multi-modal activity should be just as valid.



- Develop System Wide Plan. We have not evaluated health impacts of active mode planning, though our efforts are thorough in this area. Perhaps points should be available if work has been done, regardless of whether health impacts have been evaluated. We don't measure progress toward health goals, so can't earn many points here. As above, points should be for work accomplished, not whether you've measured the impacts.
- As in Section SP-3, perhaps change the criterion to a measure appropriate for a planning agency that does not typically 'implement transportation investments that expand travel choices and modal options.'

#### SP-8: Freight and Goods Movement

- There is a strange comparison of this section to SP-5 access/affordability – not sure why they are linked, so perhaps some sort of explanation should be included.

#### SP-9: Travel Demand Management

- Tough to get any credit if quantifiable goals are not in place – maybe should make allowance for work being accomplished even if no specific goal has been adopted.

#### SP-10: Air Quality

- Many of the strategies to reduce emissions are not appropriate for an organization of our type, so difficult to score well. We could note support for the listed strategies in the RTP even if we would not be the appropriate organization to implement them.
- Note disagreement with one of the implementation strategies for addressing air quality – through paving unpaved roads. This is at odds with some of the character goals for our region and seems to have limited applicability. We treasure our remaining unpaved roads for their character and speed limitations.

#### SP-11: Energy and Fuels

- Unsure how fuel consumption might be tracked – are there good sources of data to support tracking fuel use? While well intentioned, this criterion seems difficult to measure in a meaningful way (ie. the data may not be sensitive enough to reflect current conditions.) Any good data or examples for inclusion in the INVEST info? Perhaps methods like tracking public transit use and carpooling would be effective also.

#### SP-15: Linking Asset Management and Planning

- Asset management seems to be limited to pavement manage-



ment, which is not something our agency is responsible for. No credit is available for the limited work we are responsible for, such as planning to extend bike corridors or expand transit service. Consider establishing separate criteria that recognizes the work of planning agencies to support these goals?

- Analyses required under Incorporate Asset management Data and Economic Analysis to Prioritize Investments do not seem appropriate for our type of agency responsibilities (this is similar to comments we made about analyses required to earn points in the PD module). This section is not geared to a planning agency, and the way the questions are structured we can't get credit for the work that we do in this area.

#### SP-16: Infrastructure Resiliency

- This section is a fair way of assessing how well an agency is thinking about and acting on the resiliency of its infrastructure.
- Under Vulnerability Assessment, it may be more appropriate to offer 4 points for assessment of “significant” or “highest priority” facilities, rather than “all” facilities.

#### SP-17: Linking Planning and NEPA

- We would have to get a score of zero for this criterion based literally on the measures. This criterion is well-intentioned – planning should be coordinated with regulatory requirements to improve efficiency of the regulatory review process and implementation of projects. However, the Cape Cod MPO rarely, if ever, proposes a project that requires NEPA review. When projects of this scale have been proposed, they have come from outside of the MPO/RTP planning process (politically-generated projects), and there has been little MPO control of the planning of the project.
- This criterion could be restructured to reflect a broader evaluation of planning/regulatory coordination. For Cape Cod-scale projects, MEPA review is sometimes required, but most frequently local regulators are the only reviewers. Engaging the regulatory community early in the planning phase of projects should be encouraged through this criterion. The current structure for awarding points makes sense: evidence of written procedures (such as MOUs for coordination?), consultation with regulatory staff, and incorporation of agency feedback into project design. The important point is to do the environmental work first to achieve the efficiencies – agencies should do pre-screening in the planning phase, whether MEPA or NEPA are triggered or not.



## Lessons Learned and RTP Improvements Planned

### Comments on RTP in response to SP-1: Land Use and Economic Development

- The Regional Transportation Plan falls short in this section because it doesn't demonstrate and document sustainability measures. Also, we don't monitor progress toward objectives. These elements should be improved in the next version. Consider including the Regional Policy Plan performance standards, as well as goals, in the RTP. Include targets and performance measures, and find a way to monitor/show progress toward objectives. FHWA-MA representative (Michael Chong) noted that performance measures will be coming at the State level too. Consider how that would affect the TIP – perhaps require TIP projects to conform with RPP standards too? This would provide better evidence of integrating economic/land use goals and better demonstrate how best practices were used.
- The goals and objectives of our agency are clearly explained in the Regional Policy Plan, but not well enumerated in the RTP. Land use goals and actions should be explained or justified in the RTP, and better integrated with transportation goals. Section 1.7.3 (page 43) should be more directed to transportation impacts on land use and future land use goals. Section 1.7.3.3 is too general to guide decision making. Incorporating acreage amounts or percentages would be more useful.
- May need to better explain Direct Local Technical Assistance (DLTA) work, various studies, and other Technical Assistance projects to demonstrate linkages between land use, economic development and transportation efforts.

### Comments on RTP in response to SP-2: Natural Environment

- RTP really doesn't include environmental resource details (besides mention of LUVM), but can reference RPP for that; a discussion of the effort to get cars off the road into alternate modes might yield an interesting analysis or ideas.
- There was disagreement on whether we adequately engage environmental interests in transportation planning. We have no institutional mechanism for consultation with natural resource agencies, unless the project otherwise triggers Cape Cod Commission review. We could do much better here and should consider using a standing technical advisory



committee of in-house and outside environmental interests for the next RTP update. Climate change or land protection angle could get them interested, perhaps related to congestion mitigation. Possibly put that committee of environmental stakeholders into the RPP planning goals or onto the MPO to better integrate them.

- Think about how transportation projects could specifically help the environment, like standards for stormwater design, and a goal to make improvements to culvert openings. Need to document sustainable outcomes/successes to support future efforts.

Comments on RTP in response to SP-3: Social

- The RPP provides a shared vision for the region, and we use LCPs to understand finer scaled community visions, but these are not well described in the discussion of projects, and the social implications could be much better expressed in the RTP. RTP includes sustainability goals, but there's no evidence the community had any role in adopting them. No process for getting to the goals was provided.
- We engage a variety of stakeholders, but we are better at it with some projects than with others. The current RTP does not address low-income and minority populations, but there are plans to improve upon this. The agency is currently developing its Title VI program, which will ensure that it gives special attention to the engagement of low-income, minority, and limited English proficient individuals. RTP has a vague section entitled "Environmental Justice" that lacks demonstration of special outreach practices to identify the needs of the underserved populations. A new Public Participation Plan under development will be an important step towards meeting this criterion. Not sure whether there is an education component to help people understand the transportation planning process (which is complicated!). RTP could incorporate more about stakeholder identification and inclusion from RPP.
- Transparent Process. Process follows MPS and JTC meetings, : howeverHOWEVER, for those projects that are not created through the membership of these committees, there is no obvious process and no explanation for how projects were identified (ie. some bike projects). We need to provide performance measures to assess the effectiveness of the community involvement process.

Comments on RTP in response to SP-5: Access and Affordability

- While the RTP includes a discussion of accessibility and specific populations groups or areas where access is an issue, it appears to lack the analysis piece. The new efforts to address this issue will get close to full points. We need to document these efforts, include analysis, and to have



more aggressive outreach. Consider having RTA staff address affordability questions and put an affordability component into the TIP evaluation. Note that affordable housing mitigation in RPP has a link to this section.

#### Comments on RTP in response to SP-6: Safety Planning

- The plan started scoring much better here. This section was quite well done and well documented under the safety goal and safety chapter of the RTP. This section corresponds well with Chapter 3 of RTP. Only use of advanced quantitative methods was lacking. These methods could be considered going forward, but are staff intensive, so may not be justifiable. No linkages to advanced data sets are available to us – would like to make linkages to medical and other advanced data sets, but do not currently have access. Some additional documentation could be helpful and more advanced analysis would be useful, but time intensive.

#### Comments on RTP in response to SP-7: Multimodal Transportation and Public Health

- Public health hasn't been a focus of our efforts – it seems a bit 'outside our realm' though there is no reason why it can't be considered a one of the factors that is considered important. The fact is that we want the same results. Maybe someone else helps with the promotion. Again, we seem to mostly be missing performance measures when considering points for this section. Good job engaging active mode stakeholders, less so with public health stakeholders. This is a new discussion for us, since public health has not been a focus for us. It could become one of several factors to support multimodal transportation.

#### Comments on RTP in response to SP-8: Freight and Goods Movement

- We are now undertaking freight studies in the UPWP. We meet with steamship authority as needed. We need to develop performance measures to get full points for this section. Current UPWP and Chapter 2 of Regional Transportation Plan address this issue area.

#### Comments on RTP in response to SP-9: Travel Demand Management

- We've done work in this area, but need to take a step further and add a quantifiable goal to the RTP to reduce Vehicle miles traveled (VMTs). Perhaps explicitly include the RPP goal to shift to other modes by 25%. RPP initiatives should be detailed and expanded upon in the RTP. Good TDM required of projects in regulatory review, encouraged and advertised network-wide, but no quantifiable goals.
- As with some previous sections, we are missing points because we are not set up for monitoring progress toward the specific goals. Can par-





tially document progress in trip reduction of specific projects - ones that our agency has reviewed and conditioned, but not for region as a whole. [Eileen Gunn offered to help facilitate ways to improve monitoring.] It would be useful to illustrate progress toward the goals on the Commission's smart transportation page.

#### Comments on RTP in response to SP-10: Air Quality

- Land use strategies implemented through the RTP, but only analysis of potential transportation improvement projects is conducted. Additional analysis could be conducted.

#### Comments on RTP in response to SP-14: Transportation Systems Management and Operations

- A lot of progress on this since last Regional Transportation Plan. More goals could be added and continued progress towards existing and new goals should be documented. Missing documentation of progress toward meeting goals.

#### Comments on RTP in response to SP-15: Linking Asset Management and Planning

- Overall, the RTP should have greater emphasis on asset management to the extent that analyses require a level of effort that is appropriate to the project.

#### Comments on RTP in response to SP-16: Infrastructure Resiliency

- We have begun the process of hazard identification and vulnerability assessment, but need to continue working in this area and include our recent work in the RTP.

### Next Steps:

The evaluation process was definitely helpful and has encouraged us to make numerous improvements. We will be updating the Cape Cod Regional Transportation Plan in the next calendar year and will be including several new or expanded sections based on lessons learned through the INVEST scoring process and based on the recent FHWA Certification Review.



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