



I-293 Exit 6 & 7 (Part B)

Technical Advisory Committee (TAC)
May 18, 2016

INVEST Sustainability Scoring Workshop

New Hampshire
DOT
Department of Transportation



INVEST SUSTAINABILITY TOOL

WHAT IS INVEST?

FHWA'S **INVEST** (Infrastructure **V**oluntary **E**valuation **S**ustainability **T**ool) is self-evaluation tool comprised of voluntary sustainability best practices, which cover the full lifecycle of transportation services, including system planning, project planning, design, and construction, and continuing through operations and maintenance.

FHWA developed INVEST for voluntary use by transportation agencies to access and enhance the sustainability of their projects and programs.

INVEST PROJECT DEVELOPMENT SCORE CARD

52 points for Bronze
69 points for Silver
86 points for Gold
103 points for Platinum

PD-01 Economic Analyses

PD-02 Lifecycle Cost Analyses

PD-03 Context Sensitive Project Development

PD-04 Highway and Traffic Safety

PD-05 Educational Outreach

PD-06 Tracking Environmental Commitments

PD-07 Habitat Restoration

PD-08 Stormwater Quality and Flow Control

PD-09 Ecological Connectivity

PD-10 Pedestrian Facilities

PD-11 Bicycle Facilities

PD-12 Transit and HOV Facilities

PD-13 Freight Mobility

PD-14 ITS for System Operations

PD-15 Historic, Archaeological, and Cultural Preservation

PD-16 Scenic, Natural, or Recreational Qualities

PD-17 Energy Efficiency

PD-18 Site Vegetation, Maintenance and Irrigation

PD-19 Reduce, Reuse and Repurpose Materials

PD-20 Recycle Materials

PD-21 Earthwork Balance

PD-22 Long-Life Pavement

PD-23 Reduced Energy and Emissions in Pavement Materials

PD-24 Permeable Pavement

PD-25 Construction Environmental Training

PD-26 Construction Equipment Emission Reduction

PD-27 Construction Noise Mitigation

PD-28 Construction Quality Control Plan

PD-29 Construction Waste Management

PD-30 Low Impact Development

PD-31 Infrastructure Resiliency Planning and Design

PD-32 Light Pollution

PD-33 Noise Abatement

INVEST TAC WORKSHOP

May 18th TAC Meeting

- Breakout groups to review and discuss initial scoring
- Identify opportunities to enhance project sustainability
 - As we proceed through Environmental Assessment (EA)
 - Final Design, Construction, or Operations and Maintenance
 - Consider for Future Projects

End of Project TAC Meeting

- Breakout groups to rescore project
 - Did we make progress during EA?
- Identify opportunities to enhance project sustainability during final design and construction (Part C) or during operations and maintenance

Today's Agenda

- 1:00 to 1:15 pm - Intro/Instructions
- 1:15 to 2:30 pm - Workshop
- 2:30 to 3:00 pm - Wrap-up

Sample Question

PD-03 Context Sensitive Project Development

Deliver projects that harmonize transportation requirements and community values through effective decision-making and thoughtful design.

PD-03.1 Did the project development process generally follow the six-step CSS framework described in NCHRP report 480 and NCHRP report 642, or an equivalent process? (2 Points) [Yes]

1. Develop a decision-making process and management structure;
2. Define the problem;
3. Develop the project and the evaluation framework for the project;
4. Determine alternatives;
5. Screen the alternatives; and
6. Evaluate and select an alternative

A public involvement process does not necessarily meet this criterion unless the public and other stakeholders are engaged in two-way communications that ultimately influence the vision and design of the project

PD-03.2 Did the project development process feature a "cradle-to-grave" project team that included planners, traffic engineers, public involvement specialists, design engineers, environmental experts, safety specialists, landscape architects, right-of-way staff, freight experts, construction engineers, and others to work on projects who worked together to achieve the desired CSS-based vision for the project? (1 point) [Yes]

PD-03.3 As a result of CSS-influenced project development process, were external "champions" for the project created in the affected community who were engaged and proactive in supporting it? (1 Point) [Likely Yes]

INVEST PROJECT DEVELOPMENT SCORE CARD

52 points for Bronze
69 points for Silver
86 points for Gold
103 points for Platinum

PD-01 Economic Analyses

PD-02 Lifecycle Cost Analyses

PD-03 Context Sensitive Project Development

PD-04 Highway and Traffic Safety

PD-05 Educational Outreach

PD-06 Tracking Environmental Commitments

PD-07 Habitat Restoration

PD-08 Stormwater Quality and Flow Control

PD-09 Ecological Connectivity

PD-10 Pedestrian Facilities

PD-11 Bicycle Facilities

PD-12 Transit and HOV Facilities

PD-13 Freight Mobility

PD-14 ITS for System Operations

PD-15 Historic, Archaeological, and Cultural Preservation

PD-16 Scenic, Natural, or Recreational Qualities

PD-17 Energy Efficiency

PD-18 Site Vegetation, Maintenance and Irrigation

PD-19 Reduce, Reuse and Repurpose Materials

PD-20 Recycle Materials

PD-21 Earthwork Balance

PD-22 Long-Life Pavement

PD-23 Reduced Energy and Emissions in Pavement Materials

PD-24 Permeable Pavement

PD-25 Construction Environmental Training

PD-26 Construction Equipment Emission Reduction

PD-27 Construction Noise Mitigation

PD-28 Construction Quality Control Plan

PD-29 Construction Waste Management

PD-30 Low Impact Development

PD-31 Infrastructure Resiliency Planning and Design

PD-32 Light Pollution

PD-33 Noise Abatement

PD-01 Economic Analyses

Using the principles of benefit-cost analysis (BCA) or economic impact analysis (EIA), provide evidence that the benefits, including environmental, economic, and social benefits, justify the full life-cycle costs.

PD-01.1a Was a benefit-cost analysis (BCA) for the project completed using minimum acceptable industry practices? (2 Points)

A BCA for the project must be completed using acceptable industry practices. The U.S. DOT provides guidance for developing a BCA within the [Tiger BCA Resource Guide](#)². In addition, FHWA has developed a project-level BCA tool called [BCA.net](#)³, which is a web-based BCA tool designed to support the highway project decision-making process

PD-01.1b Was an Economic Impact Analysis (EIA) completed that meets all the listed requirements? (3 Points)

Perform an EIA, which includes the following (if relevant):

- Quantification of benefits, including social, environmental, and economic factors; and
- Quantification of impacts to regions, land values, and businesses.

PD-02 Lifecycle Cost Analyses

Reduce life-cycle costs and resource consumption through the informed use of life-cycle cost analyses of key project features during the decision-making process for the project.

PD-02.1a Was an LCCA performed for all pavement structure alternatives in accordance with the method described in the FHWA's Technical Bulletin for Life-Cycle Cost Analysis? (1 Point) [Design Phase]

PD-02.1b Was an LCCA performed for all storm water infrastructure alternatives considered? (1 Point) [Design Phase]

PD-02.1c Was an LCCA performed for the project's major feature (bridges, tunnels, retaining walls, or other items not listed in the preceding options) for each of the alternatives considered? (1 Point) [Design Phase]

PD-03 Context Sensitive Project Development

Deliver projects that harmonize transportation requirements and community values through effective decision-making and thoughtful design.

PD-03.1 Did the project development process generally follow the six-step CSS framework described in NCHRP report 480 and NCHRP report 642, or an equivalent process? (2 Points) [Yes]

1. Develop a decision-making process and management structure;
2. Define the problem;
3. Develop the project and the evaluation framework for the project;
4. Determine alternatives;
5. Screen the alternatives; and
6. Evaluate and select an alternative

A public involvement process does not necessarily meet this criterion unless the public and other stakeholders are engaged in two-way communications that ultimately influence the vision and design of the project

PD-03.2 Did the project development process feature a "cradle-to-grave" project team that included planners, traffic engineers, public involvement specialists, design engineers, environmental experts, safety specialists, landscape architects, right-of-way staff, freight experts, construction engineers, and others to work on projects who worked together to achieve the desired CSS-based vision for the project? (1 point) [Yes]

PD-03.3 As a result of CSS-influenced project development process, were external "champions" for the project created in the affected community who were engaged and proactive in supporting it? (1 Point) [Likely Yes]

PD-03 Context Sensitive Project Development - continued

PD-03.4 Was acceptance achieved among project stakeholders on the problems, opportunities, and needs that the project should address and the resulting vision or goals for addressing them? (1 Point)

[Criteria confusing – talks about use of visualization tools]

PD-03.5 Do project features consider the appropriate scale of the project? (1 Point)

PD-03.6 Did the project remove objectionable or distracting views? (1 Point) **[Design Phase]**

PD-03.7 Did the project integrate context sensitive aesthetic treatments? (1 Point) **[Design Phase]**

PD-03.8 Were aesthetics for structural items incorporated into the design of the project? (1 Point) **[Design Phase]**

PD-04 Highway and Traffic Safety

Safeguard human health by incorporating science-based quantitative safety analysis processes within project development that will reduce serious injuries and fatalities within the project footprint.

PD-04.1 Were human factors considerations incorporated? (2 Points) [Design Phase]

- Signage, changeable message signs
- Pavement markings
- Lighting (headlight glare)

PD-04.2 Was awareness built among the public regarding contributing factors to crashes? (1 Point)

[This can be done]

PD-04.3 Does the agency conduct explicit consideration of safety using quantitative, scientifically proven methods? (0 to 6 Points) [See next slide] *No credit is given for using design and operational performance standards and guidelines to assess nominal safety of the project throughout the project development process*

PD-04.4 Was a statistically reliable, science-based method used to evaluate the safety effectiveness of the implemented project? (1 Point)

No credit is given for using design and operational performance standards and guidelines to assess nominal safety of the project throughout the project development process

Requirement PD-04.3a

1 point. Establish the Project Type as Defined in the HSM

Establish the project type, as defined in the HSM, during scoping of project alternatives through a quantitative and statistically reliable process. This process includes consideration of historic safety performance of the existing facility or similar facilities.

Requirement PD-04.3b

2 points. Develop and Evaluate the Project Design and/or Operational Alternatives

Develop and evaluate project design and/or operational alternatives using explicit consideration of substantive safety through quantitative, statistically reliable methods.

Requirement PD-04.3c

3 points. Use Quantitative and Statistically Reliable Methods and Knowledge [Design Phase]

Use quantitative and statistically reliable methods and knowledge to assess substantive safety performance in the development of preliminary and final design details. Where a project includes design exceptions, evaluate the safety impact of the design exception(s) with these methods, and identify potential mitigating actions to improve safety performance. Note: if the project has no design exceptions, the agency can earn 3 points by documenting that their policies and processes for evaluation and documentation of design exceptions incorporate substantive safety principles described above.

PD-05 Educational Outreach

Increase public, agency, and stakeholder awareness of the integration of the principles of sustainability into roadway planning, design, and construction.

PD-05.1 Did this project incorporate public educational outreach that promotes and educates the public about sustainability by installing or performing a minimum of two different elements from Table PD-05.1.A? (2 Points) [This can be done]

TABLE PD-05.1.A REQUIREMENTS FOR EDUCATIONAL ELEMENTS

Requirement	Educational Element	Recommended Requirements
PD-05.1a	Include sustainability in a Project Development Process	Specifically include sustainability as a consideration in a project development process that harmonizes transportation requirements and community values through effective decision-making and thoughtful design. Examples of this type of development process include complete streets, context sensitive solutions, neighborhood-aware design, and similar.
PD-05.1b	Include sustainability in Public Involvement	Specifically include sustainability education and promotion of sustainability as a project element throughout the public involvement process for the project.
PD-05.1c	Install point-of-interest	Install and maintain off-road point-of-interest kiosk(s) that display(s) information about the project and its sustainability features, as appropriate.
PD-05.1d	Project website	Provide a publicly available and maintained informational project website with capacity for submitting feedback and comments.
PD-05.1e	Stakeholder guide	Include sustainability and how it is being applied to the project in agency and/or stakeholder guide, specification, or policies, as appropriate.
PD-05.1f	School presentations	Perform presentation(s) about the project and its sustainability features for primary and secondary schools.
PD-05.1g	Professional presentations	Perform professional technical presentation(s) about the project and its sustainability features.

PD-06 Tracking Environmental Commitments

Ensure that environmental commitments made by the project are completed and documented in accordance with all applicable laws, regulations, and issued permits.

PD-06.1a Was a comprehensive environmental compliance tracking system used for the project and related facilities? (2 Points) [Does NHDOT have this in place now?]

The environmental compliance tracking system has a formal mechanism to communicate commitments from transportation planning through operations and maintenance. To earn credit, this ECTS must be used on this project from planning through construction and handed off to maintenance and operations.

PD-06.2 Has the principal project constructor assigned an independent environmental compliance monitor who will provide quality assurance services and report directly to and make recommendations to the regulatory and Lead Agencies? (2 Points) [Does NHDOT have this in place now?]

The Owner shall require that the principal project constructor assigns an independent environmental compliance monitor who will provide quality assurance services and report directly to and make recommendations to the regulatory and Lead Agencies. The Independent Environmental Monitor should be a recognized expert or persons knowledgeable about natural resources protection and construction, and should report directly to regulatory agencies about problems observed during design review and construction phases, including, but not limited to, erosion and sediment control problems.

PD-07 Habitat Restoration

Avoid, minimize, rectify, reduce, and compensate the loss and alteration of natural (stream and terrestrial) habitat caused by project construction and/or restore, preserve, and protect natural habitat beyond regulatory requirements.

PD-07.1 Was project-specific mitigation or mitigation banking used on this project? Use Table PD-07.1.A to determine the points earned. (0 to 3 Points) [Can score after NEPA phase]

TABLE PD-07.1.A. POINTS AND REQUIREMENTS FOR HABITAT RESTORATION

Requirement	Points	Method
PD-07.1a	1	Minimize Impacts to Habitat. Show that an effort has been made to modify the alignment and/or project cross-sections to significantly minimize impacts to habitat as compared to a traditional alternative and above and beyond what was required by regulations. To qualify, the area of impact must be reduced by 50% or more as compared to the traditional alternative.
PD-07.1b	2	Avoid or Eliminate Impacts to Habitat. Show that an effort has been made to modify the alignment and/or project cross-sections to significantly avoid impacts to habitat as compared to a traditional alternative and above and beyond what was required by regulations. To qualify, the area of impact must be reduced by 75% or more as compared to the traditional alternative. Alternatively, the project can eliminate the impacts to habitat as part of the project.
PD-07.1c	2	Relocate Species. For project required to mitigate habitat impacts through relocation, selectively relocate impacted species prior to construction where doing so has been documented in surveys, to prevent loss of species.
PD-07.1d	3	Rectify or Compensate Habitat Features. For projects required to mitigate habitat impacts through restorative practices, implement a restoration/preservation approach that restores and/or preserves an upland buffer area surrounding the required stream or wetland mitigation site. The amount of buffer must be an appropriate amount so it improves the habitat quality of the wetland or stream it is protecting.
PD-07.1e	3	Rectify or Compensate Habitat Features. For projects not required to mitigate habitat impacts, implement a habitat restoration effort that mitigates for the habitat of non-listed, Candidate species under the Federal Endangered Species Act (see the Federal Register's Recovery Crediting Guidance ¹). For example, provide nesting locations for birds or other wildlife.

PD-07.2 Were high quality aquatic resources (HQAR) avoided or were the impacts minimized on this project?
Use Table PD-07.2.A to determine the points earned. (0 to 2 Points) [Can score after NEPA phase]

TABLE PD-07.2.A. POINTS AND REQUIREMENTS FOR HABITAT RESTORATION

Requirement	Points	Method
PD-07.2a	1	Minimize Impacts to HQAR. Completely avoid HQAR as defined by the US Army Corp of Engineers <u>and</u> provide a buffer less than 100-feet.
PD-07.2b	2	Avoid Impacts to HQAR. Completely avoid HQAR as defined by the US Army Corp of Engineers <u>and</u> provide a buffer of at least 100-feet.

PD-07.3 Were high quality environmental resources avoided or were the impacts minimized on this project? Use Table PD-07.3.A to determine the points earned. [Can score after NEPA phase]

TABLE PD-07.3.A. POINTS AND REQUIREMENTS FOR HABITAT RESTORATION

Requirement	Points	Method
PD-07.3a	1	Minimize Impacts to High Quality Environmental Resources. Show that an effort has been made to modify the alignment and/or project cross-sections to significantly minimize the impacts to high quality environmental resources, such as sites with threatened or endangered species, as compared to a traditional alternative and above and beyond what was required by regulations. To qualify, the area of impact must be reduced by 50% or more as compared to the traditional alternative. Potential methods of avoidance include the use of retaining wall, berms, plantings, and reducing right of way footprint.
PD-07.3b	2	Avoid Impacts to High Quality Environmental Resources. Show that an effort has been made to modify the alignment and/or project cross-sections to significantly minimize the impacts to high quality environmental resources, such as sites with threatened or endangered species, as compared to a traditional alternative and above and beyond what was required by regulations. To qualify, the area of impact must be reduced by 75% or more as compared to the traditional alternative. Potential methods of avoidance include re-routing of the alignment, using retaining wall to minimize right of way takes, or bridging of the resource.

PD-08 Storm water Quality and Flow Control

Improve storm water quality from the impacts of the project and control flow to minimize their erosive effects on receiving water bodies and related water resources, using management methods and practices that reduce the impacts associated with development and redevelopment.

PD-08.1 Did the project treat at least 80% of the total runoff volume? Use Tables PD-08.1.A and PD-08.1.B to determine points. (0 to 3 points) [Design Phase]

TABLE PD-08.1.A. RETROFIT PROJECTS – CALCULATING EQUIVALENT TARGET IMPERVIOUS SURFACE AREA

Existing Impervious on Project (acres)	% of Existing Impervious Area Treated	Equivalent Target Impervious Surface Area Treated (% of Added)
0–1.0	0–50%	101%–125%
	50.1%–100%	>125%
1.1–5.0	0–40%	101%–125%
	40.1%–100%	>125%
5.1–10.0	0–30%	101%–125%
	30.1%–100%	>125%
>10.0	0–20%	101%–125%
	20.1%–100%	>125%

TABLE PD-08.1.B. POINTS EARNED FOR WATER QUALITY TREATMENT

(Step 1) Amount of Runoff Treated (% of Annual Volume)	(Step 2) Target Pollutant	(Step 3) Target Imp. Surface Area Treated (% of Added)	Step (4) Points Earned
80–89%	Sediment	101%–125%	0
		>125%	1
	Sediment, and Metals or Other ¹	101%–125%	1
		>125%	2
90% +	Sediment	101%–125%	1
		>125%	2
	Sediment, and Metals or Other ¹	101%–125%	2
		>125%	3

PD-08.2 Did the project manage the flow from at least 80 percent of the total runoff volume, and is flow control based on controlling peak flows or durations from the project site? Use Tables PD-08.2.A and PD-08.1.B to determine points. (0 to 3 Points) [Design Phase]

TABLE PD-08.2.A. RETROFIT PROJECTS – CALCULATING EQUIVALENT TARGET IMPERVIOUS SURFACE AREA

Existing Impervious on Project	% of Existing Impervious Area Managed	Equivalent Target Impervious Surface Area Managed
0–1.0	0–50%	101%–125%
	50.1%–100%	>125%
1.1–5.0	0–40%	101%–125%
	40.1%–100%	>125%
5.1–10.0	0–30%	101%–125%
	30.1%–100%	>125%
>10.0	0–20%	101%–125%
	20.1%–100%	>125%

TABLE PD-08.2.B. POINTS EARNED FOR FLOW CONTROL MANAGED

(Step 5)	(Step 6)	(Step 7)	(Step 8)
Amount of Runoff Managed (% of Total Volume)	Flow Control Standard Used	Target Imp. Surface Area Managed	Points
80–89%	Peak Rate	101%–125%	0
		>125%	1
	Flow Durations	101%–125%	1
		>125%	2
90% +	Peak Rate	101%–125%	1
		>125%	2
	Flow Durations	101%–125%	2
		>125%	3

PD-09 Ecological Connectivity

Avoid, minimize, or enhance wildlife, amphibian, and aquatic species passage access, and mobility, and reduce vehicle-wildlife collisions and related accidents.

PD-09.1P Was a site-specific ecological assessment of the roadway project using GIS data or regional expertise conducted? (0 to 3 Points) [Can score after NEPA phase]

TABLE PD-09.1.A. POINTS AND METHODS TO MINIMIZE IMPACTS TO AND ECOLOGICAL CONNECTIVITY

Requirement	Points	Method
PD-09.1a	1	Minimize Impacts. Show that an effort has been made to modify the alignment and/or project cross-sections to significantly minimize impacts to ecological connectivity as compared to a traditional alternative and above and beyond what was required by regulations. To qualify, the area of impact must be reduced by 50%
PD-09.1b	2	Avoid Impacts. Show that an effort has been made to modify the alignment and/or project cross-sections to significantly avoid impacts to ecological connectivity as compared to a traditional alternative and above and beyond what was required by regulations. To qualify, the area of impact must be reduced by 75% or more as
PD-09.1c	2	Enhance features. For existing alignments only. Replace in-kind, retrofit, or upgrade any and all existing culverts and wildlife fencing structures or planting deemed structurally deficient, damaged, obsolete, insufficiently sized, or otherwise inadequate. Actions must be approved by the project ecologist, resource/regulatory
PD-09.1d	3	Enhance features. For new alignments only. Install new dedicated or multi-use wildlife crossing structures and protective fencing (if needed) or planting as recommended by the wildlife assessment. Actions must be approved by the project
PD-09.1e	3	Restore features. Re-establish past habitats, infrastructure, or add connectivity to re-establish corridors and habitats. Actions must be approved by the project ecologist, resource/regulatory biologist, or other appropriate staff. Some examples of restorative features include: Construction of fish ladders. Acquisition of parcels within the watershed or parcels identified by resource

PD-10 Pedestrian Facilities

Provide safe, comfortable, convenient, and connected pedestrian facilities for people of all ages and abilities within the project footprint.

PD-10.1P Were all facilities upgraded to meet ADA standards and do responses below exclude any projects to upgrade facilities to ADA standards? (0 to 2 Points) [Should be able to commit to this now]

0 Points. Meet ADA Requirements

1 point. Install Missing Pedestrian Connections

1-2 points. Install Safe, Comfortable, Convenient, and Connected Pedestrian Features

PD-11 Bicycle Facilities

Provide safe, comfortable, convenient, and connected bicycling facilities within the project footprint.

PD-11.1 Were missing bicycle connections installed per master plan or other relevant documents?

1 point for installing missing bike connections [Will likely be done]

PD-11.2 Were bicycle features installed that are safe, comfortable, convenient and connected?

1 point for enhance existing bicycle facilities

2 points for develop new bicycle facilities [Will likely be done]

PD-12 Transit and HOV Facilities

Promote use of public transit and carpools in communities by providing new transit and high occupancy vehicle (HOV) facilities, or by upgrading existing facilities within the project footprint.

PD-12.1 Were Transit and HOV facilities installed on this project that are consistent with the need, purpose, and appropriateness for transit and HOV access within the project footprint? Use Table PD-12.1.A to determine points. (0 to 5 Points)

TABLE PD-12.1.A AVAILABLE POINTS FOR TRANSIT AND HOV ACCESS FEATURES

PD-12.1a (1 Point)

Any of one the following:

- Enhance at least 50 percent of transit station or stop amenities (such as lighting, trash/recycling bins, benches, bike parking, pay phones, heating and/or cooling, etc.)
- Improve at least 50 percent of the transit and HOV facility signage (related to transit and HOV) and vehicular access (beyond basic ADA requirements)
- Provide transit shelters at more than 50 percent of the corridor stations/stops
- Provide seamless pedestrian access within at least a half-mile and/or seamless bicycle access within at least three miles of a public transportation stop or park and ride lot. (see the Federal Register's Final Policy Statement on the Eligibility of Pedestrian and Bicycle Improvements Under Federal Transit Law⁴.)
- Provide park and ride lot(s) in strategic locations.

PD-12.1c (2 Points)

Any one of the following:

- Implement two or more of the improvements from PD-12.1a.
- Implement physical or constructed changes to the roadway structure, dimensions, or form that provide for future HOV access or minor dedicated transit access within the right-of-way (ROW), such as a carpool lane for HOV vehicle, queue jump lanes for transit vehicles, shoulder-running buses, on-street bus lane, bus rapid transit, or an expressway bus lane.

PD-12 Transit and HOV Facilities (continued)

Promote use of public transit and carpools in communities by providing new transit and high occupancy vehicle (HOV) facilities, or by upgrading existing facilities within the project footprint.

PD-12.1 Were Transit and HOV facilities installed on this project that are consistent with the need, purpose, and appropriateness for transit and HOV access within the project footprint? Use Table PD-12.1.A to determine points. (0 to 5 Points)

TABLE PD-12.1.A AVAILABLE POINTS FOR TRANSIT AND HOV ACCESS FEATURES (continued)

PD-12.1d (3 Points)

Implement physical or constructed changes to the roadway structure, dimensions, or form that provide HOV access or minor dedicated transit access within the ROW, such as a carpool lane for HOV vehicles, queue jump lanes for transit vehicles, or shoulder-running buses.

PD-12.1e (4 Points)

Implement physical or constructed changes to the roadway structure, dimensions, or form that provide dedicated transit access within the ROW, such as an on-street bus lane, bus rapid transit, or an expressway bus lane.

PD-12.1f (5 Points)

Implement physical or constructed changes to the roadway structure, dimensions, or form that provide exclusive mass transit access within the ROW, such as at-grade or grade-separated transit-ways or transit served park-and-ride lots

PD-13 Freight Mobility

Enhance mobility of freight movements, decrease fuel consumption and emissions impacts, and reduce freight-related noise.

PD-13.1 Were freight facilities installed on this project consistent with the need, purpose, and appropriateness for freight mobility within the project footprint? Use Table PD-13.1.A to determine points. (0 to 7 Points)

TABLE PD-13.1.A POINTS AND REQUIREMENTS FOR FRIEGHT ACCESS PROJECT FEATURES

PD-13.1a	1	No-idling policy and signage (no-idling policy within certain parameters, such as outside air temperature)	<ul style="list-style-type: none">•Implementation and appropriate number consistent with project setting
PD-13.1b	1	Construct new rest area or rest stop, or expand existing rest area or rest stop	<ul style="list-style-type: none">•Provides a significant number of new truck parking spots at or within a reasonable distance to a rest area•Region near proposed rest area experiences extensive interstate shoulder, interchange shoulder, and/or off-road, non-assigned parking by tractor-trailers
D-13.1c	2	Safety improvements specifically for freight (e.g., additional safety signage, speed warnings systems for hills, other intelligent transportation system solutions)	<ul style="list-style-type: none">•Implementation and appropriate number consistent with project setting•Meet requirements in the AASHTO Policy on Geometric Design of Streets and Highways¹ such that there are no height, weight, or turning radius restrictions for freight vehicles
PD-13.1d	2	Physical or otherwise constructed grade, alignment, or other design adjustments for truck safety, mobility, and the reduction of freight-related noise	<ul style="list-style-type: none">•Implementation and appropriate number consistent with project setting•Include railroad overpass clearance improvements for rail links targeted for freight mobility (i.e., do not preclude rail double stack clearance)•Pullout areas for snow chain-up

PD-13 Freight Mobility (continued)

Enhance mobility of freight movements, decrease fuel consumption and emissions impacts, and reduce freight-related noise.

PD-13.1 Were freight facilities installed on this project consistent with the need, purpose, and appropriateness for freight mobility within the project footprint? Use Table PD-13.1.A to determine points. (0 to 7 Points)

TABLE PD-13.1.A POINTS AND REQUIREMENTS FOR FRIEGHT ACCESS PROJECT FEATURES

D-13.1e	3	Construct new dedicated truck delivery parking areas or repurpose an existing parking area for truck delivery-only.	<ul style="list-style-type: none">•Speeds 35 miles per hour or less (local traffic)•Accommodate 40-foot delivery trucks; design can be for smaller delivery trucks if appropriate based on nearby businesses•Accessible within the project site (i.e., located in a parking lane on a local street)•Financed with project budget•Appropriate signage (type and number) within project area
PD-13.1f	3	Automated Weigh-In-Motion stations	<ul style="list-style-type: none">•Accessible within the project site (i.e., located along the right-of-way), or in close proximity to the roadway
PD-13.1g	3	Increase transportation efficiencies for moving freight through features such as dedicated rail or intermodal facilities.	<ul style="list-style-type: none">•Include features that promote the reduction of traditional truck traffic on the roadway system, grade separated crossings, rail line connections, and dedicated freight connector roadways.•Ensure connections between intermodal freight facilities (rail, water port, airport) and nearby highways have sufficient capacity, minimize distance and incompatible, adjacent land uses to the greatest degree possible, and are appropriately designed and maintained
PD-13.1h	4	Virtual Weigh-In-Motion stations	<ul style="list-style-type: none">•Accessible within the project site (i.e., located along the right-of-way)•Within close proximity to the roadway project right-of-way

PD-13 Freight Mobility (continued)

Enhance mobility of freight movements, decrease fuel consumption and emissions impacts, and reduce freight-related noise.

PD-13.1 Were freight facilities installed on this project consistent with the need, purpose, and appropriateness for freight mobility within the project footprint? Use Table PD-13.1.A to determine points. (0 to 7 Points)

TABLE PD-13.1.A POINTS AND REQUIREMENTS FOR FRIEGHT ACCESS PROJECT FEATURES

PD-13.1i	4	Construct a new electrified rest stop or electrify an existing rest stop	<ul style="list-style-type: none">•Minimum five electric hookups per stop.•Accessible within the project site (i.e., located at a highway exit)•Within close proximity to the roadway project right-of-way.
PD-13.1j	5	Construct a new or convert an existing mixed-traffic lane to a truck-only lane	<ul style="list-style-type: none">•Minimum density of 10% truck traffic (Hansen et al., 2008)•Minimum volume of 1300 trucks per hour per lane (Hansen et al., 2008)

PD-14 ITS for System Operations

Improve the efficiency of transportation systems through deployment of technology and without adding infrastructure capacity in order to reduce emissions and energy use, and improve economic and social needs.

PD-14.1 Were one or more allowable ITS applications installed? Use Table PD-14.1.A to determine points.

TABLE PD-14.1.A ALLOWABLE ITS APPLICATIONS FOR ITS

Requirement	Points	Category	Allowable Applications (Install 1 or More per Category)
PD-14.1a	1	Electronic Payment & Pricing	Electronic Toll Collection Congestion Pricing Value Pricing
PD-14.1b	1	Emergency Management / Response & Recovery	Hazardous Materials Management Early Warning System Evacuation & Re-Entry Management Emergency Traveler Information Temporary Incident Management
PD-14.1c	1	Enforcement	Speed Enforcement Traffic Signal Enforcement Managed Lane Enforcement Ramp Meter Enforcement
PD-14.1d	1	Information Dissemination	Dynamic Message Signs (DMS) Highway Advisory Radio (HAR) In-Vehicle Systems (IVS) In-Terminal/Wayside Dynamic Parking Internet/Wireless 511
PD-14.1e	1	Information Management	Data Archiving
PD-14.1g	1	Lane Management	HOV Facilities Reversible Flow Lanes Congestion Pricing Lane Control Variable Speed Limits Emergency Evacuation Transit Signal Priority
PD-14.1h	1	Ramp Control	Ramp Metering Ramp Closures Priority Access
PD-14.1i	1	Road Weather Management	Pavement Conditions Atmospheric Conditions Water Level Fixed Winter Maintenance Mobile Winter Maintenance Bridge Anti-Icing Systems

PD-14 ITS for System Operations (Continued)

Improve the efficiency of transportation systems through deployment of technology and without adding infrastructure capacity in order to reduce emissions and energy use, and improve economic and social needs.

PD-14.1 Were one or more allowable ITS applications installed? Use Table PD-14.1.A to determine points.

PD-14.1j	1	Surveillance	Traffic Surveillance Infrastructure Surveillance
PD-14.1k	1	Traffic Control	Adaptive Signal Control Advanced Signal Systems Special Events Vehicle Restrictions
PD-14.1l	1	Traffic Incident Management	Call Boxes Response Routing Service Patrols
PD-14.1m	1	Traveler Information	Internet/Wireless 511
PD-14.1n	1	Crash Prevention and Safety	Highway-Rail Crossing Warning Systems Active Collision Warning Active Animal Warning
PD-14.1o	1	Work Zone Management	Temporary Traffic Management Lane Control Variable Speed Limits Speed Enforcement Intrusion Detection Road Closure Management

PD-15 Historic, Archaeological, and Cultural Preservation

Preserve, protect, or enhance cultural and historic assets, and/or feature National Scenic Byways Program (NSBP) historic, archaeological, or cultural intrinsic qualities in a roadway.

PD-15.1P Is any part of the project or resource listed in the NRHP or been determined eligible for the NHRP by a State, Local, or Tribal Historic Preservation Officer? (0 to 3 Points) [Can score after NEPA phase]

TABLE PD-15.1.A. POINTS AND REQUIREMENTS FOR HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL PRESERVATION

15.1P - Listed in US National Register of Historic Places?

15.2P - Along America's Byways® or Equivalent?

15.3P - Historic and/or Cultural Significance to Community?

Requirement	Points	Method
PD-15.1a	1	Minimize Impacts. Show that an effort has been made to minimize “adverse effects” to the features from Prerequisite PD-15.1P or PD-15.2P , as described in Section 106 of the National Historic Preservation Act (NHPA).
PD-15.1b	2	Avoid Impacts. Show that measures have been taken to specifically avoid impacts to the features from Prerequisite PD-15.1P or PD-15.2P . Or show that impacts to the features were minimized and that the remaining impacts were deemed not adverse.
PD-15.1c	3	Enhance features. Protect, preserve, and/or enhance historic, archaeological, or cultural resources identified in Prerequisite PD-15.1P or PD-15.2P . This could be done through the installation of informational or interpretive facilities (e.g., viewpoint, kiosk, sign, or other installation for visitors detailing historic, archaeological, or cultural significance), where appropriate, to explain the resources or direct roadway users to the site, or through other activities.
PD-15.1d	1	Avoid Impacts. Show that measures have been taken to specifically avoid impacts to the features from Prerequisite PD-15.3P .

PD-16 Scenic, Natural, or Recreational Qualities

Preserve, protect, and/or enhance routes designated with significant scenic, natural, and/or recreational qualities in order to enhance the public enjoyment of facilities.

PD-16.1P Is any portion of the project along one of America's Byways®, a State Scenic Byway, an Indian Tribe Scenic Byway, or other route that was designated or officially recognized as such? (0 to 3 Points) [May Not Be Applicable]

TABLE PD-16.1.A POINTS AND REQUIREMENTS FOR SCENIC, NATURAL, OR RECREATIONAL QUALITIES

Points	Method
1	Minimize Impacts. Show that an effort has been made to minimize “adverse effects” to the features from Prerequisite PD-16.1P.
1	Provide Access. Provide at least one access from the project to a designated area for vehicles to exit the traffic stream, stop, and experience scenic, natural, or recreational features along the roadway. These areas may be scenic viewpoints or overlooks, welcome centers, tourist activities, or information centers or recreation areas. They must be identified with signage conforming to 23 CFR 655 (the Manual on Uniform Traffic Control Devices ² , current revision) Part 2 – Signs.
2	Avoid Impacts. Show that measures have been taken to specifically avoid impacts to the features from Prerequisite PD-16.1P.
3	Enhance Features. Protect, preserve, or enhance scenic, natural, and/or recreational qualities along the roadway. This may include improvements to existing access points, signage, views, or to the scenic, natural, and/or recreational qualities themselves. Also included would be protecting these qualities by the removal of an existing access point if it has been determined that the access threatens them.

PD-21 Earthwork Balance

Reduce the need for transport of earthen materials by balancing cut and fill quantities.

PD-21.1 Balance Cut and Fill Volumes within 10 Percent (3 Points) **Design Phase**

Balance earthwork cut (excavation) and fill (embankment) volumes such that the percent difference between cut and fill is less than or equal to 10 percent of the average total volume of material moved.

Requirement PD-21.1a 3 points. Balance Cut and Fill Volumes without Construction Banking

Show that that design volumes (for projects that haven't been constructed) or actual construction volumes (for projects that have been constructed) meet:

$$\frac{(A + C) - (B + D)}{\frac{1}{2}(A + C + B + D)} \times 100\% \leq 10\%$$

OR

Requirement PD-21.1b 1 point. Balance Cut and Fill Volumes Using Construction Banking

Show that the design volumes (for projects that haven't been constructed) or actual construction volumes (for projects that have been constructed) meet the Requirement PD-21.1a only if construction banking is used and the following requirements are met:

- Construction banking may be accomplished using adjacent projects or other phases of the same project.
- Trucking distance from banking stockpiles to project limits must be less than 10 miles.
- Banking stockpiles must be used and earthwork balanced within a period of 24 months.
- All stockpiles must have a temporary erosion and sedimentation control (TESC) plan in place and appropriate measures must be installed. Maintenance for TESC methods must be accounted for in the project being evaluated or the adjacent project sharing earthwork banking and maintenance must be completed and documented.

PD-21 Earthwork Balance (continued)

Reduce the need for transport of earthen materials by balancing cut and fill quantities.

PD-21.1 Balance Cut and Fill Volumes within 10 Percent (3 Points) **Design Phase**

Balance earthwork cut (excavation) and fill (embankment) volumes such that the percent difference between cut and fill is less than or equal to 10 percent of the average total volume of material moved.

Requirement PD-21.2 1 point. Earthwork Management Plan

Establish, implement, and actively manage an Earthwork Management Plan for earthwork activities that focuses on reducing hauling, labor, and fuel costs

- Positioning and stockpiling – plan how fill is moved around the site to decrease dump truck travel trips.
- Actively manage available soil stockpiles with project earthwork needs.
- Provide guidance on how to manage cut and fills, for example:
 - Balancing “cuts and fills” per construction stage so that traffic can be maintained on the existing pavement during construction.
 - Off-siting of construction staging areas in previously developed area to eliminate land disturbance outside of the constructed project limits.
 - No land use or staging outside of that required for the proposed project footprint.
 - Reuse of top soil onsite (non-hazardous only).

Requirement PD-21.3 1 point. Preserve or reuse topsoil or spoils.

Show that the contract design requires the Contractor to preserve or reuse topsoil or spoils as noted in one or more of the practices below:

- **Topsoil Preservation.** Topsoil depth is maintained or increased in planting areas, appropriate for the proposed plant community.
- **Topsoil Preservation.** Design minimizes or eliminates the requirement for fertilizer nutrients.
- **Reuse of Topsoil.** Allow the reuse of top soil removed for grading and reuse of this material on site as long as it is determined non-hazardous material. This can include the use of soil to create berms elsewhere within the corridor, thereby eliminating the need for trucking or disposal.
- **Reuse Spoils within Project Corridor.** Utilize spoil material as fill as specified in plans and specifications within project limits or at locations specified in the plans.

PD-30 Low Impact Development

Use low impact development stormwater management methods that reduce the impacts associated with development and redevelopment and that mimic natural hydrology.

PD-30.1 Use Effective BMP's (1 to 3 Points) **Design Phase**

Use effective BMPs or stormwater management techniques that mimic natural hydrology to treat pollutants. To calculate the points earned for this scoring requirement, follow Steps 1 through 3 below:

Step 1 Table PD-30.3.A on the next page identifies BMPs considered most effective for specific target pollutants. If the project uses one of these BMPs, go to step 2 to calculate how many points are earned.

TABLE PD-30.1.A. EFFECTIVE BMPs AND INFILTRATION/VOLUME REDUCTION

Target Pollutant	BMP					
	Detention Pond	Wet Pond	Wetland	Biofilter	Media Filter	Infiltration /LID ¹
Suspended Solids	X	X	X	X	X	X
Total Copper	X			X		X
Dissolved Copper		X		X		X
Total Lead		X		X	X	X
Dissolved Lead		X				X
Total Zinc		X	X		X	X
Dissolved Zinc				X		X
Total Phosphorus ²		X	X	-		X

PD-30 Low Impact Development (continued)

Use low impact development stormwater management methods that reduce the impacts associated with development and redevelopment and that mimic natural hydrology.

PD-30.1 Use Effective BMP's (1 to 3 Points) **Design Phase**

Use effective BMPs or stormwater management techniques that mimic natural hydrology to treat pollutants. To calculate the points earned for this scoring requirement, follow Steps 1 through 3 below:

Step 2 Calculate the Target Impervious Surface Area Treated as a percentage of added impervious surface area). For retrofit projects, use Table PD-30.1.B to calculate the equivalent value to use for Target Impervious Surface Area.

TABLE PD-30.1.B. RETROFIT PROJECTS – CALCULATING EQUIVALENT TARGET IMPERVIOUS SURFACE AREA TREATED

Existing Impervious on Project (acres)	% of Existing Impervious Area Treated	Equivalent Target Impervious Surface Area Treated (% of Added)
0–1.0	0–50%	101%–125%
	50.1%–100%	>125%
1.1–5.0	0–40%	101%–125%
	40.1%–100%	>125%
5.1–10.0	0–30%	101%–125%
	30.1%–100%	>125%
>10.0	0–20%	101%–125%
	20.1%–100%	>125%

PD-30 Low Impact Development (continued)

Use low impact development stormwater management methods that reduce the impacts associated with development and redevelopment and that mimic natural hydrology.

PD-30.1 Use Effective BMP's (1 to 3 Points) **Design Phase**

Use effective BMPs or stormwater management techniques that mimic natural hydrology to treat pollutants. To calculate the points earned for this scoring requirement, follow Steps 1 through 3 below:

Step 3 Use the Target Impervious Surface Area Treated that was calculated in Step 2 in Table PD-30.3.C to determine the points earned for this scoring requirement.

TABLE PD-30.3.C. POINTS EARNED FOR EFFECTIVE BMPS BASED ON TARGET IMPERVIOUS SURFACE AREA TREATED

(Step 1)	(Step 2)	(Step 3)
Effective BMP/Infiltration/LID Used?	Target Imp. Surface Area Treated (% of Added)	Points Earned
Yes	101%–125%	2
	125% +	3

PD-31 Infrastructure Resiliency Planning and Design

Respond to vulnerabilities and risks associated with current and future hazards (including those associated with climate change) to ensure transportation system reliability and resiliency.

PD-31.1 (2 Points) Address Climate Change in Project Development

Incorporate consideration of climate change at a project-specific level in project development and environmental reviews.

PD-31.2 (1-6 Points) Incorporate Future Climate Change Effects in the Design Process or the Design

PD-31.2a (0 to 3 Points)

Incorporate and document consideration of the effects of climate change in the design process.

- **0 points.** Climate change effects are not considered in the design process.
- **1 points.** Climate change effects are qualitatively considered in the design process.
- **3 points.** Climate change effects are quantitatively considered in the design process.

OR

PD-31.2b (4 or 6 Points) Incorporate Future Consideration of Climate Change Effects into the Design

- **0 points.** No design changes are required to accommodate future climate change effects or no changes are incorporated in the design.
- **4 points.** Design changes are incorporated in the design of one design discipline (e.g. bridges, pavements, drainage, etc.).
- **6 points.** Design changes are incorporated in the design of more than one design discipline (e.g. bridges and pavements, drainage and bridges, etc.).

PD-31 Infrastructure Resiliency Planning and Design (Continued)

Respond to vulnerabilities and risks associated with current and future hazards (including those associated with climate change) to ensure transportation system reliability and resiliency.

PD-31.3 (4 Points) Mitigate Climate Change and Extreme Weather Effects

Mitigate the effects of GHG emissions through design efforts above and beyond requirements and regulations. Some examples of strategies meeting this requirement, include, but are not limited to:

- Incorporating transportation system and operational efficiencies by optimizing the design, construction, operation, and use of transportation networks. The strategies range from anti-idling ordinances to traffic management to congestion pricing. The objective of this group of strategies is to reduce the energy use and GHG emissions associated with a given unit of passenger or freight travel (e.g., person-miles, vehicle-miles, or ton-miles of travel).
- Reduce travel activity by reducing growth in vehicle-miles traveled. The objective of this group of strategies is to influence travelers' activity patterns, thereby reducing total travel, shifting travel to more efficient modes, increasing vehicle occupancy, or otherwise taking actions that reduce energy use and GHG emissions associated with personal travel.

PD-32 Light Pollution

To safely illuminate roadways while minimizing unnecessary and potentially harmful illumination of the surrounding sky, communities, and habitat.

PD-32.1 (1 Point) Uplight Design (Design Phase)

Do not exceed the luminaire uplight ratings shown in Table PD-32.1.A, based on the specific light source installed in the luminaire, as defined in [IES TM-15-11, Addendum A](#)².

Table PD-32.1.A. MAXIMUM UPLIGHT RATINGS

	Lighting Zone				
	LZ0	LZ1	LZ2	LZ3	LZ4
Allowed uplight ratings	U0	U1	U2	U3	U4

PD-32 Light Pollution (continued)

To safely illuminate roadways while minimizing unnecessary and potentially harmful illumination of the surrounding sky, communities, and habitat.

PD-32.2 (1 Point) Backlight Design (Design Phase)

Do not exceed the luminaire backlight ratings shown in Table PD-32.2.A (based on the specific light source installed in the luminaire), as defined in [IES TM-15-11, Addendum A2²](#), based on the mounting location and distance from the lighting boundary.

Table PD-32.2.A. MAXIMUM Backlight RATINGS

Luminaire Mounting	Lighting Zone				
	LZ0	LZ1	LZ2	LZ3	LZ4
> 2 mounting heights from lighting boundary	B1	B3	B4	B5	B5
1 to 2 mounting heights from lighting boundary and properly oriented	B1	B2	B3	B4	B4
0.5 to 1 mounting height to lighting boundary and properly oriented	B0	B1	B2	B3	B3
< 0.5 mounting height to lighting boundary and properly oriented	B0	B0	B0	B1	B2

PD-32 Light Pollution (continued)

To safely illuminate roadways while minimizing unnecessary and potentially harmful illumination of the surrounding sky, communities, and habitat.

PD-32.3 (1 Point) Glare Design (Design Phase)

Do not exceed the glare ratings shown in Table PD-32.3.A, based on the specific light source installed in the luminaire, as defined in [IES TM-15-11, Addendum A²](#).

Table PD-32.3.A. MAXIMUM GLARE RATINGS

	Lighting Zone				
	LZ0	LZ1	LZ2	LZ3	LZ4
Allowed glare ratings	G0	G1	G2	G3	G4

PD-33 Noise Abatement

Reduce traffic noise impacts to surrounding communities and environments.

PD-33.1 (2 Points) Specialized Noise Barrier Construction (Design Phase)

Construct one or more of the following specialized noise barriers on the project to provide noise abatement. Noise barriers must comply with the Agency's governing Noise Study and Abatement Policy.

- Construct a new noise barrier using recycled materials.
- Re-use an existing noise wall previously constructed within the project limits.
Over 75% of the existing noise wall material needs to be re-used to be considered.
- Construct an earthen berm using over 80% of excavated soils generated from within the project limits and/or corridor.

PD-33.2 (2 Points) Traffic System Management Techniques to Reduce Existing Noise Levels (Design Phase)

On projects where noise sensitive receptors have been identified, reduce traffic noise by implementing one or more of the following traffic management options:

- Roadway geometry design or traffic control elements that develop free-flow traffic
- Speed limit reductions
- Signage for prohibiting air braking
- Coordinated signals
- Use of roundabouts

PD-33 Noise Abatement (Continued)

Reduce traffic noise impacts to surrounding communities and environments.

PD-33.3 (2 Points) Provide a Buffer Zone for Adjacent Noise Sensitive Receptors

Utilize one of the following approaches to provide a noise buffer zone:

- Selection of an alternative that is not within close proximity to noise sensitive receptors or compared to other alternatives has the least amount of noise impacts.
- Shift of the alignment within the right-of-way or adjustment of right-of-way to move the roadway away from noise sensitive receptors.
- Coordination with local officials to create or preserve compatible land uses adjacent to the roadway."

PD-33.4 (1 to 3 Points) Design Quiet Pavements

Design and specify the total new or reconstructed pavement surface area for regularly trafficked lanes of pavement with a pavement type or surface characteristics designed to reduce the noise from the tire/pavement interaction.

TABLE PD-33.4.A. Testing Speeds and Maximum Average OBSI Noise Levels

Posted Speed Limit	Maximum Noise Level	Minimum Percentage Trafficked Area		
		1 point	2 points	3 points
55 mph or more	98 dBA	20%	40%	60%
30 to 54 mph	90 dBA	40%	60%	80%

Pavement sections with posted speeds less than 30 mph do not qualify for this criterion.

PD-33.5 (1 Point) Provide Plantings or Sight Screen to Separate Receptors from Roadway

Construct a vegetative barrier a minimum of 100 feet thick, a minimum of 20 feet high with 100% density.

INVEST Project Development Score Card

52 points for Bronze
69 points for Silver
86 points for Gold
103 points for
Platinum

PD-01 Economic Analyses

PD-02 Lifecycle Cost Analyses

PD-03 Context Sensitive Project Development

PD-04 Highway and Traffic Safety

PD-05 Educational Outreach

PD-06 Tracking Environmental Commitments

PD-07 Habitat Restoration

PD-08 Stormwater Quality and Flow Control

PD-09 Ecological Connectivity

PD-10 Pedestrian Facilities

PD-11 Bicycle Facilities

PD-12 Transit and HOV Facilities

PD-13 Freight Mobility

PD-14 ITS for System Operations

PD-15 Historic, Archaeological, and Cultural Preservation

PD-16 Scenic, Natural, or Recreational Qualities

PD-17 Energy Efficiency

PD-18 Site Vegetation, Maintenance and Irrigation

PD-19 Reduce, Reuse and Repurpose Materials

PD-20 Recycle Materials

PD-21 Earthwork Balance

PD-22 Long-Life Pavement

PD-23 Reduced Energy and Emissions in Pavement Materials

PD-24 Permeable Pavement

PD-25 Construction Environmental Training

PD-26 Construction Equipment Emission Reduction

PD-27 Construction Noise Mitigation

PD-28 Construction Quality Control Plan

PD-29 Construction Waste Management

PD-30 Low Impact Development

PD-31 Infrastructure Resiliency Planning and Design

PD-32 Light Pollution

PD-33 Noise Abatement