PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation

District X

Project Title

Limits of Project

County, Florida

Financial Management Number: XXXXX-X

ETDM Number: XXXXXX

Date

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration and FDOT.



**TABLE OF CONTENTS**

1.0 PROJECT SUMMARY 1

1.1 Project Description 1

1.2 Purpose & Need 1

1.3 Commitments 1

1.4 Alternatives Analysis Summary 2

1.5 Description of Preferred Alternative 2

1.6 List of Technical Documents 2

2.0 EXISTING CONDITIONS 3

2.1 Previous Planning Studies 3

2.2 Existing Roadway Conditions 3

2.2.1 Roadway Typical Sections 3

2.2.2 Roadway Functional & Context Classifications 3

2.2.3 Access Management Classification 4

2.2.4 Right of Way 4

2.2.5 Adjacent Land Use 4

2.2.6 Pavement Type and Condition 4

2.2.7 Existing Design and Posted Speed 4

2.2.8 Horizontal Alignment 4

2.2.9 Vertical Alignment 4

2.2.10 Multi-modal Facilities 4

2.2.11 Intersections 5

2.2.12 Physical or Operational Restrictions 5

2.2.13 Traffic Data 5

2.2.14 Roadway Operational Conditions 5

2.2.15 Managed Lanes 5

2.2.16 Crash Data 5

2.2.17 Railroad Crossings 5

2.2.18 Drainage 5

2.2.19 Lighting 5

2.2.20 Utilities 6

2.2.21 Soils and Geotechnical Data 6

2.2.22 Aesthetics Features 6

2.2.23 Traffic Signs 6

2.2.24 Noise Barriers and Perimeter Walls 6

2.2.25 Intelligent Transportation Systems (ITS)/Transportation System Management and Operations (TSM&O) Features 6

2.3 Existing Bridges and Structures 6

2.4 Existing Environmental Features 6

3.0 FUTURE CONDITIONS 7

3.1 Future Conditions Considerations 7

4.0 DESIGN CONTROLS & CRITERIA 8

4.1 Design Controls 8

4.2 Design Criteria 8

5.0 ALTERNATIVES ANALYSIS 9

5.1 No-Build (No-Action) Alternative 9

5.2 Transportation Systems Management and Operations (TSM&O) Alternative 9

5.3 Multimodal Alternative(s) 9

5.4 Build Alternatives 9

5.4.1 Complete Streets 11

5.4.2 Pedestrian and Bicycle Accommodation 11

5.4.3 Traffic Operations and Safety 11

5.4.4 Managed Lanes 11

5.4.5 Access Management 11

5.4.6 Interchanges on Interstate Highways 11

5.4.7 Intelligent Transportation Systems 11

5.4.8 Lane Repurposing 11

5.4.9 Landscape 11

5.4.10 Lighting 11

5.4.11 Wildlife Crossings 11

5.4.12 Permits 11

5.4.13 Stormwater Management 11

5.4.14 Sea Level Impact Protection (SLIP) Studies 11

5.4.15 Water Quality 11

5.4.16 Hydrology and Floodplains 11

5.4.17 Utilities and Railroads 11

5.4.18 Survey and Mapping 11

5.4.19 Geotechnical Investigation 11

5.4.20 Structures and Bridges 11

5.4.21 Transportation Management Plan 11

5.4.22 Constructability 11

5.4.23 Construction Impacts 11

5.5 Comparative Alternatives Evaluation 12

5.6 Selection of the Preferred Alternative 12

6.0 AGENCY COORDINATION & PUBLIC INVOLVEMENT 13

6.1 Agency Coordination 13

6.2 Public Involvement 13

6.3 Public Hearing 13

7.0 PREFERRED ALTERNATIVE 14

7.1 Engineering Details of the Preferred Alternative 14

7.1.1 Typical Sections 14

7.1.2 Access Management 14

7.1.3 Right of Way 14

7.1.4 Horizontal and Vertical Geometry 14

7.1.5 Design Variations and Design Exceptions 14

7.1.6 Multimodal Accommodations 15

7.1.7 Intersection/ Interchange Concepts and Signal Analysis 15

7.1.8 Tolled Projects 15

7.1.9 Intelligent Transportation System (ITS) and TSM&O Strategies 15

7.1.10 Landscape 15

7.1.11 Lighting 15

7.1.12 Wildlife Crossings 15

7.1.13 Permits 15

7.1.14 Drainage and Stormwater Management Facilities 15

7.1.15 Floodplain Analysis 16

7.1.16 Bridge and Structure Analysis 16

7.1.17 Transportation Management Plan 16

7.1.18 Constructability 16

7.1.19 Construction Impacts 16

7.1.20 Special Features 16

7.1.21 Utilities 16

7.1.22 Project Costs 17

7.2 Summary of Environmental Impacts 17

7.2.1 Future Land Use 17

7.2.2 Section 4(f) 17

7.2.3 Cultural Resources 17

7.2.4 Wetlands 17

7.2.5 Protected Species and Habitat 17

7.2.6 Essential Fish Habitat 17

7.2.7 Highway Traffic Noise 17

7.2.8 Contamination 17

APPENDIX 18

**LIST OF FIGURES**

FigurePage Number

**LIST OF TABLES**

TablePage Number

**APPENDICES**

# PROJECT SUMMARY

##

## Project Description

*Start with the description from the Efficient Transportation Decision Making (ETDM) and modify as applicable based on the changes in scope between ETDM screening and completion of PD&E. The project description must be written to allow a person without prior knowledge of the area to clearly understand where the project is located. Refer to Part 2, Chapter 1 of the PD&E Manual for project description requirements.*

*Include:*

* *The name of the facility (with alternate names if applicable);*
* *Limits of the proposed project (length and logical termini);*
* *Name of City and County where the project is located;*
* *A brief description of the existing facility;*
* *A brief description of the proposed improvements including pedestrian and bicycle accommodation;*
* *Discuss navigations issues when the project crosses over navigable waters.*

*Include a project map illustrating the project limits.*

## Purpose & Need

*Describe the purpose of the project and then support it by discussing the needs for the project. Refer to Part 2, Chapter 1 of the PD&E Manual for Purpose and Need requirements.*

*The purpose and need must be consistent with the purpose and need in the ETDM. Purpose and Need must be verbatim with purpose and need described in the Environmental Document (Type 2 CE, EA, EIS, SEIR).*

*Discuss the project status including planning status, planning consistency, actions taken to date, other agencies and governmental units involved, actions pending, schedules, etc.*

## Commitments

*Include a list of all commitments that are made during the study. Review final technical documents and agencies correspondence to include and list their commitments. Refer to Part 2, Chapter 22 of the PD&E Manual for additional information.*

## Alternatives Analysis Summary

*Provide a summary of alternatives analysis to include the number of alternatives, any significant differences in the alternatives analyzed, summary of agency, stakeholder and public involvement feedback, and overall project costs.*

## Description of Preferred Alternative

*Include a brief description of the Preferred Alternative. Briefly explain why the alternative addresses the purpose and need for the project. Note potential Design Variations or Design Exceptions needed for the preferred alternative.*

## List of Technical Documents

*Include a list of all technical documents prepared for the study. Include the date the document was prepared (The initial draft may include Dates of Draft technical documents. The Final PER lists the dates of the final documents).*

*Do not name any of the consultant firms when referencing technical documents.*

# EXISTING CONDITIONS

*The Existing Conditions section should adequately describe the project area, and document available information. Include sources for data or information when applicable.*

*Reference other supporting technical documents to reduce repetition, if applicable.*

## Previous Planning Studies

*Briefly discuss planning studies that were completed to support development of this study. If there are no previous planning studies completed, simply say there were no completed planning studies.*

*If planning decisions or products were incorporated into NEPA by reference, then:*

* *discuss the previous planning studies’ influence on the PD&E study;*
* *provide a brief description of the planning study;*
* *summarize policy assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion consistent with those to be used in the NEPA process;*
* *discuss changes that have occurred in the project area since the study was completed;*
* *include titles of the previous planning reports in the List of Technical Documents.*

## Existing Roadway Conditions

*If the item is not found in the existing condition, include a statement that it is not present in the appropriate section of the PER. If review of the existing conditions identifies a deficiency or substandard element, describe the finding(s) in the appropriate subsection in the Existing Conditions Section of the PER.*

### Roadway Typical Sections

*Include figure(s) of the existing typical section(s). Identify number of lanes and all existing roadway typical sections within the project limits. Include dimensions of each cross-sectional element. Briefly explain typical section changes from committed projects that are not part of this PD&E Study, if applicable, such as intersection improvements, access management changes, or bounding projects that have not yet been constructed.*

### Roadway Functional & Context Classifications

*Identify the functional and context classifications of the existing roadway. Identify any other special designations such as hurricane evacuation route, SIS corridor, etc. as mentioned in Section 3.2.3.3.2 of Part 2, Chapter 3 of the PD&E Manual.*

### Access Management Classification

*Identify the access management classification and locations where the existing roadway does not meet the access management standards.*

### Right of Way

*Identify the existing right of way (ROW) within the project limits including extent and type of limited access, if applicable. Include relevant easements such as utility* *and drainage easements.*

### Adjacent Land Use

*Identify and discuss the existing land uses adjacent to the ROW. Include an existing land use map.*

### Pavement Type and Condition

*Identify the cracking and ride rankings found in the Pavement Condition Survey from the FDOT State Materials Office. Include the year of the data reported.*

### Existing Design and Posted Speed

*Identify the design speed and posted speed of the existing facilities.*

### Horizontal Alignment

*Identify horizontal alignment components of the facility as noted in the survey or as-built plans, if available. If this data is not available, identify public sources of horizontal alignment data to describe the existing condition. Include deflections, horizontal curves (length, radius, and associated superelevation), and horizontal clearances. State the source of information.*

### Vertical Alignment

*Identify vertical alignment components of the facility as noted in survey or as-built plans, if available. If this data is not available, identify public sources of vertical elevation data to generally describe the existing conditions. Include grades, vertical curve components (length, K value), and vertical clearances, if applicable. State the source of information.*

### Multi-modal Facilities

*Identify pedestrian accommodations, bicycle facilities, shared use paths, mass transit facilities and freight and intermodal logistics centers within the study area. List existing pedestrian accommodations including sidewalks, crosswalks, Americans with Disabilities Act (ADA) accessibility, and school routes. Include the location, type, pavement type, width and any special designations of pedestrian and bicycle facilities including shared use paths. Provide routes/schedules, bus stops, park-and-ride lots and transfer centers of mass transit facilities. Provide the location, type, and any special considerations of freight and intermodal facilities.*

### Intersections

*Identify the existing intersection configuration and lane assignment, intersection control type, technology, and operational conditions.*

### Physical or Operational Restrictions

*Identify physical or operational restrictions such as multimodal use lanes, parking, evacuation routes, fixed objects, barriers, and clear zones.*

### Traffic Data

*Identify existing Annual Average Daily Traffic (AADT), peak hour volume, Directional Design Hour Volumes (DDHV), truck percentages, pedestrian and bicycle counts, and transit data.*

### Roadway Operational Conditions

*Identify LOS and relevant performance measures such as delay, travel time, and density.*

### Managed Lanes

*Identify Managed Lanes, such as Express Lanes or Toll Lane configurations and operations within the corridor.*

### Crash Data

*Discuss crash rates, severity, number (frequency), types, locations, and contributing causes and patterns.*

### Railroad Crossings

*Identify the number of tracks, number of train crossings, speed, type of train (passenger or freight), type of warning devices, operating characteristics, and railroad ROW.*

### Drainage

*Describe surface water and groundwater features on or near the project. Identify the drainage basins and flow patterns, floodplains, floodways, and stormwater management systems including regional facilities. Include an existing drainage map. Use the Flood Insurance Rate Map (FIRM) or Water Management Districts maintained flood maps (when required) to identify any special flood hazard areas. Include size and location of cross drains and box culverts along the corridor. Discuss areas with potential drainage problems within the project limits.*

### Lighting

*Identify the presence of lighting, lighting type, location, condition, spacing, and the maintaining agency.*

### Utilities

*List utilities located within the project limits. Include location, Utility Agencies/Owners (UAO), and contact person(s).*

### Soils and Geotechnical Data

*Identify the different soil classifications found in The United States Department of Agriculture (USDA) and the National Resources Conservation Service (NRCS) Soil Survey for the project corridor.* *Include an existing soil map. Note areas of special design considerations.*

### Aesthetics Features

*Describe any scenic views or vistas on or near the project limits. Identify any aesthetic features (landscaping, vegetation, lighting, pavers, noise wall decors, etc.) within the project limits. Document who is responsible for maintenance activities.*

### Traffic Signs

*Provide a general summary of roadway signs. Identify and describe all overhead traffic signs located within the study limits in an aerial map or exhibit. Include description of existing guide signage.*

### Noise Barriers and Perimeter Walls

*Identify type and location of noise barriers and/or perimeter walls within the study limits.*

### Intelligent Transportation Systems (ITS)/Transportation System Management and Operations (TSM&O) Features

*Identify any ITS or TSM&O features within the study limits. Include operational needs and infrastructure requirements. Review and summarize Concepts of Operations (ConOps) and other systems engineering documents, if applicable.*

## Existing Bridges and Structures

*Briefly describe all bridges and features being crossed (rivers, streams, roadway, railroads, etc.). For each bridge, identify each item listed in Section 3.2.3.3.3 of Part 2, Chapter 3 of the PD&E Manual. Note in the PER if no bridges or specific bridge features do not apply.*

##  Existing Environmental Features

*Summarize the existing environmental features within the project limits that would affect the development of alternatives.*

# FUTURE CONDITIONS

## Future Conditions Considerations

*Briefly discuss future conditions that were considered in the development of alternatives including land use, context classification, travel demand, and other improvement plans, if any. Reference traffic report if it was prepared separately. Briefly discuss how future demand volumes and design hour volumes were estimated. Reference Traffic Report, or Interchange Access Request report and Traffic Forecasting Memo for more details.*

*Include discussion of local plans or policies that affect the project alternatives.*

# DESIGN CONTROLS & CRITERIA

## Design Controls

*List design controls used to determine the design criteria of the project alternatives. Refer to FDM 201 and Section 3.2.3.5 of Part 2, Chapter 3 of the PD&E Manual for more information on design controls. If a design control listed in 3.2.3.5 is not applicable, include a statement to that fact in the PER.*

## Design Criteria

*List [in tabular form] design criteria used to develop alternatives with their associated manuals, procedures, and guidelines. Include criteria relevant to the project including roadway, structures, drainage design, and any special local or project specific criteria.*

­

# ALTERNATIVES ANALYSIS

## No-Build (No-Action) Alternative

*Describe the No-Build Alternative, including the advantages and disadvantages, which serves as the baseline or benchmark against which the other Alternatives are evaluated. Include reference to any planned projects or conditions that are part of the project no-build condition. Describe the results of not taking action including impacts to the surrounding area and describe how the No-Build reflects on the items noted in the Purpose and Need Statement.*

## Transportation Systems Management and Operations (TSM&O) Alternative

*Describe the TSM&O Alternative, including strategies it would use to optimize the efficiency of the existing transportation system or facility. Explain how the TSM&O Alternative would meet (or fail to meet) the project’s purpose and need.*

## Multimodal Alternative(s)

*When consistent with the purpose and need, the alternative(s) analysis should consider multimodal alternatives. Describe the multimodal alternative(s) and how they align with the Metropolitan Planning Organization (MPO) Long Range Transportation Plan (LRTP), Local Government Comprehensive Plan (LGCP), and Transit Development Plan where applicable. Discuss coordination with the District Transit or Modal Office. Describe how the multimodal alternative(s) will address the purpose and need for the project. If the multimodal alternative(s) will not meet the purpose and need for the project, it does not need to be evaluated further (no documentation of coordination needed).*

## Build Alternatives

*Review any hybrid alternatives that incorporate TSM&O strategies and/or multimodal options into the Build Alternative(s) per Section 3.2.4.4 of Part 2 Chapter 3 of the PD&E Manual. Discuss how the Build Alternative(s) were developed. Discuss initial screening of alternatives (based on a fatal flaw analysis), alternatives that were eliminated from detail study, and the methodology used for eliminating alternatives. If the alternatives were screened by studies completed prior to PD&E study, state the title and date of the reports, summarize the decision reached to eliminate the alternatives, include the reports in the Technical Materials section, and upload final reports in SWEPT.*

*Describe Build Alternative(s) and how it addresses the project’s purpose and need. For each Build Alternative that is evaluated in detail, include discussion of the following engineering elements that were considered during the development of Build Alternative(s) For more information about each engineering element, see Section 3.2.5 of Part 2, Chapter 3 of the PD&E Manual. If an engineering element does not apply, include a statement to that fact.*

### Complete Streets

### Pedestrian and Bicycle Accommodation

### Traffic Operations and Safety

### Managed Lanes

### Access Management

### Interchanges on Interstate Highways

### Intelligent Transportation Systems

### Lane Repurposing

### Landscape

### Lighting

### Wildlife Crossings

### Permits

### Stormwater Management

### Sea Level Impact Protection (SLIP) Studies

### Water Quality

### Hydrology and Floodplains

### Utilities and Railroads

### Survey and Mapping

### Geotechnical Investigation

### Structures and Bridges

### Perimeter Walls

### Transportation Management Plan

### Constructability

### Construction Impacts

*Summarize the environmental considerations that were taken into account during the development of the Build Alternative(s) and reference other sections of the PER and supporting technical documents to reduce repetition, if applicable.*

*If a Value Engineering (VE) study was performed per guidance in Section 3.2.7 of Part 2, Chapter 3 of the PD&E Manual, summarize the recommendations of the study. If a VE study was not performed, simply list the reason why.*

*Support description of Build Alternatives with exhibits and plans that are developed only to the level of detail needed to illustrate the concepts.*

## Comparative Alternatives Evaluation

*Include a matrix that compares each alternative evaluated in detail (including the No-Build Alternative) with respect to the items listed in Section 3.2.8 of Part 2, Chapter 3 of the PD&E Manual and any additional comparative evaluation used.*

*If a TSM&O Alternative was evaluated in detail, include the alternative in the matrix.*

*If a VE study was performed, include the VE Recommended Alternative in the comparative evaluation matrix. Reference and upload the VE Study report in SWEPT.*

## Selection of the Preferred Alternative

*Briefly, discuss the results of the comparative alternatives evaluation. Explain the rationale behind selecting the Preferred Alternative.*

# AGENCY COORDINATION & PUBLIC INVOLVEMENT

##

## Agency Coordination

*Briefly explain how ETDM comments were used to develop alternatives and identify mitigation (if applicable). Also summarize coordination with ongoing or committed projects near the project area.*

*Briefly summarize coordination with MPO/County/City and resource agencies.*

## Public Involvement

*Briefly describe the public involvement approach that was followed including dates for meetings and hearing(s), reference Comments and Coordination Report for detail. Briefly discuss how public comments were considered in the development and refinement of Build Alternatives.*

*Comments are provided in the Comments and Coordination Report.*

## Public Hearing

*Briefly describe the information presented at the Public Hearing and the outcomes of the meeting. Include discussion of any items that affect the recommendations of the PD&E, public support or opposition of the preferred alternative, and number of attendees.*

# PREFERRED ALTERNATIVE

*This section includes a description of design features and environmental impacts of the Preferred Alternative, which may be a refinement of the Build Alternative described in Chapter 5 as the result of Public Hearing comments.*

*Include a discussion of design refinements performed after the Public Hearing if appropriate or reference another section that does.*

*Attach concept plans of the Preferred Alternative in the Appendix.*

## Engineering Details of the Preferred Alternative

*Discuss the engineering details of the Preferred Alternative listed below, as appropriate per Section 3.2.9.1 of Part 2, Chapter 3 of the PD&E Manual. Reference other sections of the PER and supporting technical documents to reduce repetition, if applicable. If an element does not exist, include a statement to that fact.*

### Typical Sections

*Discuss the roadway and bridge typical sections in detail and support discussion by exhibits. Upload Signed and Sealed Typical Section Package in SWEPT and include in the PER appendix.*

### Access Management

*Briefly discuss any change(s) to existing access management classification that is(are) proposed in the Preferred Alternative. Discuss changes to any other access points, e.g. medians. Include language about how the project complies with 335.199, FS, if applicable.*

### Right of Way

*If additional ROW is required to construct the Preferred Alternative, state the estimated ROW impacted, the number of impacted parcels, the number of relocations (residential and business), and the total cost estimate for acquisition that the Preferred Alternative will require. If applicable, include considerations of future land use changes around the proposed ROW.*

### Horizontal and Vertical Geometry

*Discuss the horizontal and vertical geometry of the Preferred Alternative. Include [in the appendix] concept plans showing the horizontal and vertical geometry for the project.*

### Design Variations and Design Exceptions

*Discuss design controls and criteria that will need a Design Variation or Design Exception. State (and provide date) if any of the Design Variations or Design Exceptions were approved. Include signed Design Variations and Design Exceptions in the appendix.*

### Multimodal Accommodations

*Discuss provisions for multimodal accommodations (bicycles, pedestrians, transit), Complete Streets and Context Sensitive design solutions that are included in the Preferred Alternative.*

*Identify any impacts to transit routes, railroads and truck routes along the project including the location and general layout of potential bus turnouts, ramp bypass lanes, or exclusive transit lanes.*

### Intersection/ Interchange Concepts and Signal Analysis

*Include concept plans showing Preferred Alternative intersections and/or interchange configurations, traffic control types, and signs. Refer to either the PTAR or include signal analysis in the appendix.*

### Tolled Projects

*Summarize the results of the Preliminary Toll Siting Technical Memorandum as applicable to the preferred alternative.*

### Intelligent Transportation System (ITS) and TSM&O Strategies

*Include discussion of Intelligent Transportation System (ITS) facilities and TSM&O strategies or technologies that will be added in the Preferred Alternatives. Discuss if a Systems Engineering analysis is required by FHWA. Confirm applicability of TSM&O strategies or technologies with the District TSM&O Program Engineer.*

### Landscape

*Describe any landscape features of the Preferred Alternative.*

### Lighting

*Describe the lighting features to be included in the Preferred Alternative. Discuss the impacts to neighborhoods, aesthetic impacts, and impacts to sensitive species, if applicable.*

### Wildlife Crossings

*Discuss wildlife crossings and coordination with appropriate District personnel and regulatory agencies.*

### Permits

*Summarize the preferred alternative permitting needs and coordination with the District and permitting agencies.*

### Drainage and Stormwater Management Facilities

*Discuss the type of drainage system(s) to be used for the Preferred Alternative. Include a discussion of the stormwater management systems.*

### Floodplain Analysis

*Summarize the findings of the Location Hydraulics Report and/or Bridge Hydraulics Report and discuss any mitigation proposed as part of the project. Include whether impacts will be parallel or perpendicular to the floodplain.*

### Bridge and Structure Analysis

*Include a proposed typical section and bridge concept for all bridges on the project. Include the proposed superstructure and substructure for each bridge and the breakdown of cost.*

*Summarize preferred structure and aesthetic treatment, and utility from the Bridge Development Report, if one was prepared. Include a discussion of general structural plans and elevations if needed for the environmental document or design exception report.*

*Describe existing structures that can be retained and reused. Describe location where new structures (bridge and retaining walls) are required, including the proposed bridge location and layout, profile grade requirements at stream crossings, and justification of use of retaining walls instead of slope embankments.*

### Transportation Management Plan

*Briefly discuss the Transportation Management Plan (TMP) and how it facilitates the general traffic control strategies, addresses potential road closures or detours, maintain traffic and multimodal accessibility during construction and work zone impacts. Discuss the preliminary TMP that will handle all phases of construction for the preferred alternative.*

### Constructability

*Describe general sequence of construction and identify any issues that may impact implementation of the preferred alternative including constructability concerns.*

### Construction Impacts

*Describe all impacts from the proposed project construction to resources including but not limited to noise, air, and water quality, maintenance of traffic and access, species protection, safety considerations, temporary construction impacts, etc.*

### Special Features

*Briefly discuss any special features that are not commonly associated with a transportation project. Examples could include any features included to protect or minimize impacts to the environment.*

### Utilities

*Identify any impacted utilities and costs associated with relocating utilities. Include a list of all UAO’s and contact information for impacted utilities. If utilities are in FDOT ROW by permit, the cost for relocation is at the expense of the utility owner (Note that information here).*

### Project Costs

*Include a table summarizing project costs (construction, ROW, design, CEI, etc.) as listed in Section 3.2.9.1 of Part 2, Chapter 3 of the PD&E Manual. Note method used to prepare project costs for the project phases, such as percentages based on the Long Range Estimates (LRE) system for construction costs.*

## Summary of Environmental Impacts

*Discuss the environmental impacts of the Preferred Alternative listed below, as appropriate per Section 3.2.9.2 of Part 2, Chapter 3 of the PD&E Manual.*

### Future Land Use

*Discuss the project’s compatibility with nearby land uses, zoning, and comprehensive plans; focus discussion on implications for the environmental effects and engineering decisions. Identify measures that will be incorporated into the project to mitigate any potential incompatibility.*

### Section 4(f)

*Identify, by their formal name, any existing or proposed Section 4(f) protected resources along and/or within the study area. Focus discussion on implications for the environmental effects and engineering decisions.*

### Cultural Resources

*Summarize findings of the Cultural Resources Assessment Survey (CRAS), findings of the letter submitted to the State Historic Preservation Office (SHPO) and their response. Focus discussion on implications for the environmental effects and engineering decisions.*

### Wetlands

*Summarize the Natural Resource Evaluation (NRE) Report.*

### Protected Species and Habitat

*Summarize the NRE report.*

### Essential Fish Habitat

*Summarize the NRE report.*

### Highway Traffic Noise

*Discuss land use, proposed project traffic noise levels, and any apparent solutions available to mitigate the noise at the receptor locations based on the Noise Study Report (NSR).*

### Contamination

*Summarize the results of the Contamination Screening Evaluation Report (CSER).*

# APPENDIX

***Attachments vs. Technical Documents***

*Documents included in the Appendix as attachments are considered part of the PER document. The Appendix contains documents which support the evaluations documented in the PER. Examples of these optional Appendices are shown below. Additionally, some projects may need to refer to additional Technical Documents as appropriate. Please evaluate each project as necessary.*

*Technical Documents are documents contained under separate cover. They should be referenced in the PER and are included in the project file in SWEPT. This includes technical reports (e.g., Project Traffic Analysis Report, Conceptual Stage Relocation Plan, Natural Resource Evaluation, etc.), technical memorandums, and studies.*

*Be sure Appendices and Technical Documents are described/named clearly.*

***APPENDICES - Note: All maps may be embedded in the document or attached.***

*□ District Approved Typical Section Package, signed and sealed*

*□ Concept Plans*

*□ Project Costs*

***TECHNICAL DOCUMENTS - Reference in the PER in the Technical Documents section as applicable and upload to SWEPT separately.******Consult the standard scope of services for all needed reports to be included for the PD&E. Some common Technical Documents are listed below.***

*Engineering Documents*

*□ Location Hydraulics Report (LHR)*

*□ Bridge Hydraulic Report (BHR)*

*□ Pond Siting Report (PSR) / Conceptual Drainage Design Report*

*□ Water Quality Impact Evaluation (WQIE)*

*□ Geotechnical Report*

*□ Interchange Access Request (IAR) Report*

*□ Project Traffic Analysis Report (PTAR)*

*□ Safety Analysis Memorandum*

*□ Intersection Control Evaluation (ICE) Forms*

*□ Bridge Development Report (BDR)*

*□ Bridge Replacement Report*

*□ Design Exceptions/Variation Package*

*□ Value Engineering (VE) Study Report*

*□ Utility Assessment Package*

*Environmental Documents*

*□ Cultural Resources Assessment Survey (CRAS) or Technical Memorandum*

*□ Individual Section 4(f) Evaluation and Section 106 Notification Letter*

*□ Natural Resources Evaluation (NRE) or Technical Memorandum*

*□ Noise Study Report*

*□ Contamination Screening Evaluation Report*

*□ Conceptual Stage Relocation Plan*

*Public Involvement Documents*

*□ Comments and Coordination Report*

*□ Public Hearing Transcript*