

Alternative Corridor Evaluation
Methodology Memorandum

Florida Department of Transportation
District Seven

US 301/US 98/SR 35/SR 700/Clinton Avenue
Intersection Realignment Study

Pasco County, Florida

Financial Management Number: 443368-1-22-01
ETDM Number: 14374

August 2019

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016 and executed by FHWA and FDOT.

This planning product may be adopted into the environmental review process, pursuant to Title 23 USC §168, or the state project development process.

1.0 Background

The Florida Department of Transportation (FDOT) District Seven is utilizing the Alternative Corridor Evaluation (ACE) process as part of the US 301/US 98/Clinton Avenue Intersection Realignment Study. ACE is typically performed as part of the Efficient Transportation Decision Making (ETDM) screening efforts that precede the Project Development and Environment (PD&E) phase and is used to identify, evaluate, and eliminate alternatives. Alternatives advancing to the PD&E phase should support the purpose and need for a project in accordance with all applicable laws and regulations, through the balancing of engineering, environmental, and economic aspects while considering comments received through the ETDM screening efforts.

The purpose of this Methodology Memorandum (MM) is to document the evaluation methodology to be utilized for the recommendation and elimination of alternatives. The MM details the goals of the evaluation, the methodology, how coordination with stakeholders will occur, and the basis for decision making. This MM will be reviewed by the Environmental Technical Advisory Team (ETAT) members during a 30-day minimum comment period.

The evaluation of the corridors will be detailed in the Alternative Corridor Evaluation Report (ACER). The results in the ACER will identify the reasonable alternatives for National Environmental Policy Act (NEPA) analysis.

1.1 Contact Personnel

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1.2 Project Information

FDOT District Seven initiated this ACE for the US 301/US 98/Clinton Avenue Intersection Realignment Study in Pasco County, Florida in April 2019. The realignment of the US 98 intersection is listed in both the Needs Plan and the Cost Feasible Plan of the Pasco County Metropolitan Planning Organization's (MPO) 2040 Long Range Transportation Plan (LRTP) and planned for construction between 2030 and 2040 with a total cost of \$23,566,428. Funding for a PD&E study to evaluate the realignment of the US 301/US 98/Clinton Avenue intersection is ranked #8 (WPI Segment #443368-1) on the Pasco County MPO's 2019-2020 Transportation Improvement Program (TIP) Priority List: Table 1: Combined Roadway Capacity, Intersection, and ITS Projects. The PD&E for this project was funded (\$1,000,000) in FY 2019 and is shown on page 50, in the FY 2019-2020 TIP. No additional funding is currently set in the FDOT's Five Year Work Program.

The ETDM Planning Screen for ETDM #14374 (US 98 (SR 35/SR 700)/US 301/(SR 39)/Clinton Avenue (CR 52A) Intersection Realignment Study) was initiated on December 11, 2018 with the Preliminary Planning Screen Summary Report published on April 23, 2019. For the Planning Screen, a single study area (Alternative #1) that would likely encompass all alternative corridors to be developed was screened to help identify sensitive resources and other fatal flaws that should be avoided. Features identified during the ETDM screening as important considerations include, but are not limited to: low income residents, the Withlacoochee (multi-use) Trail, historic resources, cemeteries, wetlands, water quality, floodplains, wildlife and habitat, contamination, and noise. There are previous studies on US 98 in this area and previously identified corridor alternatives.

1.3 Project Description

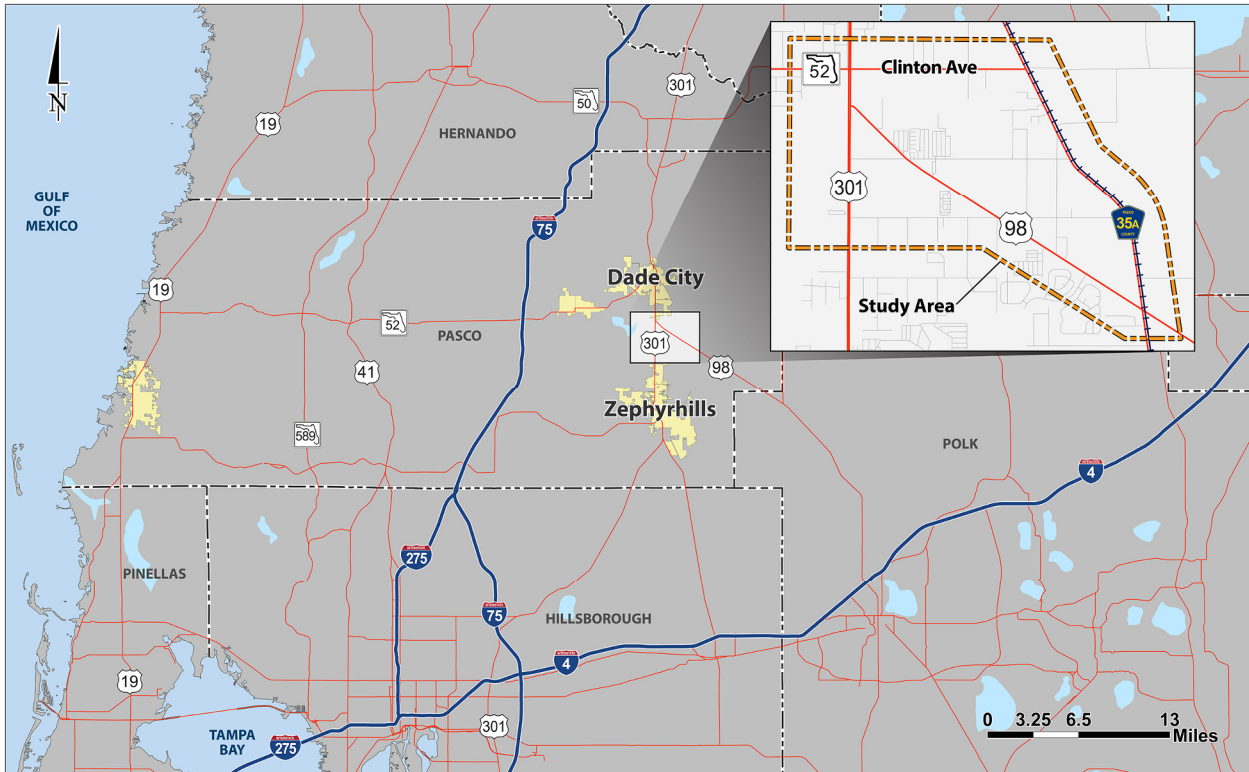
This project will evaluate potential alternatives for the realignment of US 98 to Clinton Avenue to eliminate the closely spaced intersections of US 301 at US 98 and US 301/US 98 at Clinton Avenue, which are currently spaced approximately 1,600 feet apart. US 301 is currently a four-lane divided facility throughout the project limits and is functionally classified by FDOT as an urban principal arterial. A PD&E Study has been approved for the widening of US 301 from four lanes to six lanes in the segment from south of US 98 to Clinton Avenue. US 98 is a two-lane undivided facility and is functionally classified as an urban principal arterial. Clinton Avenue is a four-lane divided roadway and is functionally classified as an urban major collector. A project location map is shown in **Figure 1-1**.

1.4 Purpose and Need

Purpose

The purpose of this project is to provide alternatives that realign US 98 to Clinton Avenue to eliminate the current closely spaced intersections of US 301 at US 98 and US 301 at Clinton Avenue; facilitate east/west travel; maximize the benefits of the improvements to Clinton Avenue and designation as SR 52 west of US 301; and enhance safety along the corridor.

**FIGURE 1-1
PROJECT LOCATION MAP**



Need

The need for the project is based on the following:

Safety

The closely spaced intersections of US 301 at US 98 and US 301 at Clinton Avenue have crash rates that exceed the statewide average. Between 2013 and 2017, the intersection of US 301 at US 98 experienced a total of 68 crashes. The predominant crash types were angle crashes (57%) followed by rear end crashes (32%). This intersection exhibited a crash rate (crash ratio = 2.457) that was consistently higher than the statewide average for a similar type of intersection.

Between 2013 and 2017, the intersection of US 301 and Clinton Avenue experienced a total of 71 crashes. The predominant crash types were rear end crashes (51%) followed by angle crashes (28%). This intersection exhibited a crash rate (crash ratio = 2.181) that was consistently higher than the statewide average for a similar type of intersection. A realignment of US 98 to Clinton Avenue to eliminate high traffic volumes at one of the two closely spaced intersections has the potential to reduce crashes and enhance safety.

The realignment of SR 52 from east of McKendree Road to east of US 301 will begin in 2019 and will serve as an additional east/west route in the regional transportation network. When completed, this improvement will increase traffic at the US 301 at US 98 and US 301 at Clinton Avenue intersections, exacerbating the current intersection safety concerns.

2.0 Goals and Objectives

2.1 Goals and Intent of the Alternative Corridor Evaluation

The ACE process, as defined in the PD&E Manual, Part 1, Chapter 4 and ETDM Manual, meets the intent of the Code of Federal Regulations (CFR), Title 23, Part 450 (Planning Regulations) and 23 U.S. Code (USC) §168 (Integration of Planning and Environmental Review) of streamlining the planning and environmental review process. It is the intent to conduct the corridor study for the proposed US 301/US 98/Clinton Avenue Intersection Realignment so that planning decisions can be directly incorporated into the NEPA process. The goals of the ACE are to address ETAT comments, to eliminate alternative corridors that do not meet the project's purpose and need or that have disproportionate and/or significant impacts, and to recommend viable corridors to be carried forward into the PD&E Study. The ACE process ensures that all alternatives are evaluated consistently.

2.2 Status in Project Delivery

The ETDM Planning Screen for ETDM #14374 (US 98 (SR 35/SR 700)/US 301/(SR 39)/Clinton Avenue (CR 52A) Intersection Realignment Study) was initiated on December 11, 2018 with the Preliminary Planning Screen Summary Report published on April 23, 2019. For the Planning Screen, a single study area (Alternative #1) that would likely encompass all alternative corridors to be developed for this study was screened to help identify sensitive resources and other fatal flaws that should be avoided. There are no corridor alternatives from any previously completed planning activities. The naming of each corridor or alternative identified in the ACE will remain consistent throughout the ACE process and be carried through the PD&E phase.

2.3 Decision Points/Milestones

This Draft MM will be distributed to the ETAT for review and comment through the EST (Environmental Screening Tool). The ETAT has 30 days in which to comment on the Draft MM. Once comments on the Draft MM have been incorporated, the revised MM will be included in the republished Planning Screen Summary Report.

The revised MM and implementation of the ACE process will be documented in the ACER. The results of the ACE will determine which corridors are not feasible or do not meet the purpose and need and should be eliminated from further study. The Draft ACER will be distributed to the ETAT for review and comment through the EST. The ETAT has 30 days in which to comment on the Draft ACER. After ETAT review, the ACER will be submitted to the FDOT Office of Environmental Management (OEM), the Lead Agency under the NEPA Assignment Program, for acceptance and concurrence. After acceptance and concurrence from OEM, the Final Planning Screen Summary Report will be published and will include the MM and ACER.

3.0 Alternative Corridor Evaluation Methodology

3.1 Data Collection

The data used to evaluate the project corridor’s social, cultural, natural and physical environmental impacts will be derived from (GIS), literature and field reviews, where appropriate. Various GIS datasets within the Florida Geographical Data Library (FGDL), the Southwest Florida Water Management District (SWFWMD), the Florida Fish and Wildlife Conservation Commission (FWC), the Florida Natural Areas Inventory (FNAI), the National Park Service (NPS), the Federal Emergency Management Agency (FEMA), the U.S. Department of Agriculture’s (USDA) Natural Resource Conservation Service (NRCS), the Florida Department of Environmental Protection (FDEP), the National Wetland Inventory (NWI), and the Pasco County Government (PC) will be used as data sources. In addition, field and literature reviews will be performed to verify key project corridor constraints. A preliminary list of GIS data layers that may be used in the assessment of the project study area is provided in **Table 3-1**.

**TABLE 3-1
GIS DATA LAYERS**

GIS Data Layer	Source (Year)
Social and Economic Layers	
Airports	PC (2018)
Cemeteries	PC (2018)
Churches	PC (2018)
Developments of Regional Impact (DRIs)	FGDL (2018)
Fire Stations	PC (2018)
Future Land Use	PC (2018)
Hospitals	PC (2018)
Low and Moderate Income	PC (2018)
Planned Unit Developments (PUDs)	PC (2018)
Police Stations	PC (2018)
Prime Farmland	NRCS (2018)
Public Housing	PC (2018)
Public Lands	PC (2018)
Residential Land Use	PC (2018)
Schools	PC (2018)

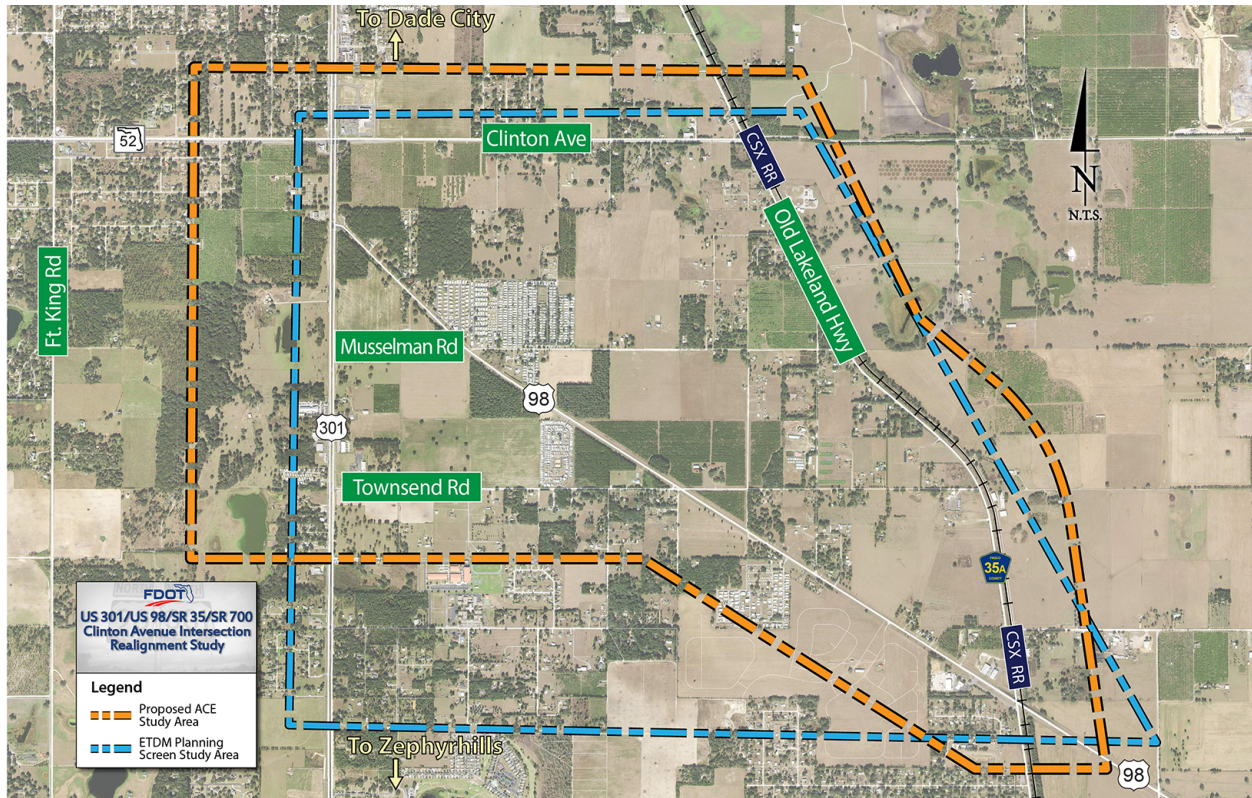
**TABLE 3-2
GIS DATA LAYERS (CONTINUED)**

GIS Data Layer	Source (Year)
Cultural Layers	
American Indian Lands	FGDL (2017)
Historical (Sites, Railroads, Structures & Districts)	PC (2018)
Local Parks	PC (2018)
National Register of Historic Places	NPS (2014)
State Historic Preservation Officer (SHPO) Bridges	FGDL (2019)
SHPO Cemeteries	FGDL (2019)
SHPO Resource Groups	FGDL (2018)
SHPO Structures	FGDL (2019)
State Parks	FGDL (2017)
Existing Trails	FGDL (2018)
Natural Environment Layers	
Conservation Lands	FNAI (2019)
Critical Wildlife Areas	FWC (2019)
Eagle Nests	FGDL (2016)
Flood Zones	FEMA (2018)
FWC Managed Lands	FWC (2019)
Mitigation Banks	FGDL (2018)
Outstanding Florida Waters (OFWs)	FGDL (2018)
Protected Species Occurrence Potential (multiple layers)	FWC (2017, 2012, 2010, 2003); FNAI (2018)
SWFWMD Owned Lands	SWFWMD (2010)
Wetlands	NWI (2018)
Wetlands and Water Land Uses	SWFWMD (2014)
Physical Environment Layers	
Brownfields (EPA/FDEP)	FGDL (2018)
EPA Pollutant Sites (air, water, RCRA)	FGDL (2018)
Hazardous Materials Generator Sites	FDEP (2017)
Landfills	PC (2018)
Petroleum Contamination Monitoring Sites	FGDL (2019)
Solid Waste Facilities	FGDL (2018)
Storage Tank Contamination Monitoring	FGDL (2019)
Superfund Sites	FGDL (2018)

3.2 Study Area

The study area used for the ETDM Preliminary Planning Screen has been refined to standardize and make uniform the buffers along US 301, Clinton Avenue, Old Lakeland Highway, and US 98. **Figure 3-1** shows the proposed ACE study area in comparison to the ETDM Preliminary Planning Screen study area.

**FIGURE 3-1
PROPOSED ACE STUDY AREA**



3.3 Identify Corridor Constraints

The GIS data will be used to identify corridors that avoid and minimize impacts to sensitive environmental features to the extent possible. The data sources included in **Table 3-1** will be used to locate social, cultural, natural, and physical constraints within the study area.

Based on ETAT commentary from the Preliminary Planning Screen, features identified as important considerations include, but are not limited to: low income residents, the Withlacoochee (multi-use) Trail, historic resources, cemeteries, wetlands, water quality, floodplains, wildlife and habitat, contamination, and noise.

3.4 Identify Potential Corridors

Corridors with a width of 250 feet will be developed for screening purposes. It is anticipated that 4-6 lane divided typical sections will be developed for corridor consistency and to accommodate the projected future traffic demand. The developed corridors will tie into the 4-lane Clinton Avenue extension west of US 301 (to be designated as SR 52) and to US 98.

Potential typical sections include a high speed urban typical section requiring 148 feet of right of way and a rural typical section requiring 192 feet of right of way. This corridor width allows for flexibility in developing proposed alignments that avoid potential constraints.

If necessary, the corridor width also allows for multimodal accommodations including sidewalks, bike lanes, recreational trail, and transit. The typical sections and the corridor alignments will be further refined during the PD&E Study phase. Traffic analysis is being performed as part of the ACE to verify that traffic operations in developed corridors improve or at a minimum remain the same.

It is anticipated that five (5) to seven (7) alternatives will be developed for evaluation as part of this ACE. The naming of each corridor or alternative identified in the ACE will remain consistent throughout the ACE process and be carried through the PD&E phase.

3.5 Corridor Analysis and Evaluation Criteria

The corridors will be evaluated based on consideration of meeting the project purpose and need, avoidance and/or minimization of potential impacts to environmental resources, engineering feasibility, a narrative assessment of the corridors, and agency/public input. The analysis and assessment for each of these factors are described below.

3.5.1 Purpose and Need Evaluation

Each corridor will be evaluated for how well it satisfies the project purpose and need. Each corridor will be assigned a yes or no for its ability to:

- Realign US 98 to Clinton Avenue
- Improve the safety at the intersections of US 301 at US 98 and US 301 at Clinton Avenue

Corridors will be evaluated for their overall ability to satisfy the purpose and need by totaling the number of criteria that are met. Any corridor that does not satisfy the stated purpose and need criteria will be eliminated. All remaining viable corridors will be evaluated using environmental, engineering, and cost considerations. **Table 3-2** provides the purpose and need screening criteria. The evaluation matrix tables in this chapter are examples shown to demonstrate how they may look in the ACER. The number of columns and rows showing corridors will be adjusted to reflect the actual number of corridors created and evaluated.

**TABLE 3-2
EVALUATION OF PURPOSE AND NEED**

Corridor	Eliminate Intersection Offset	Improve Safety
A		
B		
C		
D		
E		

Notes: Yes = Highest Benefit, Moderate = Neutral Benefit, No = Unsatisfactory

3.5.2 Environmental Evaluation

The potential direct, indirect, and cumulative effects on the environment will be considered for each corridor. **Table 3-3** provides an evaluation matrix table that will be populated with data using the GIS layers identified in **Table 3-1** and the corridor shapes for the corridors to be developed. Quantifiable values for the social, cultural, natural, and physical environment will be shown in the evaluation matrix. Non-quantifiable factors will be given a likelihood of impact rating. For listed species occurrence potential, an assessment of likelihood of impact will be made by a qualified biologist through the review of species occurrence databases from the sources identified in **Table 3-1**, as well as limited pedestrian wildlife surveys within the ACE study area shown in **Figure 3-1**.

**TABLE 3-3
EVALUATION OF ENVIRONMENTAL FACTORS**

Category	Evaluation Criteria	Unit of Measure	Corridor A	Corridor B	Corridor C	Corridor D	Corridor E
Social	Potential Residential Displacements	Number					
	Potential Non-residential Displacements	Number					
	Community Facilities	Number					
	Neighborhoods	Number					
	Community Cohesion	Effects to residential connectivity and social interaction					
	Socioeconomic Impact to Special Populations	Potential for disproportionate impact					
	Prime Farmlands	Acres					
Cultural	Historic Resources	Number					
	Archaeological Resources	Number					
	Potential Section 4(f) Resources	Number					
	Recreation Areas/Trails	Number					
Natural	Special Designations (OFW)	Acres					
	Water Quality (Verified impaired waters drainage basin)	Acres					
	100-year Floodplain	Acres					
	Non-Forested Wetlands	Acres					
	Forested Wetlands	Acres					
	Water Features	Acres					
	Listed Species Occurrence Potential	Degree					
Physical	Conservation/Managed Lands	Acres					
	Potential Contamination Sites	Number					
	Potential Noise Sensitive Sites	Number					

3.5.3 Engineering Considerations

The engineering considerations used to screen corridors are listed in **Table 3-4**. Engineering factors include utility conflicts, involvement of infrastructure items such as bridges and railroad crossings, drainage basins involved, requirements for stormwater ponds, and acres of new right of way required. Those corridors with greater engineering involvement are likely to have higher design and construction costs.

**TABLE 3-4
EVALUATION OF ENGINEERING ISSUES**

Evaluation Criteria	Unit of Measurement	Corridor A	Corridor B	Corridor C	Corridor D	Corridor E
Utility Conflicts	Number					
Bridge Involvement	Number					
Railroad Crossings	Number					
Drainage Basins	Number					
Stormwater Ponds	Acres					
Right of Way	Acres					

The estimated construction, wetland mitigation, and right of way costs will be listed in **Table 3-5** below. Construction costs for each corridor will be developed utilizing FDOT Long Range Estimates (LRE). Right of way costs will be estimated based upon general costs of land and buildings in the study area by land use type and unit right of way costs obtained from the FDOT Right of Way Office. Wetland mitigation costs will be based on in-basin mitigation bank credit costs.

**TABLE 3-5
EVALUATION OF COSTS**

Costs	Corridor A	Corridor B	Corridor C	Corridor D	Corridor E
Construction Costs					
Wetland Mitigation Costs					
Right of Way Costs					
Total Cost					

3.5.4 Narrative of Assessment

Based on the corridor evaluations described above, a narrative discussion and assessment of each of the corridors will be prepared in compliance with elements and issues contained in 23 USC §168(c). This narrative will provide a discussion of the affected environment, advantages and limitations of each corridor, potential safety improvements, and highlight any specific factors that may result in an unreasonable corridor. Public and agency input

(consideration of input received from the ETAT, project stakeholders and the general public) will be summarized in the narrative.

3.5.5 Public and Agency Considerations

Public, agency and ETAT members input received during the screening process will be used to refine the purpose and need, corridor constraints and evaluation criteria in order to evaluate the corridors. A complete description of the opportunities for public input into the corridor evaluation process is in **Section 4.0 Stakeholder Coordination**. The results documented in the ACER will be made available to the ETAT through the EST for a 30 calendar day period. Notification of the public meetings will be distributed to all the individuals on the project mailing list including local officials, agencies, appropriate Native American tribes, stakeholders, special interest groups and property owners within the affected study area. If meetings are needed to explain the results of the ACER, they will be scheduled as necessary.

3.6 Approach to Eliminating Unreasonable Alternatives

Any corridor that does not meet the purpose and need for the project or is not considered feasible will be eliminated from further consideration, upon OEM approval. The corridors considered reasonable for detailed study as a result of the Purpose and Need Evaluation will be compared using the evaluation criteria described in **Section 3.5**. The corridor evaluation involves both quantitative and qualitative comparisons of the evaluation criteria. The comparative analysis will include evaluating the following:

- Environmental impacts and construction cost estimates (quantitative)
- Engineering factors (technical feasibility) (quantitative)
- Narrative assessment (advantages and limitations) (qualitative)
- Public support including plan consistency and controversy potential (qualitative)

The rating process is discussed further in **Section 3.6.1**. Upon completion of this assessment and OEM approval, viable corridors will be carried forward into the PD&E Study. The evaluation criteria and units of measure used to evaluate and compare alternatives will include resources issues that are consistent and acceptable to each respective resource agency.

3.6.1 Summary Corridor Ratings

A summary comparative evaluation matrix will be utilized to facilitate the overall comparison of alternatives and identification of corridors to be advanced to the PD&E study. The summary comparative evaluation matrix (**Table 3-6**) will reflect the alternative corridors in each of the evaluation categories.

**TABLE 3-6
SUMMARY OF COMPARATIVE EVALUATION**

Corridor	Purpose and Need	Evaluation Criteria				Recommended for Further Consideration
		Environmental Impacts	Engineering Performance	Public Support	Cost	
A						
B						
C						
D						
E						

3.7 Alternative Corridor Evaluation Report

The results of the analysis described above will be summarized in the ACER. This report will be submitted to the ETAT and interested stakeholders through the EST for a 30 calendar day period. Once comments are addressed, a corridor public workshop will be held to allow the public to provide input. The appropriate decision making matrices will be included in the ACER to substantiate findings, provide reasons for eliminating corridors, and to identify corridors that will be carried forward into the PD&E phase. The ACER will be included in the republished Final Planning Screen Summary Report.

4.0 Stakeholder Coordination

Public outreach during the ACE will be used to engage stakeholders to identify community values and concerns that may affect the development and evaluation of corridors. **Table 4-1** lists the public and agency events that will be conducted. In addition, other meetings with the public, elected officials, special interest groups or public agencies may occur, as needed. Other communication aids will be utilized including a project website and newsletters.

**TABLE 4-1
SCHEDULED PUBLIC MEETINGS**

Meeting	Purpose	Schedule
Elected Officials/Agency Kick-off Meeting	To introduce the project, set expectations for the project, and present the project schedule.	Beginning of ACE Study (June 2019)
Small Group Meetings	To discuss project purpose and progress and to seek project input	Throughout ACE Study
Alternative Corridors Workshop	To present the results of the ACE and seek public opinion on corridor recommendations	End of ACE Study (Winter 2019/2020)

In compliance with the ETDM Master Agreement, agency involvement regarding project needs, issues, evaluation criteria, avoidance, minimization, decisions, and preliminary mitigation concepts will be a continuous effort throughout the ETDM and ACE processes. Agency coordination was initiated with the ETAT review during the Planning Screening. ETAT coordination will continue throughout the ACE process with ETAT reviews of this MM and the ACER.

5.0 Conclusion

In conclusion, the purpose of this MM is to document and describe the ACE methodology to be conducted for the US 301/US 98/Clinton Avenue Intersection Realignment Study. The memorandum details the goals of the evaluation, the methodology, the stakeholders coordination process, and the basis for decision-making. The evaluation of the corridors will be detailed in the ACER and the results will identify the reasonable alternatives for NEPA analysis.