



Florida Department of Transportation

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MEMORANDUM

Date: February 21, 2020

To: Kadian McLean, District Value Engineer Administrator

From: Steven C. Braun, P.E. Director of Transportation Development 

Copies: John Olson, P.E., Robert Bostian, P.E., VE Team Members

Subject: **Value Engineering Study Responses**
SR 869 / SW 10th Street Connector
Broward County, Florida
Project Development and Environment (PD&E) Study
FIN 439891-1-22-02

This memorandum is in response to the subject Value Engineering (VE) review conducted during the week of April 16 to April 19, 2018, May 8 to May 11, 2018, and July 7 to July 9, 2018. We would like to thank the VE Team for their review of the project and their recommendations. Only the recommendations that were detailed in the Development Phase of the *Cost Risk Assessment and Value Engineering Report* provided are discussed here. The VE Team generated 103 ideas during the Creative Ideas phase of the VE Job Plan and concluded with 32 VE Recommendations, as described below.

VE Recommendation Number No. 1: Create An At-Grade Alignment (Idea Nos. 1, 71)

VE Recommended Change: Design an alternative alignment that can accommodate the managed lanes at ground level as much as possible with elevated section at intersections.

PD&E Proposed: An at-grade alternative has been developed that can accommodate ingress / egress between the local and managed lanes.

PD&E Response: Accepted.

VE Recommendation Number No. 2: Begin Depressed Section West of Canal (Idea No. 54)

VE Recommended Change: Start the depressed section west of the canal.

PD&E Proposed: Beginning the depressed section west of the canal was incorporated in the “Partial Depressed Alternative”, including all three sub-alternatives.

PD&E Response: Accepted.

VE Recommendation Number No. 3: Use Cantilever Roadway Over Depressed Section (Idea Nos. 35, 37)

VE Recommended Change: Use a Cantilever/Bridge structures to support a portion/local street over the depressed section. Use Cantilever section at pinch point at a minimum to avoid right-of-way. Dedicate cantilevered lane for HOV/bus lane

PD&E Proposed: A cantilever section has been incorporated into the Full Depressed Alternative. In particular, the Full Depressed Alternative utilizes this configuration at Powerline Road for eastbound right-turn lane. The westbound exit ramp in this alternative also utilizes a cantilever section. However, this recommendation would have a more widespread application to the Center Alternative, which was not carried forward.

PD&E Response: Accepted.

VE Recommendation Number No. 4: Construct Semi-Depressed Section (Idea No. 53)

VE Recommended Change: Incorporate a semi-depressed (10’ to 16’ below local SW 10th Street) section which would adjust the ML section so that it would lie approximately 10’ below (Approximately 16’ at intersections) local SW 10th Street. Local SW 10th Street would need to be raised approximately 5’-7’ at intersections and SW 10th Street ML would need to be lowered an additional 5’ at the intersections to achieve the grade separation and vertical clearance requirements.

PD&E Proposed: Due to the connections at SW 30th Avenue, SW 28th Avenue, and SW 24th Avenue, raising local SW 10th Street is not considered desirable. Raising the corresponding profiles of these side streets would have additional impacts in the vicinity of the neighborhoods.

PD&E Response: Not accepted.

VE Recommendation Number No. 5: Temporary U-Turns on Powerline Road (Idea Nos. 12, 21)

VE Recommended Change: The recommendation is to reduce the number of lanes/turning movements to be maintained during the traffic control phasing at the Powerline Road Interchange scope of work. This reduction will be mitigated with temporary median U-turns to avoid right-of-way impacts during construction.

PD&E Proposed: Restricting left-turns and utilizing downstream U-turns could be evaluated in the design phase to ensure that proper turning radii developed for U-turns would accommodate any necessary truck movements within the existing right-of-way.

PD&E Response: Defer to next phase.

VE Recommendation Number No. 6: Early utility relocation package (Idea No. 74, 76)

VE Recommended Change: Coordinate utility relocations, execute utility agreements, and issue Notices to Proceed in the early stages of project development. Identify a dedicated utility corridor, then coordinate and start moving utilities into designated corridor, during RFP development. Have FPL Transmission and Distribution to relocate all their lines to the same side where designated corridor is going to be.

PD&E Proposed: Coordination with FPL, the City of Deerfield Beach, and Broward County has already begun. FDOT will continue to advance utility coordination to help minimize impacts of utility relocations needed for the project and facilitate relocation where required. Discussions regarding the implementation of a utility corridor or advanced utility work are underway.

PD&E Response: Accepted. Continue utility coordination in PD&E phase; accelerate during RFP development.

VE Recommendation Number No. 7: Construct a stormwater treatment facility (CDS units) (Idea No. 95)

VE Recommended Change: Construct a stormwater treatment facility with a continuous deflective separation system (CDS Units) to separate and trap debris, sediments, oil and grease from the stormwater runoff for SW 10th St. from Florida's Turnpike (FTE) to I-95.

PD&E Proposed: Currently, CDS units are not expected to be necessary for the permanent drainage but may be required in some form for construction dewatering. The drainage concept as well as the potential dewatering needs will continue to be assessed to help mitigate any potential impacts for future phases.

PD&E Response: FDOT is currently in conversation with Century Village for joint-use drainage facilities. However, further details on the stormwater design will occur in the next phase.

VE Recommendation Number No. 8: Eliminate covered sections of depressed section (Idea No. 88)

VE Recommended Change: Eliminate lids/landscape structures

PD&E Proposed: This option applies to the Full Depressed and Partial Depressed Alternatives. Depending on the alternative selected and the configuration of any depressed element, the lids / landscape structures will be incorporated to increase the overall aesthetics of the corridor. The COAT recommendations mention the desire to “Include generous tabletop intersections for local roads to improve pedestrian and bike connectivity north and south across 10th Street.”

PD&E Response: Not accepted.

VE Recommendation Number No. 9: Implement an extraordinary public awareness campaign (Idea No. 50)

VE Recommended Change: Procure a “top notch” Technology Public Relation team to help us market the project and be the face of the project

PD&E Proposed: FDOT is in the process of expanding its public engagement activities and will continue to utilize innovative techniques throughout PD&E, design, and construction phases.

PD&E Response: Accepted.

VE Recommendation Number No. 10: Implement livable community opportunities) (Idea Nos. 6, 12, 13, 14, 24, 25, 34, 39, 42, 43, 45, 48, 57, 87, 26, 52, 38, 96)

VE Recommended Change: Enhance the appearance of the facilities to gain public support for the project.

PD&E Proposed: Local SW 10th Street is being considered as a “complete street” with a lower operating speed (35 mph) and wide (8-foot) sidewalks and bicycle facilities. In addition, there is potential for noise walls, bold landscaping, and other aesthetic treatments and opportunities that will need to be coordinated with the city and residents to gain support.

PD&E Response: Accepted.

VE Recommendation Number No. 11: Develop one-lane roundabout) (Idea Nos. 60, 61)

VE Recommended Change: Provide one-lane roundabout with adequately designed truck apron and potentially right-turn bypass lane if needed.

PD&E Proposed: The I-95 PD&E study is recommending a roundabout at Newport Center Drive. A two-lane roundabout functions superior to a one-lane roundabout and accommodates large trucks.

PD&E Response: Not accepted.

VE Recommendation Number No. 12: Accommodate transit (Idea Nos. 51, 52, 81)

VE Recommended Change: Implement a Transit strategy by transporting passengers from the Coral Springs area to Boca Raton on the Corridor.

PD&E Proposed: Currently, Broward County does not have a transit plan for this corridor; however, a local bus service is offered. Accommodations for transit will be included in the project when they are identified.

PD&E Response: Accepted.

VE Recommendation Number No. 13: Implement truck staging strategies (Idea Nos. 56, 57, 58)

VE Recommended Change: Eliminate truck staging area near Publix and provide a staging area within the preferred concept.

PD&E Proposed: The proposed concept provides accommodations for trucks such that a staging area is not necessary.

PD&E Design Response: Accepted.

VE Recommendation Number No. 14: TSM&O strategies during construction) (Idea No. 79)

VE Recommended Change: Install temporary TMC (traffic management center) with ITS devices to monitor work zones during construction

PD&E Proposed: FDOT is currently considering various scenarios for traffic management during construction. TSM&O strategies will be incorporated to monitor work zones during construction.

PD&E Design Response: Accepted.

VE Recommendation Number No. 15: Maximize use of MSE walls (Idea No. 82)

VE Recommended Change: Extend roadway/MSE wall approaches to reduce length of structures that are required

Center alignment – Not feasible due to the amount of the local SW 10th roadway tucked under the ML ramps. [The Center Alternative has been dropped from further consideration.]

North Alignment- With additional refinements of the horizontal alignment by shifting further north, there appears to be the opportunity to separate the two facilities (Local SW 10th and SW 10th ML) and reduce the total bridge requirements between Military Trail and I-95.

PD&E Proposed: With the right-of-way limitations along the corridor, MSE walls are used anytime an extensive fill slope is needed. Structure lengths have been minimized to the greatest extent practicable.

PD&E Response: Accepted.

VE Recommendation Number No. 16: Realign direct connect structures (Idea No. 87)

VE Recommended Change: Adjust the horizontal alignment for SW 10th EL and reduce design speed of ramps to reduce required right-of-way takes

NB to WB ramp, maintain radius, and the EB to SB ramp combine structures as far as possible

PD&E Proposed: Adjustments to the direct connect ramps maintain the required design speed. In particular, the ramp in the southwest quadrant of the I-95 SW 10th Street intersection was shifted to avoid right-of-way impacts and retain the design speed.

PD&E Response: Accepted.

VE Recommendation Number No. 17: Seek right-of-way donations from local municipalities (Idea No. 7)

VE Recommended Change: Coordinate with local municipalities to obtain donations of public right-of-way.

PD&E Proposed: FDOT will work with the City of Deerfield Beach regarding impacts to the City parcel. FDOT is also working with the Turnpike for location of pond sites within Turnpike right-of-way. This effort will occur after Location Design Concept Acceptance.

PD&E Response: Accepted.

VE Recommendation Number No. 18: Create a rail spur for hauling and delivery (Idea No. 15)

VE Recommended Change: Build a rail spur onto Publix right-of-way to haul and deliver materials.

PD&E Proposed: Due to the extremely limited remaining right-of-way, constructing a private railroad spur is considered not feasible and would be beyond the scope of FDOT's jurisdiction. This topic, which is part of the contractor's means and methods, may be explored further during the design and construction phases.

PD&E Response: Not Accepted.

VE Recommendation Number No. 19: Transfer utility relocations to contractor (Idea Nos. 73, 75)

VE Recommended Change: Design and permit during RFP development “to be relocated” water/sewer lines. Determine the cost of design and relocations; carve out agreements with County/City for relocations of their lines, however, have FDOT contractor to do the actual relocations. The relocation could be done within designated utility corridor (preferable), or contractor could propose a new location that may reduce costs of relocations or construction time.

Utility crossings and service lines can be placed within depressed section lids.

PD&E Proposed: Utility coordination is currently being advanced to help determine the optimum methods to relocate utilities with a goal to reduce overall impacts to schedule and the risks of relocation. Where practical and feasible, relocations will be included with the roadway contract or potentially done in an advance contract or agreement.

Regarding the placement of services within a depressed section lid, this option has not been evaluated, and further analysis will be accomplished during the design phase.

PD&E Response: Accepted.

VE Recommendation Number No. 20: Use accelerated bridge construction (Idea No. 34)

VE Recommended Change: Build two bridges over the depressed roadway section, up station and down station from Powerline. Phase traffic to one of the bridges, excavate half of Powerline, and slide a new bridge into the position. Shift all traffic to the new bridge. Excavate the other half and slide the other bridge into position.

Maximize the use of pre-cast elements where appropriate.

PD&E Proposed: A preliminary analysis of staging a depressed section beneath Powerline Road acknowledged the need to construct this bridge in stages. Since Powerline Road is intended to remain operational for the duration of construction, the PD&E analysis also indicated the need for commercial displacements in the southwest and southeast quadrants of the intersection.

The first and second Alternatives Public Workshop showed diagrams of how a depressed section would be constructed along with a conceptual staging plan at Powerline Road. Because of the need to temporarily shift the Powerline Road intersection to provide room for construction of the depressed section, the need for commercial displacements became apparent.

The Full Depressed Alternative as envisioned avoids the need for temporary bridges by constructing the permanent bridge with a phased approach. The depressed section cells on the west side of the intersection along with half of the proposed bridge carrying an at-grade Powerline Road over a depressed SW 10th Street are constructed first while traffic is shifted to the east on existing grade. The subsequent phase shifts traffic to the just-completed western half of the bridge while the eastern side is completed.

However, accelerated bridge construction, along with numerous other construction incentives and techniques, including maximizing the use of precast elements, will be examined further as the project progresses.

PD&E Response: Defer to next phase.

VE Recommendation Number No. 21: Use alternative tie back methods (Idea No. 34)

VE Recommended Change: Avoid installation of tiebacks at Quiet Waters Park/Deerfield Storage - soldier pile with different tiebacks, etc.

PD&E Proposed: Alternative tie-back methods have been examined and will depend on the alternative carried forward. For example, the Partial Depressed – Depressed WB exit ramp alternative currently features shortened tie-back distances because of the reduced amount of depressed section. Moreover, the design team has coordinated with the park regarding leaving below-ground tiebacks in place. Park management has indicated that leaving the below-grade temporary sheet pile anchors in place is acceptable, should this alternative be selected.

PD&E Response: Accepted; alternative tie-back methods will be evaluated as required.

VE Recommendation Number No. 22: Use CM/GC delivery method (Idea No. 11)

VE Recommended Change: (CM/GC) Construction Manager/General Contractor Method

PD&E Proposed: FDOT is evaluating alternative contracting options and has hired a Corridor Design Consultant to assist in determining the optimal method to work as the construction manager or general contractor.

PD&E Response: The delivery method is currently being evaluated. Several Alternatives are being considered in a coordinated effort which includes the Design and Construction offices.

VE Recommendation Number No. 23: Use displaced left turns (EB and WB) at Military methods (Idea No. 62)

VE Recommended Change: The alternative concept will provide displaced left turn intersection (DLT) on SW 10th St in East-West directions as well as provide three through lanes in East-West direction for the SW 10th St. North Alignment Alternative.

The SW 10th St East-West traffic that would normally turn left at the Military Trail intersection would first cross the opposing through lanes at a signal-controlled intersection several hundred feet upstream of the main intersection. Left-turning vehicles then would travel on a new street parallel to the opposing lanes and execute the left-turn maneuver simultaneously with the through traffic at the main intersection. The traffic signals will be operating in a coordinated manner, are present at the main intersection and the locations of the left-turn crossovers.

PD&E Proposed: The difficulty with displaced left turns is that a wide median with a bulb-out is required to accommodate tractor-trailer U-turns. The available right-of-way along this corridor is significantly constrained. Therefore, displaced left-turn movements are not considered feasible at Military Trail.

PD&E Response: Not accepted.

VE Recommendation Number No. 24: Build a second access to Waterways community (Idea No. 100)

VE Recommended Change: Explore an option to provide a second entrance/exit for Waterways, to Wiles Road.

PD&E Proposed: The existing entrance to Waterways will remain open during construction. The FDOT has no authority to facilitate this new access to the Waterways (a private community), although the Department researched the history of a potential second entrance at the time of the development.

PD&E Response: Not accepted.

VE Recommendation Number No. 25: Modify work restrictions and sound wall construction (Idea Nos. 13, 99)

VE Recommended Change: Require the contractor to install the applicable ground mounted sound walls (within the FDOT construction time restrictions) as the first item of work before any other activities can occur.

Once complete, obtain approval to reduce or eliminate the construction time restrictions and City of Deerfield Beach noise ordinances in order to promote increase production rates and overall reduction in construction schedule.

ASSUMPTION: Schedule for this recommendation assumes 24/7 construction Advantages Disadvantages

PD&E Proposed: Depending on the results of the noise study and recommended barrier placement, FDOT will consider installing ground-mounted noise walls as early as practical during construction or potentially in advance of construction, if feasible. However, FDOT does not anticipate substantive night-time construction due to the proximity of residential neighborhoods.

PD&E Response: Further evaluation to occur during final design phase.

VE Recommendation Number No. 26: Use compensatory stormwater treatment strategy (Idea No. 101)

VE Recommended Change: Compensate for lack of treatment area west of Powerline by expanding capacity of ponds in Century Village golf course for Basins 2 and 3 with a total area of 64.56 AC. Basin 2 is located between Waterways Blvd. and Powerline Road. Basin 3 is located between Powerline Road to CSX Railroad.

PD&E Proposed: Due to the volume of storm water requiring treatment, compensatory treatment is not considered desirable. Our proposed pond configuration includes providing treatment with the Turnpike / Sawgrass interchange area.

PD&E Response: Not accepted.

VE Recommendation Number No. 27: Use Turnpike right-of-way for ponds (Idea Nos. 97, 98)

VE Recommended Change: Reshape Florida's Turnpike (FTE) infield wet ponds to maximize capacity and proposed dry ponds within Water Park to provide water quality and water quantity for additional impervious area created in Basins 1 and 2 with a total area of 37.43 AC. Basins 1 and 2 are located between FTE to Powerline Road.

PD&E Proposed: Florida's Turnpike right-of-way is located west of the project limits, and FTE has agreed to accommodate retention ponds west of the interchange (also see response to No. 26). The need for dry ponds within Quiet Waters Park is not required as part of this project.

PD&E Response: Accepted.

VE Recommendation Number No. 28: Implement TSM&O strategies (Idea No. 77, 78)

VE Recommended Change: Install additional intelligent transportation devices (CCTV, Bluetooth readers, Microwave vehicle detection sensors (MVDS), pre-emption devices, dynamic message signs (DMS), signal performance metric (SPM) devices, and connected vehicle (CV) devices) on both the managed lanes and the arterial to assist the flow of traffic and actively respond to events. Additionally, install a supervisory control and data acquisition (SCADA) system to actively monitor, control, maintain and provide data on the managed lanes.

PD&E Proposed: TSM&O strategies are being evaluated and will be implemented where possible.

PD&E Response: Accepted; the extent of the TSM&O implementation will be determined during final design. The idea of an advance project for TSM&O is being considered.

VE Recommendation Number No. 29: Industry Outreach (Idea No. 18)

VE Recommended Change: Risk Mitigating strategies:

- Industry Forum Presentation to showcase concept plans
- Management One-on-One Meetings with Design-Build Firms
- TRC One-on-One Meetings with Design-Build Firms

PD&E Proposed: FDOT has an aggressive outreach program and will consider holding an industry forum and associated one-on one meeting prior to the project construction advertisement as well as during a potential alternative delivery procurement.

PD&E Response: Accepted.

VE Recommendation Number No. 30: Construction staging strategies (Idea No. 16)

VE Recommended Change: Identify staging areas that the contractor may use in advance. Propose to the contractor different options of areas available to use to store material and equipment such as vehicles and stockpile from contract acquisition. These areas are located within the project limits or in the proximities of the project limits and will facilitate construction operations.

PD&E Proposed: The existing right-of-way provides significant opportunities for staging. The design-build teams will be expected to develop innovating construction staging techniques based on the allowances and criteria that would be provided to them for use of the project's right-of-way during construction.

PD&E Response: Not accepted.

VE Recommendation Number No. 31: Use soil mixing, ground anchors, and cellular construction (Idea No. 102)

VE Recommended Change: Use of soil mixing to replace tremie slab, soil ground anchors and cellular construction utilizing sheet piling.

PD&E Proposed: In the next phase of this project, these construction techniques will be analyzed further and will be dependent upon the final configuration of any depressed section. The design-build teams will consider optimal methods of constructing a depressed section should any one of these options be carried forward.

PD&E Response: Further evaluation to occur during final design phase.

VE Recommendation Number No. 32: Eliminate intermediate access to managed lanes (Idea No. 82)

VE Recommended Change: Remove intermediate access from the managed lanes throughout the length of the project

PD&E Proposed: The FDOT has considered an option, the Non-Depressed / No Managed Lanes Access Alternative, that eliminates ingress / egress to and from the managed lanes along SW 10th Street. The inclusion of ingress / egress is being evaluated as an option that applies to all the alternatives.

PD&E Response: The ingress / egress option will be considered as part of the evaluation of alternatives. The project team continues to evaluate the option eliminating the intermediate access based on coordination with the City.

SUMMARY

Of the 32 VE recommendations, 17 are being considered for implementation, while 12 are not accepted, and 3 are deferred to the next phase. We commend the participants of the study and the thoroughness of the idea phase of the analysis covering a broad range of areas that truly have and will continue to add value to the project. The VE recommendations contained herein will be re-examined throughout the remaining PD&E and design phases as the team continues to do outreach to stakeholders as well as refinements of the alternatives to best balance the needs of the project with the impacts.