



Florida Department of Transportation

719 S. Woodland Boulevard
DeLand, Florida 32720-6834

RON DESANTIS
GOVERNOR

JARED W. PERDUE, P.E.
SECRETARY

Value Engineering Final Resolution Memorandum

Date: 08/21/2023
Subject: Value Engineering Study Resolution Memo
Financial Project ID No.: 447724-1
County: Osceola, Orange, Seminole, Volusia
State Road No.: SR 400
Limits: Osceola/Polk County Line to SR 9 (I-95)

This memorandum is in response to the subject Value Engineering (VE) review conducted during the week of June 5 through June 9, 2023. The purpose of this memorandum is to document the responses to the subject alternative recommendations and the results of the VE Resolution Meeting held July 31, 2023.

DISCIPLINE: SITE LAYOUT

VE Recommendation #1A: Centralize the Restrooms (Osceola County Site 1)

Potential Value Added: \$2,480,000

Response: Accepted

The VE Recommendation is to combine the two 75' x 100' restrooms at the north and south ends of the site to one larger, combined restroom in a more centralized location. The total square footage of restroom capacity would remain the same as the PD&E concept in this recommendation.

After developing a revised preliminary concept for Osceola County Site 1 with a centralized restroom, the PD&E study team determined that the number of parking spaces would remain constant at 230 parking spaces. Centralizing the restrooms centralizes the security area, reduces the utility and maintenance costs, and doesn't increase impervious surface area.

Centralizing the restroom will not change the right-of-way footprint or the general layout of the site, but will result in impact to the PD&E schedule to include in all the completed draft documents. The PD&E scope does not include detailed building analysis and additional coordination with Central Office is needed in the Design phase to confirm the number of restrooms, building layout/details and the building size along with more detailed design refinements of the site layout. Due to decreased building capital and maintenance costs with the centralized restroom, the VE Recommendation is accepted but is recommended to be deferred to the Design phase to maintain the PD&E Schedule and avoid duplication of design efforts that will need to be revisited in the Design phase regardless of this change. The incorporation of the centralized restroom will be included as a PD&E project commitment.

VE Resolution: This recommendation was **accepted** by FDOT due to lower maintenance costs. It was discussed the site layout should be configured to minimize walking distance to the centralized restroom where feasible.

VE Recommendation #1B: Centralize the Restrooms (Volusia County Site 1A)

Potential Value Added: \$3,450,000

Response: Accepted

The VE Recommendation is to combine the 100' x 270' restroom at the north end of the site and the 75' x 100' restroom at the south end of the site to one larger, combined restroom in a more centralized location, which allows an additional row of parking spaces in the place of the restroom at the north end of the site. The size of the combined restroom would be 100' x 270'.

After developing a revised preliminary concept for Volusia County Site 1A with a centralized restroom, the PD&E study team determined that the number of parking spaces would increase from 275 to 285 parking spaces. Centralizing the restrooms reduces the total impervious area of the site, centralizes the security area, and allows for one single utility connection to the site. Two rows will need to be located adjacent to each other with back-in parking in order to create the necessary room for a centralized 100' x 270' restroom facility. Locating the restroom facility between only one parking row allows for only a 64' wide restroom facility.

Centralizing the restroom will not change the right-of-way footprint or the general layout of the site, but will result in impact to the PD&E schedule to include in all the completed draft documents. Due to decreased building capital and maintenance costs with the centralized restroom, the VE Recommendation is accepted but is recommended to be deferred to the Design phase to maintain the PD&E Schedule and avoid duplication of building design efforts that will need to be revisited in the Design phase regardless of this change. The incorporation of the centralized restroom will be included as a PD&E project commitment.

VE Resolution: This recommendation was **accepted** by FDOT due to lower maintenance costs. It was discussed the site layout should be configured to minimize walking distance to the centralized restroom where feasible.

VE Recommendation #1C: Centralize the Restrooms (Volusia County Site 1B)

Potential Value Added: \$2,043,000

Response: Accepted

The VE Recommendation is to combine the 100' x 270' restroom at the south end of the site and the 75' x 100' restroom at the north end of the site to one larger, combined restroom in a more centralized location, and to add an additional row of parking spaces in the place of the restroom at the north end of the site. The size of the combined restroom would be 100' x 270'.

After developing a revised preliminary concept for Volusia County Site 1B with a centralized restroom, the PD&E study team determined that the number of parking spaces would increase from 253 to 267 parking spaces. Centralizing the restrooms centralizes the security area and allows for just a single utility connection to the site, however it does minimally increase the total site impervious area. Two rows will

need to be located adjacent to each other with back-in parking in order to create enough room for a centralized 100' x 270' restroom facility. Locating the restroom facility between only one parking row allows for only a 64' wide restroom facility.

Due to decreased building capital and maintenance costs with the centralized restroom, the VE Recommendation is accepted with the condition that two adjacent back-in parking rows are provided to create the necessary room for a 100' x 270' restroom. This recommendation should be incorporated in the PD&E phase along with the proposed site layout revisions included in VE Recommendation #32.

VE Resolution: *This recommendation was **accepted** by FDOT due to lower maintenance costs. It was discussed the site layout should be configured to minimize walking distance to the centralized restroom where feasible.*

VE Recommendation #3A: One-Way Aisles (Osceola County Site 1)

Potential Value Added: \$401,000

Response: Not Accepted

The VE Recommendation is for the three internal aisles in this site to be one-way aisles with the parking spaces oriented in a manner to promote same direction of travel, while maintaining pull-through parking. The VE Study team used a WB-62FL design vehicle when analyzing the parking area, which only requires 38' of lane width to make a pull-through movement and allows for narrower aisles. The WB-62FL is often used as the design vehicle on the SHS per FDM 201.6 except in the case where tandem tractor trailers are involved.

Conversely, the PD&E Team used a WB-67 design vehicle, which requires a minimum 41' of lane width, to provide flexibility to accommodate varying oversize tractor trailers and additional flexibility for driving maneuvers and error. The PD&E concept included an additional 3' of lane width to provide additional room for parking or turning errors. With a 38' lane width, there is no flexibility for drivers that are not parking at optimum capability (close to or over the line) or increased articulating angles with the WB-67. Based on driver feedback during public involvement activities, more flexibility in maneuvers is needed especially after a long shift of driving. Additionally, having a two-way aisle next to a one-way aisle can lead to a truck on the two-way aisle pulling through a parking space and driving the wrong way on a one-way aisle. The additional flexibility in lane width is recommended for maneuverability to enhance safety for drivers and the VE recommendation is not accepted.

VE Resolution: *This recommendation was **not accepted**. FDOT prefers to provide more flexibility and space in the aisles at the PD&E stage of project development.*

VE Recommendation #3B: One-Way Aisles (Orange County Site 1)

Potential Value Added: \$504,000

Response: Not Accepted

Similar to VE Recommendation 3A, the VE Recommendation is for the internal aisles in this site to be one-way aisles with the parking spaces oriented in a manner to promote same direction of travel, while maintaining pull-through parking. For the same reasons outlined in the Response to VE

Recommendation 3A, the additional flexibility in lane width is recommended for maneuverability to enhance safety for drivers and the VE recommendation is not accepted.

VE Resolution: *This recommendation was **not accepted**. FDOT prefers to provide more flexibility and space in the aisles at the PD&E stage of project development.*

VE Recommendation #3C: One-Way Aisles (Volusia County Site 1A)

Potential Value Added: \$842,000

Response: Not Accepted

Similar to VE Recommendation 3A, the VE Recommendation is for the internal aisles in this site to be one-way aisles with the parking spaces oriented in a manner to promote same direction of travel, while maintaining pull-through parking. For the same reasons outlined in the Response to VE Recommendation 3A, the additional flexibility in lane width is recommended for maneuverability to enhance safety for drivers and the VE recommendation is not accepted.

VE Resolution: *This recommendation was **not accepted**. FDOT prefers to provide more flexibility and space in the aisles at the PD&E stage of project development.*

VE Recommendation #3D: One-Way Aisles (Volusia County Site 1B)

Potential Value Added: \$354,000

Response: Not Accepted

Similar to VE Recommendation 3A, the VE Recommendation is for the internal aisles in this site to be one-way aisles with the parking spaces oriented in a manner to promote same direction of travel, while maintaining pull-through parking. For the same reasons outlined in the Response to VE Recommendation 3A, the additional flexibility in lane width is recommended for maneuverability to enhance safety for drivers and the VE recommendation is not accepted.

VE Resolution: *This recommendation was **not accepted**. FDOT prefers to provide more flexibility and space in the aisles at the PD&E stage of project development.*

VE Recommendation #18: Reconsider Control Vehicle (Seminole County Site 1)

Potential Cost Savings: \$214,000

Response: Accepted

The VE Recommendation is to change the vehicle used as the oversized control vehicle from a WB-62FL to a modified WB-67 tractor-trailer.

The site layout was based on the WB-62FL and WB-67D to provide sufficient travel way widths appropriate for "average driver skill", and to provide two-way traffic along three sides of the site for recirculation, and to access the mobile repair vehicle and windshield wash. The WB-109D design vehicle was used only to confirm that the vehicle could access the site if this vehicle were to be routed onto I-4. The use of this vehicle results in minor modifications to island radii only. The WB-109D is limited in the number of on-site routes that would not require multiple maneuvers. The modified WB-67 tractor trailer can access and maneuver the site with fewer on-site routes that require multiple maneuvers.

The recommendation is accepted. However, after the revised site layout was reviewed the use of the modified WB-67 tractor trailer does not reduce the site footprint or yield additional parking sites.

VE Resolution: This recommendation was **accepted** by FDOT with the acknowledgement that further review by the Design team indicated there is no reduction in footprint or additional parking sites.

VE Recommendation #32: Rotate Site 90 Degrees (Volusia County Site 1B)

Potential Value Added: (\$438,000)

Response: Accepted

The VE Recommendation proposes a revised site layout for Volusia County Site 1B to combine and centralize the restroom (consistent with **VE Recommendation #1C**), rotate the site 90 degrees, widen the existing pond abutting the west end of the westbound on-ramp, add an additional parking row to the west side of the site, and reduce the size of the pond to the east.

The PD&E Study team redesigned the concept plan for Volusia Site 1B and determined that rotating the site 90 degrees increases the number of available parking spaces from 253 to 267 (14 additional spaces). This recommendation also increases the size of the wildlife corridor and moves the entrance ramp farther away from the existing wildlife crossing.

The recommendation is accepted with the condition that two adjacent back-in parking rows are provided to create the necessary room for the recommended centralized 100' x 270' restroom. Locating the restroom facility between only one parking row allows for only a 64' wide restroom facility. The cost savings for the centralized restroom is included in Recommendation #1C. This VE Recommendation results in a slight increase in cost due to additional impervious related to the additional spaces and minor additional pavement and fencing due to rotating the site. However, this revised concept enhances wildlife connectivity and is recommended for incorporation.

VE Resolution: This recommendation was **accepted** and it was noted that further PD&E drainage analysis would be initiated to implement the refined conceptual layout prior to the Design phase.

DISCIPLINE: ROADWAY

VE Recommendation #8A: Access Management (Orange County Site 1)

Potential Cost Savings: \$214,000

Response: Not Accepted

The VE Recommendation eliminates access to Orange County Site 1 via John Young Parkway. Removing this access results in a slight reduction in construction costs, utility work, and future maintenance work; however, it reduces the site access to a single ingress and egress along Sand Lake Road, redirecting all of the truck traffic (an additional 21 trucks during peak hours) onto the egress driveway on Sand Lake Road, thus increasing queuing and congestion on Sand Lake Road.

Due to the negative impacts to site access and surrounding traffic conditions, this recommendation is not accepted.

VE Resolution: This recommendation was **not accepted**. Due to the already constrained access of this site, FDOT traffic operations recommended retaining the PD&E concept for improved access.

VE Recommendation #8B: Access Management (Orange County Site 1)

Potential Cost Savings: \$361,000

Response: Not Accepted

The VE Recommendation eliminates access to Orange County Site 1 via Sand Lake Road. Removing this access results in a slight reduction in construction costs, utility work, maintenance of traffic (MOT), and future maintenance work; however, it reduces the site access to a single ingress and egress along John Young Parkway, redirecting all of the truck traffic (an additional 34 trucks during peak hours) onto the egress driveway on John Young Parkway, thus increasing congestion on John Young Parkway. It also results in trucks travelling southbound on John Young Parkway and on Sand Lake Road having to travel an additional 2.7 miles via Presidents Drive to reach the Sand Lake Road/John Young Parkway intersection.

Due to the negative impacts to site access and surrounding traffic conditions, and the increased travel times for truck drivers, this recommendation is not accepted.

VE Resolution: This recommendation was **not accepted**. Due to the already constrained access of this site, FDOT traffic operations recommended retaining the PD&E concept for improved access.

VE Recommendation #8C: Access Management (Orange County Site 1)

Potential Cost Savings: \$81,000

Response: Not Accepted

The VE Recommendation reduces access to Orange County Site 1 via Sand Lake Road to ingress only. The egress onto Sand Lake Road is eliminated. Removing this access results in a negligible reduction in construction costs, and removes the trucks that would exit into a right turn lane; however, it causes an increase in delay and queueing at the John Young Parkway egress. It also results in trucks travelling southbound on John Young Parkway and on Sand Lake Road having to travel an additional 2.7 miles via Presidents Drive to reach the Sand Lake Road/John Young Parkway intersection.

Due to the negative impacts to site access and surrounding traffic conditions, and the increased travel times for truck drivers, this recommendation is not accepted.

VE Resolution: This recommendation was **not accepted**. Due to the already constrained access of this site, FDOT traffic operations recommended retaining the PD&E concept for improved access.

VE Recommendation #12: High Mast Lighting (Orange County Site 1)

Potential Cost Savings: \$98,000

Response: Add to List of Design Suggestions

The VE Recommendation is for high mast lighting for Orange County Site 1, which would require fewer luminaires and a lower maintenance cost than traditional 30' light poles. The use of taller luminaires may reduce the number of parking spaces, and may require a larger space to lower the fixture for maintenance.

Lighting analysis was not part of the PD&E study scope and no specific lighting was recommended; however, conventional lighting was included in the cost estimate.

The VE Recommendation is added to the list of design suggestions. Further analysis will be required to ensure a proper level of illumination throughout the site, along with any potential impacts to the design of the parking site.

VE Resolution: *FDOT agreed this recommendation should be added to the list of design suggestions. FDOT noted that high-mast lighting is becoming less preferred by FDOT due to the viewshed but it could be reviewed further in Design phase.*

VE Recommendation #33: Roller Compacted Concrete (All Sites)

Potential Value Added: \$11,535,000

Response: Add to List of Design Suggestions

The VE Recommendation proposes the use of roller compacted concrete (RCC) pavement as an alternative to asphalt pavement at all of the truck parking sites. While RCC does have superior durability to asphalt and does not require the reinforcement that traditional concrete pavement requires, RCC is not a standard FDOT material, and there are a limited number of contractors that have experience with it. Therefore, the use of RCC will be added to the list of design suggestions; additional research of the pavement, along with qualified contractors will be required in order to use this pavement. The PD&E team conducted additional coordination with Central Office and District Five materials based on this VE suggestion and FDOT offered to develop a Technical Special Provision (TSP) and specifications if recommended by D5 leadership and suggested a pilot project for RCC be considered.

VE Resolution: *FDOT agreed this recommendation should be added to the list of design suggestions. FDOT indicated if there is an opportunity to consider this as a pilot project then FDOT should move forward with development of a TSP so design schedules are not impacted. FDOT discussed that Seminole is not an ideal pilot project as it is the first truck parking facility to be constructed and FDOT does not want schedule or construction concerns.*

DISCIPLINE: DRAINAGE

VE Recommendations #24 and #30: Increase Pond Depth (Volusia County Sites 1A and 1B)

Potential Cost Savings: \$122,000

Response: Add to List of Design Suggestions

The VE Recommendations propose increasing the depths of the proposed pond for each site by 2' in order to provide additional fill that can remain on site during the construction phase of the sites, thereby reducing construction cost. A Design phase survey will be required in order to determine the amount of fill that can remain on each site, and therefore the cost benefit of these recommendations. These recommendations will be added to the list of design suggestions.

VE Resolution: *FDOT agreed this recommendation should be added to the list of design suggestions.*

VE Recommendation #19: Repurpose Existing Building (Seminole County Site 1)**Potential Cost Savings: \$2,086,000****Response:** Not Accepted

This VE Recommendation proposes repurposing one of the existing buildings on the Donnie Myers property to accommodate the required restrooms, security, and vending facilities. The existing floor plans would need to be obtained, along with any previous modifications, in order to determine the extent of modifications required to retrofit the building for the new use. Utility rerouting is anticipated due to current utility locations. Therefore, potential cost savings or additional construction cost are unknown.

The building is also not centrally located on the site, which is the preferred location based on trucking industry input. The existing building has a floor elevation beneath the current design's proposed pond maintenance berm. Modifying the pond to provide the same treatment and attenuation volumes would require a decrease in the number of parking spaces. Using this building would necessitate redesigning the site and would result in a decrease in the number of parking spaces.

Due to a significant redesign of the site, a decrease in the number of parking spaces, and a non-centralized restroom facility, this recommendation is not accepted.

*VE Resolution: This recommendation was **not accepted**. After further review of the building structure, the VE team and design team agreed a retrofit is not feasible.*

DISCIPLINE: SCHEDULE**VE Recommendation #35:** Phased Buildout of Sites (Osceola County Site 1 and Volusia County Sites)**Potential Value Added: (\$18,493,600)****Response:** Add to List of Design Suggestions

The VE Recommendation is that the construction of Osceola County Site 1, Volusia County Site 1A, and Volusia County Site 1B be phased. Each site would be constructed to 50% of each sites' final parking capacity initially.

As part of the PD&E Study, phasing of the Volusia County Sites 1A and 1B have been previously considered consistent with the VE Recommendation. The PD&E study team determined that phased construction of these three sites would make 647 parking spaces available initially, with 380 spaces deferred to a later date. The future parking demand is 750 parking spaces by 2025 and 883 parking spaces by 2040. Therefore, phased construction would not fully meet the purpose and need of the project. Additionally, implementing this recommendation would decrease the upfront cost of construction but would result in higher overall total construction costs due to additional MOT, mobilization and design costs.

The PD&E Study team recommends the full site be documented in PD&E for environmental clearance and to satisfy the projected parking demand. Due to increased Design and MOT/mobilization costs, this recommendation is not accepted. Grant applications for additional funding is under development with Central Office/District Five. In the Design phase, phasing of the site should be considered if Construction

funding is not identified for the full site. This VE recommendation is added to the list of design suggestions for further consideration pending further analysis of funding in the Design phase.

VE Resolution: *FDOT agreed this recommendation should be added to the list of design suggestions.*

Value Engineering Team:

Name	Discipline
Rick Johnson	Team Leader
Heather Chasez	Environmental
Tushar Patel	Construction
Greg Muller	Maintenance
Presley Blackburn	Drainage
Josh Callahan	Geotechnical
Matthew Gallup	Roadway
Johnny Demosthenes	Project Management
Tom Pridgen	Utilities
Nick Truncone	Right of Way
Lauren Pearson	Traffic Ops
Henri Belrose	Site Layout

DocuSigned by:

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 Jack Adkins
 District Director of Transportation Development

09/12/2023 | 3:32 PM EDT

 Date