I95 MM0-18 FR Scoping Meeting Minutes

6/26/19

Attendee List is separate.

Problem

- #2 ranked project of the rural interstates.
- All data below is in comparison to all rural interstate data.
    - Highest tonnage ranking
    - Low economic development score
    - Very high TTTI, very low reliability for freight
    - High truck ADT
    - High crash data (8.5 Commercial motor vehicle 'CMV' crashes / mile)
- Freight and safety the issue for this section based on rural interstate ranking (information above)
- Discussed how these projects were ranked in light of SCDOT ranking policy. Secretary Hall requested the rankings for rural interstates. The rankings were heavy on freight due to push for freight mobility and economic development.
- Safety Office said the actual crash data for modes of traffic did not support the rankings data. Safety not a driving factor, but should be considered.

Purpose and Need

Initial P&N from Planning

> The purpose of this project is to improve capacity on I-95 from MM 0 to 18 due to an increase in traffic demand, volume of freight, and crash history. Interchanges may also be upgraded based on safety concerns and operational deficiencies.

Proposed P&N from PDT

> The purpose of this project is to improve capacity and mobility on I-95 from MM 0 to approximately MM 18 due to a projected increase in traffic demand and volume of freight. Operational and structural deficiencies on interchanges and bridges will be addressed within the corridor. In 2045, the mainline will perform between a LOS of D and F. This corridor ranks among the worst of the rural interstate in freight mobility with a score of 0.9 on a 1 scale.

Discussion

Debated making safety a secondary P&N since safety should always be a concern with SC's low national ranking on safety. Actual safety data does not completely support the crash rankings from the rural interstate rankings list. The team was concerned that it would be difficult to prove an issue since no data supported a safety issue. It may be difficult to prove an improvement in safety since this section is not proving problematic now.

There was concern that MM18 is not a logical terminus. It was determined that it seemed improbable to reach 18 with the funding constraints. This assessment was to find the logical termini between 0-18. 8 is a more logical termini based on traffic and the fact that several bridges in the Savannah River floodplain are in bad condition and may get replaced. The bridge cost may limit the extension of the project past 8 much less past 18. There will be future FRs that address the next logical termini between the logical termini from this report up to MM33.

There was discussion on extending the project limit to MM 22.52 based on the fact that the old concrete section between MM 4.0 and 22.52 on south bound appears to be in poor condition and needs to be reconstructed. However, it seemed not feasible because of the funding constraints.

Reliability was discussed but eliminated from being included since the numbers showed that this stretch was reliable. Congestion is different from reliability. There is congestion, but travel time is consistent enough that traffic understands how long this stretch takes to traverse.

Economics/tourism was discussed but eliminated based on it being difficult if not impossible to measure.

Assuming full reconstruction for now for cost. Could descope later by Steering Committee or project development. Pavement was not mentioned in the P&N but could be considered part of mobility.

Side roads connect to the ramps but this was deemed more of a goal to address side roads rather than an item that should be stated in the P&N. Side roads are addressed later under goals.

All of the interchanges had a decrease in LOS in the future. US278 has failing movements now.

Some bridges were in poor shape, but some may be widened. All bridges were either functionally deficient and/or structurally deficient.

No additional support data from the rankings was used in the P&N. It was discussed to expand on the support but the team decided against doing so. FHWA said the vague inference to travel demand and volume of freight was sufficient.

Goals

1. Improve Capacity
    a. LOS C or better
2. Maintain or Improve Truck Travel Time Reliability
    a. Truck Travel Rate of 1.45 (from TAMP) or better
3. Address Interchange Deficiencies
    a. LOS C or better
    b. Remove interconnectivity with side roads/frontage roads on ramps
4. Improve Safety
    a. Improve crash rates from existing
5. Address Bridge Deficiencies
    a. Improve Condition to 7 or better for all bridges
6. Address Pavement Deficiencies
    a. Improve structure number, PQI, and ride-ability from existing

Discussion

The LOS of C for capacity was chosen due to SCDOT standards. It was discussed that some stretches on interstates, due to volume of traffic and surrounding development, can never reach a C. Looking at the projected traffic for a 6 lane and 8 lane section, C was reached for both a 6 and 8 lane section. These projections do not take into account the port and the addition of exit 3. In the Exit 3 Study, adding exit 3 will double the ADT on I95. Exit 3 would be installed if an approved IJR is received when the developments reach a level to justify the new interchange. The port currently has a construction date of 2035.

The truck reliability factor was pulled from the SCDOT TAMP.

Interchanges will be reviewed by traffic for the final meeting to assess what could achieve LOS of C or greater. Two interchanges had frontage roads that connected to ramps. This needs addressing. Traffic can access the interstate and the opposite side of the interstate if disconnected from the ramps. One site may need the road extended to the crossing, but one may could be cul-du-saced and not extended.

The bridge conditions come into play with whether the interchanges need to be altered. All of the bridges will require an increase in bridge height if they are replaced. Tie downs may affect the ramps and loops.

There was a great deal of discussion concerning bridge ratings and what is acceptable. 7 is "good". Asking for the full replacements to achieve 7 is expensive; however, it may not be deemed as the best approach by the Steering Committee. It was decided for the goals to propose the best scenario for the structure ratings and let the Committee descope the project.

No specific crash type was identified for measurement for improving safety. This stretch is performing as expected for this type of roadway. The team did not want to ignore safety since it is a strategic goal; therefore, safety will be evaluated for each alternative to assess if safety factors degrade or improve.

Deciding on adding lanes or total reconstruction would depend on the pavement analysis. At this point there will not be enough information to address the pavement, but it is a goal for project development.

Several items were brought up as goals but then decided they fit better in scope: Geometric Improvements, Truck Parking, ITS, Ramp Controls (hurricanes).

<u>Scope</u>

- Address mainline geometric issues.
    - Avoid pursuing a design exception at the sag at MM1.5
- Evaluate need for additional truck parking and converting truck weigh station to truck parking. (Keep for now until QT is approved)
- Expand ITS
- Address incident response controls at interchanges
- Review options for increasing capacity
- Replace all bridges on mainline
- Retain all overpasses unless the interchange alteration necessitates replacing or the need for more shoulder width exists

- Review options for addressing overpass rehab
- Increase capacity at exit 8
- Address geometric/operational deficiencies at Exit 5 and 18
- Review options for pavement design for new and existing

Discussion

There are numerous ways to increase capacity. "Widen" was avoided because it limits choices for addressing capacity.

The intent is not to bring the interstate up to all design standards. Geometrics not meeting today's standards need to be evaluated and design exceptions pursued during project development if crash data supports the exception. The one exclusion is at MM 1.5 where lowboys bottom out and have scared the interstate.

The abandoned weigh station asked for receptors in the roadway when this section of interstate was rehabbed recently leading the SCDOT to believe that DPS/HP may open it again in the future. This section has such a large volume of trucks that truck parking is a concern. Several truck stops exist along the corridor and there is a welcome center and truck parking area on this section. Truck parking may be extended at the welcome center and parking area if needed. DPS has no plans to reopen the weigh stations in this segment of I-95 N/S (~MM4.5). SC Department of Transportation (SCDOT) owns and maintains the land that the scale facility (weigh station building) is on. The SCDPS only owns the buildings not the land. Any alterations to these properties (land) will have to be approved through SCDOT. Requested input from Lowcountry COG staff re: perceived need for additional truck parking based on observation within project corridor. Response: Unknown.

ITS ends well short of this area. There is a plan to extend it to this section, but it is worthwhile to explore adding it in this project due to the large number of trucks and tourists.

Incident response could be flooding, interstate closures, or evacuation control. In the past Floridians evacuated to SC, exited the interstate, and clogged the roads for SC tourist and commerce. Highway Patrol has asked for gates on the ramps to control who can exit and enter the interstate to avoid future issues. I95 is prone to flood north of this project, plus traffic from an accident could precipitate lane closures, so preventing traffic from entering this area would help HP control traffic.

There was discussion on adding all of the goals to the scope, but it was decided that this would not be a clear path for project development to use to develop plans.

Much discussion was had about bridges and whether we had justification to replace all structures due to age, MOT costs, and ease of construction. The team decided to form a subcommittee of Traffic, District, PM, Design, and Maintenance and look at each bridge, overpass or interchange, that is "fair". "Poor" bridges should be replaced. Cost estimates for bridge alternatives will be generated in time to support the decision to replace/widen/rehab/jack. Some bridges may get widened to the outside due to MOT causing a shift in the interstate alignment.

Concerns over the level of design for the alternatives was discussed. It was left up to design to decide. The level of design could be layouts that defined the horizontal and used later in design for all

alternatives instead of using some conservative layouts for all alternatives to give a conservative window of impacts where little design effort is expended on each alternative.

Since the bridge decision could not be addressed in this meeting due to time and lack of some information, the meeting was adjourned and another meeting will be planned to finalize the scope and discuss alternatives.

7/30/2019

Second Meeting Discussion on the Scope

Attendee list on separate sheet.

The subcommittee on the bridges met and decided the following:

- Replace all bridges on mainline I95 due to them all being a 5 or less (see Goals above)
    - 5 is fair. Within 10 years they will be 4 or less. 4 is poor.
    - Within 10 years being a 4 will make them structurally deficient
    - The older bridges had the higher ratings but by the time this project is complete they will be nearing the end of their lifespan
    - The numerous staging and MOT issues involved in widening them is not worth the trouble for a fair bridge. It will still be fair after the widening. The effort to replace is not much different than widening and the bridge will be new.
- Do not replace any overpass bridges unless the overpass lacks proper shoulders for operations or geometrics or unless the interchange alteration requires replacement due to the new configuration.
- All bridges have above 16.5' of vertical clearance. No jackings required. No effort needs to be expended during construction to retain the existing clearance, i.e. overlay is acceptable.
- Several of the overpasses have deferred maintenance that needs to be addressed, i.e. paint, bearing replacements, deck work. The traffic control for this project is the same needed for the maintenance work. Do the maintenance under this contract to avoid paying for the traffic control again in the near future in a maintenance contract.
- The District has added their information on the bridges to PW. Precon is going to add their information on this to PW.

The developers requesting Exit 3 have shown volumes supporting 8 lanes on I95, but have not determined a year associated with those numbers. Their model looks at growth and volumes up to 2035 in 5 year increments. The traffic volumes will increase with the amount of economic growth. Once 80% of the expected growth occurs then 8 lanes will be needed. Only one company has shown true interest in development, with several others having entitlement to land but have not commitment to development at this time. Currently the developer is trying to get preliminary approval of a IJR. They would have to combine the weigh station and rest area in order to get approval due to conflicts with ramps on Exit 3 with the truck parking. Plus, they may have to fund the widening of I95 to 8 lanes due to connectivity between the 8 lanes a functioning interchange.

They want to construct this interchange in 2026, but considering their hurdles, it does not seem reasonable to account for the interchange or the growth. Planning is relooking at the model based on the developer's volumes just to see how I95 may be affected. For now, the plan is to move forward

based on the initial data gathered by Planning with a risk that the interchange may move forward and necessitate 8 lanes.

If private truck parking (QT) builds on exit 5 then approximately 15 truck parking spots will be located in this stretch. The QT permit has not yet been approved; therefore, truck parking will remain in the scope. As of August 6: permit is still under review.

Mike Bowman is compiling guidance for incident response controls at the interchanges.

Alternatives

Potential Alternatives with Path Forward (Pursue or Eliminate (reasons given))

1. Mainline
    a. Managed Lanes - Eliminated
        i. High Truck Percentage
        ii. Tourists more than commuters during the summer
        iii. Not conducive to rural interstates
        iv. Issues with enforcements of managed lanes
        v. SC law prohibits tolling interstates
    b. 8 Lanes – Eliminated
        i. Since the goal was to obtain LOS C or higher on the mainline, 6 lanes meets that criteria with two sections of B and the majority of the sections as C. 8 Lanes was LOS B for all sections.
        ii. There is not enough median width for 8 lanes, therefore, all interchanges would have to be replaced and new right-of-way purchased
    c. Transit – Eliminated
        i. High Truck Percentage
        ii. Capacity issues are driven by tourists and not commuters
    d. 6 Lanes
        i. Plot 6 lane configuration for the entire corridor
            1. Barrier wall for roughly 6 miles where the median is too narrow for a ditch. A full width shoulder will be used on the inside against the barrier wall.
        ii. Plot 8 lanes for bridges on mainline
2. Interchanges
    a. Exit 5
        i. Only address deficiencies
            1. Frontage road connecting to the ramp. Relocate Frontage Road.
                a. Potential QT coming to NE quadrant. Not yet approved.
                b. If approved, it will be in logical path for Frontage Road relocation.
                i. May have to purchase businesses or pay damages to businesses on frontage road attached to the ramp.

Purchase of QT more expensive than businesses on ramp. Businesses on ramp:

1. Fireworks store
2. Motel

ii. Businesses on ramp are impulse buy businesses. Cul-du-sac an option to relocating frontage road and eliminating purchase of RW and other impacts to relocate the road. If cul-du-sac frontage road, then must pay damages to the businesses.

2. Create more distance between the on and off ramps to avoid driving confusion on US17
3. Welcome Center ramps and south quadrants ramps conflict

ii. Plot:

1. Frontage road options
2. Ramp options on mainline and on US17

b. Exit 8

i. The alternatives will be traffic driven. Without exact counts the alternatives cannot be specified, but some suggestions for Traffic Engineering to consider were provided by the team. Traffic Engineering may have other alternatives that they want to consider once the design begins.

1. DDI (Diverging Diamond)
2. SPUI (Single Point)
3. Avoid loops due to growth adjacent to the existing interchange
4. The structure is to be retained unless geometrics/operational reasons necessitate its replacement or widening. If replaced, account for 8 lanes of traffic for future widening.

ii. Plot alternatives for worst case footprint

c. Exit 18

i. Cul-du-sac S13 to eliminate a side road from accessing a ramp

ii. Evaluate the next interchange at SC336 to assess if this interchange can still function properly if this interchange is eliminated

iii. Plot alternatives

3. Overpasses

a. All overpasses are to be retained unless the structure needs to be replaced due to a geometric/operational issue. If it is replaced, then the new structure should have the horizontal clearance for 8 lanes for future widening.

4. Mainline Structures

a. Replace all mainline structures for the following reasons:

i. The highest rating of any of the mainline structures is 5. 5 is fair. Within 10 years they will be 4 or less. 4 is poor.

ii. Being a 4 will make them structurally deficient

iii. The older bridges had the higher ratings but by the time this project is complete they will be nearing the end of their lifespan

iv. The numerous staging and MOT issues involved in widening them is not worth the trouble for a fair bridge. It will still be fair after the widening. The effort to replace is not much different than widening and the bridge will be new.

b. All mainline structures are to be 8 lanes to account for future widening
c. The plots are addressed in 1.d. above.

Discussion

It was discussed whether the cost to go to 8 lanes was minimal when compared to 6 lanes for this section of interstate. Due to this interstate having ample room in the median for 6 lanes but not enough room for 8 lanes, 8 lanes would be a much greater cost due to widening to the outside and having to reconfigure all overpasses and interchanges.

Exit 5 has a plot of land that a QT has applied to build a facility with truck parking (approximately 15 spaces would be dedicated to truck parking). It is unclear how the QT intends to connect to US17. If they meet the ARMS manual, then they can attach to US17 through encroachment (maybe through purchase of an existing closed business on US17). The SCDOT cannot deny their permit because of a project being discussed in the planning phases may conflict with their permit. Ideally, the frontage road would go through this plot of land. If permitted, the frontage road may have to go behind the QT to attach to US17. Cul-du-sacing the frontage road could be done but not without a price. Since the businesses on the frontage road are impulse business we would have to pay damages. If the QT builds, the different options (cul-du-sac, relocation) will have to be reviewed, but in the discussion it was believed that the cheaper option would be to cul-du-sac as opposed to the impacts to relocate behind the QT.

Much discussion was had concerning exit 18. If it is to be retained, the only issue operationally is the side road connecting to the ramp. The residents on the side road have connectivity to SC336 which takes them to I95.

The major discussion focused on eliminating this interchange. The problems noted with this interchange were lack of shoulders and the mainline off-ramp conflicts with the mainline onramp for the truck parking. This interchange connects I95 traffic to US17/US278 in between Ridgeland and Switzerland. Neither area/town generate a lot of traffic.

Pros to eliminate:

- Redundancy of interchanges in such close proximity
- One less interchange to maintain

Cons to eliminate:

- Increase travel time on mainline
- Public Perception
- Eliminates termini of project
- If improvement needed to SC336 then these improvements are outside of the project limits

Even though a IMR would be needed to eliminate the interchange, for now Traffic Engineering will just assess if the SC336 interchange can handle the additional volume without being altered.

Action Items

Item	Date Assigned	Responsible Party	Resources Needed
Assess truck parking	6/26/2019	Diane	
Bridge alternatives	6/26/2019	RPG Design	Constr, Maint, Traffic
Staging alts for bridges	6/26/2019	Traffic	Const, Maint,
Interchange Reviews, order traffic counts	7/30/2019	Traffic	Planning, safety, RPG
Mainline Plots	7/30/2019	RPG	Traffic staging, Construction, Planning
Coordination with GA	7/30/2019	Planning	RPG
Prelim Pavement Design and Analysis	8/23/2019	Jay/Dahae	

Team members will have to work together to address their items.

The Items in red will be discussed in a meeting between the responsible party and the resources prior to the next scoping meeting to finalize the scope and alternatives.

Schedules

Management wants the FR completed in 3 months. The team will review their availability and a schedule will be created. The FRM will contact the team shortly to obtain their time frames once the team has evaluated the time needed to complete their tasks.

Questions and Assumptions for the Steering Committee

Assumptions

- Replace all guardrail
- Clear all trees inside of altered interchanges.
- Full reconstruction of all lanes
- Interchange approach:
    - No alternatives involve exit 3
    - Eliminate frontage roads attached to ramps
        - Exit 5: relocate frontage road
        - Exit 18: Cul-du-sac frontage road
- Not pursuing design exceptions for mainline geometric issues in sags

- All interchange ramps will be improved as necessary and paved based on the May 6, 2010, memo Resurfacing/Rehabilitation of Interstate Ramps
- All crosslines will be extended if necessary
- All crosslines will be inspected and rehabbed
- Replace all ML bridges and account for 8 lanes
- Do not replace or jack any overpasses
    - Exceptions for geometric/operational design change
    - Replacements will account for 8 lane width
- Perform needed maintenance on the overpasses. The traffic control needed to perform this work will be part of this contract so address the needs under this traffic control instead of paying for it later with another contract. Examples of work are listed below:
    - Paint
    - Replace Bearings
    - Deck Work

Questions

- Should frontage roads and on/off ramps be moved away from the interchange ramps to avoid confusion to drivers?
    - See attached aerials
- Eliminate Exit 18?
- Are there pavement types that need to be eliminated from consideration? Is there a favored pavement design alternative and why?
- Extend FR if eliminate Exit 18?

PDT Concurrence Request for Steering Committee

I95 Rural Interstates MM0-18

Purpose and Need

The purpose of this project is to improve capacity and mobility on I-95 from MM 0 to approximately MM 18 due to a projected increase in traffic demand and volume of freight. Operational and structural deficiencies on interchanges and bridges will be addressed within the corridor. In 2045, the mainline will perform between a LOS of D and F. This corridor ranks among the worst of the rural interstate in freight mobility with a score of 0.9 on a 1 scale.

Goals and Associated Metrics

1. Improve Capacity
    a. LOS C or better
2. Maintain or Improve Truck Travel Time Reliability
    a. Truck Travel Rate of 1.45 (from TAMP) or better
3. Address Interchange Deficiencies
    a. LOS C or better
    b. Remove interconnectivity with side roads/frontage roads on ramps
4. Improve Safety
    a. Improve crash rates from existing
5. Address Bridge Deficiencies
    a. Improve Condition to 7 or better for all bridges
6. Address Pavement Deficiencies
    a. Improve structure number, PQI, and ride-ability from existing

Scope

- Address mainline geometric issues.
    - Avoid pursuing a design exception at the sag at MM1.5
- Evaluate need for additional truck parking and converting truck weigh station to truck parking. (Keep for now until QT is approved)
- Expand ITS
- Address incident response controls at interchanges
- Review options for increasing capacity
- Replace all bridges on mainline
- Retain all overpasses unless the interchange alteration necessitates replacing or the need for more shoulder width exists
- Review options for addressing overpass rehab
- Increase capacity at exit 8
- Address geometric/operational deficiencies at Exit 5 and 18
- Review options for pavement design for new and existing

Potential Alternatives with Path Forward (Pursue or Eliminate (reasons given))

1. Mainline
    a. Managed Lanes - Eliminated
        i. High Truck Percentage
        ii. Tourists more than commuters during the summer
        iii. Not conducive to rural interstates
        iv. Issues with enforcements of managed lanes
        v. SC law prohibits tolling interstates
    b. 8 Lanes – Eliminated
        i. Since the goal was to obtain LOS C or higher on the mainline, 6 lanes meets that criteria with two sections of B and the majority of the sections as C. 8 Lanes was LOS B for all sections.
        ii. There is not enough median width for 8 lanes, therefore, all interchanges would have to be replaced and new right-of-way purchased
    c. Transit – Eliminated
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        i. Plot 6 lane configuration for the entire corridor
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        ii. Plot 8 lanes for bridges on mainline
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                a. Potential QT coming to NE quadrant. Not yet approved.
                b. If approved, it will be in logical path for Frontage Road relocation.
                i. May have to purchase businesses or pay damages to businesses on frontage road attached to the ramp. Purchase of QT more expensive than businesses on ramp. Businesses on ramp:
                1. Fireworks store
                2. Motel
                ii. Businesses on ramp are impulse buy businesses. Cul-du-sac an option to relocating frontage road and eliminating purchase of RW and other impacts to relocate the road. If cul-du-sac frontage road, then must pay damages to the businesses.
            2. Create more distance between the on and off ramps to avoid driving confusion on US17
            3. Welcome Center ramps and south quadrants ramps conflict

        ii. Plot:
            1. Frontage road options
            2. Ramp options on mainline and on US17
    b. Exit 8
        i. The alternatives will be traffic driven. Without exact counts the alternatives cannot be specified, but some suggestions for Traffic Engineering to consider were provided by the team. Traffic Engineering may have other alternatives that they want to consider once the design begins.
            1. DDI (Diverging Diamond)
            2. SPUI (Single Point)
            3. Avoid loops due to growth adjacent to the existing interchange
            4. The structure is to be retained unless geometrics/operational reasons necessitate its replacement or widening. If replaced, account for 8 lanes of traffic for future widening.
        ii. Plot alternatives for worst case footprint
    c. Exit 18
        i. Cul-du-sac S13 to eliminate a side road from accessing a ramp
        ii. Evaluate the next interchange at SC336 to assess if this interchange can still function properly if this interchange is eliminated
        iii. Plot alternatives
3. Overpasses
    a. All overpasses are to be retained unless the structure needs to be replaced due to a geometric/operational issue. If it is replaced, then the new structure should have the horizontal clearance for 8 lanes for future widening.
4. Mainline Structures
    a. Replace all mainline structures for the following reasons:
        i. The highest rating of any of the mainline structures is 5. 5 is fair. Within 10 years they will be 4 or less. 4 is poor.
        ii. Being a 4 will make them structurally deficient
        iii. The older bridges had the higher ratings but by the time this project is complete they will be nearing the end of their lifespan
        iv. The numerous staging and MOT issues involved in widening them is not worth the trouble for a fair bridge. It will still be fair after the widening. The effort to replace is not much different than widening and the bridge will be new.
    b. All mainline structures are to be 8 lanes to account for future widening
    c. The plots are addressed in 1.d. above.

Assumptions

- Replace all guardrail
- Replace fence
- Clear all trees from clear zone in the median and to the outside of the travelway.
- Clear all trees inside of altered interchanges.
- Full reconstruction of all lanes
- All interchange ramps will be improved as necessary and paved based on the May 6, 2010, memo Resurfacing/Rehabilitation of Interstate Ramps
- All crosslines will be extended if necessary
- All crosslines will be inspected and rehabbed
- Perform needed maintenance on the overpasses. The traffic control needed to perform this work will be part of this contract so address the needs under this traffic control instead of paying for it later with another contract. Examples of work are listed below:
    - Paint
    - Replace Bearings
    - Deck Work
- Not pursuing design exceptions for mainline geometric issues in sags
- Interchange approach:
    - No alternatives involve exit 3
    - Eliminate frontage roads attached to ramps
        - Exit 5: relocate frontage road
        - Exit 18: Cul-du-sac frontage road
- Replace all ML bridges and account for 8 lanes
- Do not replace or jack any overpasses
    - Exceptions for geometric/operational design change
    - Replacements will account for 8 lane width

Questions

- Should frontage roads and on/off ramps be moved away from the interchange ramps to avoid confusion to drivers?
    - See attached aerials
- Are there pavement types that need to be eliminated from consideration? Is there a favored pavement design alternative and why?
- Eliminate Exit 18?
- Extend FR if eliminate Exit 18?

I95 MM0-18 Jasper Co.

Meeting Minutes with GDOT on I95 Bridges at the State Line

10/2/2019

Attendees:

Brent Rewis – SCDOT	Betsy McCall – SCDOT
Jen Necker – SCDOT	Craig Winn – SCDOT
Paul Tanner – GDOT	Rob McCall – GDOT
Tom McQueen – GDOT	Vivian Canizarez – GDOT

- This was considered the kickoff meeting for the coordination between Georgia and South Carolina in developing an agreement between the states on addressing the I95 crossing over the Savannah River.
- GDOT shared these items about the bridges
    - Built 1976
    - GA owns and maintains the dual, 2 lane bridges now
    - NB bridge is in fair condition
    - SB bridge is in good condition
- GDOT will find the bridge ratings and have their design staff to investigate the bridges and provide recommendations on replacement or widening
- Partnering for project development and funding will be discussed further and be documented in the agreement
- GDOT will let us know a point of contact during project development. Craig Winn will be the point of contact for SCDOT during project development.
- Paul Tanner and Brent Rewis will be the points of contact during the planning and agreement phase for GDOT and SCDOT, respectively.
- SCDOT will send GDOT previous agreements between the DOTs for I20 over the Savannah and for the US17 Backwater bridge.
- SCDOT will start drafting an agreement
- Grants will be investigated during the planning phase with coordination between states to obtain funding.
- Tanner to call Rewis in a week to discuss the next meeting time.

I95 Rural Interstates MM0-18

PDT Path Forward Post Steering Committee Recommendations

10/10/19

Purpose and Need

Statement

The purpose of this project is to improve capacity and mobility, provide truck parking, and address operational and structural deficiencies on bridges and interchanges along I-95 from MM 0 to MM 18.

Need

Operational and structural deficiencies on interchanges and bridges will be addressed within the corridor. In 2045, the mainline will perform between a LOS of D and F. This corridor ranks among the worst of the rural interstate in freight mobility with a score of 0.9 on a 1 scale. Truck parking is lacking in this section of interstate.

Goals and Associated Metrics

1. Improve Capacity
    a. LOS C or better
2. Maintain or Improve Truck Travel Time Reliability
    a. Truck Travel Rate of 1.45 (from TAMP) or better
3. Address Interchange Deficiencies
    a. LOS C or better
    b. Remove interconnectivity with side roads/frontage roads on ramps
4. Improve Safety
    a. Improve crash rates from existing
5. Address Bridge Deficiencies
    a. Improve Condition to 7 or better for all bridges
6. Address Pavement Deficiencies
    a. Improve structure number, PQI, and ride-ability from existing

Scope

- Address mainline geometric issues.
    - Avoid pursuing a design exception at the sag at MM1.5
- Evaluate need for additional truck parking and converting truck weigh station to truck parking. (Keep for now until QT is approved)
- Expand ITS
- Review options for increasing capacity

- Replace all bridges on mainline and account for 8 lanes
- Retain all overpasses unless the interchange alteration necessitates replacing or the need for more shoulder width exists
- Do not replace or jack any overpasses
    - Exceptions for geometric/operational design change
    - If a bridge is jacked, perform necessary maintenance and rehab on the bridge in this contract.
    - Replacements will account for 8 lane width
- Increase capacity at exit 8
- Address geometric/operational deficiencies at Exit 5 and 18
- Eliminate ramp access from frontage roads
    - Exit 5, relocate frontage road
    - Exit 18, cul-du-sac frontage road
- All interchange ramps will be improved as necessary and paved based on the May 6, 2010, memo *Resurfacing/Rehabilitation of Interstate Ramps*.
- Improve pavement conditions on existing and new lanes based on Pavement Design from the Lab.
- Pave all truck parking areas, welcome centers, and weigh stations
- All crosslines will be inspected and addressed or redesigned as needed based on the inspection.
- Follow the MASH transition plan in PCDM-14 concerning the existing guardrail
- Replace fence damaged due to clear zone tree removal.
- All trees will be removed from the full clear zone based on clear zone charts for mainline.
- All trees will be removed inside of loops and ramps. Tree removal outside of the loops and ramps will follow the clear zone charts.
- Offset the frontage road entrances from the interstate ramps per the ARMS manual for all interchanges.

<u>Potential Alternatives with Path Forward (Pursue or Eliminate (reasons given))</u>

1. Mainline
    a. Managed Lanes - Eliminated
        i. High Truck Percentage
        ii. Tourists more than commuters during the summer
        iii. Not conducive to rural interstates
        iv. Issues with enforcements of managed lanes
        v. SC law prohibits tolling interstates
    b. 8 Lanes – Eliminated
        i. Since the goal was to obtain LOS C or higher on the mainline, 6 lanes meets that criteria with two sections of B and the majority of the sections as C. 8 Lanes was LOS B for all sections.
        ii. There is not enough median width for 8 lanes, therefore, all interchanges would have to be replaced and new right-of-way purchased

c. Transit – Eliminated
    i. High Truck Percentage
    ii. Capacity issues are driven by tourists and not commuters
d. 6 Lanes
    i. Plot 6 lane configuration for the entire corridor
        1. Barrier wall for roughly 6 miles where the median is too narrow for a ditch. A full width shoulder will be used on the inside against the barrier wall.
    ii. Plot 8 lanes for bridges on mainline

2. Interchanges
    a. Exit 5
        i. Only address deficiencies
            1. Frontage road connecting to the ramp. Relocate Frontage Road.
                a. Potential QT coming to NE quadrant. Not yet approved.
                b. If approved, it will be in logical path for Frontage Road relocation.
                    i. May have to purchase businesses or pay damages to businesses on frontage road attached to the ramp. Purchase of QT more expensive than businesses on ramp. Businesses on ramp:
                        1. Fireworks store
                        2. Motel
                    ii. Businesses on ramp are impulse buy businesses. Cul-du-sac an option to relocating frontage road and eliminating purchase of RW and other impacts to relocate the road. If cul-du-sac frontage road, then must pay damages to the businesses.
            2. Create more distance between the on and off ramps to avoid driving confusion on US17
            3. Welcome Center ramps and south quadrants ramps conflict
        ii. Plot:
            1. Frontage road options
            2. Ramp options on mainline and on US17
    b. Exit 8
        i. The alternatives will be traffic driven. Without exact counts the alternatives cannot be specified, but some suggestions for Traffic Engineering to consider were provided by the team. Traffic Engineering may have other alternatives that they want to consider once the design begins.
            1. DDI (Diverging Diamond)
            2. SPUI (Single Point)
            3. Avoid loops due to growth adjacent to the existing interchange
            4. The structure is to be retained unless geometrics/operational reasons necessitate its replacement or widening. If replaced, account for 8 lanes of traffic for future widening.

        ii. Plot alternatives for worst case footprint
    c. Exit 18
        i. Cul-du-sac S13 to eliminate a side road from accessing a ramp
        ii. Evaluate the next interchange at SC336 to assess if this interchange can still function properly if this interchange is eliminated
        iii. Plot alternatives
3. Overpasses
    a. All overpasses are to be retained unless the structure needs to be replaced due to a geometric/operational issue. If it is replaced, then the new structure should have the horizontal clearance for 8 lanes for future widening.
4. Mainline Structures
    a. Replace all mainline structures for the following reasons:
        i. The highest rating of any of the mainline structures is 5. 5 is fair. Within 10 years they will be 4 or less. 4 is poor.
        ii. Being a 4 will make them structurally deficient
        iii. The older bridges had the higher ratings but by the time this project is complete they will be nearing the end of their lifespan
        iv. The numerous staging and MOT issues involved in widening them is not worth the trouble for a fair bridge. It will still be fair after the widening. The effort to replace is not much different than widening and the bridge will be new.
    b. All mainline structures are to be 8 lanes to account for future widening
    c. The plots are addressed in 1.d. above.

Steering Committee Meeting Minutes

September 30, 2019

Attendees:

Brent Rewis
Rob Perry
John Boylston
Robbie Isgett
Chad Long
Randy Young
David Cook
Will McGoldrick
Betsy McCall
Michael Fulmer
Phillip Sandel
Adam Humphries
Craig Winn
Jen Necker
Jeremy Harmon
Beth Hawkins
Michael Hood

The purpose of this meeting was to review the Purpose & Need, Goals, Scope, Alternatives, and Assumptions with the committee and to ascertain answers to questions. Members of the Regional Production Groups (RPG) and the Feasibility Report Manager (FRM) presented the information and fielded questions from the committee. The following projects were discussed in this meeting:

I26 MM125-139
I95 MM0-18
I95/I26 Interchange

The committee consists of the following members:

Chief Engineer for Project Delivery - Young
Director of Traffic Engineering - Perry
Director of Construction - Isgett
Director of Preconstruction – Boylston
Director of Planning- Rewis
Director of Maintenance - Cook
Director of Environmental Services - Long

General issues and project specific situational issues were discussed. In general, when there are project specific situational issues, it was deemed that for planning cost estimates and schedules, the worst case should be assumed. It is not the intent of the Feasibility Report to determine the exact footprint, to determine which bridges will definitively be replaced as opposed to rehabbed, and so on. The details of each situation will be addressed in the NEPA phase of project development.

The three projects had some common assumptions/questions that were brought before the committee. The questions are presented below with the answer beneath the question in dark orange. The answer is generally the last statement for each question (black circle bullets). The answers are sub bullets.

- Replace all guardrail
    - Follow the MASH transition plan in PCDM-14.
- Replace all fence
    - No. Only replace if necessary due to tree clearing impacts to the fence.
- Clear all trees from clear zone in the median and to the outside of travelway.

    - Remove all trees based on the full clear zone as defined in the appropriate clear zone charts. Do not do a maximum of 30'; follow the charts.
- Clear all trees inside of altered interchanges.
    - Clear all trees in loops and between ramps on the interchanges for sight distance reasons (safety). Remove trees according to the clear zone charts for the outside of ramps and loops.
- Full reconstruction of all lanes
    - The pavement design engineer should dictate the design. This committee will not dictate reconstruction or rehabilitation. The pavement design should be data driven.
- All interchange ramps will be improved as necessary and paved based on the May 6, 2010, memo *Resurfacing/Rehabilitation of Interstate Ramps*.
    - Agreed.
- The original bullets in gold below were combined into the following statement.
    - All crosslines will be inspected and addressed or redesigned as needed based on the inspection.
    - All crosslines will be extended if necessary
    - All crosslines will be inspected and rehabbed
- Perform needed maintenance on the overpasses. The traffic control needed to perform this work will be part of this contract so address the needs under this traffic control instead of paying for it later with another contract. Examples of work are listed below:
    - Paint
    - Replace Bearings
    - Deck Work
        - This will not be done for all bridges in need of repair/rehabilitation for a few reasons. Bridge maintenance is a different mindset from roadway construction; therefore, it is preferred to have a contractor who specializes in that type of work to perform the maintenance. Plus, we don't want to take the contractor's focus away from the main goal of the contract which is roadway construction.
        - This type of repair/rehabilitation can be included on a bridge if it is being jacked. The rehab work would fit in this type of contractor's wheelhouse.
- Are there pavement types that need to be eliminated from consideration? Is there a favored pavement design alternative and why?
    - No is the answer to both questions from the perspective of the committee. They deferred to the pavement committee. We discussed that SMA was a concern in the past but it has since been approved to be an alternative. The pavement design should dictate the pavement type. Even though it is assumed that if the pavement is concrete now it will continue as concrete (the same assumption holds true for asphalt), the pavement design engineer and the pavement committee have the final say in what the pavement type will be.
    - The pavement type does affect the staging. This will be worked out in design and, if needed, the pavement committee.
- Overpass width to account for 8 lanes if we are replacing bridge?
    - Yes. All overpasses that are being replaced due to clearance issues or low ratings will be replaced with a bridge that accounts for 8 lanes of traffic even though 6 will be

constructed for these projects. The extra width helps Construction with phasing and MOT. The extra width aids Maintenance in performing work without lane closures.

- Should frontage roads be moved away from the interchange ramps to avoid confusion to drivers?
    - See attached aerials (end of document)
        - If the interchange is being redesigned, then yes.
        - If there are safety issues in these areas that are supported by safety data, then yes.
        - For planning estimates account for these areas being addressed. Whether they will be addressed in construction will be determined during the NEPA phase.

I26 MM125-139

The assumptions and questions discussed for this specific project are below with the discussion/answer beneath. Additional discussions on the P&N and alternatives will follow.

<u>Assumptions</u>

- Interchange approach:
    - Alter if a safety issue exists (Exit 129, US21)
        - No concerns.
- Using full depth patching to reduce crest elevation sight distance issues instead of cutting the interstate.
    - Cutting the interstate would alter the vertical grade for several hundred to several thousands of feet. This would alter the footprint of the interstate to the outside which could increase impacts.
        - Agreed.
- Pursuing design exceptions for all mainline geometric issues in sags
    - If there is a major issue, then the issue should be addressed instead of pursuing a design exception/variance. For minor issues, pursue the design exception/variance.
- Bridge Approach
    - None of the overpasses have the horizontal clearance to accommodate an inside shoulder of 10’ or 4’. Design Exceptions would have to be pursued.
        - Agreed.
    - From Maintenance:
        - Our recommendation is to replace all 7 of the overpass bridges in this project, since the horizontal clearances are tight for additional lanes, existing overpasses are currently close to their expected service life, and the majority have a condition rating of 5 or less.
            - For planning purposes replace them all and account for 8 lanes of horizontal clearance. The rationale is sound, but the NEPA process in project development will determine whether each one is replaced.

Questions

- Should Exit 136, SC 6, be altered from a PARCLO to a Diamond in order to retain the bridge?
    - Loops are not necessary based on traffic counts.
    - If loops are maintained, then there is not sufficient horizontal clearance for the additional lanes of traffic. Currently there are 6 lanes under the bridge due to the loops.
        - For planning purposes, assume that the interchange will be replaced with a diamond. When the project is in development it may be found that some ramps can stay or that the entire interchange will not be replaced.
- Should we strive to create a full inside shoulder of 10' with barrier wall, or create a 4' inside shoulder for locations under bridges and for long stretches of interstate where the median is reduced?
    - If the full shoulder is used, then the interstate footprint will increase to the outside.
    - This project ties to a section of interstate that has a barrier wall with 4' inside shoulders.
        - Even though we are tying into a 4' shoulder section, for planning purposes have a 10' shoulder. All alternatives that may alter the footprint of the roadway to account for the 10' shoulders are acceptable. Environmental said that as long as we had engineering reasons for the impacts to the outside that they could permit it. The RPG felt like the extra footprint would only be roughly 5'; therefore, no new RW should be needed for the mainline if the footprint is larger.

Purpose & Need

Add verbiage to account for the interchanges in the P&N. This will aid NEPA and permitting in the future. If the interchanges are part of the P&N and interchange upgrades are needed, then impacts due to interchange upgrades points to the P&N and is defendable.

Potential Alternatives

The PDT formed a justification to replace all of the bridges associated with interchanges and all overpasses. For planning purposes account for all bridges being replaced, but the NEPA process during project development will determine which ones are actually replaced.

I95 MM0-18

The assumptions and questions discussed for this specific project are below with the discussion/answer beneath. Additional discussions on the P&N and Scope will follow.

Assumptions

- Not pursuing design exceptions for mainline geometric issues in sags
    - This was the opposite from the I26 path of pursuing design exceptions. No reason was given for a different approach to mainline geometric issues in the sags. This will

be investigated by the RPG but not brought before the committee again. The Director of Preconstruction will work with his staff to decide the best approach.

- Interchange approach:
  - No alternatives involve exit 3
    - Exit 3 is liquid and may be delivered at a different time frame from originally given. It was agreed to take the approach recommended since the Department is not paying for Exit 3.
  - Eliminate frontage roads attached to ramps
    - Exit 5: relocate frontage road
      - Account for most costly approach in the planning estimate.
    - Exit 18: Cul-du-sac frontage road
      - Agreed.
- Replace all ML bridges and account for 8 lanes
  - Agreed.
- Do not replace or jack any overpasses
  - Exceptions for geometric/operational design change
  - Replacements will account for 8 lane width
    - Agreed.

<u>Questions</u>

- Eliminate Exit 18?
  - NEPA will determine this. For planning purposes assume that the exit will remain and be redesigned if necessary based on operations and safety.
- Extend FR if eliminate Exit 18?
  - No. We are assuming for the planning phase that Exit 18 will remain. Traffic and Planning is looking into the effects closing Exit 18 will have on Exit 21. This information will be included in the FR for future reference, but the FR will not extend to Exit 21.
  - There was discussion on why 18 was the logical termini if the ADT was low enough to potentially eliminate it. No reason was given for why the RPG chose Exit 18 as opposed to Exit 21.
    - ADT drops from 51500 to 49500 at Exit 18.
    - ADT drops from 49500 to 48600 at Exit 21
  - Per the FRM, Shane Belcher from FHWA stated that for rural interstates ADT was not a driving factor in determining logical termini like it is in urban areas. Rural traffic is passing through. Few significant traffic generators exist at rural exits. Due to this, logical termini can be the next interchange even if there is not a drop in ADT.

<u>Purpose & Need</u>

Add verbiage to account for truck parking. This will aid NEPA and permitting in the future. If the truck parking is part of the P&N and adding truck parking is needed, then impacts where we add truck parking points to the P&N and is defendable.

<u>Scope</u>

The need for truck parking was discussed. On this section of interstate truck parking is lacking. I26 did not have this issue. Our Freight division is tasked with adding freight parking where appropriate. Freight Mobility funding is being used on this project.

Since the Department maintains the truck parking areas, welcome centers, and weigh stations, project development needs to account for paving each of these areas.

The Director of Traffic Engineering said to exclude the scope item "Address incident response controls at the interchanges". This is not something that the Department is pursuing during flooding events or lane reversals.

I95/I26 Interchange

The assumptions and questions discussed for this specific project are below with the discussion/answer beneath.

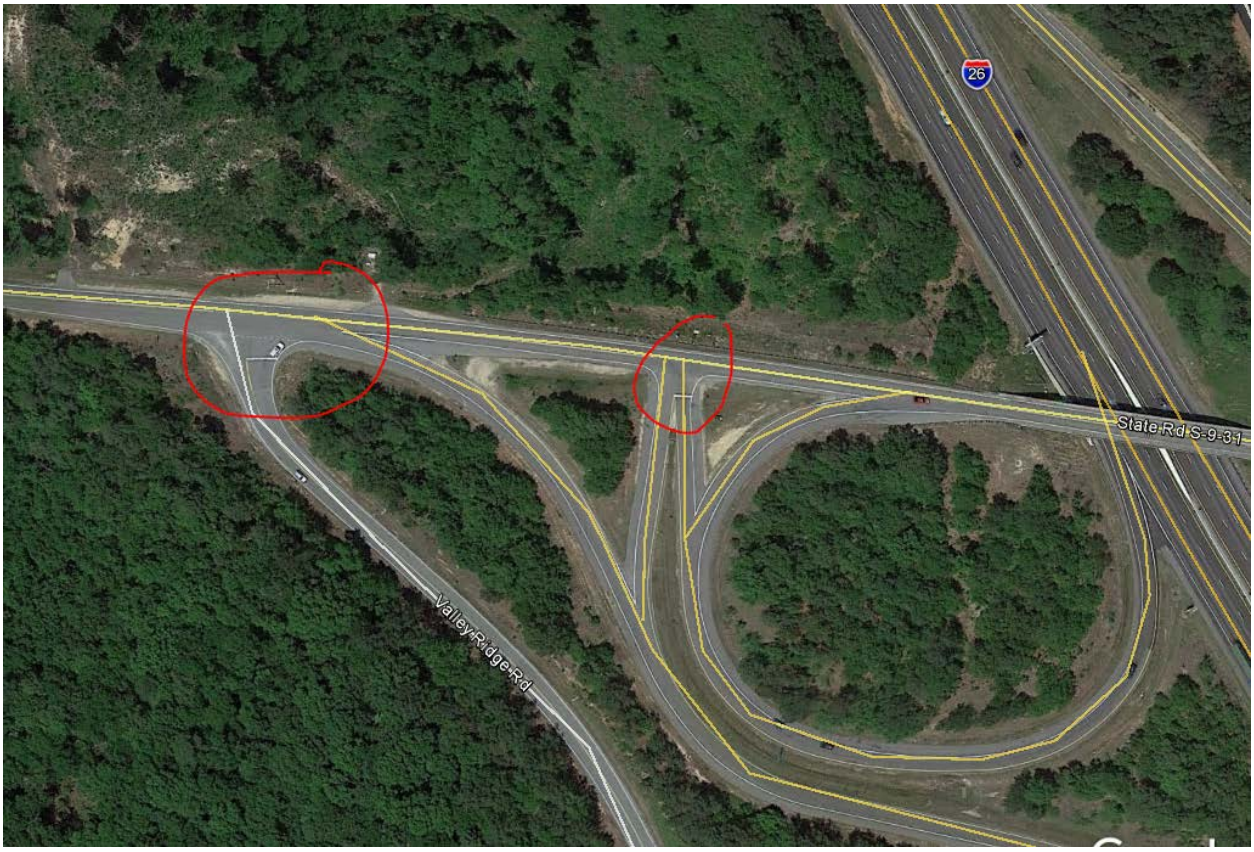
<u>Questions</u>

- The I95 Bridge can be accommodated as is. The bridge was built in 1972 and it has a high rating. It will have to be widened in the future when I95 is widened. Replace or retain with this project?
    - Assume replacement for planning purposes.
- Eliminate loops? Keep for lower volume movement, but eliminate for higher volume movements?
    - No retention of existing loops due to cost issues associated with MOT and pavement condition.
    - FHWA said loops are allowed
    - Carolina Crossroads was advised against loops
        - It is not mandatory to eliminate loops. Design will dictate whether loops are appropriate options or not.
        - There is currently room for the 6 lane section. If it is replaced it will account for horizontal clearance for an 8 lane section.
- Widen all the way to MM187?
    - Isolated 6 lanes in 4 lane section
    - Public perception
    - Risk NEPA will expand this project to include one document but two phases
        - Interchange
        - Widening
    - One FR for identified rural segment
        - This was discussed to inform the committee that the PDT had discussed widening the interstates in the area surrounding the interchange. Per the FRM, Shane Belcher with the FHWA stated that this interchange had sufficient problems to be a stand-alone project. Being stand-alone means no capacity is added to I26 or I95 in this area. Both interstates continue to be 4 lanes after this project is complete. 4 lanes are striped, but there is

nothing to stop the construction of additional lanes as long as they are not striped as through lanes. The additional lanes will be paved areas that are clearly marked to prevent traffic from using the pavement.

- The PDT has suggested constructing the additional lanes with the anticipation of the widening of I26 in the future. Project development will decide if the additional lane in each direction is graded only or graded and paved. Construction suggested project development pave the lanes to aid them with MOT. The more room they have to shift traffic around the easier the project will be to construct. Additionally, Construction agreed with constructing the additional lanes to prevent having to do more construction at this interchange later.

Aerials from Common Thread questions:



Bellinge
26
ngston Rd

I95 MM0-18 FR Scoping Meeting Minutes

6/26/19

Attendee List is separate.

Problem

- #2 ranked project of the rural interstates.
- All data below is in comparison to all rural interstate data.
    - Highest tonnage ranking
    - Low economic development score
    - Very high TTTI, very low reliability for freight
    - High truck ADT
    - High crash data (8.5 Commercial motor vehicle 'CMV' crashes / mile)
- Freight and safety the issue for this section based on rural interstate ranking (information above)
- Discussed how these projects were ranked in light of SCDOT ranking policy. Secretary Hall requested the rankings for rural interstates. The rankings were heavy on freight due to push for freight mobility and economic development.
- Safety Office said the actual crash data for modes of traffic did not support the rankings data. Safety not a driving factor, but should be considered.

Purpose and Need

Initial P&N from Planning

> The purpose of this project is to improve capacity on I-95 from MM 0 to 18 due to an increase in traffic demand, volume of freight, and crash history. Interchanges may also be upgraded based on safety concerns and operational deficiencies.

Proposed P&N from PDT

> The purpose of this project is to improve capacity and mobility on I-95 from MM 0 to approximately MM 18 due to a projected increase in traffic demand and volume of freight. Operational and structural deficiencies on interchanges and bridges will be addressed within the corridor. In 2045, the mainline will perform between a LOS of D and F. This corridor ranks among the worst of the rural interstate in freight mobility with a score of 0.9 on a 1 scale.

Discussion

Debated making safety a secondary P&N since safety should always be a concern with SC's low national ranking on safety. Actual safety data does not completely support the crash rankings from the rural interstate rankings list. The team was concerned that it would be difficult to prove an issue since no data supported a safety issue. It may be difficult to prove an improvement in safety since this section is not proving problematic now.

There was concern that MM18 is not a logical terminus. It was determined that it seemed improbable to reach 18 with the funding constraints. This assessment was to find the logical termini between 0-18. 8 is a more logical termini based on traffic and the fact that several bridges in the Savannah River floodplain are in bad condition and may get replaced. The bridge cost may limit the extension of the project past 8 much less past 18. There will be future FRs that address the next logical termini between the logical termini from this report up to MM33.

There was discussion on extending the project limit to MM 22.52 based on the fact that the old concrete section between MM 4.0 and 22.52 on south bound appears to be in poor condition and needs to be reconstructed. However, it seemed not feasible because of the funding constraints.

Reliability was discussed but eliminated from being included since the numbers showed that this stretch was reliable. Congestion is different from reliability. There is congestion, but travel time is consistent enough that traffic understands how long this stretch takes to traverse.

Economics/tourism was discussed but eliminated based on it being difficult if not impossible to measure.

Assuming full reconstruction for now for cost. Could descope later by Steering Committee or project development. Pavement was not mentioned in the P&N but could be considered part of mobility.

Side roads connect to the ramps but this was deemed more of a goal to address side roads rather than an item that should be stated in the P&N. Side roads are addressed later under goals.

All of the interchanges had a decrease in LOS in the future. US278 has failing movements now.

Some bridges were in poor shape, but some may be widened. All bridges were either functionally deficient and/or structurally deficient.

No additional support data from the rankings was used in the P&N. It was discussed to expand on the support but the team decided against doing so. FHWA said the vague inference to travel demand and volume of freight was sufficient.

Goals

1. Improve Capacity
    a. LOS C or better
2. Maintain or Improve Truck Travel Time Reliability
    a. Truck Travel Rate of 1.45 (from TAMP) or better
3. Address Interchange Deficiencies
    a. LOS C or better
    b. Remove interconnectivity with side roads/frontage roads on ramps
4. Improve Safety
    a. Improve crash rates from existing
5. Address Bridge Deficiencies
    a. Improve Condition to 7 or better for all bridges
6. Address Pavement Deficiencies
    a. Improve structure number, PQI, and ride-ability from existing

Discussion

The LOS of C for capacity was chosen due to SCDOT standards. It was discussed that some stretches on interstates, due to volume of traffic and surrounding development, can never reach a C. Looking at the projected traffic for a 6 lane and 8 lane section, C was reached for both a 6 and 8 lane section. These projections do not take into account the port and the addition of exit 3. In the Exit 3 Study, adding exit 3 will double the ADT on I95. Exit 3 would be installed if an approved IJR is received when the developments reach a level to justify the new interchange. The port currently has a construction date of 2035.

The truck reliability factor was pulled from the SCDOT TAMP.

Interchanges will be reviewed by traffic for the final meeting to assess what could achieve LOS of C or greater. Two interchanges had frontage roads that connected to ramps. This needs addressing. Traffic can access the interstate and the opposite side of the interstate if disconnected from the ramps. One site may need the road extended to the crossing, but one may could be cul-du-saced and not extended.

The bridge conditions come into play with whether the interchanges need to be altered. All of the bridges will require an increase in bridge height if they are replaced. Tie downs may affect the ramps and loops.

There was a great deal of discussion concerning bridge ratings and what is acceptable. 7 is "good". Asking for the full replacements to achieve 7 is expensive; however, it may not be deemed as the best approach by the Steering Committee. It was decided for the goals to propose the best scenario for the structure ratings and let the Committee descope the project.

No specific crash type was identified for measurement for improving safety. This stretch is performing as expected for this type of roadway. The team did not want to ignore safety since it is a strategic goal; therefore, safety will be evaluated for each alternative to assess if safety factors degrade or improve.

Deciding on adding lanes or total reconstruction would depend on the pavement analysis. At this point there will not be enough information to address the pavement, but it is a goal for project development.

Several items were brought up as goals but then decided they fit better in scope: Geometric Improvements, Truck Parking, ITS, Ramp Controls (hurricanes).

<u>Scope</u>

- Address mainline geometric issues.
    - Avoid pursuing a design exception at the sag at MM1.5
- Evaluate need for additional truck parking and converting truck weigh station to truck parking. (Keep for now until QT is approved)
- Expand ITS
- Address incident response controls at interchanges
- Review options for increasing capacity
- Replace all bridges on mainline
- Retain all overpasses unless the interchange alteration necessitates replacing or the need for more shoulder width exists

- Review options for addressing overpass rehab
- Increase capacity at exit 8
- Address geometric/operational deficiencies at Exit 5 and 18
- Review options for pavement design for new and existing

Discussion

There are numerous ways to increase capacity. "Widen" was avoided because it limits choices for addressing capacity.

The intent is not to bring the interstate up to all design standards. Geometrics not meeting today's standards need to be evaluated and design exceptions pursued during project development if crash data supports the exception. The one exclusion is at MM 1.5 where lowboys bottom out and have scared the interstate.

The abandoned weigh station asked for receptors in the roadway when this section of interstate was rehabbed recently leading the SCDOT to believe that DPS/HP may open it again in the future. This section has such a large volume of trucks that truck parking is a concern. Several truck stops exist along the corridor and there is a welcome center and truck parking area on this section. Truck parking may be extended at the welcome center and parking area if needed. DPS has no plans to reopen the weigh stations in this segment of I-95 N/S (~MM4.5). SC Department of Transportation (SCDOT) owns and maintains the land that the scale facility (weigh station building) is on. The SCDPS only owns the buildings not the land. Any alterations to these properties (land) will have to be approved through SCDOT. Requested input from Lowcountry COG staff re: perceived need for additional truck parking based on observation within project corridor. Response: Unknown.

ITS ends well short of this area. There is a plan to extend it to this section, but it is worthwhile to explore adding it in this project due to the large number of trucks and tourists.

Incident response could be flooding, interstate closures, or evacuation control. In the past Floridians evacuated to SC, exited the interstate, and clogged the roads for SC tourist and commerce. Highway Patrol has asked for gates on the ramps to control who can exit and enter the interstate to avoid future issues. I95 is prone to flood north of this project, plus traffic from an accident could precipitate lane closures, so preventing traffic from entering this area would help HP control traffic.

There was discussion on adding all of the goals to the scope, but it was decided that this would not be a clear path for project development to use to develop plans.

Much discussion was had about bridges and whether we had justification to replace all structures due to age, MOT costs, and ease of construction. The team decided to form a subcommittee of Traffic, District, PM, Design, and Maintenance and look at each bridge, overpass or interchange, that is "fair". "Poor" bridges should be replaced. Cost estimates for bridge alternatives will be generated in time to support the decision to replace/widen/rehab/jack. Some bridges may get widened to the outside due to MOT causing a shift in the interstate alignment.

Concerns over the level of design for the alternatives was discussed. It was left up to design to decide. The level of design could be layouts that defined the horizontal and used later in design for all

alternatives instead of using some conservative layouts for all alternatives to give a conservative window of impacts where little design effort is expended on each alternative.

Since the bridge decision could not be addressed in this meeting due to time and lack of some information, the meeting was adjourned and another meeting will be planned to finalize the scope and discuss alternatives.

7/30/2019

Second Meeting Discussion on the Scope

Attendee list on separate sheet.

The subcommittee on the bridges met and decided the following:

- Replace all bridges on mainline I95 due to them all being a 5 or less (see Goals above)
    - 5 is fair. Within 10 years they will be 4 or less. 4 is poor.
    - Within 10 years being a 4 will make them structurally deficient
    - The older bridges had the higher ratings but by the time this project is complete they will be nearing the end of their lifespan
    - The numerous staging and MOT issues involved in widening them is not worth the trouble for a fair bridge. It will still be fair after the widening. The effort to replace is not much different than widening and the bridge will be new.
- Do not replace any overpass bridges unless the overpass lacks proper shoulders for operations or geometrics or unless the interchange alteration requires replacement due to the new configuration.
- All bridges have above 16.5' of vertical clearance. No jackings required. No effort needs to be expended during construction to retain the existing clearance, i.e. overlay is acceptable.
- Several of the overpasses have deferred maintenance that needs to be addressed, i.e. paint, bearing replacements, deck work. The traffic control for this project is the same needed for the maintenance work. Do the maintenance under this contract to avoid paying for the traffic control again in the near future in a maintenance contract.
- The District has added their information on the bridges to PW. Precon is going to add their information on this to PW.

The developers requesting Exit 3 have shown volumes supporting 8 lanes on I95, but have not determined a year associated with those numbers. Their model looks at growth and volumes up to 2035 in 5 year increments. The traffic volumes will increase with the amount of economic growth. Once 80% of the expected growth occurs then 8 lanes will be needed. Only one company has shown true interest in development, with several others having entitlement to land but have not commitment to development at this time. Currently the developer is trying to get preliminary approval of a IJR. They would have to combine the weigh station and rest area in order to get approval due to conflicts with ramps on Exit 3 with the truck parking. Plus, they may have to fund the widening of I95 to 8 lanes due to connectivity between the 8 lanes a functioning interchange.

They want to construct this interchange in 2026, but considering their hurdles, it does not seem reasonable to account for the interchange or the growth. Planning is relooking at the model based on the developer's volumes just to see how I95 may be affected. For now, the plan is to move forward

based on the initial data gathered by Planning with a risk that the interchange may move forward and necessitate 8 lanes.

If private truck parking (QT) builds on exit 5 then approximately 15 truck parking spots will be located in this stretch. The QT permit has not yet been approved; therefore, truck parking will remain in the scope. As of August 6: permit is still under review.

Mike Bowman is compiling guidance for incident response controls at the interchanges.

Alternatives

Potential Alternatives with Path Forward (Pursue or Eliminate (reasons given))

1. Mainline
    a. Managed Lanes - Eliminated
        i. High Truck Percentage
        ii. Tourists more than commuters during the summer
        iii. Not conducive to rural interstates
        iv. Issues with enforcements of managed lanes
        v. SC law prohibits tolling interstates
    b. 8 Lanes – Eliminated
        i. Since the goal was to obtain LOS C or higher on the mainline, 6 lanes meets that criteria with two sections of B and the majority of the sections as C. 8 Lanes was LOS B for all sections.
        ii. There is not enough median width for 8 lanes, therefore, all interchanges would have to be replaced and new right-of-way purchased
    c. Transit – Eliminated
        i. High Truck Percentage
        ii. Capacity issues are driven by tourists and not commuters
    d. 6 Lanes
        i. Plot 6 lane configuration for the entire corridor
            1. Barrier wall for roughly 6 miles where the median is too narrow for a ditch. A full width shoulder will be used on the inside against the barrier wall.
        ii. Plot 8 lanes for bridges on mainline
2. Interchanges
    a. Exit 5
        i. Only address deficiencies
            1. Frontage road connecting to the ramp. Relocate Frontage Road.
                a. Potential QT coming to NE quadrant. Not yet approved.
                b. If approved, it will be in logical path for Frontage Road relocation.
                i. May have to purchase businesses or pay damages to businesses on frontage road attached to the ramp.

Purchase of QT more expensive than businesses on ramp. Businesses on ramp:

1. Fireworks store
2. Motel

ii. Businesses on ramp are impulse buy businesses. Cul-du-sac an option to relocating frontage road and eliminating purchase of RW and other impacts to relocate the road. If cul-du-sac frontage road, then must pay damages to the businesses.

2. Create more distance between the on and off ramps to avoid driving confusion on US17
3. Welcome Center ramps and south quadrants ramps conflict

ii. Plot:

1. Frontage road options
2. Ramp options on mainline and on US17

b. Exit 8

i. The alternatives will be traffic driven. Without exact counts the alternatives cannot be specified, but some suggestions for Traffic Engineering to consider were provided by the team. Traffic Engineering may have other alternatives that they want to consider once the design begins.

1. DDI (Diverging Diamond)
2. SPUI (Single Point)
3. Avoid loops due to growth adjacent to the existing interchange
4. The structure is to be retained unless geometrics/operational reasons necessitate its replacement or widening. If replaced, account for 8 lanes of traffic for future widening.

ii. Plot alternatives for worst case footprint

c. Exit 18

i. Cul-du-sac S13 to eliminate a side road from accessing a ramp

ii. Evaluate the next interchange at SC336 to assess if this interchange can still function properly if this interchange is eliminated

iii. Plot alternatives

3. Overpasses

a. All overpasses are to be retained unless the structure needs to be replaced due to a geometric/operational issue. If it is replaced, then the new structure should have the horizontal clearance for 8 lanes for future widening.

4. Mainline Structures

a. Replace all mainline structures for the following reasons:

i. The highest rating of any of the mainline structures is 5. 5 is fair. Within 10 years they will be 4 or less. 4 is poor.

ii. Being a 4 will make them structurally deficient

iii. The older bridges had the higher ratings but by the time this project is complete they will be nearing the end of their lifespan

iv. The numerous staging and MOT issues involved in widening them is not worth the trouble for a fair bridge. It will still be fair after the widening. The effort to replace is not much different than widening and the bridge will be new.

b. All mainline structures are to be 8 lanes to account for future widening
c. The plots are addressed in 1.d. above.

Discussion

It was discussed whether the cost to go to 8 lanes was minimal when compared to 6 lanes for this section of interstate. Due to this interstate having ample room in the median for 6 lanes but not enough room for 8 lanes, 8 lanes would be a much greater cost due to widening to the outside and having to reconfigure all overpasses and interchanges.

Exit 5 has a plot of land that a QT has applied to build a facility with truck parking (approximately 15 spaces would be dedicated to truck parking). It is unclear how the QT intends to connect to US17. If they meet the ARMS manual, then they can attach to US17 through encroachment (maybe through purchase of an existing closed business on US17). The SCDOT cannot deny their permit because of a project being discussed in the planning phases may conflict with their permit. Ideally, the frontage road would go through this plot of land. If permitted, the frontage road may have to go behind the QT to attach to US17. Cul-du-sacing the frontage road could be done but not without a price. Since the businesses on the frontage road are impulse business we would have to pay damages. If the QT builds, the different options (cul-du-sac, relocation) will have to be reviewed, but in the discussion it was believed that the cheaper option would be to cul-du-sac as opposed to the impacts to relocate behind the QT.

Much discussion was had concerning exit 18. If it is to be retained, the only issue operationally is the side road connecting to the ramp. The residents on the side road have connectivity to SC336 which takes them to I95.

The major discussion focused on eliminating this interchange. The problems noted with this interchange were lack of shoulders and the mainline off-ramp conflicts with the mainline onramp for the truck parking. This interchange connects I95 traffic to US17/US278 in between Ridgeland and Switzerland. Neither area/town generate a lot of traffic.

Pros to eliminate:

- Redundancy of interchanges in such close proximity
- One less interchange to maintain

Cons to eliminate:

- Increase travel time on mainline
- Public Perception
- Eliminates termini of project
- If improvement needed to SC336 then these improvements are outside of the project limits

Even though a IMR would be needed to eliminate the interchange, for now Traffic Engineering will just assess if the SC336 interchange can handle the additional volume without being altered.

Action Items

Item	Date Assigned	Responsible Party	Resources Needed
Assess truck parking	6/26/2019	Diane	
Bridge alternatives	6/26/2019	RPG Design	Constr, Maint, Traffic
Staging alts for bridges	6/26/2019	Traffic	Const, Maint,
Interchange Reviews, order traffic counts	7/30/2019	Traffic	Planning, safety, RPG
Mainline Plots	7/30/2019	RPG	Traffic staging, Construction, Planning
Coordination with GA	7/30/2019	Planning	RPG
Prelim Pavement Design and Analysis	8/23/2019	Jay/Dahae	

Team members will have to work together to address their items.

The Items in red will be discussed in a meeting between the responsible party and the resources prior to the next scoping meeting to finalize the scope and alternatives.

Schedules

Management wants the FR completed in 3 months. The team will review their availability and a schedule will be created. The FRM will contact the team shortly to obtain their time frames once the team has evaluated the time needed to complete their tasks.

Questions and Assumptions for the Steering Committee

Assumptions

- Replace all guardrail
- Clear all trees inside of altered interchanges.
- Full reconstruction of all lanes
- Interchange approach:
    - No alternatives involve exit 3
    - Eliminate frontage roads attached to ramps
        - Exit 5: relocate frontage road
        - Exit 18: Cul-du-sac frontage road
- Not pursuing design exceptions for mainline geometric issues in sags

- All interchange ramps will be improved as necessary and paved based on the May 6, 2010, memo Resurfacing/Rehabilitation of Interstate Ramps
- All crosslines will be extended if necessary
- All crosslines will be inspected and rehabbed
- Replace all ML bridges and account for 8 lanes
- Do not replace or jack any overpasses
    - Exceptions for geometric/operational design change
    - Replacements will account for 8 lane width
- Perform needed maintenance on the overpasses. The traffic control needed to perform this work will be part of this contract so address the needs under this traffic control instead of paying for it later with another contract. Examples of work are listed below:
    - Paint
    - Replace Bearings
    - Deck Work

Questions

- Should frontage roads and on/off ramps be moved away from the interchange ramps to avoid confusion to drivers?
    - See attached aerials
- Eliminate Exit 18?
- Are there pavement types that need to be eliminated from consideration? Is there a favored pavement design alternative and why?
- Extend FR if eliminate Exit 18?

I95 MM0-18 Feasibility Report Final PDT Meeting Minutes

December 5, 2019, 8:30am-11am

Attendee List is separate.

Review of previous meeting minutes – Purpose & Need, Goals and Scope

Purpose and Need

Proposed P&N from PDT

Statement

> The purpose of this project is to improve capacity and mobility, provide truck parking, and address operational and structural deficiencies on bridges and interchanges along I-95 from MM 0 to MM 18.

Need

> Operational and structural deficiencies on interchanges and bridges will be addressed within the corridor. In 2045, the mainline will perform between a LOS of D and F. This corridor ranks among the worst of the rural interstate in freight mobility with a score of 0.9 on a 1 scale. Truck parking is lacking in this section of interstate.

Goals

1. Improve Capacity
    a. LOS C or better
2. Maintain or Improve Truck Travel Time Reliability
    a. Truck Travel Rate of 1.45 (from TAMP) or better
3. Address Interchange Deficiencies
    a. LOS C or better
    b. Remove interconnectivity with side roads/frontage roads on ramps
4. Improve Safety
    a. Improve crash rates from existing
5. Address Bridge Deficiencies
    a. Improve Condition to 7 or better for all bridges
6. Address Pavement Deficiencies
    a. Improve structure number, PQI, and ride-ability from existing

Scope

- Address mainline geometric issues.
    - Avoid pursuing a design exception at the sag at MM1.5
- Evaluate need for additional truck parking and converting truck weigh station to truck parking. (Keep for now until QT is approved)

- Expand ITS
- Review options for increasing capacity
- Replace all bridges on mainline and account for 8 lanes
- Retain all overpasses unless the interchange alteration necessitates replacing or the need for more shoulder width exists
- Do not replace or jack any overpasses
    - Exceptions for geometric/operational design change
    - If a bridge is jacked, perform necessary maintenance and rehab on the bridge in this contract.
    - Replacements will account for 8 lane width
- Increase capacity at exit 8
- Address geometric/operational deficiencies at Exit 5 and 18
- Eliminate ramp access from frontage roads
    - Exit 5, relocate frontage road
    - Exit 18, cul-du-sac frontage road
- All interchange ramps will be improved as necessary and paved based on the May 6, 2010, memo *Resurfacing/Rehabilitation of Interstate Ramps*.
- Improve pavement conditions on existing and new lanes based on Pavement Design from the Lab.
- Pave all truck parking areas, welcome centers, and weigh stations
- All crosslines will be inspected and addressed or redesigned as needed based on the inspection.
- Follow the MASH transition plan in PCDM-14 concerning the existing guardrail
- Replace fence damaged due to clear zone tree removal.
- All trees will be removed from the full clear zone based on clear zone charts for mainline.
- All trees will be removed inside of loops and ramps. Tree removal outside of the loops and ramps will follow the clear zone charts.
- Offset the frontage road entrances from the interstate ramps per the ARMS manual for all interchanges.

Discussion – Alternatives Assessment

- Alternative 1 – widening both north and south bound lanes to east
- Alternative 2 – widening both north and south bound lanes to the west
- Alternative 3 – widening both north and south bound lanes to the outside
- Alternative 4 – widening both north and south bound lanes to the median

Recommendation from Design Lead on 4 alternatives was to move forward with Alternative 4 which is the only reasonable alternative, which minimized environmental impacts, reduced ROW requirements, overpasses will not need to be replaced. Widening to the inside will require guardrail, cable barriers and internal drainage. Alternatives 1 and 3 had the greatest impacts on environmental.

Mile marker 0 through 33 has recently been cleared & grubbed, which will be an advantage for this project. There were pockets in the wetlands that will have to be cleared and grubbed that we not touched during the clearing contract.

Exit 3, Purrysburg Ramp which may be constructed in the future for possible construction of Riverport on Savannah will interfere with existing weigh station, ramps will have to be braided. There may be bridges over the ramps which was a concern for Maintenance.

Exit 5 – Relocating frontage roads for ramp changes, QT truck stop still in permitting process, there are existing businesses that will need to be bought out, or provided alternative access that does not connect to ramps. If the QT does build, then the frontage road will be relocated or the businesses on the ramp will be bought out.

Exit 8 – US 278, truck stop in southeast quadrant will need an alternative route, possible connection to Henry Moss Blvd. Improvements planned for US 278 with this interchange upgrade, but they do not help the truck stop. Jasper County has contacted the SCDOT about helping them with giving the truck stop a better connection with the NB ramp access.

Exit 18 – no issues with connectivity, crashes. Expect to install cul-de-sac on frontage road where it connects to the ramp. There was a business at this location at one time. It is now closed. The cul-de-sac may be an issue with the property owner.

CSX Railroad crossing – No comments yet from the RR. It is possible that they will want to add rails and request a longer bridges and a certain bridge configuration.

NEPA Comments

- possible noise mitigation necessary in Hardeville that would require sound barrier walls
- permitting is expected for be IP (individual permit) due to wetlands
- significant impacts, anticipated document – EA

	Goals							Other			
Alternatives	Improve Capacity	Improve Truck Travel Time Reliability	Address Interchange Deficiencies		Improve Safety	Address Bridge Deficiencies	Address Pavement Deficiences				
	Metrics	Metrics	Metrics		Metrics	Metrics					
	LOS C or better	Truck Travel Rate of 1.45 or better	LOS C or better	Remove interconnectivity with side roads/frontage roads on ramps	Improve crash rates from existing	Improve condition to 7 or better for all bridges	Improve structure number, PQI, and ride-ability from existing	NEPA Impacts	Anticipated Document	Anticipated Permit	Wetland Impacts
No Build ML	N		N/A	N/A	N	N	N/A				
6 Lanes	Y		N/A	N/A	Y	Y	N/A	NOISE AT HARDEEVILLE	EA	IP	SIGNIFICANT
Exit 5 NB	N/A	N/A	Y	N	N	N	N/A				
Exit 5	N/A	N/A	Y	Y	N/A	N/A	N/A				
Exit 8 NB	N/A	N/A	N	N	N	N	N/A				
Exit 8	N/A	N/A	Y	N/A	N/A	N/A	N/A				
Exit 18 NB	N/A	N/A	Y	N	N	N	N/A				
Exit 18	N/A	N/A	Y	Y	N/A	N/A	N/A				

Discussion – Risk Assessment

Exit 5

- Development with Hardeeville/Jasper County/Riverport Development, possible that this will occur. Traffic will increase at this interchange with or without Exit 3 once development occurs.
- Right-of-way to relocate frontage road or buy out businesses on slip ramp

Exit 8

- Major interchange improvements including right-of-way and environmental. Concerns that the statewide model used to generate traffic data is not accurate, needs a full traffic study on the specific interchange with several alternatives generated to address need. RPG anticipates a full interchange re-do which has already been accounted for in cost-estimate and schedule

Exit 18

- Potential active business at the slip ramp that may need to be bought out, or have driveway rerouted

Main line Risks

- Addition of Exit 3 at Purrysburg, possible with Riverport development
- Full reconstruction of pavement from MM 4-18. CRCA pavement is in poor condition. Recommendation is for a complete rebuild, leave existing concrete as base layer and add 12" asphalt on top. Grade changes and revised shoulder would necessitate jacking bridges if 12" is required. After discussion, engineer will go back and look at 7" asphalt (SMA) to avoid bridge jacking and extensive revisions. Lowest bridge measures 16'-7" in height. Overpasses could be handled at a later date if they become an issue. Worst case is the old concrete is removed and new base is placed.
- Mile marker 0-4 pavement is in good condition
- Opportunity to utilize 7" SMA Overlay to save costs and avoid complete rebuild of MM 4-18
- Working with CSX at RR Crossing could be a coordination problem. Currently CSX requires 23' from top of rail to bottom of bridge for clearance. They may want additional rails.
- Stateline Bridge Replacement
- Stateline Bridge Coordination, working with GA
- Sound barriers in Hardeeville. 500' distance from EOP is criteria for noise sensors. Approximately a 3600 LF stretch of homes that are near I-95

Goals that are red denotes that they directly tie to the P&N.
The Alternate description can be found below the chart.
A Y in the cell under the alternative indicates that the alternative meets that particular Metric.

	Goals							Other			
Alternatives	Improve Capacity	Improve Truck Travel Time Reliability	Address Interchange Deficiencies		Improve Safety	Address Bridge Deficiencies	Address Pavement Deficiences				
	Metrics	Metrics	Metrics		Metrics	Metrics					
	LOS C or better	Truck Travel Rate of 1.45 or better	LOS C or better	Remove interconnectivity with side roads/frontage roads on ramps	Improve crash rates from existing	Improve condition to 7 or better for all bridges	Improve structure number, PQI, and ride-ability from existing	NEPA Impacts	Anticipated Document	Anticipated Permit	Wetland Impacts
No Build ML	N		N/A	N/A	N	N	N/A				
6 Lanes	Y		N/A	N/A	Y	Y	N/A	NOISE AT HARDEEVILLE	EA	IP	SIGNIFICANT
Exit 5 NB	N/A	N/A	Y	N	N	N	N/A				
Exit 5	N/A	N/A	Y	Y	N/A	N/A	N/A				
Exit 8 NB	N/A	N/A	N	N	N	N	N/A				
Exit 8	N/A	N/A	Y	N/A	N/A	N/A	N/A				
Exit 18 NB	N/A	N/A	Y	N	N	N	N/A				
Exit 18	N/A	N/A	Y	Y	N/A	N/A	N/A				

Description of Alternatives

No Build ML	No Build			
6 Lanes	6 Lanes. Full Inside shoulder. First 6 Miles has barrier wall.			
Exit 5 NB	No Build			
Exit 5	Deficiences			
Exit 8 NB	No Build			
Exit 8	Reconstruction			
Exit 18 NB	No Build			
Exit 18	Deficiences			

ML: Mainline NB: No Build

Exit 8 Risk Register Date: 12/5/2019

I95 MM0-18

Risk ID	Risk	Opportunity or Threat	Likelihood of Occurrence Value, %		Consequence Value, %		Cost Risk Value	Likelihood of Occurrence Value, %		Consequence Value, Months		ScheduleRisk Value	Risk Response	Risk Area
R 001	MAJOR INTERCHANGE IMPROVEMENTS INCLUDING RW AND ENVIRONMENTAL	T	Probable	80	Moderate	40	160	Probable	80	Moderate	12	52		
R 002							######					#VALUE!		
R 003							######					#VALUE!		

Exit 18 Risk Register Date: 12/5/2019

I95 MM0-18

Risk ID	Risk	Opportunity or Threat	Likelihood of Occurrence Value, %		Consequence Value, %		Cost Risk Value	Likelihood of Occurrence Value, %		Consequence Value, Months		ScheduleRisk Value	Risk Response	Risk Area
R 001	ACTIVE/POTENTIAL BUSINESS AT SLIP RAMP	T	Possible	45	Low	20	60					#VALUE!		
R 002							######					#VALUE!		
R 003							######					#VALUE!		
R 004							######					#VALUE!		