II. Alternatives Considered

A range of alternatives was developed to address the existing deficiencies on the Delaware Turnpike, between the I-95/ SR 1 Interchange and the I-95/ SR 141 Interchange. This section summarizes the resource assessment and decision-making process, which resulted in the choice of DelDOT's Preferred Alternative. This Alternatives Section supercedes as an update to the information presented in the *Alternatives Retained for Detailed Study* document, which was distributed to the resource agencies on October 9, 2003.

A. Existing Conditions

Three major roadways, SR 273 (2 lanes), SR 1 (1 lane) and SR 141 (2 lanes), merge with northbound I-95 (4 lanes) before traffic divides to continue on SR 141, I-95, I-295 or I-495. These interchanges are closely spaced over a distance of approximately six miles between SR 273 in the south and I-495 in the north. On northbound I-95, peak hour traffic volumes more than double between SR 273 and Churchmans Marsh. This is due to the large volume of vehicles entering the freeway at the SR 273 and SR 1 interchanges. However, the same number (4) of freeway lanes is provided in each location. Similarly, in the southbound direction, I-95 (2 lanes), I-295 (2 lanes) and I-495 (3 lanes) converge at the Christiana Interchange with SR 141 (2 lanes), and in a relatively short distance these 9 lanes merge into the existing 4 lanes of southbound I-95. In essence, on the southern end of the project, two expressways and a major arterial are merged together. On the northern end of the project, three expressways and an arterial merge into southbound I-95. The mainline of the turnpike between SR 1 and SR 141 has become the "neck in the bottle". Currently, the section of the turnpike between the SR 1 Interchange and the SR 141 Interchange is operating at an unacceptable level of service (LOS F). While accidents on the mainline between the SR 1 and SR 141 Interchanges are not significantly high relative to the rest of the Turnpike Mainline, the frequency of accidents in the SR 1 and SR 141 Interchanges are significantly higher.

B. Alternatives Considered

A No-Build Alternative and two Build Alternatives were developed for the SR 1 Interchange and Turnpike Mainline. The No-Build Alternative would maintain existing conditions with only minor changes to the SR 1 Interchange and along the Turnpike Mainline from the SR 1 Interchange to the SR 141 Interchange.

DelDOT successfully implemented extensive ITS, TDM and bus and rail transit improvements in the I-95 Corridor between 1995 and 2002. While successful, these improvements have had little effect on the turnpike traffic growth and have not eliminated the need to provide additional capacity on I-95 from SR 1 to SR 141.

Build Alternatives have been developed to address backups that occur daily on the northbound Turnpike Mainline from SR 1 to SR 141 (and through the SR 1 Interchange) in the mornings and southbound from the Christiana Interchange (I-95/I-295/I-495) to the SR 1 Interchange in the evenings and improve safety.

The Build Alternatives that have been developed as well as the No-Build Alternative are discussed in this document. No additional alternatives were suggested at the July 10, 2003 Joint Permit Review (JPR) meeting; at the April 28 and 29, 2003 Public Workshops where the Range of Alternatives were presented and discussed; or at the December 1 and 2, 2003 and January 8, 2004 Public Workshops where Alternatives Retained for Detailed Study were presented and discussed.

1. I-95/SR 1 Interchange Alternatives Considered

a. No-Build Alternative (Alternative 1)

The No-Build Alternative for the I-95/SR 1 Interchange maintains existing conditions. Minor changes would be made to the existing interchange. **Figure 3** illustrates the I-95/SR 1 Interchange for the No-Build Alternative.

Construction would be limited to routine repairs and maintenance. Development and use of various traffic management systems have been implemented in order to maximize the operational efficiency of the turnpike between the SR 1 and SR 141 Interchange. Currently, electronic traffic counting sensors, cameras, permanent variable message signs, a 24-hour County-wide AM Transportation radio station, and a 24-hour/7-days-a-week Transportation Management Center have been implemented by DelDOT and are used to maximize the presentation of real time information to Turnpike motorists. These systems help divert traffic from congestion, accidents, construction, and other incidents such as chemical spills, smoke, and fog so that backups and delays can be minimized, if the situation arises. DelDOT will continue development and deployment of these types of traffic management systems, as provided in the current Capital Transportation Program (CTP), in an effort to improve efficiency along this section of the turnpike.

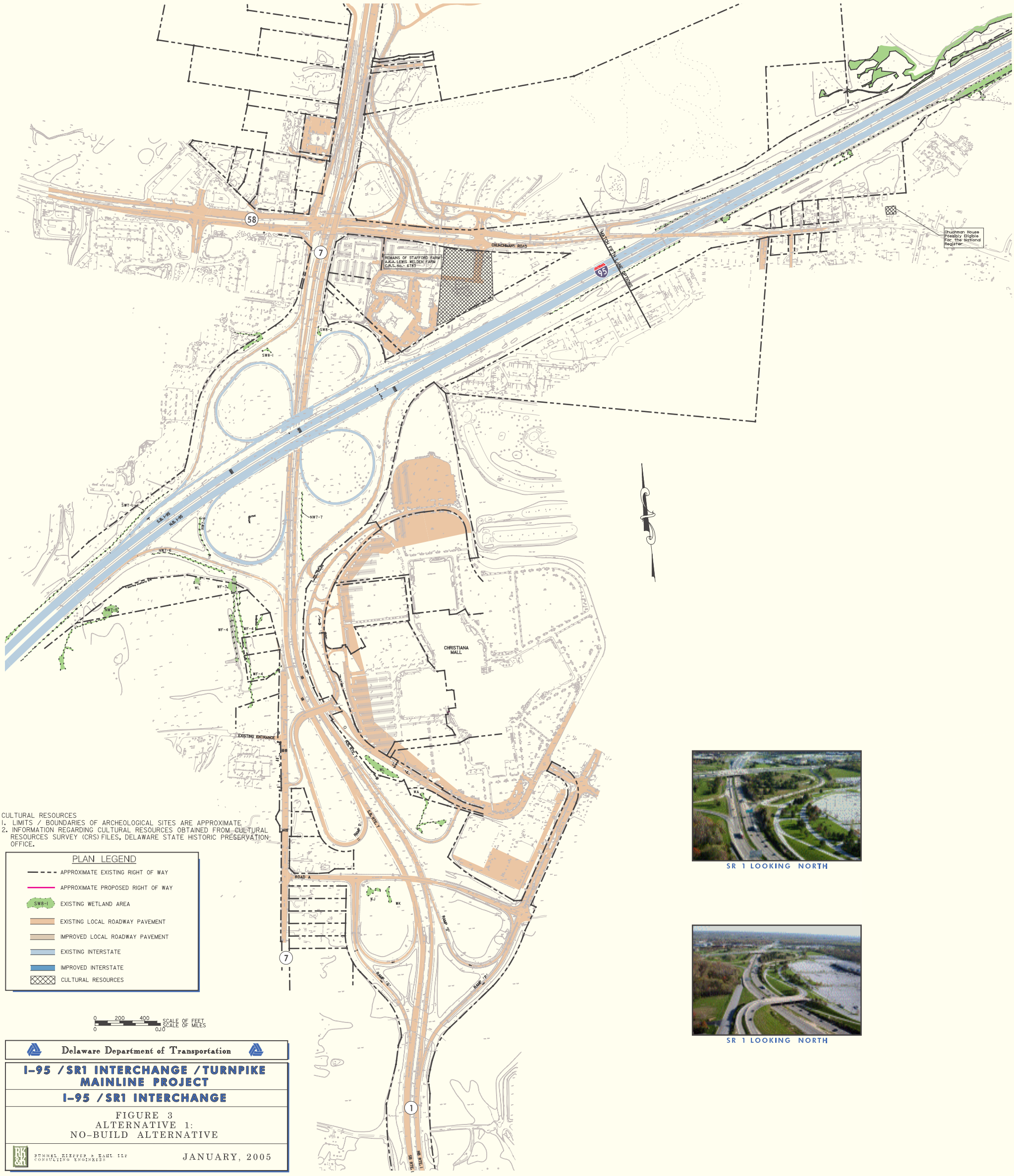
b. Build Alternatives

In order to improve the operational efficiency of the I-95/SR 1 Interchange, the movement of through/regional traffic from southbound I-95 to southbound SR 1 and from northbound SR 1 to northbound I-95 will be separated from local/mall traffic. By providing physically separated roadways for through and local traffic, movements to and from the interstate will not be affected by local traffic through the interchange and around the mall.

This will be accomplished by reconstructing the interchange to provide new connections to the interstate and local roadways as well as reconstructing existing roadways within the interchange. To facilitate this work, northbound SR 1 will be shifted to the east, and portions of the Mall Ring Road will also be relocated to the east. In order to accommodate the proposed horizontal and vertical improvements within the interchange, the mall bridge will be replaced to the south of its existing location.

Two build alternatives have been developed for the I-95/SR 1 Interchange. In general, the only significant difference in the two designs is the location of proposed Ramp A, which will provide the southbound I-95 to southbound SR 1 movement. In Alternative 2, Ramp A traverses three quadrants of the interchange forming a wide loop ramp around the interchange, crossing over the northeast loop, SR 7, I-95, Ramp F and southbound SR 1 before passing under the new mall bridge. This alternative requires that the existing northwest loop be modified to maintain traffic during construction before it is ultimately taken out of service upon completion of Ramp A. In Alternative 3, Ramp A crosses over I-95, the southeast loop and (relocated) northbound SR 7 on the east side of the interchange and then passes under the new mall bridge. In this alternative, the northwest loop is not impacted during construction but is taken out of service once construction of Ramp A is completed.

As the proposed designs for the two interchange alternatives have continued to develop, refinements have been made that resulted in increases and decreases to quantity estimates and associated costs. These items include grading, paving, bridges, retaining walls, drainage, utilities and maintenance of traffic. The result has been a decrease in the difference in cost between the two alternatives (from the initial estimated $10 million to the current $5 million). Table 3 presents a summary comparison of the two alternatives following descriptions of each.



CULTURAL RESOURCES
1. LIMITS / BOUNDARIES OF ARCHEOLOGICAL SITES ARE APPROXIMATE.
2. INFORMATION REGARDING CULTURAL RESOURCES OBTAINED FROM CULTURAL RESOURCES SURVEY (CRS) FILES, DELAWARE STATE HISTORIC PRESERVATION OFFICE.

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- APPROXIMATE PROPOSED RIGHT OF WAY
- SW8-1 EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE
- CULTURAL RESOURCES

0 200 400 SCALE OF FEET
0 0.10 SCALE OF MILES

SR 1 LOOKING NORTH

SR 1 LOOKING NORTH

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /SR1 INTERCHANGE

FIGURE 3
ALTERNATIVE 1:
NO-BUILD ALTERNATIVE

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JANUARY, 2005

(1) I-95/SR 1 Interchange Alternative 2 – Ramp A Outside Alignment

Overview

The length of Ramp A is 8,590 feet with a design speed of 50 mph; the length of Ramp B, which provides the northbound to northbound connector, is 6,975 feet with a design speed of 60 mph. Local roads and ramps within the existing interchange will be reconstructed or relocated as appropriate. This alternative includes a total of seven new bridges and one bridge widening with approximately 113,000 total square feet of deck area and approximately 9,650 linear feet of retaining walls. The I-95/SR 1 Interchange Alternative 2 is shown in **Figure 4.**

Northbound

Beginning south of Road A, northbound SR 1 will widen into a four-lane roadway. The two left lanes will diverge to provide a direct connection (Ramp B) for northbound SR 1 traffic destined for northbound I-95 that is physically separated from northbound SR 7 and access ramps to and from Christiana Mall. As Ramp B approaches I-95, Ramp E will merge from the right to provide access for Road A traffic and Christiana Mall traffic destined for northbound I-95. The two right lanes split off to serve local traffic wishing to continue north on SR 7 or the Christiana Mall. Northbound traffic from the Road A Interchange and mall traffic exiting through the Road A Interchange or from the Mall Ring Road will merge with local traffic and have an opportunity to continue north to SR 7 or to access I-95 in either the northbound or southbound direction.

Southbound

Beginning north of the interstate, local traffic traveling on SR 7 to the Mall, the Road A Interchange or continuing south will be physically separated from the through traffic exiting southbound I-95 to southbound SR 1 (Ramp A). Both southbound SR 7 and Ramp A will provide two travel lanes that are physically separated through the interchange and then merge together as SR 1south of Road A. The two left lanes will carry through traffic from southbound I-95 to southbound SR 1 along Ramp A passing around the existing northeast, northwest and southwest quadrants of the interchange, passing over SR 7 and I-95. The two right lanes (SR 7) will serve the local southbound traffic that will access the mall by using either the loop ramp to the Mall Ring Road or the Road A Interchange. South of Road A both roadways (Ramp A and SR 7) will merge and then taper to match the existing three-lane SR 1 roadway section.

Assessment of Advantages and Disadvantages for Interchange Alternative 2

The advantages and disadvantages of Alternative 2, Outside Alignment are as follows:

Advantages

- Direct access from northbound SR 1 to northbound I-95 and from southbound I-95 to southbound SR 1 - avoids conflicts between local traffic and through traffic
- Existing NW loop ramp is removed from service – eliminates ramp conflict with southbound local traffic
- Ramp A bridge over I-95 has improved skew angle and shorter bridge length, as compared to Alternative 3.
- Has approximately one-third less bridge deck surface area compared to Alternative 3.
- Has approximately one-third less retaining wall surface area compared to Alternative 3.
- Less expensive than Alternative 3 – about $5 million.

Delaware Department of Transportation

I-95 / SR1 INTERCHANGE / TURNPIKE MAINLINE PROJECT

I-95 / SR1 INTERCHANGE

FIGURE 4 (1 OF 5)
PREFERRED ALTERNATIVE 2
PROPOSED RAMP A OUTSIDE

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JANUARY 2005

MATCHLINE SEE SHEET 2

CHRISTIANA MALL

APPROXIMATE PROPOSED RIGHT OF WAY

APPROXIMATE PROPOSED RIGHT OF WAY

MALL RING ROAD

N.B. RTE. 7

S.B. RTE. 7

RAMP B

RAMP A

RAMP U

RAMP UI

RAMP S

RAMP G2

RAMP G

RAMP GI

RAMP F

RAMP A

SB RTE 7

STANTON CHRISTIANA ROAD

ROAD A

EXISTING ENTRANCE

APPROXIMATE PROPOSED RIGHT OF WAY

APPROXIMATE PROPOSED RIGHT OF WAY

7

MATCHLINE SEE SHEET 4

SHEET 3 OF 4

CULTURAL RESOURCES

1. LIMITS / BOUNDARIES OF ARCHEOLOGICAL SITES ARE APPROXIMATE
2. INFORMATION REGARDING CULTURAL RESOURCES OBTAINED FROM CULTURAL RESOURCES SURVEY (CRS) FILES, DELAWARE STATE HISTORIC PRESERVATION OFFICE.

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE
- CULTURAL RESOURCES

0 100 200 SCALE OF FEET
0 0.10 SCALE OF MILES

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /SR1 INTERCHANGE

FIGURE 4 (4 of 5)
PREFERRED ALTERNATIVE 2
PROPOSED RAMP A OUTSIDE

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...B:/display/January/EA_SR1/EA-A...

MATCHLINE SEE SHEET 1

APPROXIMATE PROPOSED RIGHT OF WAY

RAMP E1

RAMP E

RAMP B

RAMP A

INTERSTATE 95

MALL RING ROAD

SB RTE 7

RAMP F

RAMP A

MATCHLINE SEE SHEET 3

REMAINS OF STAFFORD FARM
A.K.A. LEWIS WELDEN FARM
C.R.S. No.- 6783

N.B. I-95

S.B. I-95

RAMP A

RAMP H

7

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE
- CULTURAL RESOURCES

CULTURAL RESOURCES

1. LIMITS / BOUNDARIES OF ARCHEOLOGICAL SITES ARE APPROXIMATE
2. INFORMATION REGARDING CULTURAL RESOURCES OBTAINED FROM CULTURAL RESOURCES SURVEY (CRS) FILES, DELAWARE STATE HISTORIC PRESERVATION OFFICE.

APPROXIMATE PROPOSED RIGHT OF WAY

0 100 200 SCALE OF FEET
0 0.10 SCALE OF MILES

SHEET 2 OF 4

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /SR1 INTERCHANGE

FIGURE 4 (3 OF 5)
PREFERRED ALTERNATIVE 2
PROPOSED RAMP A OUTSIDE

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TO SR 141

NB I-95

SB I-95

MATCHLINE SEE MAINLINE PLANS STA. 100+00

MATCHLINE SEE SHEET 2

INTERSTATE 95

RAMP B

RAMP A

NEW BRIDGE UNDER CONSTRUCTION

APPROXIMATE PROPOSED RIGHT OF WAY

REMAINS OF STAFFORD FARM
A.K.A. LEWIS WELDEN FARM
C.R.S. No.- 6783

CHURCHMANS ROAD

SHEET 1 OF 4

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE
- CULTURAL RESOURCES

CULTURAL RESOURCES

1. LIMITS / BOUNDARIES OF ARCHEOLOGICAL SITES ARE APPROXIMATE
2. INFORMATION REGARDING CULTURAL RESOURCES OBTAINED FROM CULTURAL RESOURCES SURVEY (CRS) FILES, DELAWARE STATE HISTORIC PRESERVATION OFFICE.

0 100 200 SCALE OF FEET
0 0.10 SCALE OF MILES

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /SR1 INTERCHANGE

FIGURE 4 (2 OF 5)
PREFERRED ALTERNATIVE 2:
PROPOSED RAMP A OUTSIDE

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TO SR 273

RAMP P

RAMP Q

1

NB RTE. 1

SB RTE. 1

CHRISTINA RIVER

STATE ROUTE 1 (SB)

STATE ROUTE 1 (NB)

MATCHLINE SEE SHEET 3

SHEET 4 OF 4

CULTURAL RESOURCES

1. LIMITS / BOUNDARIES OF ARCHEOLOGICAL SITES ARE APPROXIMATE
2. INFORMATION REGARDING CULTURAL RESOURCES OBTAINED FROM CULTURAL RESOURCES SURVEY (CRS) FILES, DELAWARE STATE HISTORIC PRESERVATION OFFICE.

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE
- CULTURAL RESOURCES

0 100 200 SCALE OF FEET
0 0.10 SCALE OF MILES

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /SR1 INTERCHANGE

FIGURE 4 (5 OF 5)
PREFERRED ALTERNATIVE 2
PROPOSED RAMP A OUTSIDE

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JANUARY 2005

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Disadvantages

- Ramp A design speed is 50 mph - preferred design speed is 60 mph.
- Maintenance of traffic for existing northwest loop ramp during construction of Ramp A will require a 20 mph speed limit – traffic analysis indicates that this would create a severe backup onto the southbound I-95 travel lanes.
- Requires reconstruction of Ramp H.
- Requires reconstruction of Ramp F.
- Ramp A requires construction in three quadrants of the interchange and extends the construction area along I-95 relative to Alternative 3. This results in a greater impact to the traveling public on I-95.
- Slightly greater wetlands impacts than Alternative 3.
- Greater woodlands impacts than Alternative 3.
- Greater right of way impacts than Alternative 3.

(2) I-95/SR 1 Interchange Alternative 3 - Ramp A Inside Alignment

Overview

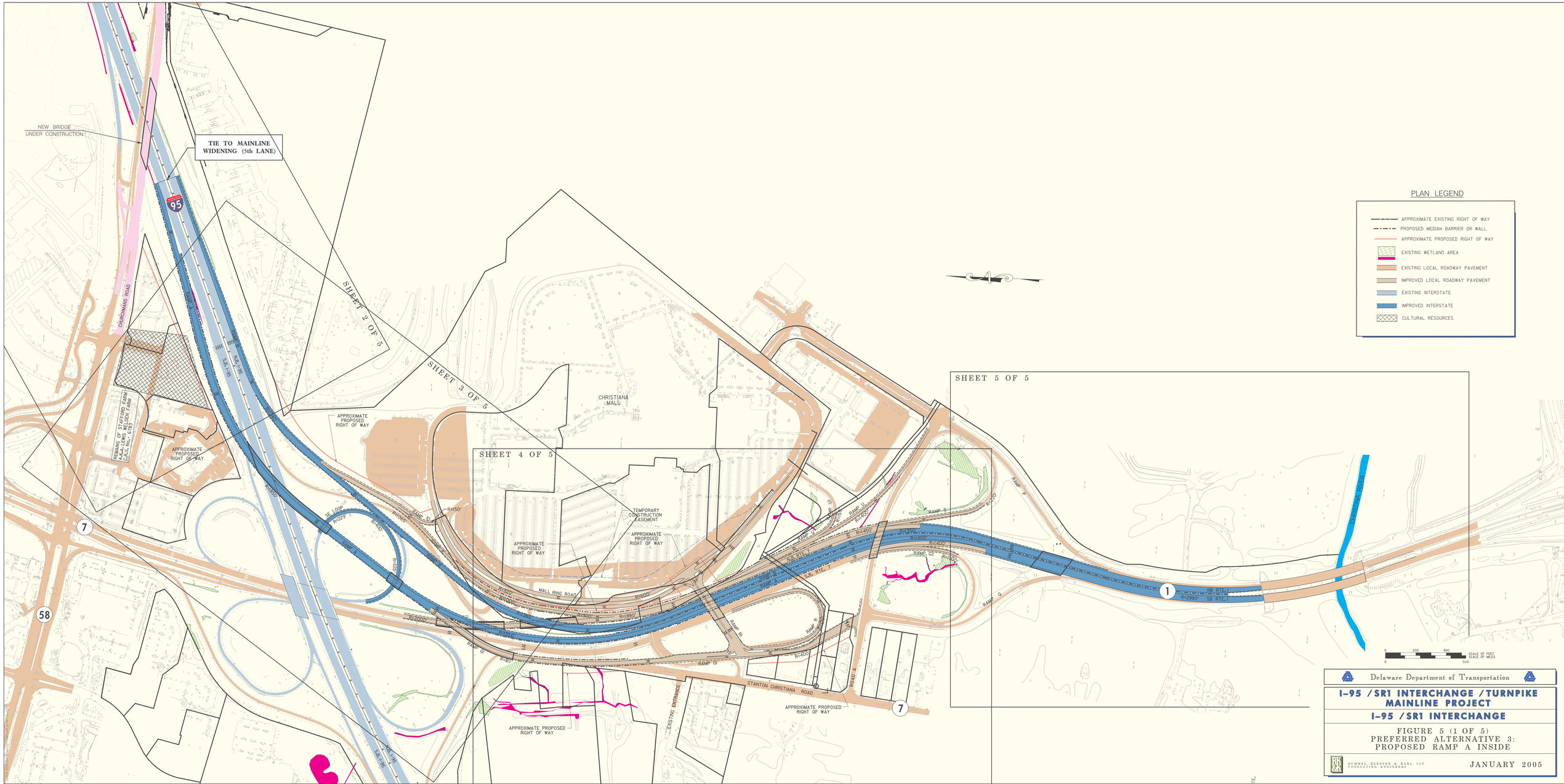
The length of Ramp A is 7,245 feet with a design speed of 60 mph; the length of Ramp B is 6,000 feet with a design speed of 60 mph. Local roads and ramps within the existing interchange will be reconstructed or relocated as appropriate. This alternative includes a total of six new bridges and one bridge widening with approximately 165,000 total square feet of deck area and approximately 9,850 linear feet of retaining walls. Alternative 3 is shown in **Figure 5**.

Northbound

Beginning south of Road A, northbound SR 1 will widen into a four-lane roadway. The two left lanes will diverge to provide a direct connection to northbound I-95 (Ramp B) that is physically separated from local roadways (SR 7). As Ramp B approaches I-95, Ramp E will merge from the right to provide access for Road A traffic and Christiana Mall traffic destined for northbound I-95. South of Road A, the two right lanes split off to serve local traffic wishing to continue north on SR 7 or the Christiana Mall. Northbound traffic from the Road A Interchange and mall traffic exiting through the Road A Interchange or from the Mall Ring Road will merge with local traffic and have an opportunity to continue north to SR 7 or to access I-95 in either the northbound or southbound direction.

Southbound

Beginning north of the interstate, local traffic traveling on SR 7 to the Mall, the Road A Interchange or continuing south will be physically separated from the through traffic exiting southbound I-95 to southbound SR 1 (Ramp A). Both southbound SR 7 and Ramp A will provide two travel lanes that are physically separated through the interchange and then merge together as SR 1 south of Road A. The two left lanes will carry through traffic from southbound I-95 to southbound SR 1 along directional Ramp A passing over I-95 and the southeast quadrant loop to the east of the existing interchange. The two right lanes (SR 7) will serve the local southbound traffic that will access the mall by using either the loop ramp to the Mall Ring Road or the Road A Interchange. South of Road A both roadways (Ramp A and SR 7) will merge and then taper to match the existing three-lane SR 1 roadway section.


NEW BRIDGE UNDER CONSTRUCTION
TIE TO MAINLINE WIDENING (5th LANE)
SHEET 2 OF 5
SHEET 3 OF 5
SHEET 4 OF 5
SHEET 5 OF 5
CHURCHMANS ROAD
REMAINS OF STIFFORD FARM A.K.A.-LEWIS-ELDER FARM C.A.S. No.- 6783
APPROXIMATE PROPOSED RIGHT OF WAY
CHRISTIANA MALL
TEMPORARY CONSTRUCTION EASEMENT
MALL RING ROAD
STANTON CHRISTIANA ROAD
EXISTING ENTRANCE
ROAD A
RAMP A
RAMP B
RAMP C
RAMP D
RAMP E
RAMP F
RAMP G
RAMP H
RAMP I
RAMP J
RAMP K
RAMP L
RAMP M
RAMP N
RAMP O
RAMP P
RAMP Q
RAMP S
RAMP U
RAMP V
RAMP C2
NB RTE. 1
SB RTE. 1
CHRISTINA RIVER
SCALE OF FEET
SCALE OF MILES
PLAN LEGEND
APPROXIMATE EXISTING RIGHT OF WAY
PROPOSED MEDIAN BARRIER OR WALL
APPROXIMATE PROPOSED RIGHT OF WAY
EXISTING WETLAND AREA
EXISTING LOCAL ROADWAY PAVEMENT
IMPROVED LOCAL ROADWAY PAVEMENT
EXISTING INTERSTATE
IMPROVED INTERSTATE
CULTURAL RESOURCES
Delaware Department of Transportation
I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT
I-95 /SR1 INTERCHANGE
FIGURE 5 (1 OF 5)
PREFERRED ALTERNATIVE 3:
PROPOSED RAMP A INSIDE
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JANUARY 2005

MATCHLINE SEE SHEET 2

MATCHLINE SEE SHEET 4

CHRISTIANA MALL

TEMPORARY CONSTRUCTION EASEMENT

APPROXIMATE PROPOSED RIGHT OF WAY

APPROXIMATE PROPOSED RIGHT OF WAY

APPROXIMATE PROPOSED RIGHT OF WAY

MALL RING ROAD

RAMP U1

RAMP U

RAMP S

N.B. RTE. 7

S.B. RTE. 7

RAMP B

RAMP A

RAMP G2

RAMP R1

RAMP R

RAMP G1

RAMP G

STANTON CHRISTIANA ROAD

ROAD A

EXISTING ENTRANCE

APPROXIMATE PROPOSED RIGHT OF WAY

APPROXIMATE PROPOSED RIGHT OF WAY

7

CULTURAL RESOURCES

1. LIMITS / BOUNDARIES OF ARCHEOLOGICAL SITES ARE APPROXIMATE
2. INFORMATION REGARDING CULTURAL RESOURCES OBTAINED FROM CULTURAL RESOURCES SURVEY (CRS) FILES, DELAWARE STATE HISTORIC PRESERVATION OFFICE.

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE
- CULTURAL RESOURCES

0 100 200 SCALE OF FEET
0 0.10 SCALE OF MILES

SHEET 3 OF 4

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /SR1 INTERCHANGE

FIGURE 5 (4 of 5)
ALTERNATIVE 3
PROPOSED RAMP A INSIDE

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CONSULTING ENGINEERS

JANUARY 2005

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MATCHLINE SEE SHEET 1

MATCHLINE SEE SHEET 3

CHRISTIANA MALL

APPROXIMATE PROPOSED RIGHT OF WAY

APPROXIMATE PROPOSED RIGHT OF WAY

MALL RING ROAD

RAMP B

RAMP A

RAMP E1

RAMP E

RAMP B

INTERSTATE 95

CONSTRUCTION B

SE LOOP

RAMP A

RAMP GI

NB I-95

SB I-95

REMAINS OF STAFFORD FARM
A.K.A. LEWIS WELDEN FARM
C.R.S. No.- 6783

7

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE
- CULTURAL RESOURCES

CULTURAL RESOURCES

1. LIMITS / BOUNDARIES OF ARCHEOLOGICAL SITES ARE APPROXIMATE
2. INFORMATION REGARDING CULTURAL RESOURCES OBTAINED FROM CULTURAL RESOURCES SURVEY (CRS) FILES, DELAWARE STATE HISTORIC PRESERVATION OFFICE.

0 100 200 SCALE OF FEET
0 0.10 SCALE OF MILES

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /SR1 INTERCHANGE

FIGURE 5 (3 OF 5)
ALTERNATIVE 3
PROPOSED RAMP A INSIDE

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CONSULTING ENGINEERS

JANUARY 2005

SHEET 2 OF 4

...A/display/January/EA-SR1/EA-alt3.dgn

TO SR 141

NB I-95

SB I-95

CONSTRUCTION ℄

MATCHLINE SEE MAINLINE PLANS STA. 100+00

MATCHLINE SEE SHEET 2

INTERSTATE 95

RAMP B

RAMP A

CONSTRUCTION ℄

NEW BRIDGE UNDER CONSTRUCTION

APPROXIMATE PROPOSED RIGHT OF WAY

REMAINS OF STAFFORD FARM
A.K.A. LEWIS WELDEN FARM
C.R.S. No.- 6783

CHURCHMANS ROAD

SHEET 1 OF 4

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE
- CULTURAL RESOURCES

CULTURAL RESOURCES

1. LIMITS / BOUNDARIES OF ARCHEOLOGICAL SITES ARE APPROXIMATE
2. INFORMATION REGARDING CULTURAL RESOURCES OBTAINED FROM CULTURAL RESOURCES SURVEY (CRS) FILES, DELAWARE STATE HISTORIC PRESERVATION OFFICE.

0 100 200 SCALE OF FEET
0 0.10 SCALE OF MILES

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /SR1 INTERCHANGE

FIGURE 5 (2 OF 5)
PREFERRED ALTERNATIVE 3
PROPOSED RAMP A INSIDE

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JANUARY 2005

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TO SR 273

RAMP P

RAMP Q

1

NB RTE. 1

SB RTE. 1

CHRISTINA RIVER

MATCHLINE SEE SHEET 3

SHEET 4 OF 4

CULTURAL RESOURCES

1. LIMITS / BOUNDARIES OF ARCHEOLOGICAL SITES ARE APPROXIMATE
2. INFORMATION REGARDING CULTURAL RESOURCES OBTAINED FROM CULTURAL RESOURCES SURVEY (CRS) FILES, DELAWARE STATE HISTORIC PRESERVATION OFFICE.

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE
- CULTURAL RESOURCES

0 100 200 SCALE OF FEET
0 0.10 SCALE OF MILES

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /SR1 INTERCHANGE

FIGURE 5 (5 OF 5)
ALTERNATIVE 3
PROPOSED RAMP A INSIDE

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CONSULTING ENGINEERS

JANUARY 2005

...B/display/January/EA_SR1/EA_alt3.dgn

Assessment of Advantages and Disadvantages for Interchange Alternative 3

The advantages and disadvantages of Alternative 3, Inside Alignment, are as follows:

Advantages

- Direct access from northbound SR 1 to northbound I-95 and from southbound I-95 to southbound SR 1 - avoids conflicts between local traffic and through traffic.
- Avoids construction impacts to northeast, northwest and southwest quadrants.
- Avoids need for reduced speeds on northwest loop ramp (no construction in this area).
- Avoids the need to relocate and lower southbound SR 7 (reduced impacts to traffic).
- Reduces area along I-95 impacted by construction activities.
- Likely reduces construction time – phasing / maintenance of traffic is simplified.
- Will increase the weave distance between Ramp G and Ramp R (improved design).
- Existing NW loop ramp is removed from service – eliminates NW quadrant loop ramp conflict with southbound SR 7 traffic.
- Ramp A has preferred 60 mph design speed.
- Decreased right of way impacts as compared to Alternative 2.
- Slightly decreased wetland impacts as compared to Alternative 2.
- Decreased forest impacts as compared to Alternative 2.
- May simplify the FHWA required interstate access point approval report – no changes in the northeast, northwest and southwest quadrants.

Disadvantages

- Ramp A has a longer skewed bridge over I-95 (southbound I-95 to southbound SR 1).
- Has approximately one-third more bridge deck surface area compared to Alternative 2.
- Has approximately one-third more retaining wall surface area compared to Alternative 2.
- More expensive than Alternative 3 – about $5 million.

(3) I-95/SR 1 Interchange Alternatives Comparison

Table 3 compares the two build alternatives considered for the I-95/SR1 Interchange.

Table 3: I-95/SR 1 Interchange Build Alternatives Comparison

	Alternative 2 – Ramp 'A' Outside Alignment	Alternative 3 – Ramp 'A' Inside Alignment
Meets Project Purpose and Need		
Provides improvement to substandard ramp design	Yes	Yes
Provides directional ramp design between SR 1 and I-95	Yes	Yes
Eliminates NW loop ramp	Yes	Yes
Minimize traffic weaving and merging conflicts	Yes	Yes
Improves safety	Yes	Yes
Issues		
Requires temporary reconstruction/relocation of the NW quadrant outer connection during construction	Yes	No
Provides desired 60 mph design speed on Ramp A	No (50 mph)	Yes
Compatible with potential future CD roads	Yes	Yes
Requires relocation of SW quadrant outer ramp	Yes	No
Provides Ramp G/ Ramp A diverge on tangent section	Yes	No
Requires relocation and lowering of southbound SR 7	Yes	No
Requires construction in 3 quadrants (NE,NW,SW) of the intersection	Yes	No – only in SE
Speed restrictions in NW loop ramp during construction	Yes	No
Requires reconstruction of Ramps H and F	Yes	No
Has less bridge deck surface and retaining wall surface	Yes	No - 1/3 more
Improved weave distance between Ramps G and R	No	Yes
Requires severe skewed angle for Ramp A bridge crossing over I-95 and longer bridge length	No	Yes
Reduces area along I-95 impacted by construction activities	No	Yes
Likely reduces construction time, simplifies phasing/MOT	No	Yes
Costs		
Preliminary Costs	$95 million	$100 million
Impacts		
Additional Right-of-Way (acres)	18.5	9.41
Nontidal Wetland Impacts (acres)	1.64	0.40
Tidal Wetland Impacts (acres)	0.00	0.00
Nontidal Waters of the US(acres/LF)	0.42 acre/2,031LF	0.11 acre/743 LF
Tidal Waters of the US (Christina River) (acres/LF)	0	0
Forest impacts (acres)	5.97	1.60
100-year Floodplain impacts – FEMA mapping (acres)	0	0
Farmland impacts	No	No
Utility impacts	To Be Determined	
Parks and Recreation Areas (Section 4(f))	No	No
Rare, threatened and Endangered Species	No	No
Cultural Resources	No	No
Noise Impacts/Mitigation Feasibility	No	No

c. Preferred Alternative for I-95/SR 1 Interchange

As outlined in Table 3, DELDOT considered many factors in the evaluation and selection of a preferred alternative for the SR 1 Interchange.

These factors included the safety of the public during and after construction, minimizing impacts to the traveling public, ease of construction, duration of construction, minimizing impacts to the environment, right of way impacts, and cost. As a result of this evaluation, DelDOT has chosen Alternative 3 as the Preferred Alternative for the I-95/SR1 Interchange improvements. Alternative 3 was selected for the following reasons: (1) environmental impacts are less than for Alternative 2 (wetlands impacts 1.24 less acres, 1,288 less linear feet of impacts to waters of the US, 4.37 less acres of forest impact, 4.5 acres less right-of-way required); (2) Alternative 3 provides a 60 MPH design speed for the freeway-to-freeway movements northbound and southbound; (3) there will be a likely reduction of impacts to the traveling public during construction since maintenance of traffic requirements are improved and construction time is shorter; (4) Alternative 3 provides additional travel safety with longer diverge and weave areas and avoids need to lower southbound SR 7 where it passes under Ramp A; and (5) Alternative 3 accommodates concerns of Mall owners/operators regarding several access issues.

The draft Environmental Assessment noted Alternative 2 as preferred for the I-95/SR 1 Interchange. However, upon more detailed study and evaluation, Alternative 3 was determined preferable, due to its reduced natural environmental impacts, reduced construction time, reduced impacts on the traveling public, improved maintenance of traffic, provision of desirable 60 mph design speed for Ramp A and improved geometric design. In addition, further study reduced the estimated difference in construction costs between Alternatives 2 and 3 from $10 million to $5 million. Although more costly, Alternative 3 is preferred for the reasons provided herein.

2. I-95/Turnpike Mainline Alternatives Considered

a. No-Build Alternative (Alternative 1)

The No-Build Alternative maintains existing conditions. Minor changes would be made along the existing Turnpike Mainline from the SR 1 Interchange to the SR 141 Interchange. Construction would be limited to routine repairs and maintenance. Development and use of various traffic management systems have been implemented in order to maximize the operational efficiency through the aforementioned areas of the turnpike. Currently, electronic traffic counting sensors, cameras, permanent variable message signs, a 24-hour County-wide AM Transportation radio station, and a 24-hour/7-days-a-week Transportation Management Center have been implemented by DelDOT and are used to maximize the presentation of real time information to Turnpike motorists. These systems help divert traffic from congestion, accidents, construction, and other incidents such as chemical spills, smoke, and fog so that backups and delays can be minimized, if the situation arises. DelDOT will continue development and deployment of these types of traffic management systems, as provided in the current Capital Transportation Program (CTP), in an effort to improve efficiency along this section of the turnpike.

b. Build Alternatives

Two build alternatives were considered for improvements on the mainline. Both alternatives add a fifth travel lane between the SR 1 Interchange and the SR 141 Interchange. Following a description of each of the alternatives, **Table 4** provides a comparison of the two.

(1) Turnpike Mainline Alternative 2 - Additional 5th Lane - Widening North and South

Under Alternative 2, the existing shoulder on each side of the Turnpike, from just east of the SR 1 Interchange to the SR 141 Interchange, will be reconstructed as the fifth Turnpike Mainline lane in each direction and a new outside shoulder will be provided in each direction. **Figure 6** shows a rendering of the improvements associated with Alternative 2 on a section of turnpike and a cross section. In the northbound direction, the mainline widening will be an extension of the northbound SR 1 ramp to northbound I-95 mainline. The widening will continue easterly, parallel and immediately adjacent to northbound I-95, under the Churchmans Road Bridge (currently being reconstructed), north of Artesian Marsh, over the Christina River (the existing bridge will be widened to accommodate an additional lane) and terminate in the SR 141 Interchange. In the southbound direction, the widening will begin north of the Christina River as an extension of the existing southbound collector distributor (C-D) road within the SR 141 interchange. The widening will continue in a westerly direction, parallel and immediately adjacent to southbound I-95 over the Christina River, south of Churchmans Marsh, under the Churchmans Road Bridge and extend into new Ramp A of the SR 1 Interchange (southbound I-95 to southbound SR 1).

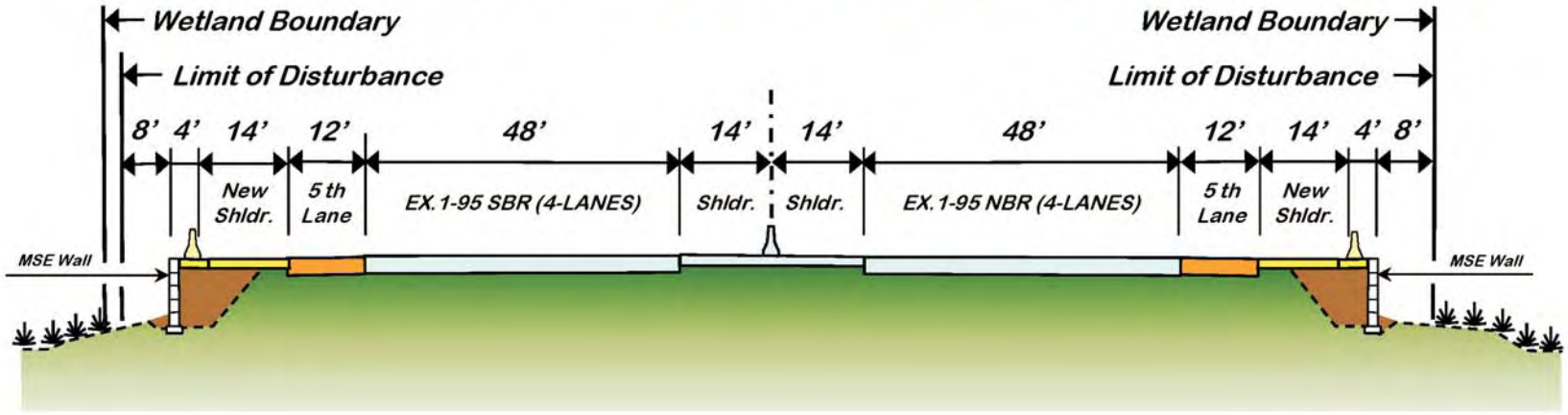
The improvements under Alternative 2 will result in a total of 14 feet of pavement being added to the outside of both the northbound and southbound lanes. Since construction would be on the outside of the existing travel lanes, this alternative will not affect the existing I-95 travel lanes between SR 1 and SR 141.

Three typical section options have been developed for the construction of the widened roadway:

Option 1: 2:1 slopes
Option 2: Mechanically Stabilized Earth (MSE) retaining walls
Option 3: MSE reinforced 1:1 slopes.

Figure 7 presents a comparison of the outside slope options.

Alternative 2 – 5th Lane Widening on North and South Sides



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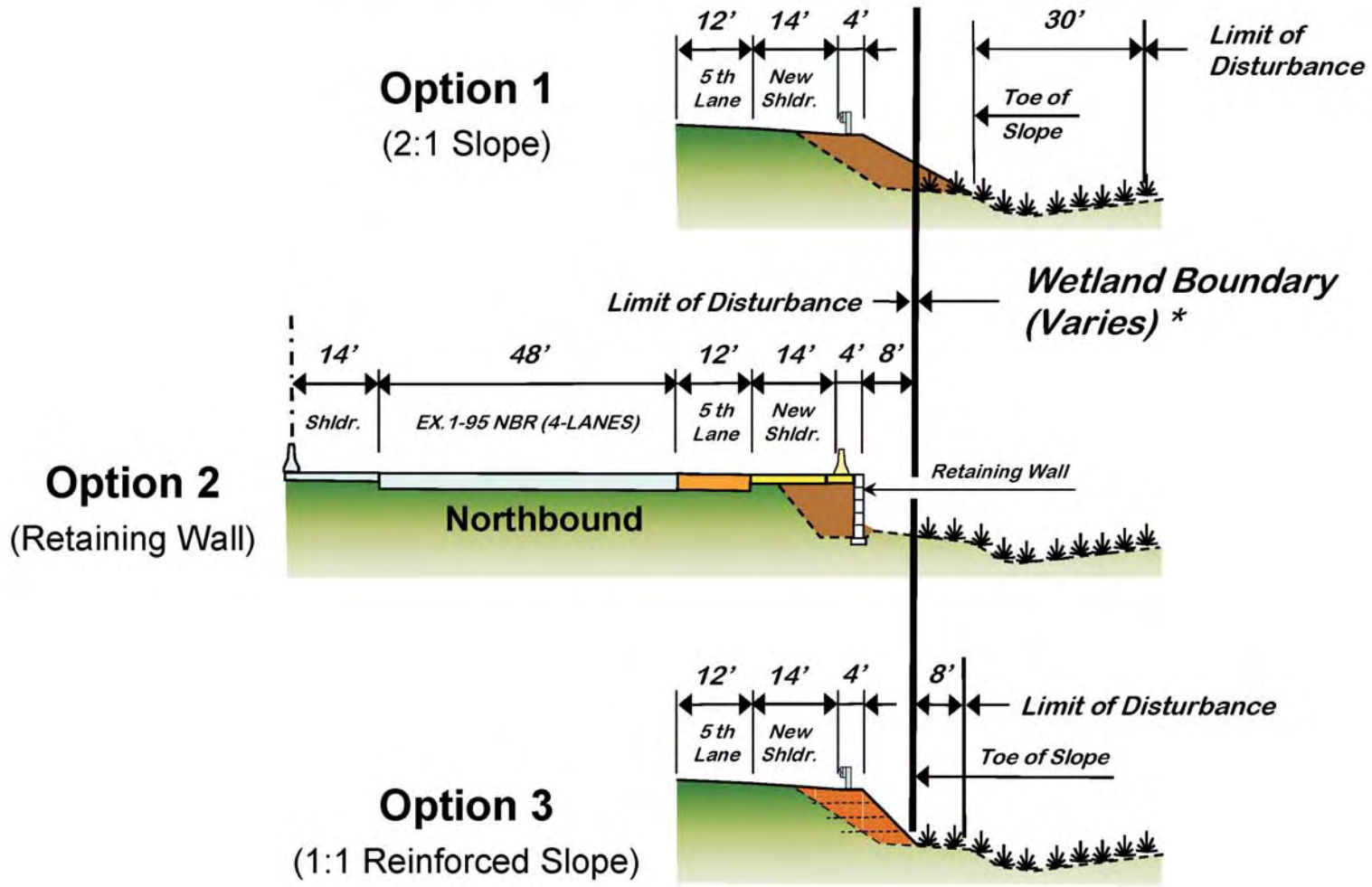
I-95/SR 1 INTERCHANGE/TURNPIKE MAINLINE PROJECT

ALTERNATIVE 2 / OPTION 2

5TH Lane Widening on North and South Sides

RUMMEL, KLEPPER & KAHL, LLP CONSULTING ENGINEERS	January 2005	Figure 6

Alternative 2 - Outside Options 1, 2 & 3



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I-95/SR 1 INTERCHANGE/TURNPIKE MAINLINE PROJECT

ALTERNATIVE 2
Outside Options 1, 2 & 3

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Figure 7

Assessment of Advantages and Disadvantages for Mainline Alternative 2

The advantages and disadvantages of Turnpike Mainline Alternative 2 with the various typical section options are indicated below.

Advantages

- Widening equally to the north and south eliminates the need to modify the existing I-95 median, minimizes the shifting of I-95 during construction, thus providing a safer option for the traveling public.
- Existing median utilities, such as drainage structures and conduits, will not be affected by construction. No modifications to the existing closed drainage system, other than the possible extension of outfall pipes, are required.
- During construction, the existing median remains available to the traveling public.
- Traffic impacts are minimized because existing 12-foot travel lanes will only have to be shifted once prior to construction beginning (12-foot to 11-foot lanes) and once following completion of construction (11-foot to 12-foot).
- An additional lane can be constructed beside the existing pavement without having to make profile changes.
- The bridge over the Christina River can be widened without replacement or modification of the existing deck. Replacement of the parapet is required.
- MSE Walls or MSE 1:1 Slopes can be used for widening the mainline while staying within the limits of the embankment of the original roadway.
- Construction work on both the northbound and southbound lanes could occur simultaneously, providing a shorter construction period.
- Widening on both sides makes efficient use of the existing embankment and minimizes impacts to wetlands and waters of the US.

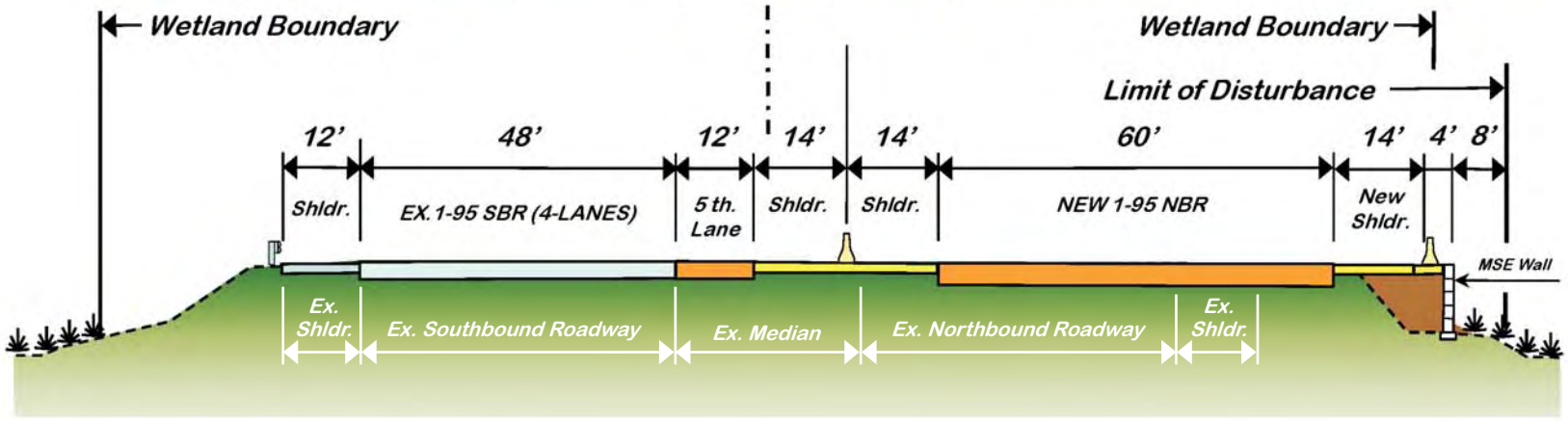
Disadvantages

- Conventional 2:1 Slopes will extend beyond the edge of the existing roadway embankment
- MSE Walls or MSE 1:1 slopes will require inlets to collect surface water

(2) Turnpike Mainline Alternative 3 – Additional 5th Lane - Widening South Side Only

Alternative 3 will provide additional travel lanes northbound and southbound from just east of the SR 1 Interchange to the SR 141 Interchange. From the SR 1 Interchange to just east of the Churchmans Road Bridge, an additional travel lane will be added to each side of the existing Turnpike, similar to Alternative 2. From just east of the Churchmans Road Bridge to just east of the Christina River, the widening will be accomplished by maintaining the southbound outside shoulder in its present position and shifting the roadway alignment 12 feet to the south. This proposed shift would be accomplished using a reverse curve starting just east of the reconstructed Churchmans Road Bridge and by modifying the curves of both northbound and southbound I-95 just east of the Christina River Bridge. In the southbound direction, the existing median shoulders will be reconstructed as a travel lane and a new median shoulder. The median barrier and associated drainage will be shifted to the south and reconstructed along what is currently the inside (median) edge of the travel lane for the northbound roadway. The existing northbound median travel lane will become the northbound median shoulder. **Figure 8** provides a rendering and cross section of Alternative 3 (with Option 2) improvements on a representative section of mainline.

Alternative 3 – 5th Lane Widening on South Sides Only



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I-95/SR 1 INTERCHANGE/TURNPIKE MAINLINE PROJECT

ALTERNATIVE 3 / OPTION 2

5TH Lane Widening on South Side Only

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Figure 8

Additional improvements will be constructed adjacent to and outside of the existing northbound travel lanes where the existing outside shoulder will be reconstructed as a travel lane. Additional pavement will be constructed to provide a new outside shoulder. These improvements will result in a total of 26 feet of pavement being added to the outside (south side) of the existing northbound roadway width. This alternative will require reconstruction of approximately 1.5 miles of median barrier and closed drainage system. An existing conduit buried under the southbound median shoulder may be impacted by the drainage work associated with this alternative. Alternative 3 will also require modification to the center of the Christina River Bridge, such as replacement of the superstructure (portion of the bridge above the piers). By widening the roadway to the south only, construction will require diversions of traffic from the existing travel lanes as the median is shifted to the south. To accomplish the travel lane shift, Alternative 3 will require three distinct phases of construction. The outside widening, along the northbound lanes, will be completed, and then traffic will be shifted onto the new travel lanes before the median reconstruction begins.

Assessment of Advantages and Disadvantages for Mainline Alternative 3

The advantages and disadvantages of the Turnpike Mainline Alternative 3 with the typical section options are indicated below:

Advantages

- Reduced amount of work required at the top of the north embankment, *i.e.* adjacent to the southbound roadway.
- Eliminates the need to perform work at the toe of slope of the north embankment, thus avoiding wetland impacts.
- Provides a wider work zone south of the existing roadway.

Disadvantages

- Requires reconstruction in the median of I-95.
- Imposes a series of reverse curves on a tangent section of Interstate.
- The existing median pavement, barrier and drainage structures will have to be removed and relocated.
- MSE, 1:1 or conventional 2:1 slopes will require undercutting the marshland and replacing it with borrow fill.
- Because of southbound pavement contour changes, the existing bridge deck (Christina River) may have to be modified or replaced.
- Pipes for the new drainage structures may have to be “jacked” or bored beneath the interstate pavement.
- Surface drainage to the south of a new median barrier will be impaired because the existing 2% cross-slope northbound mainline pavement will be used for the shoulder.
- The new median barrier would have to be bifurcated because the pavement elevations on each side of the barrier will be different.
- Additional right of way will be required to reconstruct the cut slopes in the vicinity of the Churchmans Road Bridge.

(3) Turnpike Mainline Alternatives Comparison

Table 4 compares the two build alternatives considered for the Turnpike Mainline.

Table 4: Turnpike Mainline Build Alternatives Comparison

	Alternative 2 – 5th Lane Widening N and S	Alternative 3 – 5th Lane Widening South Side Only
Meets Project Purpose and Need		
Provides improved Level of Service	Yes	Yes
Provides improved safety	Yes	Yes
Improves traffic operations at and between interchanges, i.e. merges, diverges and weave conditions	Yes	Yes
Issues		
Maintains the tangent alignment of I-95	Yes	No
Reduces amount of work at top of north embankment and provides wider work zone south of existing roadway	No	Yes
Avoids wetland impacts on north embankment	No	Yes
Maintains profile of existing roadway	Yes	No
Preserves existing median, barrier, pavement, drainage and utilities	Yes	No
MSE walls or MSE 1:1 slopes will contain improvements within limits of the existing roadway embankment	Yes	No
MSE walls or MSE 1:1 slopes will require inlets to collect surface water; no impairment to surface drainage	Yes	No
Conventional 2:1 slopes will extend beyond edge of existing roadway embankment	Yes	Yes
Provides safer conditions for traveling public during construction by not requiring median relocation, multiple construction phases, new drainage system, bifurcated median barrier and pavement	Yes	No
Limits construction activities to the outside shoulders	Yes	No
Existing median remains available to traveling public during construction	Yes	No
Work can be completed in one phase or traffic shift	Yes	No
Christiana River Bridge construction limited to outside widening	Yes	No
Construction traffic (equipment, materials deliver, etc.) is physically separated from I-95 Mainline traffic	Yes	No
Allows concurrent northbound and southbound work to reduce construction time	Yes	No
Widening supported by existing embankment, avoiding significant removal and replacement of unsuitable soil	Yes	Maybe

Table 4: Turnpike Mainline Build Alternatives Comparison (continued)

	Alternative 2 5th Lane Widening N and S			Alternative 3 5th Lane Widening South Side Only		
	Option 1: 2:1 Slopes	**Option 2: MSE Wall**	**Option 3: MSE 1:1**	**Option 1: 2:1 Slopes**	**Option 2: MSE Wall**	**Option 3: MSE 1:1**
***Preliminary Impacts* on Resources**						
Additional right-of-way (SF)	3,712	0	0	12,370	0	0
Nontidal Wetland Impacts (acres[SF])	7.22 [314,701]	0.47 [20,473]	4.09 [178,218]	4.92 [214,464]	0.88 [38,384]	3.12 [135,901]
Tidal Wetland Impacts (acres[LF])	0	0	0	0	0	0
Nontidal Waters of the US (stream channel and roadside drainage ditches) Impacts (acres [LF])	1.02 [5,985]	0.93 [5,420]	0.99 [5,926]	0.74 [4,427]	0.74 [4,416]	0.74 [4,416]
Tidal Waters of the US (Christina River) Impacts (acres [LF])	0.30 [55]	0.26 [54]	0.27 [55]	0.21 [38]	0.18 [38]	0.20 [39]
Forest Impacts (acres)	0	0	0	0	0	0
Total LOD within 100-year Floodplain (acres)	29.60	19.90	22.03	24.29	19.50	22.24
Farmland Impacts	No Impact			No Impact		
Potential Stormwater Drainage System Impacts	No			Yes		
Community Impacts	No			No		
Wellhead Protection Area	No Impact			No Impact		
Parks and Recreation Areas	No Impact			No Impact		
Rare, Threatened, and Endangered Species	No Impact			No Impact		
Cultural Resources - Direct Impacts	None			None		
Cultural Resources – Indirect Impacts	None			None		
Noise Impacts/Mitigation Feasibility	No Change			No Change		
Costs						
Estimated Capital Costs ($ million)*	25.5	24.3	23.9	31.7	31.9	31.6

* 10% Contingency – roadway and structure unit costs, 15% Construction Engineering, 20% Change Orders
*Add $2.6 Million to mill & overlay existing mainline, SR 1 to I-495 split
SF = square feet; LF = linear feet

c. Preferred Alternative for I-95 from SR 1 to SR 141

In comparing the alternatives retained for detailed study, DelDOT considered safety, improving traffic congestion in the project corridor, cost, and minimizing environmental impacts. Because Alternative 2, Option 2 addresses the project issues, improves safety and results in the least impacts to environmental resources, it has been chosen as DelDOT's Preferred Alternative for providing an additional (5^{th}) lane on the Turnpike Mainline from SR 1 to SR 141. The Preferred Alternative will add a fifth lane on both the north and south sides of the existing roadway. See **Figure 9.** Alternative 2, Option 2 was selected for several reasons: (1) Alternative 2 with Option 2 has less environmental impacts compared to Alternative 3 and the other outside slope options; (2) it will result in improved safety to the traveling public during construction because construction activities will be limited to outside the existing pavement and behind concrete safety barriers; (3) it retains the existing I-95 median barrier, pavement and median drainage; (4) it will allow for concurrent construction of the fifth lanes both northbound and southbound, providing a shorter construction period; and (5) Alternative 2 has the lower construction costs of the two alternatives.

SEE SR1 INTERCHANGE PLANS
Sta. 100+00

MATCHLINE

TO BALTIMORE

EXISTING 28' MEDIAN

EXISTING AND PROPOSED CENTERLINE

APPROXIMATE EXISTING RIGHT OF WAY

LOD

SHOULDER
SHOULDER
SHOULDER

176'

60'
60'

INTERSTATE 95

I-95 SBR

I-95 NBR

APPROXIMATE EXISTING RIGHT OF WAY

CHURCHMAN'S ROAD

MATCHLINE

SEE SR 1 INTERCHANGE PLANS

TURNPIKE MAINLINE PLANS

MATCHLINE SEE SHEET 2

SHEET 1 OF 4

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- LOD LIMIT OF DISTURBANCE
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE

0 100 200 SCALE OF FEET
0 0.10 SCALE OF MILES

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /TURNPIKE MAINLINE

FIGURE 9
PREFERRED ALTERNATIVE 2:
Additional 5th Lane –
Widening North and South Sides

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MATCHLINE SEE SHEET 1

MATCHLINE SEE SHEET 3

EXISTING 28' MEDIAN

EXISTING AND PROPOSED CENTERLINE

APPROXIMATE EXISTING RIGHT OF WAY

LOD

125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158

SHOULDER
SHOULDER
SHOULDER

60'
176'
60'

INTERSTATE 95

I–95 SBR

I–95 NBR

APPROXIMATE EXISTING RIGHT OF WAY

SHEET 2 OF 4

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- LOD – LIMIT OF DISTURBANCE
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE

0 100 200 SCALE OF FEET
0 0.10 SCALE OF MILES

Delaware Department of Transportation

I–95 / SR1 INTERCHANGE / TURNPIKE MAINLINE PROJECT

I–95 / TURNPIKE MAINLINE

FIGURE 9
PREFERRED ALTERNATIVE 2:
Additional 5th Lane –
Widening North and South Sides

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MATCHLINE SEE SHEET 2

MATCHLINE SEE SHEET 4

EXISTING 28' MEDIAN

EXISTING AND PROPOSED CENTERLINE

APPROXIMATE EXISTING RIGHT OF WAY

APPROXIMATE EXISTING RIGHT OF WAY

LOD

SHOULDER

SHOULDER

176'

60'

60'

INTERSTATE 95

I-95 SBR

I-95 NBR

RIVER

CHRISTINA

CHRISTINA

153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186

10 11 12 13 14 15 16 17 18 19 20 21

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- LOD LIMIT OF DISTURBANCE
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE

0 100 200 SCALE OF FEET

0 0.10 SCALE OF MILES

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /TURNPIKE MAINLINE

FIGURE 9
PREFERRED ALTERNATIVE 2:
Additional 5th Lane –
Widening North and South Sides

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SHEET 3 OF 4

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MATCHLINE SEE SHEET 3

TO WILMINGTON

APPROXIMATE EXISTING RIGHT OF WAY

LOD

181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200

SHOULDER SHOULDER

INTERSTATE 95

15 16 17 18 19 20 21 22

OLD AIRPORT ROAD

AIRPORT ROAD

APPROXIMATE EXISTING RIGHT OF WAY

SHEET 4 OF 4

PLAN LEGEND

- APPROXIMATE EXISTING RIGHT OF WAY
- PROPOSED MEDIAN BARRIER OR WALL
- APPROXIMATE PROPOSED RIGHT OF WAY
- LOD LIMIT OF DISTURBANCE
- EXISTING WETLAND AREA
- EXISTING LOCAL ROADWAY PAVEMENT
- IMPROVED LOCAL ROADWAY PAVEMENT
- EXISTING INTERSTATE
- IMPROVED INTERSTATE

0 100 200 SCALE OF FEET
0 0.10 SCALE OF MILES

Delaware Department of Transportation

I-95 /SR1 INTERCHANGE /TURNPIKE MAINLINE PROJECT

I-95 /TURNPIKE MAINLINE

FIGURE 9
PREFERRED ALTERNATIVE 2:
Additional 5th Lane –
Widening North and South Sides

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