



**Natural Resources**

The Project Team has worked closely with the Natural Resource Regulatory Agencies to refine the alternatives and minimize the impacts to natural resources.

**Wetlands**

Generally, the western alternatives impact headwater wetland complexes while the eastern and on-alignment alternatives impact fringe tidal and non-tidal wetlands along larger stream corridors. Headwater wetland systems are considered to have greater function and value than fringe wetlands. Therefore the western alternatives are considered to have greater wetland impacts than the eastern alternatives.

Alternative impact highlights include:

- Purple has the greatest impact to wetlands at 31.3 acres of non-tidal headwater wetland impact
- Yellow has the least impact to wetlands at 20.1 acres of non-tidal fringe wetland impact
- Blue and Red each impact 1.3 acres of tidal fringe wetland in addition to 29.5 and 25.5 acres of non-tidal fringe wetland impact respectively



**Waters of the U.S.**

Waters of the U.S. other than wetlands have been separated into two categories:

- Open waters (which include Millsboro Pond and Indian River)
- Streams (which include flowing ditches, small unnamed tributaries, and named streams such as Iron Branch.)

Stream impacts are measured in linear feet of impact along the length of the stream, and open water impacts are measured in acres.

Stream impact highlights include:

- Green has the greatest impact with 22,453 linear feet of impact
- Yellow has the least impact with 15,034 linear feet of impact

Open waters will be bridged, reducing the severity of the impacts that could result from shading and from piers in the water.

The eastern alternatives have the greatest open water impacts (8.5 acres) with a 4 lane crossing of Millsboro Pond and the Indian River.



The western alternatives have the least impact on open water (1.1 acres) with a 2 lane crossing of Millsboro Pond.

**Forested Area**

Forest tracts are scattered throughout the project area. The majority of these tracts are privately owned and managed for timber, resulting in early to mid-successional stage forests that will not endure. Due to the management regime of the existing forest cover, impacts to forest carry less weight than they would if the forests were not likely to be logged at some point in the future. Forest impact highlights include:

- Blue has the greatest impacts with 162 acres of impact
- Yellow has the least impact to forest with 42 acres of impact

**Mitigation**

Impacts will be minimized to the maximum extent practicable during the design phase. Unavoidable impacts will be mitigated in accordance with Federal and State regulations.

**Cultural Resources**

The Delaware State Historic Preservation Office (SHPO) and the Sussex County Planner have worked closely with the project team on the eligibility of architectural properties for the National Register of Historic Places (NRHP).



Twenty-four standing structures and four historic districts that are listed or eligible for listing on the NRHP were identified.

A vacant lot located in the Selbyville Historic District would be directly impacted by all build alternatives due to the construction of a minor access roadway that would provide access to the Selbyville Industrial Park. However, this vacant lot is not a contributing element to the Selbyville Historic District.

Some standing structures would be subjected to potential noise and visual effects from the Build Alternatives. Upon the confirmation of the preferred alternative, adverse effects to these properties will be fully determined and the results will be finalized in the FEIS and Record of Decision (ROD).

Consultation with the SHPO will continue throughout the FEIS, design and construction phases of the project.

DeIDOT will consider your comments regarding potential effects to properties listed in, or eligible for listing in National Register of Historic Places, in compliance with Section 106 of the National Historic Preservation Act.

**Section 4(f) Resources**

FHWA and DeIDOT have initiated de minimis coordination with Town of Millsboro for Millsboro Pond. This property is protected by Section 4(f) of the U.S. Department of Transportation Act of 1966. For publicly owned public parks and recreation areas, a de minimis impact is one that will not adversely affect the activities, features, or attributes of the property that are relevant and publicly available. DeIDOT is seeking your comments on whether potential impacts to the pond may be considered de minimis impacts.

**Socio-Economic**

The build alternatives would each impact between 353 and 480 properties; of those, between 71 and 119 are total relocations.

None of the build alternatives would lead to disproportionate impacts to low-income or minority populations.

The build alternatives would enhance access to and from residential and business areas along the corridor or bypass locations and would increase travel options, reduce congestion and improve area travel times. Communities in the project area are expected to benefit from increased access to jobs and other destinations.

**Noise**

- Proposed build alternatives are predicted to create noise impacts to between 89 and 100 properties for the eastern alternatives, 97 and 174 properties for the western alternatives, or 190 for the on-alignment alternative.

- Most impacts are due to noise levels of 66 dBA or greater, which is roughly equivalent to normal speech at 3 feet distance - though some impacts are caused by substantial noise increases of 12 dBA, which can be generally perceived as slightly more than a doubling in sound level.



After a thorough analysis of noise abatement for impacted noise sensitive areas, it was determined that neither noise barriers nor berms would meet DeIDOT's criteria for both feasibility and economic reasons.

**Impact Matrix**

|   | No-Build | Green       | Purple      | Yellow      | Red           | Blue          |
|---|----------|-------------|-------------|-------------|---------------|---------------|
| <b>Wetlands and Waters of the US</b>  |          |             |             |             |               |               |
| Wetlands (total acres) / (acres bridged)                                    | 0        | 24.9(4.8)   | 31.3(5.4)   | 20.1(0.3)   | 26.5(6.8)     | 30.8(8.1)     |
| High Quality (bridged)  | 0        | 23.7(4.8)   | 29.3(5.4)   | 17.7(0.3)   | 22.1(5.0)     | 24.9(6.3)     |
| Medium Quality (bridged)  | 0        | 1.2(0.0)    | 2.0(0.0)    | 2.4(0.0)    | 4.4(1.8)      | 5.4(1.8)      |
| Low Quality (bridged)   | 0        | 0(0.0)      | 0.0(0.0)    | 0.0(0.0)    | 0(0.0)        | 0.5(0.0)      |
| Waters of the US (linear feet)  | 0        | 22,453      | 15,034      | 14,376      | 16,653        | 19,246        |
| <b>Subaqueous Lands, Tidal Wetlands, and Tax Ditches</b>                    |          |             |             |             |               |               |
| Subaqueous Lands  |          |             |             |             |               |               |
| Rivers and Lakes (acres)  | 0        | 3.1         | 10.0        | 1.7         | 9.0           | 9.0           |
| Linear Features (linear feet)   | 0        | 17,250      | 13,808      | 13,000      | 17,894        | 20,851        |
| DNREC Jurisdictional Tidal Wetlands (acres)                                 | 0        | 0.0         | 0.0         | 0.0         | 1.3           | 1.3           |
| Tax Ditches (linear feet)   | 0        | 26,772      | 18,544      | 18,544      | 19,772        | 14,842        |
| <b>Historic Resources</b>   |          |             |             |             |               |               |
| Number of Historic Properties within Study Area                             | 0        | 19          | 20          | 21          | 19            | 14            |
| Number of Cemeteries  | 0        | 3           | 5           | 4           | 4             | 2             |
| Cemeteries within 50 feet of LOD (additional to above)                      | 0        | 3           | 2           | 2           | 0             | 0             |
| <b>Archaeological Resources</b>   |          |             |             |             |               |               |
| Number of Known Archaeological Sites in the Limit of Disturbance            | 0        | 1           | 0           | 0           | 1             | 1             |
| Prehistoric Sensitivity in the Limit of Disturbance                         |          |             |             |             |               |               |
| High Sensitivity Area (acres / %)   | 0        | 38 (3.7%)   | 38 (3.5%)   | 19 (2.0%)   | 32 (2.6%)     | 29 (2.7%)     |
| Moderate Sensitivity Area (acres / %)                                       | 0        | 71 (6.9%)   | 75 (7.0%)   | 52 (5.6%)   | 74 (6.1%)     | 70 (6.4%)     |
| Low Sensitivity Area (acres / %)  | 0        | 253 (24.5%) | 286 (26.6%) | 263 (27.7%) | 289 (23.7%)   | 259 (23.7%)   |
| Slight Sensitivity Area (acres / %)   | 0        | 671 (64.9%) | 677 (62.9%) | 614 (64.7%) | 827 (67.6%)   | 737 (67.2%)   |
| Early Historic-Period Sensitivity in the Limit of Disturbance               |          |             |             |             |               |               |
| High Sensitivity Area (acres / %)   | 0        | 77 (7.5%)   | 93 (8.6%)   | 35 (3.7%)   | 35 (2.8%)     | 32 (2.9%)     |
| Moderate Sensitivity Area (acres / %)                                       | 0        | 10 (1.0%)   | 12 (1.1%)   | 12 (1.2%)   | 21 (1.7%)     | 20 (1.8%)     |
| Low and Slight Sensitivity Area (acres / %)                                 | 0        | 6 (0.6%)    | 6 (0.6%)    | 6 (0.7%)    | 8 (0.7%)      | 6 (0.6%)      |
| Low and Slight Sensitivity Area (acres / %)                                 | 0        | 940 (90.9%) | 965 (89.7%) | 895 (94.4%) | 1,158 (94.8%) | 1,037 (94.7%) |
| Later Historic-Period Sensitivity in the Limit of Disturbance               |          |             |             |             |               |               |
| Extant Locations  | 0        | 175         | 230         | 272         | 184           | 134           |
| High Sensitivity Locations  | 0        | 56          | 58          | 45          | 69            | 64            |
| Moderate Sensitivity Locations  | 0        | 91          | 96          | 100         | 92            | 86            |
| Low Sensitivity Locations   | 0        | 17          | 21          | 23          | 19            | 15            |
| <b>Noise Impacts</b>  |          |             |             |             |               |               |
| Total Number of Residences Affected   | 0        | 97          | 174         | 190         | 89            | 100           |
| <b>Rare, Threatened and Endangered Species</b>                              |          |             |             |             |               |               |
| Potential Rare, Threatened and Endangered Species - dissolved areas (acres) | 0        | 246         | 287         | 199         | 502           | 485           |
| Number of RTE Species Impacted  | 0        | 15          | 16          | 18          | 18            | 18            |
| RTE Species / Area Impact (acres)   | 0        | 618         | 697         | 498         | 888           | 871           |
| <b>Other Considerations</b>   |          |             |             |             |               |               |
| Agricultural Districts (Ten-Year) (number of properties)                    | 0        | 1           | 1           | 1           | 1             | 1             |
| (acres within properties)   | 0.0      | 1.9         | 1.9         | 1.9         | 5.3           | 5.3           |
| Agricultural Preservation Easements (Permanent) (number of properties)      | 0        | 1           | 0           | 0           | 0             | 3             |
| (acres within properties)   | 0        | 18.6        | 0           | 0           | 0             | 11.6          |
| Prime Farmland (acres)  | 0        | 54.1        | 46          | 41          | 46            | 64.9          |
| Natural Areas (acres)   | 0        | 12.2        | 12.2        | 12.2        | 23.0          | 23.0          |
| Forestland: 2007 Land Use (acres)   | 0        | 70          | 62          | 42          | 131           | 162           |
| <b>Property Impacts</b>   |          |             |             |             |               |               |
| Properties affected (number)  | 0        | 359         | 480         | 478         | 416           | 353           |
| Properties affected (total acres)   | 0        | 920         | 918         | 591         | 770           | 1,084         |
| <b>Access Rights</b>  |          |             |             |             |               |               |
| Relocations   | 0        | 78          | 119         | 107         | 99            | 71            |
| Residential   | 0        | 43          | 72          | 68          | 67            | 52            |
| Agricultural  | 0        | 11          | 9           | 4           | 9             | 9             |
| Commercial  | 0        | 24          | 36          | 33          | 23            | 10            |
| Other (non-profit, institutional, etc.)                                     | 0        | 0           | 2           | 2           | 0             | 0             |
| Partial Acquisition / Modified Access (numbers of affected properties)      | 0        | 250         | 311         | 334         | 263           | 238           |
| Residential   | 0        | 115         | 158         | 161         | 117           | 97            |
| Agricultural  | 0        | 73          | 72          | 71          | 81            | 85            |
| Commercial  | 0        | 40          | 47          | 68          | 28            | 22            |
| Other   | 0        | 22          | 34          | 34          | 37            | 34            |
| <b>Engineering Criteria</b>   |          |             |             |             |               |               |
| Preliminary cost range (millions)   | 0        | \$629-\$769 | \$562-\$686 | \$607-\$742 | \$671-\$820   | \$687-\$839   |
| Existing US 113/SR 1 length (miles)   | 0        | 6.4         | 9.3         | 13.2        | 5.4           | 3.8           |
| Proposed off-alignment length (miles)                                       | 0        | 8.1         | 4.7         | 0           | 10.9          | 12.7          |
| Total alternative length (miles)  | 0        | 14.5        | 14.0        | 13.2        | 16.3          | 16.5          |