5.0 Explanation of Why the Criteria of Adverse Effect Were Found Applicable

5.0 EXPLANATION OF WHY THE CRITERIA OF ADVERSE EFFECT WERE FOUND APPLICABLE

In accordance with Section 106 of the National Historic Preservation Act and the implementing regulations (36 CFR Part 800), FHWA and DelDOT, in consultation with the DE SHPO, applied the Criteria of Adverse Effect to the historic properties in the APE of the Preferred Alternative (as defined in Section 1.0 of this report). This section describes the results of that assessment, explains why the undertaking was found to have Adverse Effects on historic properties, and describes efforts that have and/or will be undertaken to avoid, minimize or mitigate, for adverse effects. Tables 4 and 5 include a summary of the adverse effects.

5.1 The Criteria of Adverse Effect

Adverse effects were evaluated with regard to the Criteria of Adverse Effect, formulated by the Advisory Council on Historic Preservation (36 CFR 800.5). According to these criteria:

> An *Adverse Effect* is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative. (36 CFR Part 800.5 [a] [1])
>
> Adverse effects on historic properties include, but are not limited to:
>
> (i) Physical destruction of or damage to all or part of the property;
> (ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;
> (iii) Removal of the property from its historic location;
> (iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;
> (v) Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
> (vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
> (vii) Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-

term preservation of the property's historic significance. (36 CFR Part 800.5 [a] [2])

Each of these examples of adverse effects and their applicability to historic properties within the APE is discussed in detail below.

5.2 Resources Not Adversely Affected by the Preferred Alternative

As a result of the application of the Criteria of Adverse Effect, the Preferred Alternative was found to have no adverse effect on these three resources:

- Hedgelawn, CRS No. N00118;
- Lovett Farm, CRS No. N05132; and
- J. Houston House, CRS No. N05195.

As discussed in Section 3.0 and presented in Tables 2 and 4, Hedgelawn and Lovett Farm were previously listed or determined eligible for listing in the National Register under Criterion A in the area of agriculture and Criterion C in the area of architecture. The aspects of integrity most important to the resources eligible under Criterion A that may be affected by the introduction of new visual elements in the area are setting, feeling, and association. However, due to distance and intervening landscaping and/or existing development, it does not appear that the undertaking has the potential to alter the setting or significant visual elements of the resources to the extent that the characteristics that qualify them for listing in the National Register will be diminished. In addition to Hedgelawn and the Lovett Farm, the J. Houston House was also previously determined eligible under Criterion C in the area of architecture. Since these properties are eligible for the architectural significance of their dwellings, retention of integrity of materials, workmanship, and design are most important. None of these aspects of integrity will be adversely altered by the Preferred Alternative or by the overall undertaking.

At Hedgelawn, the proposed improvements along Levels Road will be screened from view of the farm complex by a tree line that follows along the southern edge of the National Register boundary (Figure 11 and Photograph 31). In addition, the viewshed from this property toward the Preferred Alternative mainline has already been somewhat compromised by the introduction of modern structures on the east side of existing US 301 (Photograph 32). Furthermore, there is a business park planned between the property and the proposed mainline. As a result of existing vegetation and modern development within its viewshed, it does not appear that the Preferred Alternative has the potential to significantly detract from the setting or visual characteristics that contribute to Hedgelawn's agricultural significance under Criterion A. The dwelling will not be altered as a result of the undertaking; thus, the property will maintain its architectural significance under Criterion C.

While the proposed improvements will be within close proximity of the National Register boundary, the undertaking will be located over 2,600 feet from the dwelling associated with the Lovett Farm (Photograph 46 and Figure 22). Due to the significant distance between the farm complex and the proposed undertaking, it is unlikely that the Preferred Alternative will adversely detract from the integrity of feeling, association, setting of the farmstead, or the visual features or

aspects of setting that contribute to the resource's agricultural significance under Criterion A. Integrity of materials, design, and workmanship of the dwelling will not be affected by the undertaking, and the dwelling will retain its significance under Criterion C.

The proposed undertaking will be located over 2,600 feet from the National Register boundary and 3,065 feet from the dwelling associated with the J. Houston House (Photograph 46 and Figure 22). Although eligible under Criterion C for architecture, integrity of setting enhances the agricultural feeling and association of the J. Houston House. Due to the significant distance between the dwelling and the proposed undertaking, it is unlikely that the Preferred Alternative will adversely detract from the integrity of feeling, association, or setting or the visual features or aspects of setting that enhance the resource's agricultural history. Additionally, the most important aspects of integrity for the architecturally significant J. Houston House, integrity of materials, workmanship, and design, will not be altered by the construction of the Preferred Alternative.

5.3 Resources Adversely Affected by the Preferred Alternative

Under the examples of adverse effects presented in 36 CFR Part 800.5(c)(2), the Preferred Alternative was found to have an adverse effect on 12 historic properties identified as having the potential for an effect:

- B.F. Hanson House, CRS No. N05225.
- C. Polk House Estate, CRS No. N05221;
- Rumsey Farm, CRS No. N00113;
- Summerton, CRS No. N00112;
- The Maples, CRS No. N00106;
- Rosedale, CRS No. N05148;
- S. Holton Farm, CRS No. N00107;
- Choptank, CRS No. N00109;
- Governor Benjamin T. Biggs Farm, CRS No. N05123;
- Armstrong-Walker House, CRS No. N05146;
- T. J. Houston Farm, CRS No. N05131; and
- Idalia Manor, CRS No. N03947.

Specifically, the Preferred Alternative will result in the following types of adverse effects:

- Changes of the character of a historic property's use or physical features within the property's setting that contribute to its historic significance; or
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of a historic property's significant historic features.

5.3.1 (iv) Changes of the character of a historic property's use or physical features within the property's setting that contribute to its historic significance

The undertaking has the potential to alter the character of the setting of 12 historic properties in the APE, all of which are farms or farmsteads that were historically associated with the prosperous agricultural heritage of the area. As discussed in Section 3.0 and presented in Table 4, the following six historic properties are eligible under Criterion A for their agricultural significance and Criterion C for their architectural significance: the Rumsey Farm, Rosedale, Choptank, the Governor Benjamin T. Biggs Farm, the Armstrong-Walker House, and Idalia Manor. All are examples of the rebuilding campaign that occurred on the most prosperous farmsteads in St. Georges Hundred during the mid- to late nineteenth century. The aspects of integrity that best enable these farm complexes to convey their agricultural significance include integrity of feeling, setting, association, and location. Character-defining features include the farm complexes, landscaping features, and surrounding farmlands. Integrity of materials, design, and workmanship enhance the architectural significance of the associated dwellings. The Governor Benjamin T. Biggs Farm is also eligible under Criterion B as the place most associated with the productive life of the former governor.

The following six resources are eligible under Criterion C for their architectural significance: the B.F. Hanson House, the C. Polk House Estate, Summerton, The Maples, the S. Holton Farm, and the T. J. Houston Farm. Except for the B.F. Hanson House, which is a well-developed example of the Greek Revival style, these dwellings reflect the use of a variety of architectural styles and features, a common practice during the rebuilding campaign that occurred in this area during the mid- to late-nineteenth century. The aspects of integrity most important for conveying the significance of these properties are integrity of materials, design, and workmanship. Retention of integrity of setting, feeling, association, and location, which is made possible through the presence of an associated farm complex, landscape features, and surrounding agricultural lands, enhances the character of these former farmhouses.

Eleven of the 12 farm complexes/farmhouses (excluding Summerton whose setting has been compromised by the presence of modern development) are located in a rural setting amidst agricultural lands and often have open views of nearby farmsteads or farmlands. The agricultural lands are differentiated from the yards of the farm complexes by gravel access drives, landscaping, the edge of farm fields, tree lines, and/or fencing. Given the largely rural character of the landscape and the current setting of these complexes, the proposed undertaking could be considered an incompatible intrusion. As discussed in detail in Section 4.0, the undertaking will introduce a new four-lane roadway, the Preferred Alternative mainline and/or the Preferred Alternative two-lane Spur Road and/or associated infrastructure in the location of former farmlands. These improvements will be within 1,725 feet or less of these 11 properties. The introduction of these new features will result in changes to the historic properties' rural setting. Additionally, this roadway will not be in keeping with the scale, mass, proportion, and in some cases, height, of the road network that currently serves the area. By introducing this new roadway, physical features of setting that contribute to the historic significance of these farmsteads including surrounding farmlands and open viewsheds will be lost, and integrity of setting, feeling, and association will be diminished. As the undertaking will result in a change in the surrounding physical features that contribute to the historic significance of the farmsteads, it will have an

adverse effect on the following 11 historic properties: the B.F. Hanson House, the C. Polk House Estate, the Rumsey Farm, The Maples, Rosedale, the S. Holton Farm, Choptank, the Governor Benjamin T. Biggs Farm, the Armstrong-Walker House, the T. J. Houston Farm, and Idalia Manor.

The setting of Idalia Manor was previously compromised by improvements to US 13 and the introduction of a four-lane divided highway (SR 1) to the west and an associated elevated bridge that carries SR 1 over the C&D Canal to the north. The addition of the US 301 project would be part of the cumulative adverse changes that have occurred to the setting of Idalia Manor.

The setting of Summerton has been more recently compromised by the demolition of contributing outbuildings, removal of all trees on the property, and the relocation of Levels Road to the immediate north to serve the Westown development project.

There may be a change in the character of the use of a portion of the farmlands associated with the S. Holton Farm. The proposed construction of the four-lane divided highway will separate a portion of the farmlands at the eastern end of the tax parcel from the rest of the property (Figure 12). Although this agricultural land is located outside of the National Register boundary, it can be considered to contribute to the setting and function of the S. Holton Farm as an agricultural property. Therefore, the undertaking has the potential to have a secondary adverse effect on the S. Holton Farm by resulting in the loss of some of the associated agricultural lands, thereby diminishing the property's nearby setting.

5.3.2 (v) Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features

As discussed in Section 4.0 and detailed in Table 4, the alternative has the potential to have a visual and/or audible effect on the 12 historic properties discussed in Section 5.3.1 above. The Preferred Alternative will introduce new visual elements, such as a new four-lane divided highway, interchanges, local roadway overpasses, and a two-lane Spur Road onto the existing landscape, usually in the location of active farmlands or open space. The project also has the potential to have noise impacts to one historic property, the S. Holton Farm, and have a perceptible increase at two additional historic properties, Rosedale and Idalia Manor. Where the introduction of these new features will diminish the integrity of the properties' significant historic features, the effects will be considered adverse.

The qualities of a farmstead's visual setting, particularly its location amidst active farmlands and views of surrounding farmsteads, contribute greatly to its agricultural significance and enhance integrity of setting, feeling, location, and association. Historically and currently, these twelve farmsteads were located amidst active fields and pastures and, in some cases (Rosedale and The Maples), within view of adjacent farms. The Preferred Alternative will introduce new visual elements that will diminish the integrity of the properties' significant features. The mass, scale, proportion, and, in some cases, height of the roadway will not be in keeping with the character of the existing landscape, thereby detracting from the original scenic view from or view toward historic properties located within the vicinity. Additionally, the proposed improvements will result in the elimination of open space and viewsheds associated with the agricultural landscape. For two

historic properties, The Maples and Rosedale, the proposed alternative will have an obstructive visual effect by altering the views of neighboring farmsteads. Therefore, the introduction of new visual features will diminish significant historic features and will have an adverse visual effect on 12 historic properties: the B.F. Hanson House, the C. Polk House Estate, Rumsey Farm, Summerton, The Maples, Rosedale, the S. Holton Farm, Choptank, the Governor Benjamin T. Biggs Farm, the Armstrong-Walker House, the T. J. Houston Farm, and Idalia Manor.

When SR 1 was planned for construction, the improvements in the vicinity of Idalia Manor were determined to have the potential for an adverse visual effect on the resource. The Preferred Alternative will introduce greater levels of traffic on SR 1 and result in a cumulative adverse visual effect on the resource.

The Preferred Alternative will also introduce additional noise in the locations of the historic properties in the APE. This increased noise will be perceptible (increase of 3 dBA or more) at the following historic properties: The Maples (+4), Rosedale (+7 dBA), Idalia Manor (+4 dBA), and the S. Holton Farm (+13 dBA). The Criteria of Adverse Effect seek to determine if the introduction of audible elements will diminish the integrity of the properties' historic features. These properties are eligible for their agricultural significance under Criterion A and/or Criterion C for their architectural significance. The projected noise increases at The Maples, Rosedale, and Idalia Manor coupled with visual changes in the vicinity, will be of sufficient magnitude to detract from the setting, feeling, and association of these former farmsteads. By introducing greater levels of traffic on SR 1, the noise increases at Idalia Manor will result in a cumulative adverse audible effect on the resource. The projected increase in noise level at S. Holton Farm is of a sufficient magnitude (+13 dBA) that the improvements will introduce audible elements that will diminish the integrity of setting, feeling, and association of the resource, resulting in an adverse audible effect to the S. Holton Farm.

5.4 Criteria of Adverse Effect Not Applicable to the Preferred Alternative

The following examples of adverse effects under 36 CFR Part 800.5(a)(2) were not found applicable to the Preferred Alternative.

5.4.1 (i) Physical destruction of or damage to all or part of the property

The Preferred Alternative will not involve physical destruction or damage to all or part of any of the historic properties. No associated land will be acquired from the National Register boundaries and no buildings, structures, or landscape features will physically affected by the Preferred Alternative.

5.4.2 (ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines

The Preferred Alternative will not physically alter any of the identified historic properties.

5.4.3 (iii)Removal of the property from its historic location

The Preferred Alternative will not involve the removal of any of the historic properties from their historic location. The resources will remain in the place in which they were originally constructed and retain physical relationships to related features such as farmland.

5.4.4 (vi) Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization

The Preferred Alternative will not result in physical neglect and deterioration of any of the historic properties.

5.4.5 (vii) Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

This criterion is not applicable to historic properties in the APE since none of the identified historic properties are under federal ownership.

5.5 Measures to Minimize Adverse Effects

Throughout the project development planning process, DelDOT, FHWA, DE SHPO, RK&K, and A.D. Marble & Company staff were aware of and have considered the potential impacts of the proposed undertaking on historic properties as well as all other resources (social, economic, and natural). Preliminary impacts of the Alternatives Retained for Detailed Evaluation (ARDs), as documented in the DEIS, compared the potential impacts of each alternative:

- the Yellow Alternative would have the potential for direct physical impacts to four historic structures, as well as indirect impacts to 17 structures (including two with physical impacts to the boundaries); would have the highest potential (41.4% compared to between 23.1% – 24.2% for the other build alternatives) to impact sites with high or moderate historic archaeological potential; and would have the lowest potential (13.9%) to impact sensitive prehistoric sites;
- the Purple Alternative would have the potential to indirectly impact 22 historic structures; would have a 24.2% potential to impact archaeological sites with high to moderate historic archaeological sensitivity; and would have a low potential (25.8%) to impact sites of high to moderate prehistoric sensitivity;
- the Brown Alternative would have the potential to impact less areas with high and moderate sensitivity for historic archaeological sites (23.7%/23.4%, North/South options, respectively); would have a moderate potential (34.4%/32.9%, North/South Options respectively) to impact sites of high to moderate prehistoric sensitivity; would result in indirect impacts (17%/16%, North/South options, respectively) to historic structures; and
- the Green Alternative would potentially have indirect impacts to 21 historic structures (both North & South options); would have the potential to impact less areas with high and moderate sensitivity for historic archaeological sites (23.1%/23.4%, North/South

options, respectively); would have a moderate potential (28.9%/35.9%, North/South options respectively) to impact sites of high to moderate prehistoric sensitivity.

Throughout the planning process, an effort was made to avoid direct impacts to historic structures. Preliminary efforts to realign the Yellow Alternative to avoid direct impacts were not considered feasible because of significantly greater potential impacts to socioeconomic and natural resources. Alignments were also evaluated on the comparative indirect impacts of each of the alternatives and options considered, and adjustments of alignments were made where possible to lower the severity of the indirect effects while considering all other resource impacts. The Green North Alternative was selected as the Preferred Alternative based on a holistic comparison of the potential impacts on cultural resources and other environmental, social, and economic impacts.

Since the recommendation of the Green North Alternative as the Preferred Alternative was published in the DEIS, refinements have been made to the design, resulting in the current Preferred Alternative. The alignment of the Preferred Alternative was refined as a result of comments received on the DEIS and during the Public Hearings to include Ratledge Road Area Option 4B Modified and a local connection between Strawberry Lane and existing US 301. Refinements in planning-level engineering included additional alignment modifications, refined sections based on topography, and refined stormwater management design based on the identification of existing drainage patterns. This combination of refinements resulted in the elevation of the roadway being raised in some areas to provide adequate drainage, resulting in an expanded Limit of Disturbance (LOD) and the potential for more impacts to areas of archaeological potential. Prior to refined engineering, the LOD for the Green North Alternative was 897 acres; the Preferred Alternative LOD encompasses 941 acres, a five percent increase. It is anticipated that the LOD of all of the alternatives would increase proportionally were they subjected to the same level of design refinement as the Preferred Alternative.

Since the publication of the Preferred Alternative in the DEIS, the refinement of engineering and in-depth application of the Criteria of Adverse Effect has resulted in less potential indirect effects to above-ground resources. Prior to refined engineering, the number of resources that would be indirectly impacted by the Green North alternative was 21; the Preferred Alternative has the potential to impact 15 above-ground resources. It is anticipated that the number of resource impacts for all of the alternatives would decrease proportionally were they subjected to the same level of detail as the Preferred Alternative.

As aforementioned, the Preferred Alternative includes design decisions that serve to minimize potential adverse effects on historic properties:

- Whenever possible, when designing the Preferred Alternative in the vicinity of historic properties, the roadway was aligned to minimize physical and visual impacts, the elevation of the proposed roadway was kept as close to existing ground as feasible, and other methods were used to avoid or minimize visual impacts and changes to the integrity of setting, feeling, and association of the resources. For example, in the vicinity of CRS No. N00109, Choptank the roadway was designed to be as close to grade as possible to minimize visual effects to the property.

- In the vicinity of two historic properties, Weston (N00121) and the Lovett Farm (N05195), the Preferred Alternative was located between the two resources in order to avoid the introduction of new visual elements within the viewsheds of either of the farm complexes associated with these properties.

- During final design, roadway landscaping will be determined to minimize effects to surrounding properties, including historic residential resources. Highway lighting will be designed, where possible, to shield the surrounding area from illumination and focus lighting onto the highway.

- During final design, archaeological surveys (Phase I/II) will be conducted prior to any construction activities, with priority investigation anticipated in areas of high sensitivity for historic and prehistoric resources.

5.6 Mitigation Measures

The following mitigation measures are proposed for the Preferred Alternative and have been considered during the development of the project Memorandum of Agreement (MOA). A draft MOA is presented in Appendix C of this document.

5.6.1 Adverse Visual Effects

As indicated above, the B.F. Hanson House, the C. Polk House Estate, the Rumsey Farm, Summerton, The Maples, Rosedale, Choptank, the S. Holton Farm, the Governor Benjamin T. Biggs Farm, the Armstrong-Walker House, the T.J. Houston Farm, and Idalia Manor will experience adverse visual effects and changes to their setting if the Preferred Alternative is constructed. Recommendations for mitigation for these properties include the development of visual screens in consultation with property owners and the DE SHPO to reduce the impact on the setting of historic properties. The screens could consist of earthen berms, plantings, fencing, or other appropriate visual barriers that are complementary to the surrounding environment and existing vegetation. The landscaping or fencing will serve as a barrier between the proposed undertaking and property's main historic characteristics. Whenever feasible, all screening or landscaping elements will be installed prior to actual construction activities.

5.6.2 Adverse Audible Effects

Measures to mitigate adverse audible effects to four historic properties, The Maples, Rosedale, the S. Holton Farm, and Idalia Manor, will be discussed with the property owners and DE SHPO and, if feasible, will be included in the final design of the project, as stipulated in the MOA (Appendix C).

5.6.3 Adverse Secondary and Cumulative Effects

The potential for the separation of associated farmlands from the S. Holton Farm resulted in a finding that the undertaking will have a secondary adverse effect on the resource. DelDOT will

work with the property owner to minimize secondary effects to the resource and develop feasible mitigation measures as outlined in the MOA (Appendix C).

The potential introduction of further visual intrusions in the agricultural setting of Idalia Manor resulted in the finding that the undertaking will have a cumulative adverse visual effect on Idalia Manor. In consultation, DelDOT and DE SHPO staff determined that this effect cannot be mitigated.

The US 301 Project Development area is already experiencing an unprecedented level of residential development, which is one of the factors indicating a need for the new roadway. These development pressures have already resulted in the acquisition of former farmsteads, removal of all or nearly all associated buildings, and new or planned construction in the location of farmlands. Thus, the potential for the US 301 Project to result in cumulative impacts to historic properties as a result of development pressure should be considered alongside other past, present, and reasonably foreseeable future actions.

5.7 Archaeological Concerns

In consultation with DelDOT, DE SHPO, and MD SHPO, FHWA will ensure that the identification/evaluation, effect determination/mitigation, public outreach, discovery of and treatment of human remains and burials, and curation stipulations for archaeological resources will be carried out as outlined in the MOA (Appendix C).

5.8 General Issues

During all implementation phases of the Preferred Alternative, DelDOT shall provide copies of project plans at various plan development states to the DE SHPO and/or MD SHPO and other parties as deemed appropriate for review and comment. Within 30 days of receipt, all plan review and comments must be submitted in writing. DelDOT shall take into account any comments provided on behalf of the DE SHPO, MD SHPO, or other consulting parties prior to the development of final construction plans.

DelDOT will notify FHWA, DE SHPO, MD SHPO and other interested parties as deemed appropriate of any subsequent changes during actual construction or design stages of the project. Such notification will involve modifications to the construction methods, materials, footprint, scale, or design elements of the project that will alter existing agreements or visual and design aspects of the project. During such time, consultation under Section 106 shall be re-established to assess and determine the project impact and any additional compliance needs.