7.0 SUMMARY AND RECOMMENDATIONS

7.1 Summary

At the request of DelDOT, Skelly and Loy has constructed two archaeological predictive surfaces, including one that addresses the potential for pre-contact period resources and one that addresses the potential for historic period resources within the proposed Western Parkway study area located in Sussex County. The archaeological predictive surfaces are based on the concept that the spatial distributions of cultural remains are the results of human decision-making activities within environmental conditions, and were generated using spatial data that was created, processed, and displayed within a GIS. The use of the GIS allowed for sophisticated spatial analyses and data manipulation, which was necessary to produce the two archaeological predictive surfaces.

The primary reasons for the creation and application of archaeological predictive surfaces are cost effectiveness and planning utility. The purpose of producing the Western Parkway project predictive surfaces is to allow DelDOT to have appropriate archaeological information during early project planning in order to make informed decisions about site/alternative selection and potential project impacts to the archaeological record. If effectively developed, tested, and applied, the use of predictive surfaces, early in project planning, allows the proposed project construction to avoid destruction of significant cultural resources and to potentially limit expenses associated with cultural resource testing, assessment, and mitigation.

The pre-contact and historic period archaeological resource predictive surfaces generated by Skelly and Loy for the Western Parkway study area comprise Figures 7 and 8. These correlative predictive surfaces were generated using selected environmental, archaeological, historic structures, and secondary variables, which were measured, ranked, weighted, and applied within an additive formula. The Western Parkway predictive surfaces are digital maps of the study area in which each land parcel (cell) has an archaeological site potential as expressed by a summed score. The distribution of these scores was then classified into very low, low, moderate, high, and very high potentials for the presence of archaeological resources. A sixth class (not color coded) is included in the historic period predictive surface because some areas lacked confirmation of historic period use and, therefore, could not contribute information during the generation of the predictive surface. The potential rankings can then be used to provide resource potential maps within each of the proposed alternatives or across the study area. Using the potential classifications expressed in the predictive surfaces

allows expected impacts by the alternatives to be developed for the EIS. Since the predictive surfaces are generated in a GIS, any configuration of the alternatives may be designed within any portion of the study limits, and surface areas of low to high potential may be quickly calculated. The characterization of the predictive surfaces is included in Table 3.

Table 3.
Characterization of the Western Parkway Archaeological Predictive Surfaces

Pre-contact Period Predictive Surface			
Potential Ranking (color represented on Figure 7)	**Acreage**	**Percent of Total Study Area**	**Comments**
Very Low (blue)	935.16 ha (2,310.74 ac)	36.6	areas heavily affected by modern development; roads or other paved surfaces; borrow areas; areas exhibiting no intact soils of appropriate age to contain archaeological resources
Low (green)	103.23 ha (255.08 ac)	4.0	areas moderately affected by modern development; swamps and marshy areas adjacent to streams; areas exhibiting some potential for intact soils of appropriate age to contain archaeological resources
Moderate (yelllow)	512.43 ha (1,266.20 ac)	20.0	areas not directly affected by modern development; level areas in agricultural fields but relatively distant from water sources; potential for intact soils of appropriate age to contain archaeological resources
High (orange)	912.07 ha (2,253.70 ac)	35.7	areas not directly affected by modern development; higher level areas with good drainage between water sources
Historic Period Predictive Surface			
Potential Ranking (color represented on Figure 8)	**Acreage**	**Percent of Total Study Area**	**Comments**
Very Low (blue)	237.8 ha (587.5 ac)	9.3	areas affected heavily by modern development; little or no documented historic activity; areas located away from documented historic features
Low (green)	26.3 ha (65.0 ac)	1.0	areas moderately affected by modern development; little or no documented historic activity; areas located away from documented historic features; areas with documented later historic features
Moderate (yellow)	363.8 ha (899.0 ac)	14.2	areas not directly affected by modern development; areas proximal to less significant historic features; areas with documented historic features dating to the middle periods of local history
High (orange)	9.0 ha (22.2 ac)	0.4	areas not affected by modern development; areas proximal to significant historic features; areas with documented historic features dating to the middle and earlier periods of local history; properties potentially eligible for listing in the NRHP

Historic Period Predictive Surface			
Potential Ranking (color represented on Figure 8)	**Acreage**	**Percent of Total Study Area**	**Comments**
Very High (red)	58.6 ha (144.7 ac)	2.3	areas not affected by modern development; areas proximal to significant historic features or locations of significant historic features; areas with documented historic features dating to the earliest periods of local history; properties eligible for or listed in the NRHP
uncoded	1,861.7 ha (4,600.3 ac)	72.8	areas without any documented historic activities other than agriculture; therefore, could not be used to contribute to predictive values

7.2 Recommendations

Given the results of this archaeological research, it is recommended that the Western Parkway pre-contact and historic period archaeological resources predictive surfaces (Plates 1 and 2) be utilized as a relative method of weighing proposed alternatives within the project planning process and the selection of a preferred alternative. In addition, and based solely on the archaeological evidence and predictive surfaces, it is recommended that the preferred alternative route for the Western Parkway avoid impacts to the areas proximal to Love Creek, Goslee Creek and Mill Pond, Hetty Fisher Glade, tributaries to these streams, and the historic districts of Jimtown and Belltown, as these are the portions of the study area that exhibit the highest potentials for archaeological remains. Once a preferred alternative has been selected, it is recommended that a complete Phase I archaeological survey for pre-contact and historic period archaeological resources be performed within the preferred alternative in order to identify sites potentially eligible for listing in the NRHP. The Western Parkway predictive surfaces should help guide the Phase I survey field methodologies, and the results of that survey should be used to critically assess the effectiveness of the predictive surfaces.