SSP DEPLOYMENT PLANNING TOOL INSTRUCTIONS

For each segment of a route under consideration for SSP deployment, there are 11 input variables. The user must input text or numerical data pertaining to each variable. For null values, cells should be left blank. It is recommended that segments along a proposed route be grouped together as this will allow for easier comparisons of route scores. Once segment scores are established, the user should sum the segment scores and divide the total score by the number of segments under analysis (e.g., obtain an average score per route).

NOTE: Some links in the input variable instructions can only be accessed via VDOT's intranet and are noted as "VDOT Access Only".

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SEGMENT LENGTH

Segment lengths can be obtained from VDOT's Traffic Engineering Division web page - http://www.virginiadot.org/info/ct-TrafficCounts-2005.asp. For example: on I-64 in Henrico County, the segment length between Parham Rd. and U.S. 250; Glenside Dr. is 2.03 miles. Therefore, the input value for this segment length should be 2.03.

DAILY PERCENT ADT SERVED BY SSP (%)

To determine this value, the hours of proposed SSP operations must be taken into consideration. To find the percent ADT served by SSP, the user should create average hourly traffic profiles for the segment under consideration. Average hourly traffic profiles can be obtained from VDOT's Traffic Engineering Division web page/Toolkit/Traffic Volume Query - http://tedweb/tms/jsp/ *(VDOT Access Only)*. To obtain an average weekday ADT (for proposed 'weekday only' operations), it is recommended that the user select 4 distinct time periods (winter, spring, summer, fall) and create hourly flow profiles from continuous count stations spanning Tuesday through Thursday for each time period. In cases where proposed coverage is 7 days per week, average hourly flow profiles should be created for Saturdays and Sundays from each time period. To obtain % ADT served by SSP, the user must determine the proposed hours of SSP operation and sum the hourly ADT percentages for the coverage period. For example, if proposed coverage is to be 24 hours a day, 7 days a week, the % ADT served by an SSP is *100*. For weekday only operations that consist of a 6 AM to 6 PM shift on a segment that exhibits an hourly flow profile similar to the flow profile shown in Figure 1, the % ADT served by SSP is 70.6.

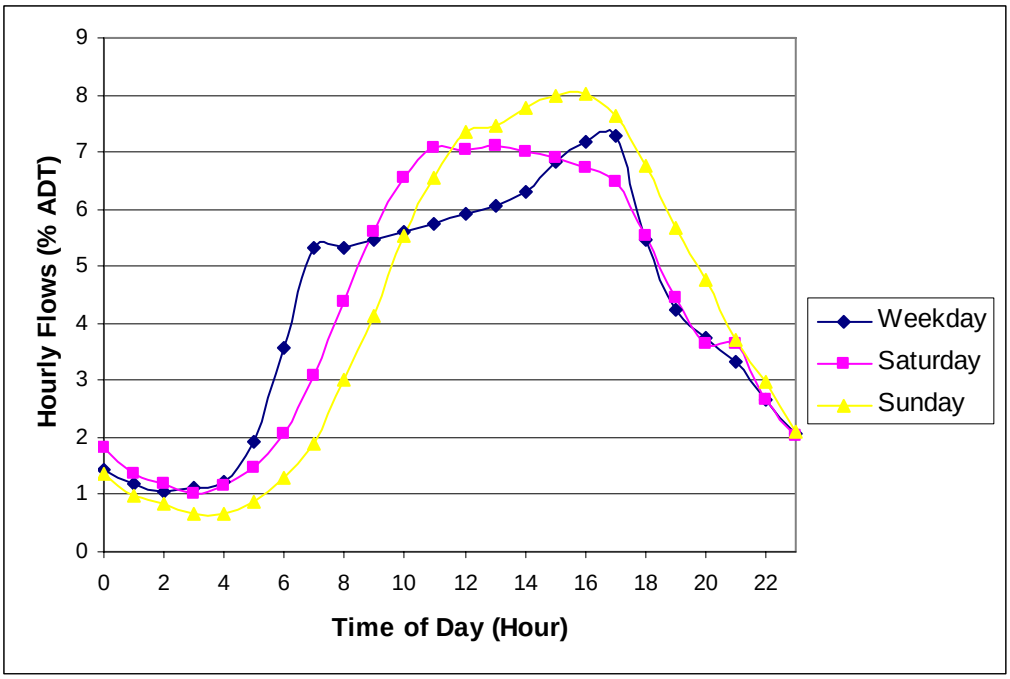

Figure 1. Hourly Flow Profiles on a Hypothetical Segment.

LEVEL OF SERVICE (LOS)

LOS is a measure of the quality of traffic flow. A variety of factors are considered in determining LOS. These factors include traffic volume, traffic composition, and highway geometrics. To determine LOS for a given segment, Highway Capacity Manual (HCM) methods should be used and LOS (A-F) per each segment under analysis should be input into the respective cell. VDOT's Transportation and Mobility Planning Division created a Statewide Planning System (SPS) program that incorporates HCM methods for determining LOS on all segments throughout the state. This program can be found at:

http://insidevdot/Planning/default.aspx?RootFolder=%2fPlanning%2fDocument%20Library%2fSPS&View=%7b3F994A1A%2dD32D%2d437B%2dA56F%2dCDECB7F71DC8%7d *(VDOT Access Only)*

PLANNED PROJECTS

To determine the value of planned projects on a given segment, the user should reference project details in VDOT's Six Year Plan. The current Six Year Plan can be found at: http://isyp/syp/. The input value for each segment under analysis should be in $-million. For example, if a planned project on a particular segment is $12,000,000, the value entered in the cell should be 12.

AIR QUALITY

Air quality non-attainment areas are especially sensitive to the polluting effects of the stop-and-go traffic conditions caused by an incident. For segments under analysis, cell values should be input as: “attainment” or “non-attainment”.

ACCESS DISTANCE

Access distance is the maximum distance an incident may occur on a segment of highway from an access point to the highway and is defined as ½ the distance between adjacent interchanges. Input values must be entered in miles. For example, if the distance between interchanges is 2.68 miles, the input value should be 1.34.

STRUCTURE LENGTH

Bridges and tunnels are covered by the term “structures”. The presence of long structures on a section of highway can complicate incident response since long structures frequently form critical choke points on highways. The presence of a long structure indicates a significant barrier is crossed, which is often a sign that the presence of alternative routes is limited. Additionally, long structures have limited clear zones and, frequently, reduced shoulder widths. Input values for structure length must be in feet. For example, if a 350 ft. bridge is located within a segment, the input value should be 350.

AVERAGE ANNUAL DAILY TRAFFIC

Average Annual Daily Traffic (AADT) is a weighted average of the amount of traffic a highway carries. AADT must be combined for both directions of travel. For example, if eastbound AADT is 74500 and westbound AADT is 71300, the input value for this cell should be 145800. Values for segment AADT can be obtained from VDOT’s Traffic Engineering Division web page/Toolkit/Traffic Volume Query - http://tedweb/tms/jsp/ *(VDOT Access Only)*.

DAILY TRUCK VOLUME

Trucks tend to require more time to clear and may significantly reduce highway throughput more than passenger vehicle incidents. Additionally, a significant percentage of trucks transport hazardous materials. Timely response to hazmat incidents is critical in restricting the effects of material spills. Truck percentages can be obtained from VDOT’s Traffic Engineering Division web page - http://www.virginiadot.org/info/ct-TrafficCounts-2005.asp. Truck percentages should be multiplied by the AADT to obtain number of trucks. The value in the cell must be the number of trucks (not percentage of

trucks). For example, if the truck percentage on a freeway with AADT of 95000 is 6 percent, the value in the cell would be 5700.

URBAN OR RURAL

The planning tools incident prediction model (IPM) provides different evaluation scales for segments defined as "urban" or "rural". It is recognized that there are segments in "rural" regions that have an urban federal functional classification and census designation (e.g., segments in and around Christiansburg, Salem, Roanoke, Staunton, and Charlottesville). However, to compare the scores of routes in a regional context, the regional area type (urban or rural) must be used as the variable input. For the purposes of this planning tool, it is recommended that all segments in NOVA and Hampton Roads be defined as "urban" and all segments in Fredericksburg, Salem, and Staunton be defined as "rural".

COVERAGE DAYS PER WEEK

The input value for this cell must be numeric. For example if proposed SSP coverage on a particular segment is 7 days a week, the cell value should be 7. For coverage just on weekdays, the value should be 5.

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GETTING SEGMENT SCORES

Once all segment variables are entered, the user must enter the number of segments that are to be analyzed in cell 'R'. Segment scores will be computed when the user clicks on "Click to Compute Score".