Sec. 10.11 **The VDOT Project Coordinate System**

[*]Beginning June 1, 2014 all new VDOT Projects will be based on the new VDOT Project Coordinate System outlined below (Now known as "VDOT Project Coordinates-2014"). To convert Virginia State Plane Coordinates (based on the US Survey Foot) to VDOT Project Coordinates-2014, the coordinates will need to be multiplied by the combined Scale & Elevation Factor for each specific project. One method of obtaining the scale factor for each project will be to submit GNSS data to OPUS (NGS utility) for each primary control point on the project. Submitting "Static" data to OPUS (minimum 2- hour occupations per point) will be required. Once the OPUS results are obtained, take the average of the combined factors under the State Plane Coordinates for the primary control points. Once this step is done, the inverse function (1/x) should be applied, resulting in the Combined Scale Factor for the project (9 decimal places- Example= 1.000000009).

This is only one method of obtaining the scale factor for a project. Regardless of the method used, the procedure shall be described in detail in the project notes as well in the Project Deliverables (Sec. 10.06).[◊]

Special Note on Projects that predate June 1, 2014:[◊]

Projects completed or started prior to January 1, 2014 should continue to use the former language below.

The VDOT Coordinate System is based on **NAD83 METRIC values** as defined in **The Code of Virginia §55-292** (see **Figure 10-H**). To convert NAD83 METRIC to VDOT Project coordinates (Imperial Units), first depending on the zone you are working in, subtract 1,000,000 meters from the South Zone Northing value (or 2,000,000 meters from the North Zone Northing value). Next, subtract 2,500,000 meters from the Easting value. Next, multiply the Northing and Easting values by 3.28083333333 (the conversion for the U. S. Survey Foot as defined in **The Code of Virginia §55-290,** see **Figure 10-M**). Last, multiply the Northing and Easting values by the Combined County Scale & Elevation Factor. **Figure 10-N** is a list of the combined scale and elevation factor for the counties. This produces VDOT Project Coordinates (in Imperial Units) for a given project. A reverse of this procedure will transform VDOT Project Coordinates back the original NAD83 METRIC values. See **Figure 10-F,** showing the use of the above procedures as depicted on a LD-200 Horizontal Control Station Reference Card.

[*] Rev. 7/15