Introduction

This chapter will provide references, and guidance on Surveying and Mapping services as explained in ***Topic No. 550-030-101*** ***FDOT Surveying and Mapping Procedure*** and ***Surveying and Mapping Handbook.***

The District Surveying and Mapping Office (DSMO) is the Florida Department of Transportation (FDOT) office responsible for managing the Design Survey phase, Mapping, and Title review for the Right of Way (ROW) phase of the project. The DSMO provides customers with existing conditions and planimetric data for design purposes, existing ROW limits information, and supports the acquisition of new ROW. The DSMO is divided into **Location Surveying** and **Right of Way Mapping**.

Location Surveying

The Design Survey phase of a project is the responsibility of the DSMO Location Surveying unit, which manages Design Survey deliverables. The Location Surveying unit is responsible for providing the existing roadway features and project network control for roadway design projects. Depending on the type of project, the Location Surveying unit will determine the best surveying technologies and methodologies to acquire surveying data.

The various surveying technologies available include:

- Conventional Survey (Reflector less or GNSS (GPS) Survey)
- Static 3D LiDAR Scanners
- Mobile LiDAR
- Aerial Photogrammetry
- Aerial LiDAR
- Ground Penetrating Radar
- Subsurface Utility Engineering (SUE)/Soft Dig/Vacuum Excavation

- The Location Surveying technologies are used to create a survey of existing conditions for use by Roadway Design. This survey will consist of a digital delivery accompanied by a ***Survey Report*** as required by ***Rule Chapter 5J-17, F.A.C.*** The ***Survey Report*** will detail all survey project specifics, comments, and results. The digital delivery will also consist of one or more digital files as required by the Scope of Services for each project.

New construction and Reconstruction projects typically require 3D modeling. The digital survey file(s) for 3D modeling projects are a complete database containing 3D elements representing a Digital Terrain Model (DTM), drainage, topography, and utilities. The content of the digital survey file(s) must adhere to the ***FDOT Surveying and Mapping Procedure***, the ***Surveying and Mapping Handbook***, and the ***FDOT CADD Manual***. Additional guidelines and information are located on the ***FDOT Surveying and Mapping Office website***:

The required survey effort for Resurfacing, Restoration, and Rehabilitation (RRR) Projects varies by the type of project. Descriptions of the various levels of survey effort are located in ***FDM 114.2.2***.

Along with the ***SURVRD*** survey database, there are additional Location Surveying deliverables that may be required by the project Scope of Services such as:

- Project Network Control (Horizontal/Vertical)
- Certified Corner Records
- Tree Survey
- Wetland Survey
- Bridge Survey
- Hydrographic Survey
- Right of way/Boundary Survey
- Alignment Survey

- Mean High-Water Line
- Safe Upland Line / Ordinary High-Water Line

Right of Way Mapping

For a project that requires the acquisition of real property interests, the Surveying and Mapping unit is responsible for right of way maps, property title chain analysis, and document preparation. The Surveying and Mapping unit is also responsible for maintaining the historical and current state highway right of way maps and records. ROW Mapping takes on an active role throughout the life of the project. Right of Way Maps are living documents that are continually edited and updated. Note that the ROW Acquisition phase of a project typically takes two years after maps and documents are sent to the ROW Office to begin acquisition.

Right of Way Mapping Coordination

Coordination is an essential function of Right of Way Mapping. When the project limits are identified, a coordinated effort takes place with all the project production offices to develop a scope of services that meet the needs of the transportation facility goals.

Changes in the project limits can trigger changes to production efforts including additional field work, right of way map, document revisions, and potential schedule changes.

Right of Way Mapping Project Changes

Changes in ROW requirements may originate from staff with active roles in the mapping project, which includes District Management, Project Management, Acquisition, Appraisal, Legal, Utilities, Records Management. Copies of any change in the requirements should be reviewed by these staff. All changes are communicated to the Project Manager and the acquisition team throughout the life of the project.

Frequently, there are unpredictable changes to project limits which can cause an additional acquisition or to VOID a previously intended acquisition. A large variety of actions can trigger a change to the project limits, such as:

- Changes in design
- Legal negotiations
- Court orders
- Utility interest
- Inter-agency regulations
- County and local involvement

All ROW changes must be coordinated with the ROW Acquisition team and the Surveying and Mapping team from the onset.