

Turnpike KMZ Standards

As identified in a project's scope, conventional and Non-Conventional Projects (Design Build) will be required to develop KMZ files. KMZ is a zip file of KML (Keyhole Markup Language). For the purpose of this document KML and KMZ are used interchangeably.

File Naming Convention

- Conventional (Design Bid Build):
 - The file name for the KMZ will follow the format: **7-digit FPID + Submittal + YYYYMMDD**.
 - **YYYY** is the year of KMZ creation, **MM** is the month of KMZ creation, and **DD** is the date of KMZ creation.
 - **Submittal** choices: ERCAR, Concept, Interim, Working Notes, 15 Percent Line and Grade, Phase I, Phase II, Phase III, Phase IV, Final, Bid, RFI # and Revision #.
- Non-Conventional (Design-Build):
 - The file name for the KMZ will follow the format: **7-digit FPID + Submittal + YYYYMMDD**.
 - **YYYY** is the year of KMZ creation, **MM** is the month of KMZ creation, and **DD** is date of KMZ creation.
 - **Submittal** choices: Overall Line and Grade (if required by RFP), 90 Percent Plans, Final Plans, At Risk (if allowed by Contract), RFC plans, Resubmittal, and As-Built.
 - If individual plan components are submitted in lieu of an entire project package, the **Submittal** will be appended to include additional information relative to the degree in which the component is broken down. Examples – (90 Percent Universal Blvd Lighting) or (RFC Segment 2 Drainage), etc.

Bid – advertised contract plans.

RFI XYZ – a special plan detail to address specific field design issue, if requested.

Revision XYZ – the updated KMZ of the entire project's current design for submitted plan revisions.

Overall Line and Grade – the overall 15% line and grade submittal, if required by RFP.

At Risk – early work plans prior to RFC, if allowed by Contract.

RFC – the Plans submitted for review to be Released for Construction.

As-Built – the final project deliverable.

Do not include the following characters in the file name(s):

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File Size Limitation

Google Developer's website identifies that Google Maps support of KMZ files has restrictions on file size and content. The provider of the KMZ will validate that the file delivered is compatible with Google Earth. Due to sluggish performance issues with large KMZ files in Google Earth, the KMZ file size should be limited to twenty megabytes, unless approved by Turnpike. This size limitation may require the KMZ developer to separate the KMZ into several smaller KMZ's, at which point the file naming convention for each KMZ shall be appended to include the name of the individual components. Example – (Phase 3 Lighting), or (RFC Segment 1 Signalization), etc. This size limitation may also require the KMZ developer to clip reference files to eliminate information outside the project limits to reduce the file size. Effort to reduce the file size will require the user to completely close out MicroStation after making changes in the CADD DGN file(s), and reopen it before exporting to KMZ. Without closing the file, MicroStation retains the memory of the files you turned off or deleted within the same session which will not reduce the size of the KMZ file.

Creation of KML Files Within MicroStation

Utilize the appropriate coordinate system for the location of the project. For Turnpike Projects, "State Planes East" or "State Planes West" coordinate systems are typically used.

CADD reference files will follow the standards as outlined by the ***FDOT CADD Manual*** (Production Criteria). All applicable MicroStation reference files will be included in the generation of the KML files to achieve the KML file layers. Design elements within KML files shall be color-coded in accordance with the ***FDOT CADD Manual***.

Design KML Deliverables

The KML file accompanying any submittal must show the required plan information that is outlined in the ***FDOT Design Manual (FDM) 301***, and any additional items specifically identified in the project's requirements, with exception of plan notes or special details that are not geo-referenced. The KMZ file structure will follow ***FDM 301*** establishing design component plan layers containing separate layers for existing and proposed features. Refer to KMZ Layer structure section below for required layer establishment. The labels are optional for including in the Design submittals for review, but are required for finalized files such as Bid, RFI's, Revisions, RFC's, RFC resubmittals, and As-Builts.

As part of the final plans deliverable, deliver a Design Documentation KML. The file name will be **SR ###-MMM.M{begin milepost}-MMM.M{end milepost}-YYYYMMDD-Design**. This KML file will contain shapes, lines and/or points that will archive design decisions for the project with respect to variations, exceptions, permits, unresolved needs and drainage patterns on levels titled as such. The minimum content of the KML expanded "bubble" will contain:

- Variation/Exception
 - FPID
 - Variation Title
 - Reason for Variation
 - Date of Approval
- Permit
 - FPID
 - Agency Issuing
 - Type of Permit
 - Date of Issue
 - Permit Number
 - Hyperlink to permit on ePermit website (if applicable)
- Drainage Patterns (for widening and new construction only)
 - Floodplain limits

Flow arrows spaced as a minimum one arrow per drainage conveyance feature with maximum spacing of 200'. Flow arrows will be blue for onsite (treatment flows) and red for offsite flows.

Non-Conventional projects should include deliverables as noted above when plans development is applicable (design, MOT, etc.).

When plans development is not applicable (non-conventional deliverables; ERCARs, Safety Assessments, Technical Memorandums etc.), KML content may include:

- Crash analysis data – highlight fatality(ies) locations
- Recommended improvement location(s) – guardrail, three beam connection upgrades, etc.
- Critical areas - pavement rehab locations, culvert repairs, etc.
- GPS-tagged Photo Log / Inventory - signs, culverts, outfalls, etc.

KMZ Layer Structure

All KMZ deliverables will have layers with naming convention that follows the contract plan set naming convention for the major Components Plans Sets as identified in **FDM 301**. The following list is presented in a tiered fashion to indicate the layering and naming that is required for the KMZ file setup. Layers without content shall be omitted from the KMZ.

- 1) Roadway Component
 - a) Drainage Map
 - i) Proposed
 - ii) Labels
 - b) Interchange Drainage Map
 - i) Proposed
 - ii) Labels
 - c) Alignment Baselines
 - d) Existing Features
 - i) Topo
 - ii) Wetlands
 - e) Right of Way
 - f) Roadway Plan
 - i) Proposed
 - ii) Labels
 - g) Drainage
 - i) Existing
 - ii) Proposed
 - iii) Labels
 - h) Ramp Terminal
 - i) Proposed
 - ii) Labels
 - i) Intersection Layout
 - i) Proposed
 - ii) Labels
 - j) Outfall/ Lateral Ditches and Ponds
 - i) Proposed
 - (1) Improvements
 - (2) Contours
 - ii) Existing Contours
 - iii) Labels
 - k) Utilities
 - i) Existing
 - ii) Proposed Adjustments
 - iii) Labels
 - l) Traffic Control Plan
 - i) Phase X
 - (1) Proposed
 - (2) Work Area
 - (3) Temporary Drainage
 - (4) Labels
 - ii) Phase Y
 - (1) Proposed
 - (2) Work Area
 - (3) Temporary Drainage
 - (4) Labels
- iii) Phase Z
 - (1) Proposed
 - (2) Work Area
 - (3) Temporary Drainage
 - (4) Labels
- iv) etc....
- 2) Signing and Pavement Marking
 - a) Existing
 - b) Proposed
 - c) Labels
- 3) Signalization
 - a) Proposed
 - b) Labels
- 4) ITS
 - a) Proposed
 - b) Labels
- 5) Lighting
 - a) Proposed
 - b) Labels
- 6) Landscaping
 - a) Proposed
 - b) Labels
- 7) Structures
 - a) Proposed improvements or modifications
 - b) Labels
- 8) Toll Facility Plans
 - a) Civil/Site Plans
 - i) Existing
 - ii) Proposed
 - iii) Labels
 - b) Electrical Plans
 - i) Existing
 - ii) Proposed
 - iii) Labels
 - c) Utility Plans
 - i) Existing
 - ii) Proposed
 - iii) Labels