

TxDOT's Statewide Planning Map



**Presented by:
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Introductions

- Michael is the GIS Supervisor in the Data Analysis branch of TPP and has been with the TxDOT for 10 years.
- Serena is the Lead Worker in the Data Analysis branch for FC Streets and special projects. Serena has been with TxDOT 3 years.



Map Purpose

- To quickly display a representation of traditional paper based mapping products in a browser
 - Departmental Map
 - Railroad Map
 - Control Section Maps
 - County Mapbook
- Provide a common point of reference between TxDOT districts, divisions and the public



Core Concepts

- DHTML, CSS (events and presentation)
- JavaScript (processing)
- AJAX (interaction)
- XML, KML (data storage)

- Client based
- Custom JavaScript library
- No map server or database



Content

- The map content is organized into the following sections
 - Maps
 - Overlays
 - Tools



Maps

- Maps are created in ArcGIS (view license)
- Tiles are created for each zoom level at the following scales:
 - 1:5,350,750
 - 1:1,783,583
 - 1:594,528
 - 1:198,176
 - 1:66,059
 - 1:22,020



Map Tiles

- Tile size is 1056 x 1056 pixels
- Map tiles are .png's
- Imagery tiles are .jpg's
- Overlay tiles are .gif's
- Naming convention for all tiles is x0y0z0



Tile Cache

- Total map tiles per map theme is 66,430
 - $z_0 = 1$ image
 - $z_1 = 9$ images
 - $z_2 = 81$ images
 - $z_3 = 729$ images
 - $z_4 = 6,561$ images
 - $z_5 = 59,049$ images



Tools

- The following tools were developed for the planning map
 - Draw
 - Identify
 - LRS Data
 - Measure
 - Search
 - View and Send



Draw

- The HTML5 Canvas tag is used to draw vector graphics on top of the map tiles
- Points, Lines, Polygon and Text items are supported
- Excanvas.js developed by Google is used for IE support (Text items are not supported in IE)



Identify

- Selected features in the map were indexed to the tile cache grid
- Click events are translated from Lat, Long to grid number (x0y0z0)
- Features that intersect the grid number are stored in the index and returned as identify results



LRS Data

- This tool provides simple route events to user selected portions of roadways
- The begin and end points are selected and snapped to linework vertices
- Linework and attributes are clipped to the selected section
- Resulting attributes are drawn with a color theme and legend on the map



Measure

- The measure tool returns the great circle distance between selected points
- Results are drawn as a vector line between clicked points
- The following units are supported
 - Meters
 - Kilometers
 - Feet
 - Miles



Search

- Search provides an interactive suggest style tool to locate features
- As the user types suggestions are pulled from the index and displayed in a list box
- When a result is selected the map theme is changed to the stored map, zoom level and coordinate for that feature



View and Send

- This set of links allows the user to jump out of the application and view a similar extent in mapping services like Google or Bing
- It also allows the creation of geographic links that are sent via e-mail
- A geographic link is a URL with variables that gets passed to the application and parsed
- The variables are used to change the map, zoom level and extent



Demonstration and Links

- [Statewide Planning Map](#)
- [Past presentations](#)



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