TxDOT Floodplain Mapping Tool (TXDOT FPM Tool)

July 2017
Outline

• History & Collaboration
• What was it like before the tool
• Overview
• User Experience
• Training
• Future
• Q & A – Video of tool in action
What was it like before the FPM Tool?

Tools available for TxDOT Designers

- Watershed Modeling system
- GeoRAS, GeoHMS, HMS, HEC-RAS
- HY 8
- Bentley Culvert Master
- USBR SRH-2D
TxDOT FPM Tool: History & Collaboration

- December 2016 1st release and Training Started
- Collaboration between TxDOT, NTT Data, and ESRI - April 2016
- Leveraged Esri Enterprise Advantage Program (EEAP)
- Time Savings survey March 2017

The Future
NEXT EXIT
TxDOT FPM Tool : Overview

Arc GIS Online (AWS)

AD authentication

User Interface Code

Arc Hydro Tools and Services

ArcGIS Base Maps / Data

Flood Plain Mapping tool

Temporary Data Storage

ESRI API

ESRI Web Service

ESRI Web Service

30 M DEM

Annual Precipitation Omega EM
1. Watershed Delineation
2. Generate Flow Report
3. Create Cross Section Features
4. Geoprocessing & SDF Conversion
5. Export GIS to CAD
Regression Equations for Flow Calculations
USGS SIR 2009-5087
TxDOT FPM Tool : User Experience

SDF File Flow

HEC-RAS

DGN

Plan sheet -DGN
TxDOT FPM Tool: User Experience

- Easy to use and learn
- Time savings (consensus)

<table>
<thead>
<tr>
<th>Task</th>
<th>Conventional Tools</th>
<th>TxDOT FPM Tool</th>
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<tbody>
<tr>
<td>Drainage Area Delineation (including – to collect topography data)</td>
<td>8 hrs</td>
<td>10 min</td>
</tr>
<tr>
<td>Hydrology (Regression Method and determining channel lengths and slopes)</td>
<td>2 hrs</td>
<td>(included in the same 10 min shown above)</td>
</tr>
<tr>
<td>HEC-RAS Model (Existing)</td>
<td>24 to 40 hrs (depending on complexity)</td>
<td>Less than 2 hrs</td>
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• Webinars
• Help Desk
• Videos and Powerpoints
• Engineering Wiki
• Include Finer Resolution Elevation data
• Other Methods of determining flow
• Allow user defined layers to be used
TxDOT FPM Tool: Acknowledgements

- TxDOT Staff: Claudio Nunez, Jason Verner, Travis Campbell, Matthew Volkmann, Mark Berry, Abderrahmane Maamar-Tayeb
- Staff: Dean Djokic, Michael Zugelder, Christine Dartigueneave
- NTT Data Staff: James Johnson, Alonzo Balderaz, John Pedigo, Marit Tenfjord, Tim Suto

Thank you
Questions?
TxDOT FPM Tool: Overview - Future

ArcGIS Online (AWS)

- Elevation data (local, 3 M, 30M)
- Annual Precipitation
- Omega EM
- Land cover, USGS Stream gage data, reservoir data

ESRI API

ESRI Web Service

Temporary Data Storage