BGIS 2/BINS Presentation
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Acknowledgements

- Financial support of the JWC members through NMDOT,
- Assistance provided by SCT and US and Mexican State Transportation Offices,
- Data analysis provided by Antonio Carranza, former NMSU student,
- Mapping support provided by SpARC employees,
- Assistance and support from Alfredo Granados.
Outline of presentation

• Brief background of the BINS/BGIS project
• Discussion of work done to date on BGIS/BINS
• Presentation of data products
  – BGIS/BINS data downloads
  – Online Web Mapping Application(s)
• Discussion of continued work at NMSU
The JWC, working through new Mexico Department of Transportation (NMDOT), contracted the Department of Geography and the Spatial Applications Research Center at New Mexico State University (NMSU) on the Border Infrastructure Needs Study and Binational GIS Project (BINS/BGIS).

Project outcomes and products are hosted at the SpARC site and the linked web pages accessed from this site.
BGIS/BINS II Goals & Objectives

• Develop fully integrated BGIS/BINS II database, linking project & spatial data

• Update future planned transportation projects

• Develop terminal and feeder corridors including both N/S & E/W connections.
Efforts to date

- Most recent phase of BINS/BGIS II ran from 8/07-8/09, during which we worked with range of JWC members on project.
- Summer 2009 JWC meeting in SF afforded a key connection with SCT staff.
- Complete roads dataset delivered by SCT in August of 2009, as funding cycle for 2009 ended.
- NMDOT provided new funding in 2010 that has continued to present.
- Recent work integrated SCT data, new POE data, updated imagery, & project portal enhancements.
Efforts to date

• Compilation of data from Mexican and US agencies
  – Direct contact with members of the JWC
  – Alfredo Granados worked with Mexican agencies
• Development and population of database structure in GIS framework
• Development and deployment of Web Mapping Applications
Project Deliverables

• File geodatabase files containing GIS data, packaged into state by state groups
• Terminal and feeder corridors based on freight and passenger movements
• Preliminary DO matrix based on freight volume between US and Mexican states
• Deploy a Web Mapping Application that serves GIS data
Data Processing (ArcGIS, Arc Catalog)
Model 1 – File Geodatabase Creation and Feature Dataset Creation

- BGISII
  - Create File GDB
  - NM_CH_W_T.gdb
    - Create Feature Dataset
    - GeoPolitical_Boundaries
    - Create Feature Dataset (3)
      - Int_Border_Data
    - Create Feature Dataset (4)
      - Planned_Projects
    - Create Feature Dataset (2)
      - Transportation
Data Processing (ArcGIS, Arc Catalog)
Model 2 – Populate Geodatabase via Extraction from the SDE
Recent Data Acquisitions
IMT Road data

- QA/QC of data using Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, the GIS User Community, and Google Earth
- Edited data integrated into .gdb
Data in ArcMap (v 10.1)

- ArcMap .mxd is used to publish a Web Map Service.
- Service used as a data source to build Web Mapping Application
SpARC Internet Mapping Resource and Data Portal

- Google Search “NMSU SpARC”
- SpARC Homepage
- BGIS2 project homepage
POE Planned Projects

- A bulleted list of POEs that may have planned projects
- Organized by US state
- Link to individual POE pages

http://smiley.nmsu.edu/SparcWebsite/POE/poe_index.html
POE Planned Projects pages (e.g. Santa Teresa)

- This page provides access to:
  - GE image of POEs,
  - project designs,
  - project schedule and status.

- Ancillary images:
  - e.g. recent aerial images.

- Links to additional information:
  - Dept. Homeland Security
  - Customs and Border Protection
  - NM Border Authority (as applicable)

http://smiley.nmsu.edu/SparcWebsite/POE/santa_teresa.html
Updated Imagery
e.g. Santa Teresa POE

- **Metadata**: imagery date, source(s), geographic location, elevation, image altitude for all 53 POEs
- **Google Earth** imagery:
  - consistent source of data
  - updated regularly
  - publically accessible
  - metadata available
Updated POE Design/Diagrams
e.g. Columbus / Palomas

http://smiley.nmsu.edu/SparcWebsite/POE/diagrams/Columbus_Palomas_diagram_2012.jpg
POE Project Status
JWC Status of Border Crossing Projects

<table>
<thead>
<tr>
<th>Border Crossing</th>
<th>States (U.S.-Mex)</th>
<th>PP ?</th>
<th>SENTRUFAST</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Prepared) Port of Brownsville</td>
<td>Texas - Tamaulipas</td>
<td>PP issued Oct 1997</td>
<td></td>
<td>No immediate plans to build this proposed commercial-only bridge. Port of Brownsville consultant met with GSA in Jan 03 to review the 2004 site master plan and solicit GSA’s input regarding current CDF requirements.</td>
</tr>
<tr>
<td>Veterans Bridge at Laredo/Matamoros II</td>
<td>Texas - Tamaulipas</td>
<td>PP issued Oct 1999</td>
<td>SENTRUFAST</td>
<td>Sponsors notified State Dept of intent to apply for PP amendment in order to build 2nd bridge span.</td>
</tr>
<tr>
<td>Gateway/Matamoros II Bridge</td>
<td>Texas - Tamaulipas</td>
<td>Predates PP process</td>
<td></td>
<td>GSA plans to start design in FY10 for a FY10 construction start on proposed expansion of the POE.</td>
</tr>
<tr>
<td>(Prepared) Brownsville-West Rail</td>
<td>Texas - Tamaulipas</td>
<td>PP issued Oct 2004</td>
<td></td>
<td>Will take trains out of downtown Brownsville/Matamoros. If built, the B&amp;M Rail Bridge will be closed to rail traffic; vehicle portion of B&amp;M bridge to remain open; former rail line may be used as toll road. Engineering design 95% complete; county has acquired 70% of land. B&amp;M committed to U.S.-side of project. Developing USCG permit.</td>
</tr>
<tr>
<td>Los Indios-Lucido Blanco Free Trade Bridge</td>
<td>Texas - Tamaulipas</td>
<td>PP issued Oct 1990</td>
<td></td>
<td>No projects planned for this bridge; only crossing for “transvagantes” heading thru Mexico to Central or S. America.</td>
</tr>
<tr>
<td>Progreso/Nuevo Progreso Bridge</td>
<td>Texas - Tamaulipas</td>
<td>Predates PP process</td>
<td></td>
<td>U.S.-side owner made enhancements to allow for commercial traffic. GSA studying expansion project for leased LPPOE.</td>
</tr>
<tr>
<td>(Prepared) Donna-Ro Bravo International</td>
<td>Texas - Tamaulipas</td>
<td>PP issued Nov 2000</td>
<td></td>
<td>Planned six-lane, 1,000-foot bridge to precess POE traffic. GSA to begin POE construction in 2006; complete in 2010.</td>
</tr>
</tbody>
</table>
ArcGIS Server 10 – 10.1 upgrade changes
Application building will no longer be supported through ArcGIS Server Manager – i.e. rebuilding the WMA is a necessity.

Currently developing new WMA in ArcGIS Viewer for Flex:
• a configurable web application
• presently enhancing application functionality

Looking into the feasibility of using ArcGIS Online…
Web Mapping Applications

• Web Mapping Application provides online mapping access at variable scales
  – Map elements are available.
  – Basic layers include border, POEs, major and secondary roads, and imagery.

• Current efforts – selecting the best option, updating WMAs and related data
Current WMA URL:
http://smiley/BGIS2_WMA_2012/default.aspx
WMA Prototype 1
ArcGIS Viewer for Flex

- Layers
- Bookmark
- Locator
- Search
- Querying
- Drive times
- Printing
WMA Prototype 2
ArcGIS Online

• Currently adding functionality to this WMA
DATA - BGIS2/BINSII

- Preview maps and file geodatabases
- GIS/attribute data downloads for the various bi-national state pairs and corridors
- For use with ArcGIS

http://smiley.nmsu.edu/SparcWebsite/bgis2/datadownload.html
Terminal and Feeder Corridors

- Five Major N/S Corridors developed, including E/W linkages to adjacent states
  - California-Baja-Sonora Corridor
  - Arizona/Sonora Corridor
  - Texas/Chihuahua/New Mexico Corridor
  - Central Texas/Laredo Corridor
  - Lower Rio Grande Corridor
Terminal and Feeder Corridors
In progress…

• SpARC will continue to;
  – improve the functionality and usefulness of the Data Portal and WMA;
  – Update and edit data;
  – Improve the quality of the metadata

• Currently looking to find more recent POE Design Diagrams (with metadata) …

• Future works… Review EP MPO resources
Comments…

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