

BGIS 2/BINS Presentation

2012 JWC Annual Meeting

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Geography Department
Spatial Applications Research Center



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



Role of NMSU and NMDOT

- 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.

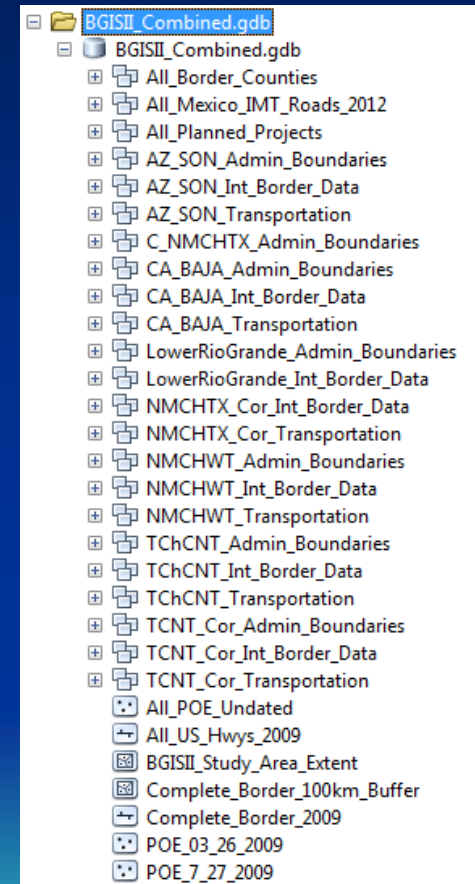


Efforts to date

- 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



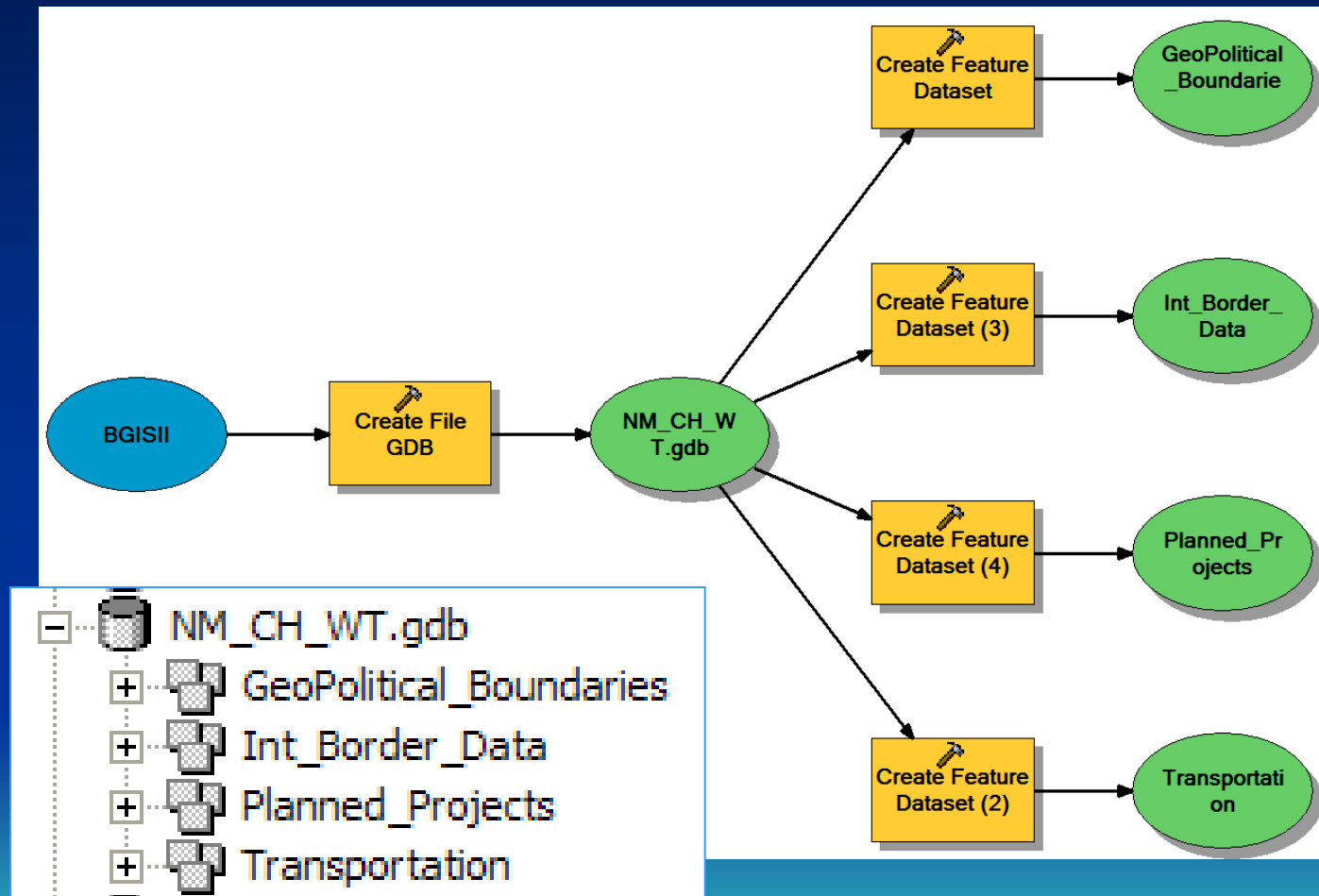
Project Deliverables

- 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



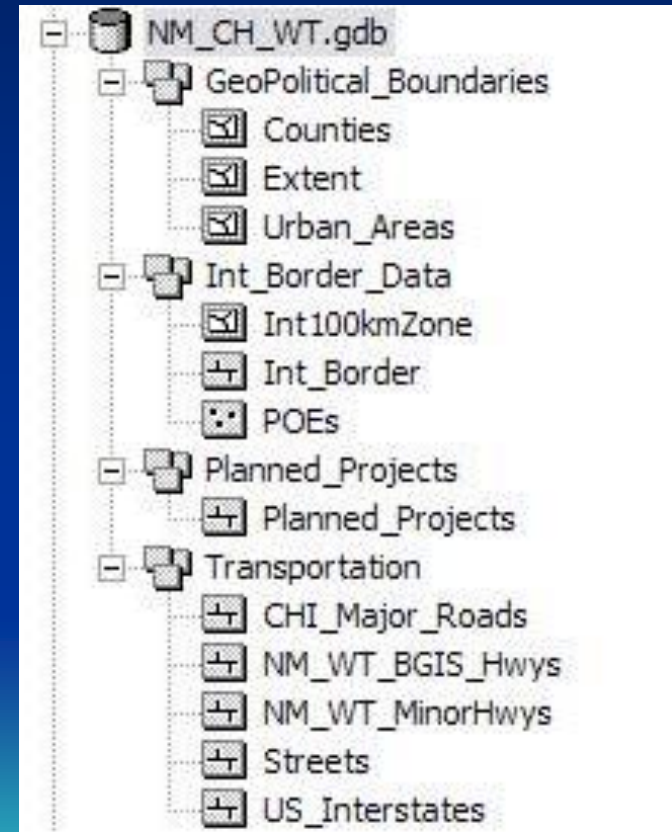
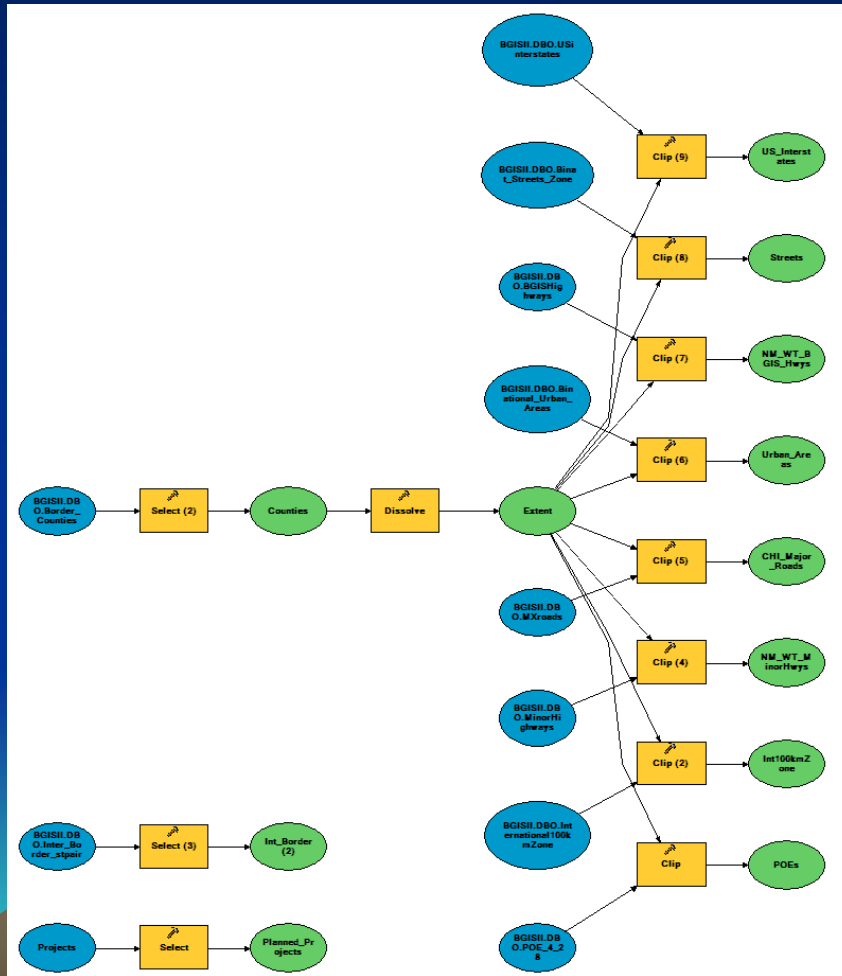
Data Processing (ArcGIS, Arc Catalog)

Model 1 – File Geodatabase Creation and Feature Dataset Creation



Data Processing (ArcGIS, Arc Catalog)

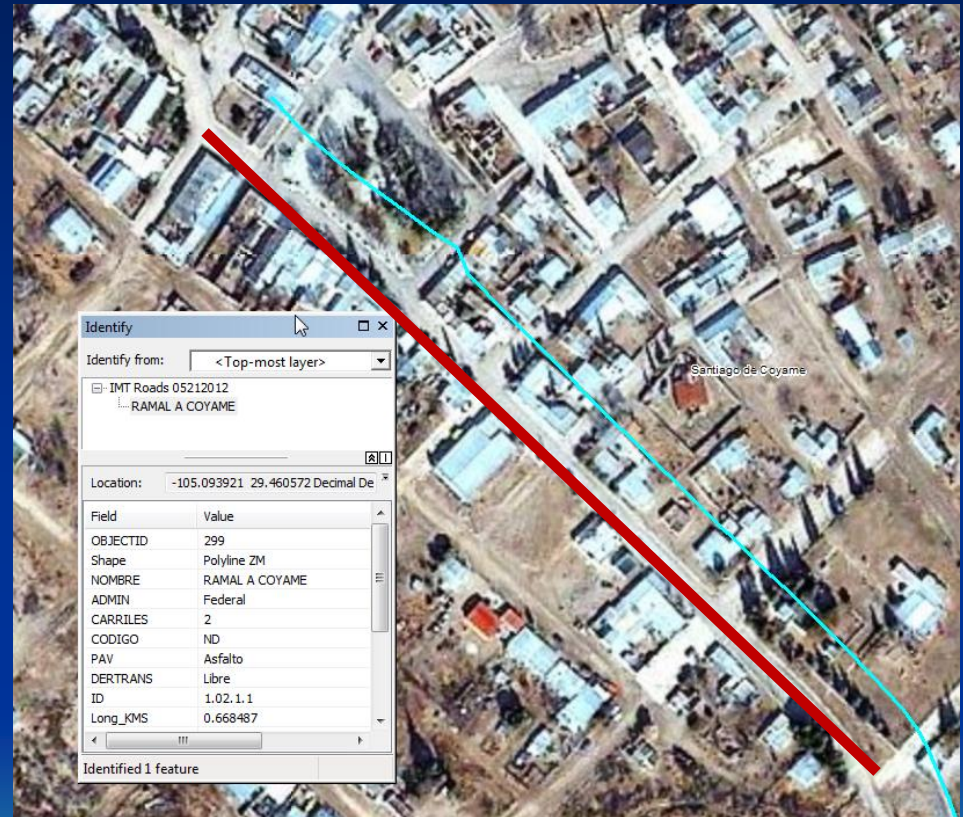
Model 2 – Populate Geodatabase via Extraction from the SDE



Recent Data Acquisitions

IMT Road data

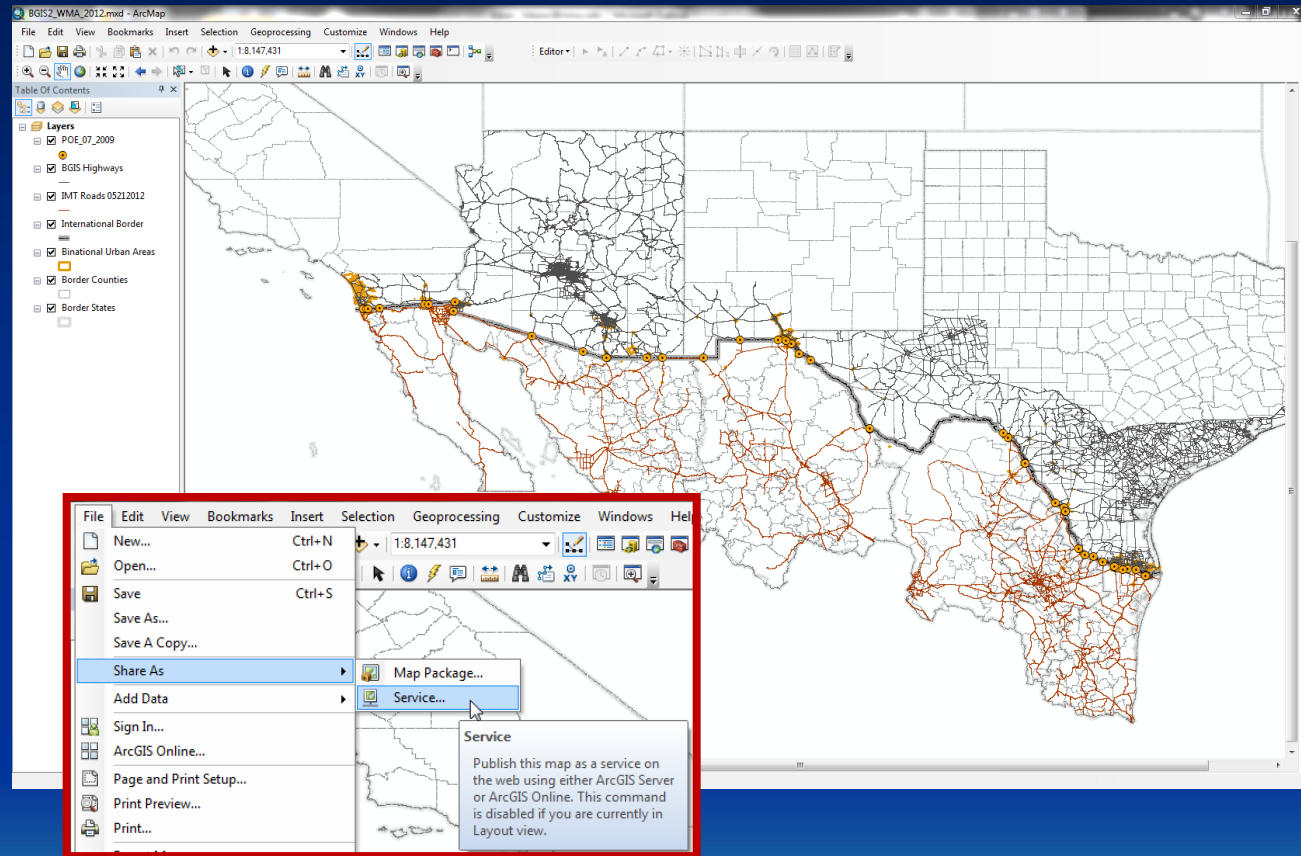
- QA/QC of data using Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, the GIS User Community, and Google Earth
- Edited data integrated into .gdb



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 home page](#)

You are here: » [NMSU](#) » [College of Arts and Sciences](#) » [Department of Geography](#) » SpARC Map and Data Portal

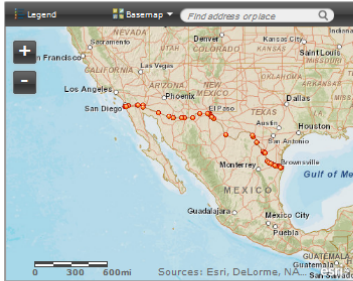
Department of Geography Spatial Applications Research Center (SpARC)

USDOT/SCT/ICT Border Geographic Information System II

The U.S.-Mexico Joint Working Committee on transportation planning (JWC) is a binational group whose primary focus is to cooperate on land transportation planning along and across the U.S.-Mexico border and the facilitation of efficient, safe, and economical cross-border transportation movements. The group is comprised primarily of transportation professionals from the Federal Highway Administration (FHWA), the Mexican Secretariat of Communication and Transportation (SCT), staff within states departments of transportation in the U.S. and Mexico, and other federal officials in the U.S. and Mexico. In the last several years, the JWC, working through the New Mexico Department of Transportation (NMDOT), has 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 this site and the linked web pages accessed from this site.

This portal provides access to various data downloads and Internet Mapping Services. If you plan to use bookmarks, bookmark this page rather than the individual site pages as those will likely migrate to different servers. The portal page will be the most reliable form of access to the online interactive mapping sites.

WARNING: The map server requires a high speed connection. If you have a 56K or slower connection, maps could take several minutes to load.



[View Larger Map](#)

Google Earth: [POE_07_2012.kmz](#)

BGIS project data (2012) :

- **POE Planned Projects:** Aerials/imagery; design diagrams; JWC project status
- **BGIS 2 Web Mapping Application**
- **Data Download :** Ports of Entry ; US/Mexico roads data

DISCLAIMER: Every attempt had been made to insure the highest quality and most accurate geospatial data in this project including data contained in project outcomes and products. However, NMSU, the NMDOT, and FHWA assume no liability for the use of these products by end users.

POE Planned Projects

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

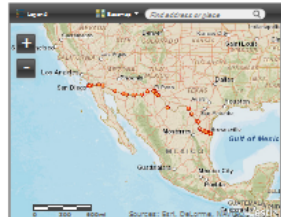
You are here: NMSU > College of Arts and Sciences > Department of Geography > SpARC Map and Data Portal > Planned Projects Page

Department of Geography

Spatial Applications Research Center (SpARC) - POE Planned Projects Home Page

July 14, 2010, California, New Mexico, Texas, Additional Resources

Welcome to the port of entry (POE) planned projects page. Below is a bulleted list of POEs that have planned projects associated with them. Click on the link of the POE that you would like detailed planned project information for. This information includes at least one of the following three items: (1) an aerial view, (2) a diagram or design (where available), and (3) a link to the JWC's "Status of Border Crossing Projects" page.



View Larger Map

Arizona

- Douglas
- Lukeville
- Maric
- Nogales-DelConcini
- Nogales-Mariposa
- Pima
- San Luis
- San Luis II
- Sasabe

California

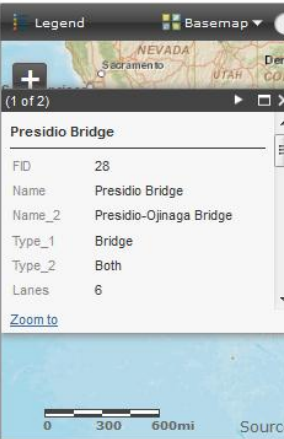
- Andrade
- Calaisco
- Calaisco East
- East Otay Mesa
- Otay Mesa
- San Ysidro
- Progresso
- Tacata

New Mexico

- Antelope Wells
- Columbus/Palomares
- New Mexico-Texas Railroad Bridge
- Santa Teresa

Texas

- Amalidas International Bridge
- E and M Bridge
- Bridge of the Americas
- Brownsville - Matamoros SE Bridge
- Camino Real International Bridge
- Del Rio-Cd. Acuña International Bridge
- Donna Rio Bravo
- Eagle Pass Bridge 1
- Eagle Pass SE Bridge
- El Paso SE Bridge
- Fabens-Casta Bridge
- Fort Hancock/El Pasovenir Bridge
- Free Trade Bridge



Presidio Bridge	
FID	28
Name	Presidio Bridge
Name_2	Presidio-Ojinaga Bridge
Type_1	Bridge
Type_2	Both
Lanes	6
Zoom to	

Sources: Esri, DeLorme, NAVTEQ, Swisstopo, UGC, Earthstar, GeoBC, Aero, IGN, Intermap, Swire, GEBCO, Esri, DeLorme, NAVTEQ, Swisstopo, UGC, Earthstar, GeoBC, Aero, IGN, Intermap, Swire, GEBCO

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)

JWC Santa Teresa POE Planned Projects **GSA**

August 29, 2012

Aerial Photograph/Image(s)

Design/Diagram(s)

JWC Project Status

Welcome to the Santa Teresa port of entry (POE) page. This page provides all of the available, up-to-date, POE planned project information, which includes an aerial photo snapshot, project designs, and the project schedule and status. Links to the aforementioned are on the far left table.

[Link to aerial photo of Union Pacific rail yard construction \(Link\)](#)

[Link to the DHS Locate a Port Of Entry - Air, Land, or Sea page;](#) Ports of entry are responsible for daily port specific operations. There are 329 official ports of entry in the United States and 15 Preclearance offices in Canada and the Caribbean. Port personnel are the face at the border for most cargo and visitors entering the United States. Here CBP enforces the import and export laws and regulations of the U.S. federal government and conducts immigration policy and programs. Ports also perform agriculture inspections to protect the USA from potential carriers of animal and plant pests or diseases that could cause serious damage to America's crops, livestock, pets, and the environment.

[Link to the US Customs and Border Protection Border Wait Times page;](#) shows the estimated wait times for reaching the primary inspection booth, the first point of contact with CBP when crossing the Canada/U.S. and Mexico/U.S. land borders. Each border location updates its estimated wait times hourly.

[Link to the New Mexico Border Authority Website;](#) the state agency overseeing development and promotion of our International Ports of Entry (POE) located at [Santa Teresa](#), [Columbus](#) and [Antelope Wells](#).

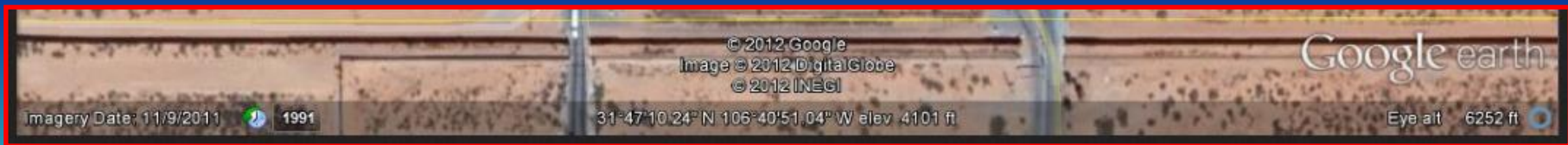
Updated Imagery

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

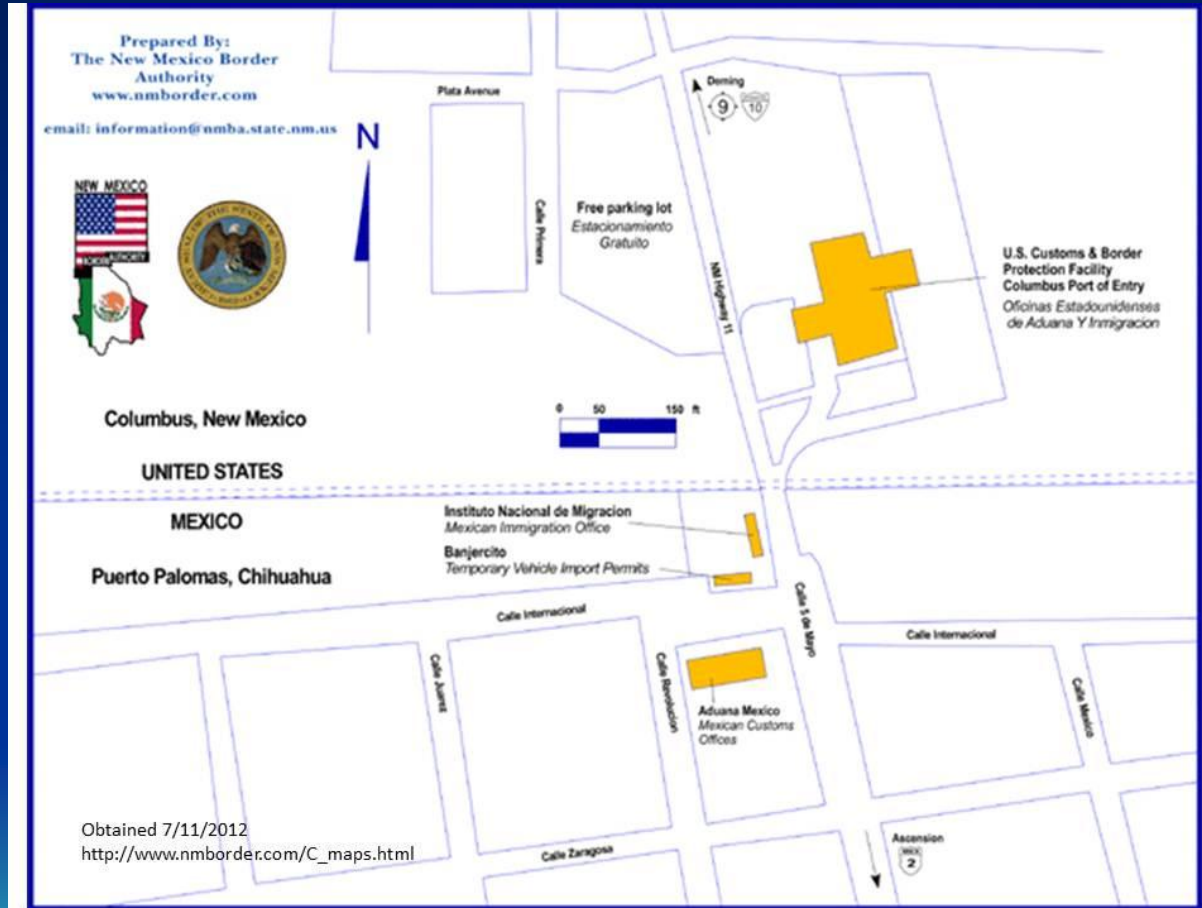


Image metadata



Updated POE Design/Diagrams

e.g. Columbus / Palomas



POE Project Status

JWC Status of Border Crossing Projects

U.S. Department of Transportation
 Federal Highway Administration

[FHWA Home](#) | [Feedback](#)

Planning
FHWA > [HEP](#) > [Planning](#) > [Border](#)

U.S./Mexico Joint Working Committee on Transportation Planning

U.S./Canada

Welcome

Timeline of Activities

JWC Members
[JWC File Manager](#)

Past Accomplishments
[MOUs](#)
[Work Plans](#)
[Regional Border Master Plans](#)
[Meeting Minutes](#)

Border Planning Resources
[Studies and Reports](#)
[Maps](#)

Current Border Activities

Links

Status of Border Crossing Projects				
Border Crossing	States (U.S.-Mex)	PP ?	SENTRI/FAST	Status
(Proposed) Port of Brownsville (Brownsville Navigation District) Bridge	Texas - Tamaulipas	PP issued Oct 1997		No immediate plans to build this proposed commercial-only bridge. Port of Brownsville consultant met with GSA in Jan 08 to review the 2004 site master plan and solicit GSA's input regarding current CBP requirements.
Veterans Bridge at Los Tomates/Matamoros III	Texas - Tamaulipas	PP issued Oct 1993	SENTRI/FAST	Sponsors notified State Dept of intent to apply for PP amendment in order to build 2nd bridge span
Gateway/Matamoros II Bridge	Texas - Tamaulipas	Predates PP process		GSA plans to start design in FY10 for a FY12 construction start on proposed expansion of the LPOE.
(Proposed) Brownsville/West Rail Bypass Project	Texas - Tamaulipas	PP issued Oct 2004		Will take trains out of downtown Brownsville/Matamoros; if built, the B&M Rail Bridge will be closed to rail traffic; vehicle portion of B&M bridge to remain open; former rail line may be used as toll road. Engineering design 85% complete; county has acquired 70% of land; \$27M committed to U.S.-side of project; Developing USCG permit
Los Indio-Lucio Blanco Free Trade Bridge	Texas - Tamaulipas	PP issued Oct 1990		No projects planned for this bridge; only crossing for "transmigrantes" headed thru Mexico to Central or S. America
Progreso/Nuevo Progreso Bridge	Texas - Tamaulipas	Predates PP process		U.S.-side owner made enhancements to allow for commercial traffic. GSA studying expansion project for leased LPOE.
(Proposed) Donna-Rio Bravo International	Texas - Tamaulipas	PP issued Aug 1979		Planned six-lane, 1,000-foot bridge to process POV traffic; GSA to begin POE construction in 2009, complete by 2010.

The WMA

Services and Applications

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:

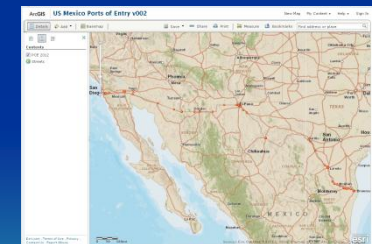
- a configurable web application
- presently enhancing application functionality

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

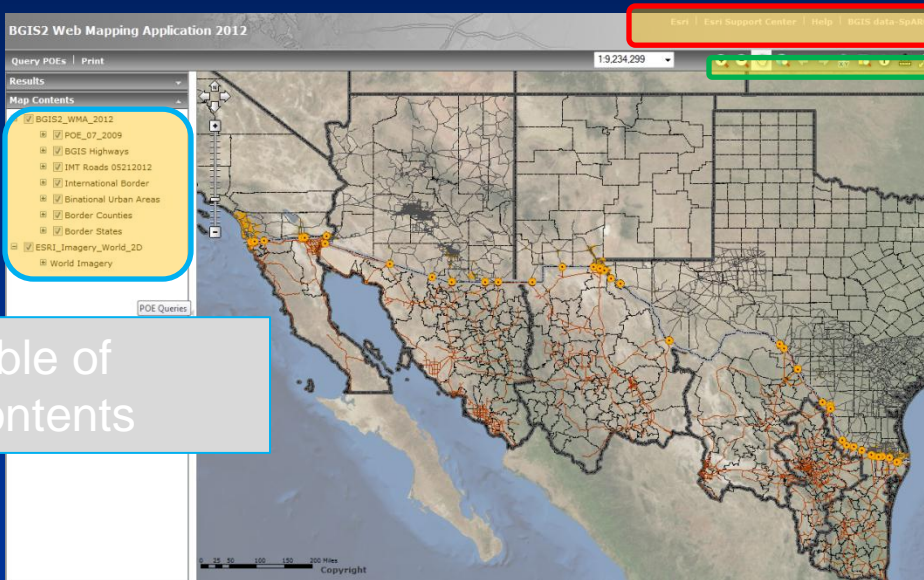
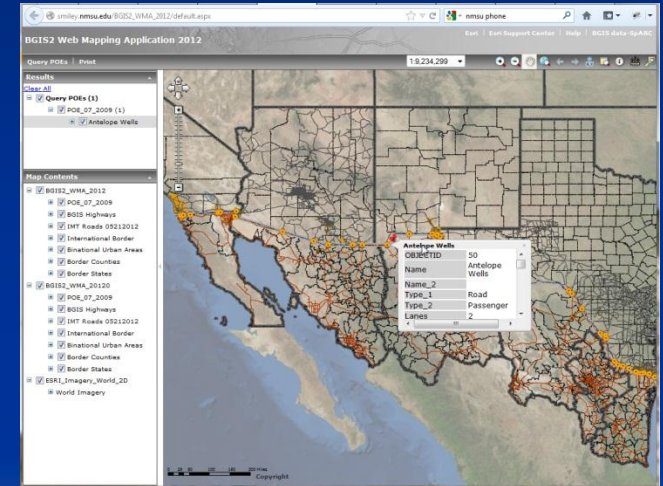


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Useful links
buttons
Toolbar
buttons

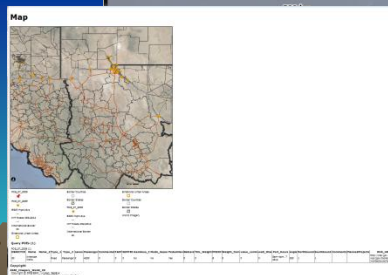
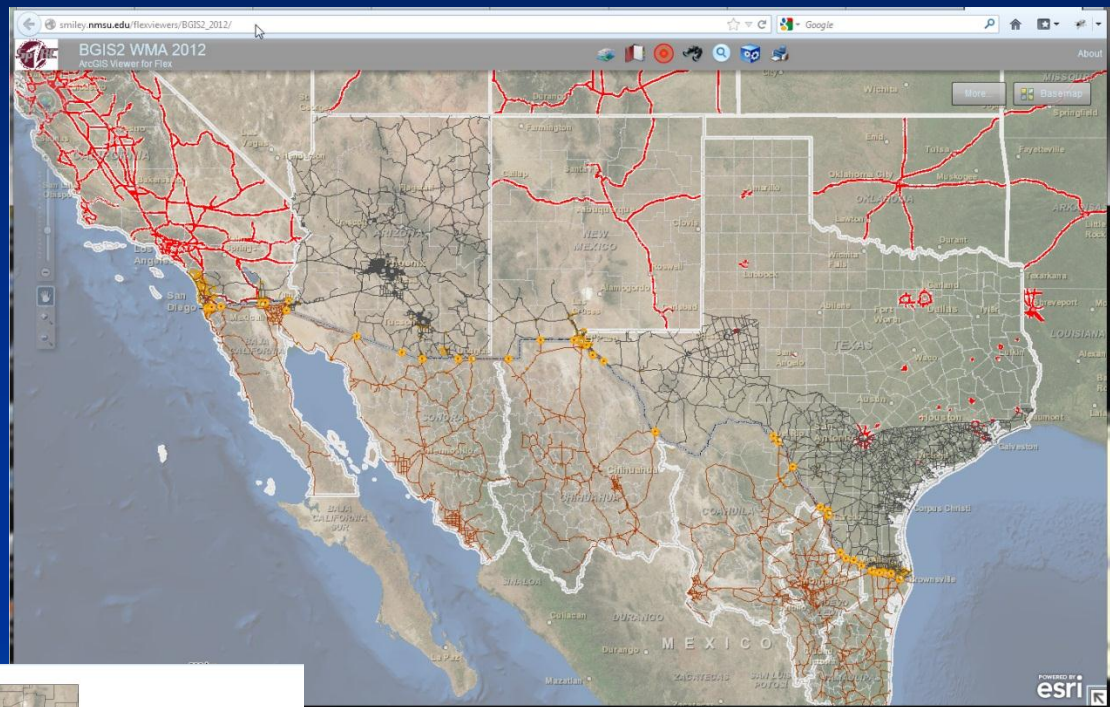


Query function

WMA Prototype 1

ArcGIS Viewer for Flex

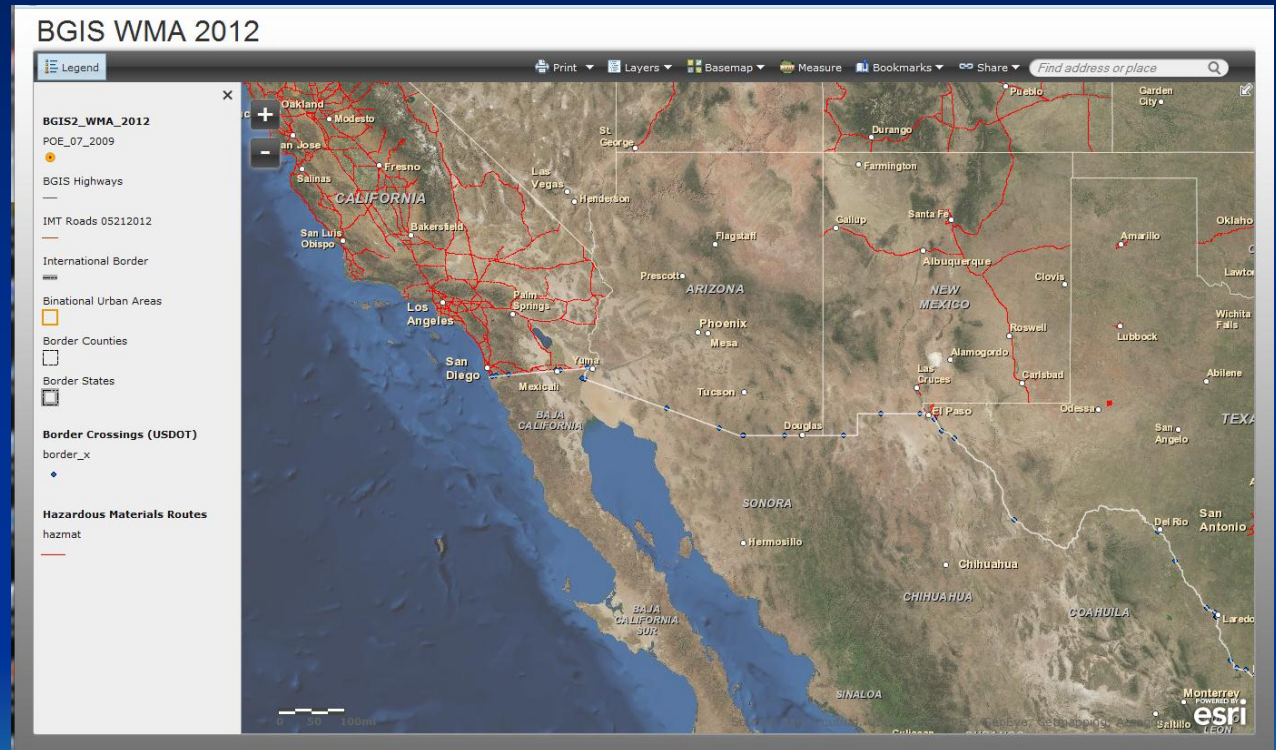
- Layers
- Bookmark
- Locator
- Search
- Querying
- Drive times
- Printing



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

Department of Geography BGISII/BINSII Data and Documentation		
BGIS Database		
Description	Preview	Downloads
This file geodatabase contains all of the BGISII GIS data for the US/Mexico border region. All feature classes contain the best available metadata.		BGISII_Combined.gdb.zip
Binational State Pairs		
Description	Preview	Downloads
This file geodatabase contains all the agreed upon BGISII data for the California and Baja California bi-state pair. It includes four feature datasets (Administrative Boundaries, International Border Data, Planned Projects, and Transportation) containing twelve feature classes. All feature classes contain the best available metadata.	California and Baja California	CA_BAJA.gdb.zip
This file geodatabase contains all the agreed upon BGISII data for the Arizona and Sonora bi-state pair. It includes four feature datasets (Administrative Boundaries, International Border Data, Planned Projects, and Transportation) containing twelve feature classes. All feature classes contain the best available metadata.	Arizona and Sonora	AZ_SON.gdb.zip
This file geodatabase contains all the agreed upon BGISII data for the New Mexico, Chihuahua, and West Texas bi-state pair. It includes four feature	New Mexico,	

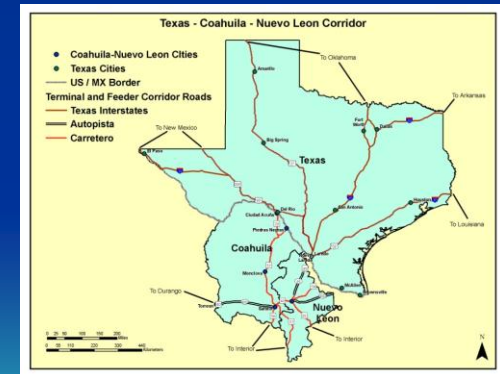
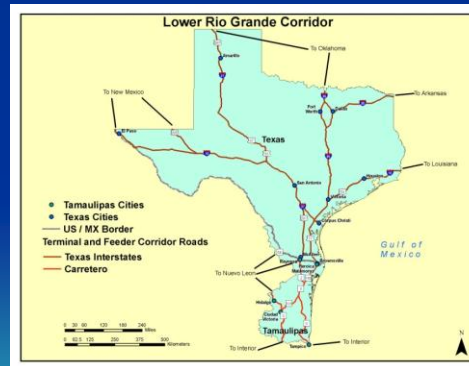
<http://smiley.nmsu.edu/SparcWebsite/bgis2/datadownload.html>

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

Binational Corridors		
Description	Preview	Downloads
This file geodatabase contains all the agreed upon BGISII data for the California, Baja California, and Sonora bi-national corridor. It includes four feature datasets (Administrative Boundaries, International Border Data, Planned Projects, and Transportation) containing fifteen feature classes. All feature classes contain the best available metadata.	California and Baja California Corridor	CA_BAJA_SON_Corridor.gdb.zip
This file geodatabase contains all the agreed upon BGISII data for the Arizona and Sonora bi-national corridor. It includes four feature datasets (Administrative Boundaries, International Border Data, Planned Projects, and Transportation) containing fifteen feature classes. All feature classes contain the best available metadata.	Arizona and Sonora Corridor	AZ_SON_Corridor.gdb.zip
This file geodatabase contains all the agreed upon BGISII data for the New Mexico, Chihuahua, and West Texas bi-national corridor. It includes four feature datasets (Administrative Boundaries, International Border Data, Planned Projects, and Transportation) containing fifteen feature classes. All feature classes contain the best available metadata.	New Mexico, Chihuahua, and West Texas Corridor	NM_CHI_TX_Corridor.gdb.zip
This file geodatabase contains all the agreed upon BGISII data for the Lower Rio Grande bi-national corridor; this includes Texas and Tamaulipas. It includes four feature datasets (Administrative Boundaries, International Border Data, Planned Projects, and Transportation) containing fifteen feature classes. All feature classes contain the best available metadata.	Lower Rio Grande Corridor	LowerRioGrande_Corridor.gdb.zip
This file geodatabase contains all the agreed upon BGISII data for the Texas, Coahuila, Nuevo León, and Tamaulipas bi-national corridor. It includes four feature datasets (Administrative Boundaries, International Border Data, Planned Projects, and Transportation) containing fifteen feature classes. All feature classes contain the best available metadata.	Texas, Coahuila, Nuevo León, & Tamaulipas Corridor	TX_CO_NL_TAM_Corridor.gdb.zip

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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