

Date: October 1, 2009

Agreement Number: G09AC00089

Project title: Create Central Repository for Transportation Data

Interim report

Organization: Kenai Peninsula Economic Development District, 14896 Kenai Spur Highway, Suite 103A, Kenai AK 99611-7756, <http://www.kpedd.org/>

Principal Investigator: John Torgerson, 907-283-3335, jtorgerson@kpedd.org

Collaborating Organizations:

Alaska Map Company, Gary Greenburg, 14896 Kenai Spur Hwy #212, Kenai, AK 99611, <http://www.akmapco.com/>

Nuna Technologies, Allison Gaylord, PO Box 1483, Homer, AK 99603, <http://www.nunatech.com>

Kenai Peninsula GIS User Group, Bobbi Lay, 253 Wilson Lane, Soldotna, Alaska, 99669, <http://www.kpbgis.org/>

Alaska Department of Transportation and Public Facilities, Division of Program Development 3132 Channel Drive, Room 200, PO Box 112500, Juneau, AK 99811-2500, Kerry Kirkpatrick, <http://www.dot.state.ak.us/stwdplng/mapping/index.shtml>

CIRI An Alaskan Native Corporation, Blake Kowal, 2525 C Street, Suite 500, Anchorage, AK 99503, <http://www.ciri.com>

City of Kenai, Nancy Carver, 210 Fidalgo Avenue, Kenai, Alaska 99611 <http://www.ci.kenai.ak.us/>

City of Soldotna, Anna Johnson, 177 North Birch Street Soldotna, AK 99669 <http://www.ci.soldotna.ak.us/>

City of Homer, Julie Engebretsen, 491 E. Pioneer Avenue Homer, Alaska 99603, <http://planning.ci.homer.ak.us/>

City of Seward, Donna Glenz, 410 Adams St., Seward AK 99664 <http://www.cityofseward.net/>

Chugach National Forest, Karin Preston, 3301 C Street, Suite 300 Anchorage, AK 99503-3998, <http://www.fs.fed.us/r10/>

Kenai Peninsula Borough GIS Department, Chris Clough, 144 N. Binkley St. Soldotna, Alaska, 99669, <http://www.borough.kenai.ak.us/GISDept/>

Kenai Peninsula Borough Planning Department, Carrie Hansen, 144 N. Binkley St. Soldotna, Alaska, 99669, <http://www.borough.kenai.ak.us/planningdept/default.htm>

USGS Geospatial (State) Liaison: Craig Seaver, 907-786-7089, cseaver@usgs.gov

Data themes: (list) Transportation infrastructure, roads

Executive Summary

The Kenai GIS Transportation Portal project kicked off with extensive outreach and information gathering to member agencies of the Alaska ArcUser Group, Alaska URISA chapter and Kenai Peninsula GIS Users Group. Information was gathered via a series of in person meetings and teleconferences. A standard interview format was established. Primarily digital data and database schemas were transmitted via email and FTP. The Kenai GIS Transportation Portal web site was established at <http://www.kpbgis.org/TransportationPortal/index.html> with information about the project including links to standards, presentations and activities. Project updates are also available on Twitter (www.twitter.com/KenaiGIS). Transportation web services with associated metadata and database cross walking tools will be hosted on the transportation portal web site. A grant oversight committee has been established and bimonthly meetings are being held.

Project Narrative

The goal of this project is to centralize transportation data resources for the Kenai region via a web portal that hosts geospatial data, web services, metadata, database crosswalk tools and other documentation. This web site will become the “one stop shop” for digital road data, eliminating the need to contact numerous entities for regional road information. An initial task was to compile a list of key stakeholders and point contacts. Currently, the data are housed and maintained by numerous distributed agencies/entities (and utilized by many more.) Respective agencies/entities will continue to maintain portions of the data under their jurisdiction, but all of the data will be integrated via database crosswalks built to the National Map standard. The priority for the grant has been to collect and analyze various database schemas and develop crosswalks to the “Trans_RoadSegment” table of the National Map standard. Many entities have recently been completing extensive database updates. Current database designs address internal business needs. The Borough’s X-9 Microdata standard and Alaska DOT’s schema are the most extensive. The Cities, native corporations, Forest Service, Wildlife Refuge and others do not have firmly established standards, so an opportunity exists to encourage these entities to adopt the National Map standard thus allowing organizations with limited resources to avoid reinventing the proverbial wheel.

Data are primarily maintained by all agencies in ArcGIS. Database crosswalks are being developed using Visio and ArcGIS Model Builder. Offsite geodatabase replication has been successful to allow the Cities to contribute updates to the Borough’s X-9 database standard. Work flow challenges have been identified due to varying levels of ArcGIS licensing between e911 centers and the Cities which do not have editing capabilities (ArcEditor is required to edit the replicated geodatabase.) ArcGIS Server solutions are being considered.

An online transportation survey was developed using SurveyMonkey. Draft available at: <http://bit.ly/4G7j8y> It is anticipated that this will be distributed to broad list of stakeholder

entities and users this Fall. Feedback welcome.

The Kenai Peninsula GIS Transportation workshop is tentatively planned for January 12th. All stakeholders will be invited. The preliminary agenda will include project overview presentations geared toward managers, followed by more technical presentations and discussion.

Subcontracts for conducting the grant tasks were awarded in late Spring. Many key stakeholders were on vacation, consumed by Summer field work or seasonal emergencies (such as forest fires) and were unavailable until late August.

b. The content provided to *The National Map* will be in the form of Open Geospatial Consortium standard (WMS, WFS) services and Federal Geographic Data Committee (FGDC) metadata. A metadata Web Accessible Folder (WAF) will be established and registered with *The National Map* for periodic harvesting. The Kenai Peninsula Borough GIS Department hosts web services via ArcGIS Server. Testing of public services for transportation resources has resumed using the latest software release and it is anticipated that the WMS, WFS services will be linked to the Kenai Transportation portal web site this Fall.

Private roads on Native owned lands are not publicly accessible. Managers have concerns about trespass issues but GIS practitioners recognize the need for collaboration. However, these roads and off-road trails may be relevant in the case of emergency response. A protocol for handling this sensitive information will be considered.

c. Open Geospatial Consortium standard (WMS, WFS) services will be publicly available via the Kenai Transportation portal. These services will be maintained by the Kenai Borough GIS Department as part of routine maintenance for services tied to various online mapping tools currently available to the public. These services can be harvested by the National Map as needed. A web accessible folder (WAF) will be established to harvest metadata linked to these services.

The Kenai Peninsula GIS Department hosts a directory of geospatial services via ESRI's ArcGIS Server version 9.3.1 at: <http://mapserver.borough.kenai.ak.us/ArcGIS/rest/services> The transportation related services are being refined and expanded to expose WMS/WFS. Testing has begun.

d. Administrative challenges were encountered which delayed the establishment of subcontracts to conduct tasks for the grant. The KPEDD does not have in house GIS expertise and therefore established an external review committee to review progress on the grant. Confusion on reporting requirements and duplication resulted. Twitter announcements have been adopted to keep collaborators updated on progress weekly progress and milestones, but USGS staff are not able to access Twitter.

It would be helpful if the USGS Google site had current documentation content for the Transportation data model schema, an associated data dictionary for the fields and live data samples.

e. An MOU was signed on April 1st by the Kenai Peninsula Borough Department of Planning, Kenai Peninsula Borough GIS Department and Kenai Peninsula Economic Development District in support of the USGS FGDC Cooperative Agreement Program award to create a Kenai GIS Transportation Portal.

If any **photographs, graphics, or illustrations** of the project in action are available please include a couple or more of these.

1. Kenai GIS Transportation Portal:

<http://www.kpbgis.org/TransportationPortal/index.html>

Kenai GIS Transportation Portal - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.kpbgis.org/TransportationPortal/ir

Kenai GIS User

Net@ddress Email Kenai GIS Transportation Portal Report Format for Building Struct...

Kenai GIS Transportation Portal



Home Downloads Committee Contacts National Map KPB User Group

City Council Member, Seward Alaska:

The digital road data available via the USGS DRG is so outdated that it still shows the old road from Port Avenue to the naval station across the airport, Bayview school, Fourth of July Creek running straight west to the bay before the levy was built or the prison, and an inaccurate west city limits boundary. No current residential developments, the middle school, or long term care facility are shown either."

Other Links

- > www.twitter.com/KenaiGIS; login is fgdc2009
- > View the full proposal
- > Project plan: timeline of tasks
- > National Transportation Data Model
- > ASMC 2009 (3MB)
- > Kenai Transportation Data Survey - **Coming Soon**
- > x9GIS

Welcome to the Kenai GIS Transportation Portal!

In 2008, the Kenai Peninsula GIS User Group conducted a preliminary data needs survey and transportation data was identified as a top priority. As a result, a decision was made to pursue a collaborative pilot project to improve regional transportation data with funding from the USGS Cooperative Agreement Program. The goal of this project is to improve work flows among the agencies responsible for maintaining this information and to enhance access to transportation data via an online data portal. A \$50,000 grant was awarded to the Kenai Peninsula Economic Development District (KPEDD) to direct this grassroots effort; view the award [here](#).

Local GIS professionals with an intimate knowledge of the Peninsula will be contracted to work under the direction of the KPEDD [grant oversight committee](#) to perform this work.



Regional GIS data from city, borough and state entities will be enhanced with federal standards to improve the [National Map](#).

Recent News

3 September: Grant Oversight Committee Meeting (click [here](#) for notes)

5 June: Project outreach to Alaska ArcUser Group and Alaska URISA chapter; ESRI presented ArcGIS Mobile technologies

26 May: KPEDD contracts project support from Alaska Map Co. and Nuna Technologies

2. Kenai GIS – FGDC Transportation Grant Updates

<http://twitter.com/KenaiGIS>

The screenshot shows a Mozilla Firefox browser window displaying the Twitter profile for Allison Gaylord (KenaiGIS). The browser's address bar shows the URL <http://twitter.com/KenaiGIS>. The page features a yellow banner at the top with the text "Hey there! KenaiGIS is using Twitter." and a green "Join today!" button. Below the banner is the KenaiGIS profile header, which includes a circular logo with "gis" and the name "KenaiGIS". The profile information on the right side lists: Name Allison Gaylord, Location Kenai Peninsula, Alaska, USA, Web <http://www.kpbgis...>, Bio Brief information update to the Kenai GIS Transportation Portal will be posted here, 20 following, and 5 followers. The main content area displays a list of tweets. The most recent tweet, posted at 4:35 PM on Sep 22nd, reads: "X-9 successfully replicated offsite! Working out Server configuration to be tested later in the week from Seward." Other tweets include updates about a meeting on Sep 18th, a meeting on Sep 11th, data received from CIRI and USFS Chugach NF on Sep 10th, a grant conference call on Sep 10th, and a meeting with USFS Chugach National Forest GIS Database Coordinator on Sep 2nd.

Hey there! **KenaiGIS** is using Twitter.

Twitter is a free service that lets you keep in touch with people through the exchange of quick, frequent answers to one simple question: What are you doing? **Join today** to start receiving **KenaiGIS's** tweets.

Join today!

Already using Twitter from your phone? [Click here](#)

 **KenaiGIS**

X-9 successfully replicated offsite!
Working out Server configuration to be tested later in the week from Seward.

4:35 PM Sep 22nd from web

Great meeting! Ready to jump into the updated x-9 data. Thanks Chris for serving the streets layer @mapserver.borough.kenai.ak.us!

4:57 PM Sep 18th from web

X-9 meeting this coming Thursday 10:00 @ the KP. Focus will be on schema update, software capabilities and prototyping replicas.

6:17 PM Sep 11th from web

In the past week we have received additional data from CIRI and The USFS Chugach NF, thanks guys!

2:11 PM Sep 10th from web

Grant conference call with the USGS, Montana, Utah & Michigan today. Initial info gathering efforts were well received.

2:11 PM Sep 10th from web

Meeting with USFS Chugach National Forest GIS Database Coordinator On Sept 2nd @10:00 AM

4:51 PM Aug 31st from web

Let's get ready for the FGDC grant working group meeting on Sept 3rd @ 1 pm Alaska Standard Time.

Name Allison Gaylord
Location Kenai Peninsula, Alaska, USA
Web <http://www.kpbgis...>
Bio Brief information update to the Kenai GIS Transportation Portal will be posted here.

20 following 5 followers

Tweets

Favorites

Following

[RSS feed of KenaiGIS tweets](#)

3. Example of Cross walk built between the City of Seward, Kenai Peninsula Borough, DOT and the National Map's "Road_TransSegment" table standard.

Street Class Cross Walk Table

Street Class	CFCC CODE
1 - Town Arterial	A40 - Local Neighborhood, Rural collector
2 - Town Major Collector	A40 - Local Neighborhood, Rural collector
3 - Town Medium Collector	A40 - Local Neighborhood, Rural collector
4 - Town Low/Seasonal	A40 - Local Neighborhood, Rural collector
5 - State Forest Highway	A30 - Secondary State and County Highways

Simple feature class
Streets

Field name	Data type	Allow nulls
OBJECTID	Object ID	
UpdateSource	String	Yes
UpdateDate	Date	Yes
Comments	String	Yes
Flag	String	Yes
Flg	Short integer	Yes
DelRec	Long integer	Yes
StreetID	Long integer	Yes
GeoNameID	Long integer	Yes
PrimaryName	String	Yes
ALIName	String	Yes
StreetClass	Short integer	Yes

X-9 Streets

USGS Roads

Simple feature class Trans_RoadSegment						Geometry Polyline	Contains M values Yes	Contains Z values No
Field name	Data type	Allow nulls	Default value	Domain	Prec- ision Scale Length			
Shape	Geometry	Yes						
OBJECTID	Object ID							
Permanent_Identifier	String	Yes					40	
Source_FeatureID	String	Yes					40	
Source_DatasetID	String	Yes					40	
Source_DataDesc	String	Yes					100	
Source_Originator	String	Yes					130	
Data_Security	Short integer	Yes	0	Sec_Classification Domain	0			
Distribution_Policy	String	Yes	E4	Distribution_Policy Domain			4	
LoadDate	Date	Yes			0	0	8	
Interstate	String	Yes					20	
US_Route	String	Yes					20	
State_Route	String	Yes					20	
County_Route	String	Yes					20	
StCo_FIPSCode	String	Yes					5	
Road_Class	Long integer	Yes	4	RoadClass Domain	0			
IsOneWay	Long integer	Yes	2	YesNo Domain	0			
OneWay_Direction	String	Yes	N/A				10	
Low_Address_Left	String	Yes					12	
High_Address_Left	String	Yes					12	
Low_Address_Right	String	Yes					12	
High_Address_Right	String	Yes					12	
Full_Street_Name	String	Yes					100	
Zip_Left	String	Yes					10	
Zip_Right	String	Yes					10	
CFCC_Code	String	Yes					4	
Shape_Length	Double	Yes			0	0		