

BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

In the Matter of the Commission, ) Application No. 911-057/  
on its own motion, seeking to ) PI-187  
investigate funding for costs )  
for the development of certain ) ORDER OPENING DOCKET AND  
Geographical Information Systems ) SEEKING COMMENT  
Data relating to the provision )  
of Enhanced Wireless 911 )  
Service. ) Entered: December 18, 2012

Comments on behalf of the:

**GIS Council of the Nebraska Information Technology Commission**

The following is a response from the NITC GIS Council for PSC Docket 911-057/PI-187.

The docket is asking for comment on costs to develop a statewide address layer for GIS data. Also, that interested parties should provide comments and justification on the necessary steps and estimated costs involved in the development of the data.

This response stems from current work and discussions that are ongoing by the NITC GIS Council's working group on the street centerline address database project. This response provides dialogue about important issues to consider prior to estimating potential costs. It is the position of the NITC GIS Council that careful planning and coordination need to be considered. We realize this request is specific for PSAPs and the Enhanced Wireless 911 Service. We also realize there are many other stakeholders in need of similar data. Being able to coordinate efforts together will get us further in the long run.

The NITC GIS Council is currently working on a business plan for a street centerline address database. This plan has already outlined the following key components for such a project to be successful.

- Statewide Planning and Coordination
- Standards and Guidelines
- Implementation and Maintenance

Ultimately, it is the position of the NITC GIS Council to develop a set of standard and guidelines for a statewide address point database that coincides with the current street centerline database. In addition we strive to involve other stakeholders, identify allocation of resources and promote collaboration and coordination of such efforts across the state. We term it "***build it once – share it many.***"

**Statewide Planning and Coordination**

The GIS Council completed a strategic planning effort during 2012. Findings from that plan identified street centerline addressing as a priority dataset for the Nebraska Spatial Data Infrastructure (NESDI). <http://nitc.ne.gov/gisc/workgroups/StrPlan>

The NITC GIS Council currently has a project charter in place for a Street Centerline Address Database working group. This working group is currently in the middle of developing a statewide business plan for a Street Centerline Address Database. Representation from the Public Service Commission is involved in this process.

It is also important to consider planning and coordination with our federal partners. Efforts of this planning process are in lines with federal guidelines and standards. There is current movement on development of data models and standards for use among government entities. The Nebraska State GIS Coordinator, Nathan Watermeier, is a member of the National State Geographic Information Council (NSGIC) Addressing Working Group. This group works with the Federal Geographic Data Committee (FGDC), US Census Bureau, US Department of Transportation, National Emergency Number Association (NENA) and other federal partners. There are several states already working with local partners in a coordinated effort.

Through activities of the NITC GIS Council working group, draft data models and standards are currently being developed through the business planning process to support many state agencies and local governments. This involves database design, workflow processes of creating and using data, quality control of data, and access to use the data. The plan also defines a project management team that would be made up of involvement from many stakeholders to assure criteria is met for the database.

The development and use of a statewide addressing solution offers the potential of considerable efficiencies that can be gained by harvesting the synergies from a number of interrelated projects by state and local agencies. For example, there are a number of projects for which a current statewide street centerline-address is a key database. For the PSC, those projects include E911 and broadband mapping and potentially others such as in your transportation and utilities area. Both the State Patrol and NEMA have an interest from public safety/emergency response applications. Revenue is in need of addresses for their Streamline Sales Tax project. For many of these applications, the same or similar GIS/IT infrastructure is required and the same GIS/IT professionals who are familiar with the street centerline data. Many of these applications will require similar specialized customized applications and/or security arrangements. By partnering, we can help reduce duplication of many of the underlying infrastructure foundations and achieve the cost efficiencies possible by repeated use of existing public GIS/IT resources and expertise.

### **Standards and Guidelines**

The National Emergency Number Association (NENA) is the leading authority for data standards for specific E911 applications. NENA has developed a number of recommended standards for data layers and data exchange.

NENA is also taking the lead in developing new policies and standards as they relate to the evolution of E911 dispatch systems to support VoIP, texting, and other evolutions of in telecommunication technology ([http://www.nena.org/?NG911\\_Project](http://www.nena.org/?NG911_Project)). As part of its efforts to provide leadership for adapting to the Next Generation of E911, NENA is emphasizing the importance of working with the broader emergency response and government stakeholder community. This is an area in which the GIS Council feels it can be especially helpful. As noted in the Next Generation Transition Policy Implementation Handbook, March 2010, NENA, *"It is important to note that most policy and governance issues should not be addressed by individual Public Safety Answering Points (PSAPs) or even individual 9-1-1 Authorities. Given the interconnected nature of NG9-1-1 systems, it is important for all 9-1-1 Authorities in a region or state, along with other related emergency response and government stakeholders, to jointly address policy and governance issues in a coordinated manner."*

For each specific GIS data/map layer commonly used in E911 applications there are frequently national standards and guidelines for that particular data theme. It is important that one be aware of these national standards for specific data themes. For some key E911 data layers, a consensus national standard does not yet exist. One such key data layer for which there is not yet a clear consensus national standard is the street centerline-address database. It is for this reason that federal entities are partnering together and working with states.

A key issue related to standards and guidelines is the database design as it relates to how specific data elements are captured and presented in the database. This issue will need to be addressed before determining overall costs. We realize our business plan is interested in a database that may support many entities. There are a number of attributes that are not needed by PSAP. Examples have been shared with us by other states showing how these database models can work together for multiple purposes.

The GIS Council had made some of these similar remarks to previous dockets when starting the GIS street centerline projects for E911. During those times, it was suggest to PSC as they move towards a more decentralized contracting or disbursement of funding for GIS data, the absence of data standards in this area could very well result in widely varying data coming from the different counties. The same suggestion is applicable to addressing. The absence of defined data standards and decentralized coordination to ensure those standards would make it difficult to determine whether a given county is delivering the required data in a format that can be consumed for a statewide address database.

For example, when one includes a street address in a database, will that address be broken into separate data fields for each component part (e.g. street address prefix, street number, street name, street suffix), or will all of these components be included in one data field. There is also the question of how many geocoded address points should be placed. Several stakeholders in our planning process identified needs for address locations at parcel/driveway entrance, one on the residence rooftop, and/or other working places on larger parcels.

These are some of the issues that are currently being discussed as part of our working group. Prior to our business planning efforts started, draft standards were started and a pilot project was completed that worked to integrate street centerline-address data from multiple sources into one statewide dataset. The lessons we have learned from these outcomes are going towards our business planning efforts.

It is the hope of the GIS Council that the PSC will continue its active involvement with the working group. But more importantly to consider adopting the database standards when they are finalized and endorsed by the GIS Council and the NITC.

### **Implementation and Maintenance**

Another important aspect to a well-executed statewide address database is a maintenance plan. Maintenance of such projects of this magnitude involve changes of address data over time. Key functions involved in the process include: a). changes on the ground (streets, addresses, buildings, contacts, etc.) that require modifications of the data to keep it current and accurate, b). retention of technical IT support staff (GIS and others) to make the necessary data changes and to maintain the systems that make the data readily available, c). maintenance of reliable systems to insure the ready availability and security of the data, d). coordination and maintenance of regular communications with local governments and others to ensure that any relevant changes are noted in a timely manner, and e). administrative overhead.

The statewide street centerline pilot project was a one-shot effort to develop an initial statewide dataset. It is with this project that serves as the baseline for accuracy and placement of addresses. It is still an open question as to how this dynamic data will be maintained on a statewide basis. Consistent with the recommendation and leadership of the NENA on the Next Generation of E911, it is hoped that the PSC will continue to be an active partner in our efforts to develop a collaborative solution for the maintenance of a common statewide street centerline-address data layer. As noted before, NENA is emphasizing the importance of working with the broader emergency response and government stakeholder community. *"It is important to note that most policy and governance issues should not be addressed by individual Public Safety Answering Points (PSAPs) or even individual 9-1-1 Authorities. Given the interconnected nature of NG9-1-1 systems, it is important for all 9-1-1 Authorities in a region or state, along with other related emergency response and government stakeholders, to jointly address policy and governance issues in a coordinated manner."* – Next Generation Transition Policy Implementation Handbook, March 2010, NENA.

Your current docket mentions the development of a "statewide" address point layer for GIS data. With that being said, a more centralized, statewide approach to the development and maintenance of such a database is needed for E911, public safety and other state government business functions. It offers many potential advantages over a very decentralized approach. Key among these are data quality, security, and efficiency. If 50 to 90 counties are undertaking GIS data maintenance, either via individual contracts or in-house efforts, some central entity needs to be actively involved in on-going monitoring of the quality of the data produced, otherwise one will have widely varying data that cannot be easily integrated. Tightening data standards will help, but on-going oversight will be necessary or PSC will have no accountability for the quality of the data produced by the funds that PSC distributes. A decentralized approach to data maintenance is likely to create an issue in the area of data security and reliable access in a timely manner.

Another major reason to consider a statewide approach is the synergy that can be gained by overlapping use of public investment to develop the required GIS/IT foundation infrastructure for multiple applications, train and retain skilled GIS/IT professionals familiar with specific data layers, and custom GIS/IT applications to support similar, but multiple applications. Otherwise, with multiple contracts, with multiple vendors, one is likely to pay for these investments many times over.

It would seem that the standard interlocal agreement could be a vehicle for multiple PSAPs to enter into joint maintenance contracts for GIS data maintenance. The Office of the CIO (OCIO) would have the potential to either enter into a master contract with private GIS vendors and provide coordination to allow individual counties to access to data and services. The OCIO has experience in managing these types of contracts in other areas of IT work and are currently working to build this capacity with our new State GIS Coordinator for a statewide GIS enterprise system.

Another strong reason to consider a statewide contracting approach for the maintenance of this E911 GIS data is oversight for data quality. With only one entity being responsible for the maintenance of the GIS data, it is much more likely to be consistent across all of the counties. In the course of developing the statewide street centerline-address data, using PSC, local county and Dept. of Roads data, we discovered a number of problems with the street centerline data. Without some central entity being responsible for on-going monitoring the data quality it is very unlikely that these problems with the data will be discovered and fixed in a timely manner. If the PSC ends up working with 90 PSAPs who are individually contracting for the maintenance of this data with a variety of private entities, the management of data quality will very likely be a significant problem.

The OCIO has also been urged by the Nebraska GIS Council to develop business plans and a statewide GIS enterprise system to coordinate and manage several of these projects. After the completion of the business plan, it is our intent to have appropriate steps in place and allocation of resources to support such an enterprise.

Your docket indicates interest that the timing of our business plan is relevant and a need for identifying appropriate methods to develop and maintain the project. The GIS Council hopes that the PSC will continue its involvement in this effort and will consider many of the recommendations provided to the success of addressing for future E911 efforts.

For questions and follow-up on these comments by the NITC GIS Council please contact:

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