

Metropolitan 911 Board
E911 Regional Geographic Information System
Technical Operations Committee Recommendations
March, 2004

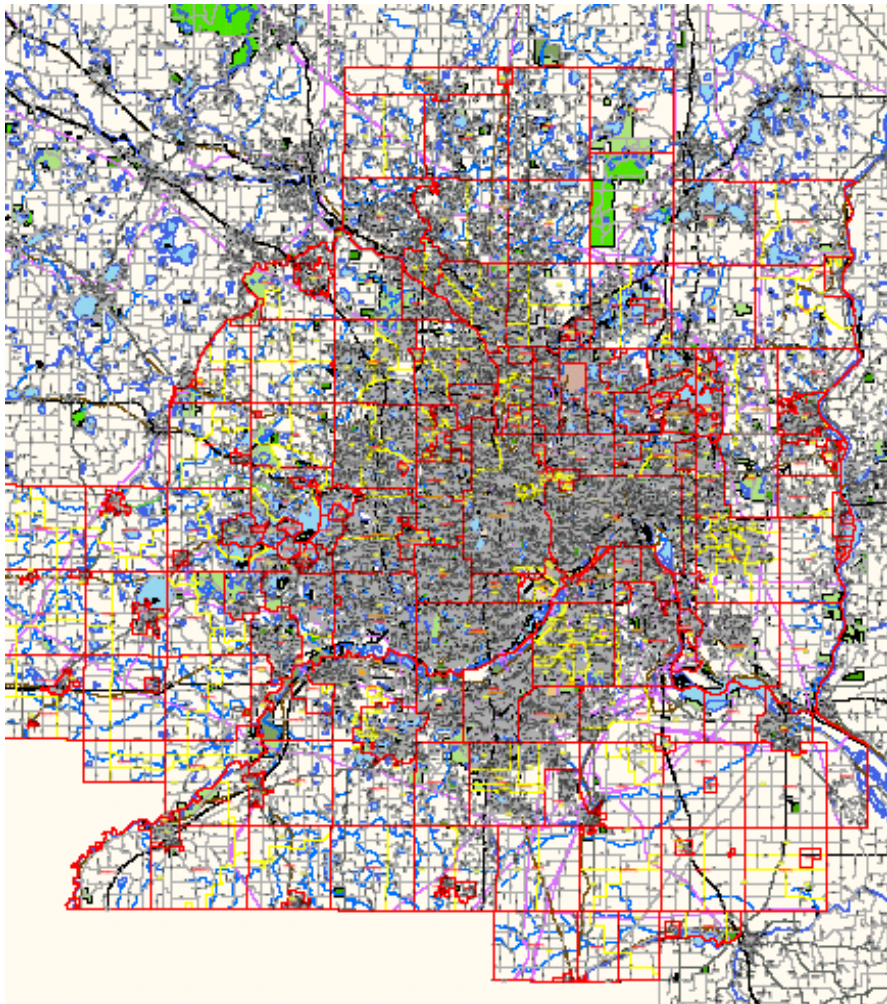


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Why Do PSAPs Need GIS Information?

Location, location, location

Basic 911:

The original implementation of basic 911 simply redirected the 911 caller to an administrative number at a pre-determined answering point. The telephone company, AT& T, called the answering location a public safety answering point (PSAP). No database information accompanied the call, but callers no longer had to look up the administrative number for each of the local emergency service agencies (law enforcement, fire, or ambulance services) when they had an emergency.

E911:

The next milestone in the evolution of the 911 system was the transition to Enhanced 911 or E911. E911 systems selectively route the 911 caller to the appropriate PSAP for their location, provide the PSAP call taker with the caller's telephone number, and display the address information associated with that telephone number. This system worked so well that the general public now expects the PSAP call taker to know exactly where the 911 caller is, whether the caller verbally tells them or not. When a 911 call is placed in an E911 system, the caller's telephone number is sent along with the caller's voice to the PSAP. Special equipment at the PSAP uses the caller's telephone number to send a request to the 911 database requesting the address information associated with that telephone number. The key to making E911 systems work is an accurate database detailing the exact address associated with where a particular telephone is wired to the wall.

Dynamic Location 911:

Today, the 911 system is again going through a transition as significant as the move from Basic 911 to Enhanced 911 was. Telephone technology is no longer stationary. Wireless telephones now make up over 40 % of the 911 calls received in the metropolitan area. Wireless telephones are now the only type of telephone service for over 5% of telephone subscribers.

In addition to wireless telephones, some telephone service providers are now using the Internet to transport telephone calls. This type of service is known as Voice Over interNet or VON telephone service. Telephone equipment used for VON service is installed between a high-speed Internet access modem and any traditional telephone instrument. The subscriber uses the same telephone they have always used and the

functionality is exactly the same as traditional telephone service. The subscriber can make and receive telephone calls (including, in some cases, 911) anywhere they can get high-speed Internet access.

Telephone service that is not associated with any specific location, regardless of the technology used, appears likely to become the predominant type of telephone service within the next 5-10 years. Solutions for locating wireless 911 callers dynamically at the time of the call are now in the final stages of implementation in the metropolitan area. The location information provided with the voice on a wireless 911 call is given to the PSAP call taker as a latitude / longitude coordinate (x,y coordinate), rather than a specific street address. The PSAP call taker must be able to accurately interpret that x,y coordinate and communicate the caller's location to the emergency responders.

A location solution for VON telephone service subscribers is now under development. It is unknown what form that location information will take when it is delivered to the PSAP. It may display as a traditional street address or as an x,y coordinate.

The telematics technology that is now being built into an ever-increasing number of cars and trucks also face the same dynamic location 911 challenges. OnStar, ATX, and other telematics service providers are looking for ways to route emergency 911 calls directly from their vehicles to the correct PSAP with location data. PSAPs will have to be equipped to handle this type of dynamic location 911 call.

GIS information pulled together from a variety of existing or new datasets and displayed at the PSAP call taker position is the foundation for locating 911 callers dynamically at the time the 911 call is made. The traditional 911 database used to support E911 systems must be synchronized with the GIS datasets. This synchronization will allow the PSAP call takers to recognize the relationship between mobile 911 callers and traditional E911 callers that are all calling about the same incident. In addition, the same GIS information can be used by the emergency response agencies to better manage their resources utilizing real-time automatic vehicle location (AVL) systems. Incidents that require multi-agency or even multi-PSAP responses can be managed more safely when everyone involved has access to real-time incident information.

Location, location, location the best law enforcement, fire, and EMS personnel in the world don't do anyone any good, if the PSAP call taker can't identify the 911 caller's location and accurately relay that information to the responding agencies. The metropolitan area PSAPs cannot function properly in the future without accurate GIS information and the hardware / software to display the information at each call taker / dispatcher position.

General Information:

Approximately nine months ago the Technical Operations Committee asked the Board staff to prepare recommendations on providing a regional geographic information system (GIS) to support the metropolitan enhanced 911 system in order to accurately locate wireless and wireline 911 callers. The staff contacted regional 911 organizations and the national professional organizations of APCO and NENA in order to get an idea of how GIS issues have been handled in other parts of the country. Based on their preliminary research, the staff prepared a request for information¹ (RFI) that was distributed to vendors and interested individuals on a national level in July, 2003. The RFI asked vendors to provide information on these six issues:

1. Methods to enhance the MetroGIS² information for E911
2. Methods to maintain the E911 GIS information after it is developed
3. Methods to distribute the E911 GIS information to the PSAPs on a regular basis
4. Recommendations on how the PSAPs could best utilize, integrate, or display the E911 GIS information, including any recommended standards
5. Recommendations on an organizational structure that could be used to manage the regional E911 GIS datasets
6. Recommendations on how to leverage the work MetroGIS has already done on a regional level

The information received in response to the RFI was used by the staff to prepare preliminary recommendations for the Technical Operations Committee. These preliminary recommendations were presented to the Technical Operations Committee in September 2003. The Technical Operations Committee formed a sub-committee to work with the staff in the creation of these final recommendations. The sub-committee was made up of representatives from local government GIS department, MetroGIS, LOGIS, in addition to the Technical Operations Committee members and Board staff. The sub-committee met four times over a two-month period reviewing the information received in the RFI, discussing what was currently available through MetroGIS, looking at ways to get the data creators to meet the E911 needs without increasing or creating unfunded expenses, and considering how to support the PSAPs in the most efficient manner possible. The recommendations in this report represent the collaborative work of the sub-committee.

¹ Copy of RFI attached as Attachment 1

² <http://www.metrogis.org> - see homepage information in Attachment 2

Executive Summary:

Last summer, using primarily grant money, the Board took the first steps toward providing E911 regional GIS datasets by contracting with LMIC for the creation of the PSAP boundary and Emergency Service Zone boundary datasets. These new datasets, when used in conjunction with the other datasets available through MetroGIS and the proper software, give the PSAPs a tool that will assist them in locating the small number of wireless callers whose phones and/or wireless network provide the caller's latitude and longitude.

The next step in providing the PSAPs with E911 GIS datasets that can be used to locate all types of 911 callers, regardless of the technology used to make the call, involves the creation of new GIS datasets that match the traditional regional Master Street Address Guide (MSAG) and E911 location database maintained by the telephone companies.

To meet the challenges involved in that next step, the Technical Operations Committee, through its GIS Sub-committee, agreed to recommend that the Board do the following:

1. Create an E911 GIS Coordinator position within the Metropolitan 911 Board
2. Work with MetroGIS, local / state government, and private GIS data providers to:
 - a. Establish E911 GIS dataset standards
 - b. Leverage GIS work that is already being done and avoid duplication of effort whenever possible
 - c. Establish an E911 dataset error correction process
 - d. Establish a standard E911 dataset update procedure and schedule
3. Create a PSAP map display functionality standard
4. Assist PSAPs in acquiring map display software / hardware that can utilize the standardized E911 GIS datasets
5. Establish a GIS liaison structure at the PSAP level, similar to the current MSAG Coordinator responsibilities
6. Establish a standard method of E911 dataset error reporting for the PSAPs

When these tasks have been successfully implemented, all of the metropolitan area PSAPs will be able to accurately locate 911 callers, incident locations, and emergency responders (when properly equipped). The PSAPs will have this ability even when the location in question is outside of their immediate jurisdictional boundary. This ability will allow for faster, more accurate emergency responses than are currently possible, making better use of the limited public safety resources and the associated tax dollars. This ability will make multi-jurisdictional incidents easier to identify and manage. Regional coordination and maintenance of the E911 datasets will be significantly cheaper than if each individual PSAP jurisdiction maintained the same level of detail and accuracy on their own.

Recommendation Detail and Analysis:

1. Create an E911 GIS Coordinator Position³

The scope of a regional E911 GIS project will require full-time project management on an on-going basis. With a geographic area the size of the seven county area and the density of the population within that area, a significant number of changes are made to GIS datasets on a daily basis. It is anticipated that the county government GIS departments will supply most of the GIS information utilized in the E911 datasets. However, various municipal GIS departments actually create much of that data in the first place and then pass it on to the counties. This means there are a significant number of actual data creators in the metropolitan area.

For several years MetroGIS⁴ has been developing ways for GIS information to be shared between various levels of government in order to make regional datasets widely available, and to avoid duplication of efforts in creation and maintenance of the datasets. This work has been recognized on a national basis as a model for other regions to emulate.

Approximately two years ago the Metropolitan 911 Board provided a low-priced, commercially available road atlas type software program to all of the PSAPs as a temporary, interim mapping tool. That program provided a very simple, stand alone electronic map display solution, complete with its own dataset, which could be used to meet the bare minimum requirements necessary to begin to locate some wireless 911 callers. The software was not able to be integrated with the PSAP 911 equipment or their CAD systems. It had to run in a stand alone environment that was slow and awkward for the dispatchers to use, but it did provide a cheap, crude tool that met the minimum FCC requirements for requesting Phase 2 wireless location information from the wireless carriers. Unfortunately, many of the PSAPs still rely on this software today.

Even though they are aware of the Board's efforts to develop a regional GIS system, some of the PSAPs in the metropolitan area have recognized a need to move ahead and work on developing more sophisticated GIS datasets for their local jurisdictions; including making that information available through some sort of display software to their 911 dispatchers. In some cases they have contracted with outside vendors to develop the datasets and to provide the display software in the PSAP. In other cases they have worked with their local GIS department to develop individual, proprietary systems. Many of the metro area PSAPs have had to continue to rely on the original,

³ [E911 GIS Coordinator Job Description](#) (see also Attachment 3)

⁴ MetroGIS is a voluntary collaboration of over 300 local and regional government interests that serve the seven-county Minneapolis / St. Paul metropolitan area, together with partners in state and federal government and others who share the vision of MetroGIS. MetroGIS's purpose is to promote and facilitate widespread sharing of geographic information. The Policy Board is comprised of 12 elected officials representing cities, counties, school districts, watershed districts, and metropolitan interests.

temporary map solution supplied by the Board. This has led to wide variation in the quality and consistency of location information between the metropolitan area PSAPs.

The proposed E911 GIS Coordinator will be challenged to pull the various GIS data creators in the metropolitan area together to format their data in a standard way that will support the largest number of PSAP displays or an agreed upon standard PSAP display that can be used to locate all 911 callers, regardless of what telephone technology they are using, in a quick, accurate, intuitive manner. The greater challenge for the proposed E911 GIS Coordinator may be the on-going maintenance and distribution of the E911 GIS datasets.

Contracting with an experienced E911 GIS vendor for the creation and maintenance of the datasets was considered. At this time the committee and staff feel that the metropolitan area government GIS departments, through the work of MetroGIS, are already cooperating with each other to a much higher degree than is typically found in other parts of the country. It is believed that this cooperative resource should be leveraged as much as possible before a decision is made to contract with an outside vendor for the development of any of the E911 datasets. Ultimately, some work may have to be contracted for, but on a much smaller scale. By having an E911 GIS Coordinator instead of relying solely on an outside contractor, the Board will have much greater control over the project and end product. It will also allow for direct participation and representation of local PSAP needs and desires as the project progresses.

2. Work with MetroGIS and the various data providers to:

- establish E911 dataset standards
- leverage work that is already being done at the data creator level to avoid duplication of effort
- establish an error correction process
- establish a standard E911 dataset update procedure and schedule

Several years ago the Metropolitan Council recognized a need for obtaining and sharing local GIS information on a regional basis. The council agreed to serve as primary sponsor of a regional GIS data sharing initiative that has evolved into what is now known as MetroGIS to address that need. MetroGIS contracts with a private company called "The Lawrence Group" for the provision of and maintenance of a street centerline data file on a regional basis. In addition, MetroGIS has contracts with all of the counties in the metropolitan area that allow for the collection of the GIS datasets typically required by county government (i.e. parcel datasets, political subdivision boundaries, etc.). MetroGIS then pulls this information together and makes it available to any government agency that agrees to abide by whatever use or distribution restrictions that were agreed to by MetroGIS and the dataset creator.

In addition, MetroGIS has begun to work on developing data standards that dataset creators are encouraged to use that makes sharing of datasets between jurisdictions

easier to do, but not to the level necessary to ensure a consistent 911 call location display. MetroGIS has agreed to work with the GIS Coordinator to develop E911 GIS dataset standards and in getting the local dataset creators to utilize the standards. These standards will allow local datasets to be aggregated into a regional dataset, as well as support a range of PSAP display software packages or to be optimized for use with a standard PSAP display software package.

Creating the datasets necessary to support E911 is only the beginning. The datasets will need to be updated and maintained on an ongoing basis. Some of the datasets will need to be updated very frequently, while others may only have to be done on an annual basis. A maintenance schedule will need to be developed for each of the individual datasets. In addition, it is anticipated that the PSAPs will find errors in the datasets based on information provided by 911 callers and responding emergency service personnel. MetroGIS is in a unique position to work with the Board to set these processes up, monitor how the processes work, and make adjustments as necessary in order to ensure that the 911 dispatchers have confidence in the accuracy and completeness of the GIS information with which they are working.

The Board staff considered trying to get MetroGIS to take the lead role in the creation and coordination of the E911 GIS system. After meeting extensively with MetroGIS, it was determined that MetroGIS did not have the resources or 911 expertise that will be necessary to manage the system on behalf of the Board. In the meetings with the Board staff and with their participation on the sub-committee, the MetroGIS staff has been instrumental in identifying metro area GIS resources and how they may be utilized. MetroGIS supports the recommendation that the Board hire an E911 GIS Coordinator to provide a regional point of contact for 911 and public safety GIS needs. Cooperation between the Metropolitan 911 Board and MetroGIS in the development and maintenance of the required E911 datasets should significantly reduce the cost of setting up a regional E911 GIS system.

Some of the information that will be needed to fully support E911, such as associating a point with every addressable structure, is currently not available on a regional basis. Some of the local GIS departments have started to create this type of file, but many have not. The sub-committee and staff believe that a sufficient need for that data can be documented, and that with the help of the PSAPs, the local GIS departments that aren't creating this type of data now can be convinced to include it in their regular data maintenance collection plan with little added cost or time. This approach is very cost effective and may be just as fast as contracting, by using multiple local GIS departments to each do part of the work all at the same time.

3. Create a PSAP map display functionality standard

This standard will determine what E911 GIS datasets need to be developed. In our limited research on GIS information or map displays for the E911 dispatchers to use, we

found that there were significant variations in how the systems worked, how information was displayed, and what information was displayed. These variations may make it very difficult to support a wide variety of display software brands or companies.

The sub-committee and Board staff believes that it will be necessary to work with a representative group of dispatchers and PSAP managers in order to identify what information features and functions the dispatchers need and / or desire. When these have been documented, the list can be used to define the datasets needed, evaluate potential display software packages for the PSAPs, set up error reporting protocols, and set up the appropriate data infrastructure for sharing and updating the E911 GIS datasets.

4. Assist PSAPs in acquiring map display software / hardware that can utilize the standardized GIS datasets

Very few of our PSAPs have the staff, time, or expertise to be able to determine if a PSAP GIS or map display software / hardware package that they are considering will work well with the standardized E911 GIS datasets created and maintained under the regional project. The E911 GIS Coordinator will be expected to understand what data requirements each individual map display product would require and how closely the standardized GIS datasets would come to meeting those requirements, without modification. The sub-committee and Board staff hopes that several map display products can be supported. However, it is very likely that some map display products will not work very well with the standardized E911 datasets. This needs to be identified in advance so that a PSAP can make an informed choice on whether or not they want to choose a different map display product, or accept responsibility for making whatever modifications may be necessary to optimize the standard E911 datasets for a non-supported display product.

As mentioned in recommendation 3 above, we have become aware that there are significant variations in how different map display products use and display the GIS information. Many of the variations and the problems associated with dealing with them were brought to our attention by the experience that the LOGIS representatives shared with us. LOGIS⁵ is a consortium of MN cities and counties that work cooperatively to reduce data processing costs. LOGIS chose the Printrac suite of public safety software, which includes PSAP GIS or map display software. Using GIS information from MetroGIS and their participating local governments, they have been working on the datasets necessary to support their participating PSAPs in a project similar to what is currently being considered by the Board, but on a much smaller scale. The LOGIS GIS experts found that they had to do a significant amount of work modifying or enhancing the datasets in order to get good performance from the display software. The sub-committee and Board staff believe that standardization of the display functions /

⁵ [LOGIS Newsletter](#) (see Attachment 4)

features and of the datasets will allow the datasets to be created in the proper format so they will display properly at the PSAP, with minimal modification or enhancement.

As the project matures and more information becomes available, the PSAPs and the Board may decide that a single PSAP GIS or map display software / hardware product should be used by all of the PSAPs. Support of a single product could simplify the maintenance, error reporting, error correction, and update distribution of the E911 GIS datasets. While not enough information is available at this time to make a decision, most of the respondents to the Board's RFI urged to the Board to strongly consider adopting this idea.

5. Establish a GIS liaison structure at the PSAP level

The Board's E911 GIS Coordinator, working cooperatively with MetroGIS and the various data creators, will be able to adequately meet or address the PSAPs needs on most GIS issues. However, from time to time, the Board's E911 GIS Coordinator will need to work directly with a PSAP representative to resolve a particular local issue. This process will work most efficiently if each PSAP representative is identified in advance and has been trained in some of the GIS basics, in a similar way to the current system of PSAP coordinators that assist the Board staff with the corrections and maintenance to the Master Street Address Guide (MSAG). The PSAP GIS representative will become the "go to" person within their agency for the other dispatchers when a GIS issue is identified, and can refer any issues they can't resolve on to the Board's E911 GIS Coordinator. The E911 GIS Coordinator would then be responsible to work with MetroGIS and the data creators to get the issue resolved, and to keep the PSAP GIS representative informed on the status of any particular issue.

6. Establish a standard method of error reporting for the PSAPs

From time to time dispatchers will become aware of errors or omissions in the GIS information provided to them. When this happens a standard procedure needs to be followed to ensure that the error gets corrected in a timely manner. The sub-committee and the Board staff recognize that the most practical and appropriate method for getting errors corrected is to have the original data creator make the necessary correction. This eliminates the possibility of having corrections made by the PSAP or someone else being overwritten again with the same error the next time the data creator sends out an update. If the data creator makes the correction, all subsequent updates to their data set should contain the corrected data.

The error reporting method⁶ must be easy and quick enough for the dispatcher to complete the process while actually handling the 911 call, if at all possible. If the error

⁶ See sample error reporting software screens in Attachment 6

cannot be documented during the call, a significant risk is created that the dispatcher may not get the error reported at all, particularly in a busy PSAP. The reporting method should allow for the error information to be sent to the Board's E911 GIS Coordinator. The E911 GIS Coordinator would identify who the data creator is for the particular dataset that is in error. Once the data creator is identified, the error information can be passed on to the creator through whatever process is worked out by the E911 GIS Coordinator, MetroGIS and the data creators.

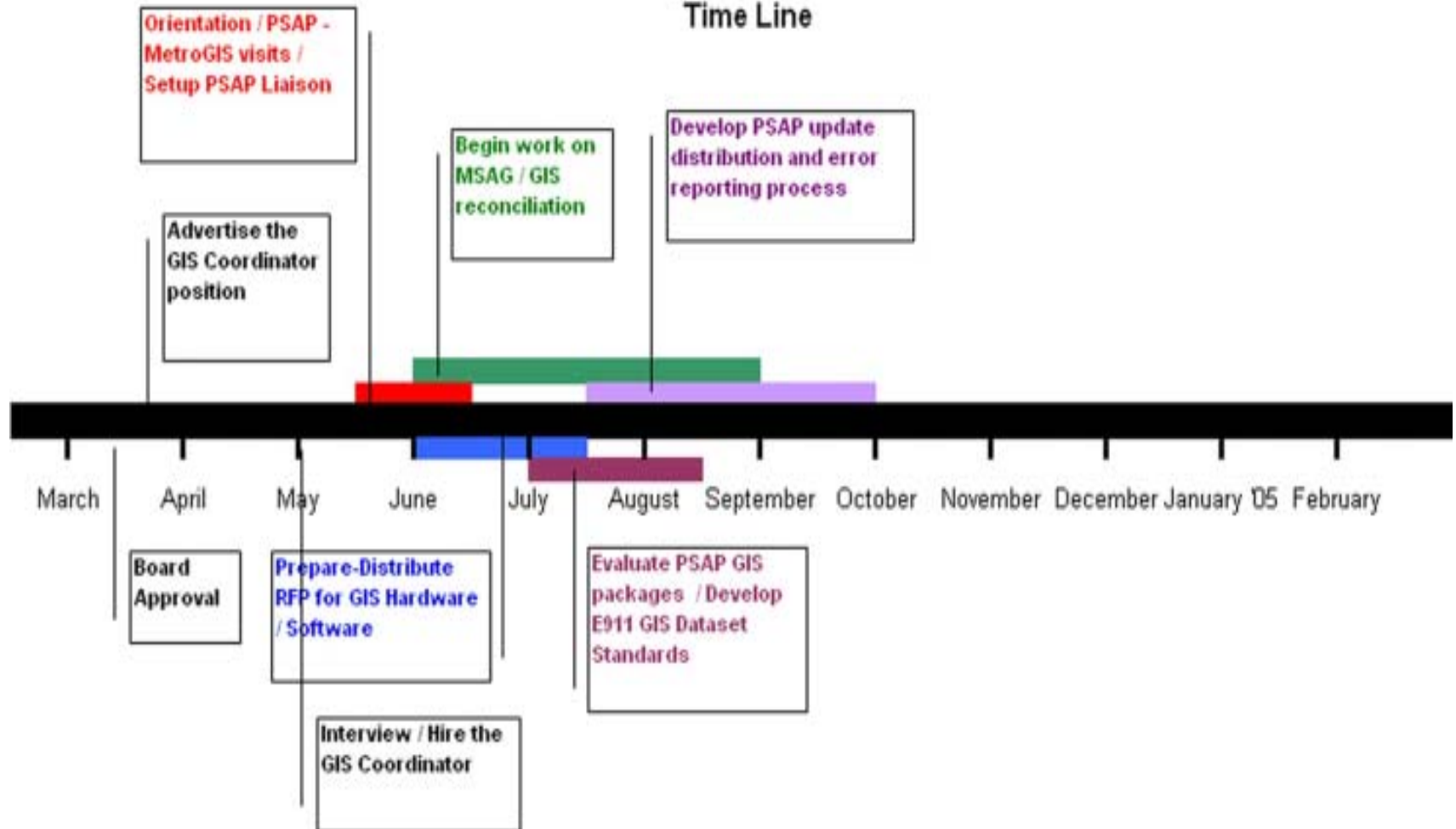
All error reports should be documented from the PSAP to the creator, with notification back to the PSAP when the error has been corrected. This audit trail will need to be monitored to ensure that no reported errors go uncorrected.

Many PSAP GIS or map display products include some sort of automated error correction documentation feature. PSAPs that invest in systems that allow the dispatcher to quickly document GIS errors with little interruption in the handling of emergency calls will, over time, see a significant improvement in the overall accuracy of their GIS data. Increased accuracy means quicker emergency response and more efficient use of limited emergency service agency resources. It also allows individual dispatchers to work more efficiently.

Conversely, PSAPs that do not utilize this automated error correction documentation type of correction tool will see little improvement in the accuracy of their GIS data. The error information identified by the dispatcher at the time of the call will be unlikely to ever reach the data creator if the process is too complicated or time consuming. When the same errors keep recurring, the dispatchers and the public safety responders will begin to lose faith in the usefulness of the information, resources are wasted, and dispatchers need to spend more time attempting to get callers the help they need.

More information is needed to understand how these automated error correction documentation features can be made to work in a multi-PSAP, regional environment with a variety of different map display products in use. This need for a quick, easy, automated error reporting process may be a strong argument for supplying all of the PSAPs with a standard, uniform product, if an adequate, equitable funding source can be identified.

Regional GIS Project Implementation Time Line



Alternatives Considered – Pros and Cons

What is the best way to manage a GIS based 911 location database on a regional basis? That was the question the Board staff hoped to get answered by the responses to the RFI.

The RFI asked respondents for recommendations on:

1. How to enhance the GIS information currently available through MetroGIS to adequately support 911
2. Once the information is developed, how should it be maintained
3. How should the information be distributed to the PSAPs on a regular basis
4. How can the PSAPs best utilize the information
5. What organizational structure should the Board put in place to manage the GIS based 911 location database
6. How to leverage the regional GIS work that is already being done

As the responses to the RFI were examined, it became obvious that the organizational structure chosen by the Board would dictate how the other issues were addressed. Three basic organizational structures considered were:

1. Contract with a GIS vendor with experience in supporting 911, for the creation and maintenance of the datasets necessary to support 911.
2. Hire sufficient staff to create and maintain the necessary datasets internally.
3. Hire a GIS 911 Coordinator to leverage the regional GIS work already being done.

Organizational Structures Considered	Advantages	Disadvantages
1. Contract For Services	<ol style="list-style-type: none"> 1. A contractor with sufficient resources may be able to complete the creation or enhancement of the datasets in a relatively short time (a period of weeks or months) 2. Previous experience on similar projects 	<ol style="list-style-type: none"> 1. Identified as the most expensive option (vendor estimate of \$1.2 - \$1.8 million in dataset development + \$160,000 - \$215,000 in annual maintenance costs) 2. The success or failure of the project is dependent on selecting the right contractor. 3. The contractor's preferred solution or method, used in previous projects, may not be the most efficient or cost effective method for this project. 4. Duplication of GIS efforts by the contractor and all levels of current data providers 5. The challenge of getting cooperation from all of the stakeholders
2. Hire sufficient staff to do all of the work in-house	<ol style="list-style-type: none"> 1. Complete control over the project 2. No third party contractor to monitor 3. Can respond quickly to PSAP needs 	<ol style="list-style-type: none"> 1. Significant investment in personnel, equipment, and space (\$240,000 - \$280,000 in salary / benefits @ 4 FTE , \$180,000 - \$200,000 in hardware / software + office space for 4 additional staff) 2. Would take the longest time to implement and produce the necessary datasets – more than a year 3. Finding knowledgeable staff or providing the necessary training 4. Duplication of GIS efforts by the Board and all levels of current data providers 5. The challenge of getting cooperation from all of the stakeholders
3. Hire an E911 GIS Coordinator to leverage the regional GIS work that is already being done	<ol style="list-style-type: none"> 1. More control over the project 2. Least expensive (\$97,000 hardware / software, \$78,000 in salary / benefits annually) 3. No duplication of effort – takes advantage of work MetroGIS and local government data creators have already done 4. Understands the needs of 911 and of the data creators 5. Can respond quickly to PSAP needs 	<ol style="list-style-type: none"> 1. Will need to have a working knowledge of both 911 and GIS – will probably require some training to gain the necessary proficiency. 2. The challenge of getting cooperation from all of the stakeholders

Many of the respondents to the RFI identified the need for an E911 GIS Coordinator position, regardless of whether much of the work was done under contract or by the local data creators. The respondents agreed that the regional scope of the project would require full-time management.

The Board staff explored having MetroGIS assume this responsibility. After much discussion, the Board staff and the MetroGIS staff both concluded that the need for synchronization of the traditional E911 database / MSAG and the E911 GIS datasets could be best met by having both responsibilities within the same organization.

After examining the advantages and disadvantages of all the options, the Board staff has concluded that hiring the right person / contractor is a critical key to success with all of the options. The issue then becomes one of cost and timing. The recommended creation of an E911 GIS Coordinator position seems to offer the best opportunity to keep the personnel and capital expenses down, while still meeting the needs of the PSAPs in a timely way. A cooperative, coordinated effort by all of the metro area data creators to support the needs of public safety should allow for the development and maintenance of the necessary E911 GIS datasets quickly and at very little additional cost. This option would probably not have been possible if MetroGIS had not already laid the ground work for regional, cooperative GIS data sharing.

Budgetary Cost Estimates:

Item	Description	Board Exp. - 1 Time	Board Exp. - Recurring	PSAP Exp. - 1 Time	PSAP Exp. - Recurring
E911 GIS Coordinator	Salary / Benefits (\$60,000 salary + 30% for benefits)		\$78,000		
	Office Setup (furniture, computer, telephone, etc.)	\$10,000			
	Training / Travel	\$ 2,000			
	GIS Specific Software / Hardware (GIS dataset consolidation / reconciliation / distribution software, computer server, map plotter)	\$85,000			
	Software / Hardware Maintenance		\$17,000		
	Total	\$97,000	\$95,000		
PSAP Equipment	GIS computer server and software			\$ 9,500	
	Answering position display software (example uses 4 positions @ \$4500/position)			\$18,000	
	Software / Hardware Maintenance - server				\$ 1,900
	Software / Hardware Maintenance – workstation (example uses 4 positions @ \$900/position)				\$ 3,600
	Dataset update distribution – High Speed Internet Access at \$40 / month				\$ 480
	Total			\$27,500	\$ 5,980
Dataset Development	E911 GIS datasets developed by local GIS departments and MetroGIS to standards developed – consolidated by the E911 GIS Coordinator				
	Total	\$ 0	\$ 0	\$ 0	\$ 0

* The hardware / software prices quoted represent the retail price of the software currently being used in King Co., Washington. These amounts are listed for budgetary purposes only. Per position pricing is based on a 4 position PSAP

Funding Recommendations:

Summary:

In June, 2003 the Board transferred \$300,000 from the General Fund to the Dedicated Fund in anticipation of funding this regional GIS project.

Using the existing Board funds and funding mechanism, the one time Board expense of **\$97,000** for setting up the GIS Coordinator's office, training, and GIS tools could be taken from the **Board's Dedicated Fund** (current balance of approximately \$1.2 million).

The prorated amount of the GIS Coordinator's estimated salary and benefits (**\$6,500 / month**) for the balance of 2004 could also be taken from the Board's **Dedicated Fund**.

In 2005 the recurring Board expense of **\$95,000** for the GIS Coordinator's estimated salary, benefits, and the GIS hardware / software maintenance should be included in the regular budget. The impact of this added expense could be spread out over a five year period by splitting the increase between the county assessments and the Dedicated Fund. Using this implementation plan, the additional \$95,000 in yearly GIS costs would be covered by increasing the county assessment share of the budget by \$19,000 per year and covering the balance each year from the Dedicated Fund. At the end of the transition period, all of the yearly GIS costs would be covered by the county assessments (the illustration only considers GIS expenses added to the current budget in constant 2004 dollars – for comparison purposes only)

Year	Assessment Increase from 2004 Budget	Dedicated Fund
2005	\$19,000	\$76,000
2006	\$38,000	\$57,000
2007	\$57,000	\$38,000
2008	\$76,000	\$19,000
2009	\$95,000	\$ 0

The following table uses the individual 2004 county assessments with the GIS expenses added on incrementally over a five year period starting in 2005 (the illustration only considers GIS expenses added to the current budget in constant 2004 dollars – for comparison purposes only)

	2004 Assess	2005 Assess	2006 Assess	2007 Assess	2008 Assess	2009 Assess
Anoka	\$41,990	\$44,137	\$46,284	\$48,431	\$50,578	\$52,725
Carver	10,180	10,703	11,226	11,749	12,272	12,795
Dakota	50,345	52,920	55,495	58,070	60,645	63,220
Hennepin	156,070	164,050	172,030	180,010	187,990	195,970
Ramsey	71,200	74,848	78,496	82,144	85,792	89,440
Scott	13,180	13,855	14,530	15,205	15,880	16,555
Washington	28,650	30,113	31,576	33,039	34,502	35,965

2003 Reserve Fund

37%

63%

FUNDS INVESTED WITH HENNEPIN COUNTY													
	SUMMARY			Beginning Balance	Ending Balance	GENERAL FUND			DEDICATED FUND			INTEREST	
	Interest Earned	Invest (Withdraw) General	Dedicate d			Beginning Balance	Int, Inv, or (Withdraw)	Ending Balanc e	Beginning Balance	Int, Inv, or (Withdraw)	Ending Balance	Cumulative Interest	Intere st Rate
2003													
January	0		0	1,516,767	1,516,767	582,118	0	582,118	934,649	0	934,649	0	
February	0		0	1,516,767	1,516,767	582,118	0	582,118	934,649	0	934,649	0	
March	22,580	300,000	(44,064)	1,516,767	1,795,283	582,118	308,355	890,473	934,649	(29,839)	904,810	278,516	5.95%
April	0		0	1,795,283	1,795,283	890,473	0	890,473	904,810	0	904,810	278,516	
May	0		0	1,795,283	1,795,283	890,473	0	890,473	904,810	0	904,810	278,516	
June	20,028	(300,000)	300,000	1,795,283	1,815,311	890,473	(292,590)	597,883	904,810	312,618	1,217,428	298,544	4.46%
July	0		0	1,815,311	1,815,311	597,883	0	597,883	1,217,428	0	1,217,428	298,544	
August	0	(100,000)	0	1,815,311	1,715,311	597,883	(100,000)	497,883	1,217,428	0	1,217,428	298,544	
September	22,339		0	1,715,311	1,737,650	497,883	8,265	506,148	1,217,428	14,074	1,231,502	320,883	5.21%
October	0	(150,000)	0	1,737,650	1,587,650	506,148	(150,000)	356,148	1,231,502	0	1,231,502	320,883	
November	0		0	1,587,650	1,587,650	356,148	0	356,148	1,231,502	0	1,231,502	320,883	
December	12,405	(50,000)	0	1,587,650	1,550,055	356,148	(45,410)	310,738	1,231,502	7,815	1,239,317	333,288	3.13%
TOTAL	\$77,352.00	(\$250,000)	\$255,936										

Summary:

Recommendations:	Advantages:
1. Create an E911 GIS Coordinator position within the Metropolitan 911 Board	<ol style="list-style-type: none"> 1. Be the E911 and GIS expert 2. Share expense with all counties 3. Leverage current data creation / sharing process with MetroGIS, Eliminate duplication of effort)
<ol style="list-style-type: none"> 2. Work with MetroGIS, local / state government, and private GIS data providers to: <ol style="list-style-type: none"> a. Establish E911 GIS dataset standards b. Leverage GIS work that is already being done and avoid duplication of effort whenever possible c. Establish an E911 dataset error correction process d. Establish a standard E911 dataset update procedure and schedule 	<ol style="list-style-type: none"> 1. Bring the E911 and GIS resources together 2. Keep them on the same page
3. Create a PSAP map display functionality standard	<ol style="list-style-type: none"> 1. Work with PSAPs to define what all displays should do 2. Ensure the PSAPs are all seeing a similar "picture" and have the tools they need 3. Ensure the GIS datasets have the information necessary to support the PSAP display needs 4. May allow for multiple vendor displays to be supported
4. Assist PSAPs in acquiring map display software / hardware that can utilize the standardized E911 GIS datasets	<ol style="list-style-type: none"> 1. Provide expertise to assist PSAPs and / or actually supply and maintain a standard PSAP map display
5. Establish a GIS liaison structure at the PSAP level, similar to the current 911 MSAG Coordinator responsibilities	<ol style="list-style-type: none"> 1. Designate a "go to" person at the PSAP level 2. Provide some basic training for PSAP personnel
6. Establish a standard method of E911 dataset error reporting for the PSAPs	<ol style="list-style-type: none"> 1. Maintain E911 GIS dataset integrity 2. Maintain user confidence 3. Support other public safety agency needs such as AVL or geo-based CAD 4. Provide highly accurate datasets for use by other non-public safety government agencies

When 911 was implemented 20 years ago in the metropolitan area, a conscious decision was made to manage the 911 network and location database on a regional level. That model has been very successful and has saved the participating counties a substantial amount of resources by avoiding a duplication of effort at the PSAP level. With the introduction of wireless

telephone service, a need to redefine the location database has been identified. The regional E911 GIS datasets will become the "location database" for wireless calls. In addition, these datasets offer a new tool that will allow the 911 dispatchers a greater ability to identify multiple calls, both wireline and wireless, related to a single event and multi-jurisdictional incidents. The E911 GIS datasets will be able to be used by all of the metropolitan area emergency responders who want to include automatic vehicle location (AVL) technology in their resource management plans; an application where a regional dataset, as opposed to a local dataset, has great value.

Currently, the metropolitan area has regional 911 expertise through the Metropolitan 911 Board and regional GIS expertise through MetroGIS. The E911 GIS Coordinator will be the bridge between the two. Because of the need to closely coordinate the maintenance of the current MSAG / ALI database with the new E911 GIS datasets, it is logical for the E911 GIS Coordinator's position to be part of the Metropolitan 911 Board. The coordinator will be able to be the GIS expert for those PSAPs that do not have that level of expertise at the local level. The coordinator will also be the 911 expert for the local GIS data creators within the metropolitan area.

The seven county metropolitan area has an opportunity to work on a local / state / private collaborative level that is unique. The level of cooperation in this area does not exist in other parts of the country. The recommendations in this report are meant to leverage these advantages in order to produce a high quality end product at the lowest practical cost and continue the high level of 911 service the public has come to expect

Attachment 1

Request For Information Enhanced 9-1-1 Regional Geographic Information System Minneapolis / St. Paul Seven County Metropolitan Area

Request:

The Metropolitan 911 Board is seeking information from qualified individuals / organizations about the development and maintenance of E9-1-1 GIS information to support the Public Safety Answering Points (PSAPs) in the seven county metropolitan area. The Metropolitan 911 Board intends to utilize this information to prepare a Request For Proposal for the actual development and maintenance of the E9-1-1 GIS information.

Background:

The Metropolitan 911 Board is a joint powers organization created by Anoka, Carver, Scott, Hennepin, Dakota, Ramsey, and Washington Counties for the express purpose of managing the 911 network and databases in support of the twenty-seven PSAPs within the seven county metro area. The Board has the authority to enter into contracts and expend funds as necessary in the management of the 911 system. The Board acts as the point of contact for the twenty-seven PSAPs with wireless carriers, telephone companies, the State of MN, and the Public Utilities Commission. The Board is funded solely through assessments to the member counties based on population, and does not receive any direct funding from the 911 surcharge on telephone bills.

The Metropolitan 911 Board believes that accurate E9-1-1 GIS information will play an increasingly critical role in the location databases used to locate all 9-1-1 callers in the future. The Board believes that the GIS information will also be vital to the coordination of the emergency response and management of emergency service resources by the PSAPs.

The seven county metropolitan area has approximately 2.7 million residents within 185 communities or townships. There are over 250 emergency service zones defining the correct combination of law enforcement, fire, and EMS agencies serving any specific geographic point within the seven counties. The twenty-seven PSAPs in the metro area 911 system receive about 1.2 million 9-1-1 calls annually, of which about 45% are currently wireless. There are seven wireless carriers providing service in the metro area. Four of the wireless carriers have either completed or are in the process of completing the conversion of their networks to provide Phase 2 911 caller location information. All of the wireless carriers are expected to complete their Phase 2 conversions by the end of August, 2003.

Currently the metropolitan area PSAPs are using a variety of mapping resources they have been able to individually acquire in order to use the Phase 2 location information. These resources range from sophisticated, fully integrated mapping systems to simple, readily available commercial map products.

Program / Project Description:

The Metropolitan 911 Board intends to develop regional E9-1-1 GIS information that will be distributed to all twenty-seven PSAPs. The information will be updated and maintained on an on-going basis, with the new information being distributed to the PSAPs electronically on a regular schedule. The PSAPs will use these GIS data files with their call taker map display equipment and software.

In the Minneapolis / St. Paul metropolitan area a regional organization, MetroGIS⁷ was created to coordinate and share GIS resources and information between local and regional units of government. The MetroGIS information currently available to the Metropolitan 911 Board does not contain all of the information necessary to support 911, but will be the starting point in the development of the E9-1-1 GIS data sets.

The Metropolitan 911 Board has contracted with the Land Management Information Center, a part of the Minnesota State Office of Strategic and Long Range Planning, to add some of the information necessary to support 911 in alignment with the MetroGIS data files⁸. This information includes emergency service zones (ESZs) and PSAP boundaries. This work is expected to be complete by July, 2003.

The Board has identified the following tasks as being necessary in the development of the regional E9-1-1 GIS information once the Land Management Information Center work is complete:

1. Creation of an MSAG valid street name data layer for the MetroGIS data files
2. Correction of address range errors or discrepancies in the MetroGIS data files
3. Verification and /or correction of the alignment of street centerline data and the ortho photos currently available in the MetroGIS data files
4. Verification and / or enhancement of the positional accuracy of the MetroGIS data files
5. Addition of a point file identifying the location of all wireless communications towers, including the cell site attributes to the MetroGIS data files
6. Creation of a data maintenance plan that includes:
 - 6.1. How and by whom new GIS information will be obtained
 - 6.2. How and by whom the E9-1-1 GIS information will be updated
 - 6.3. How and by whom the E9-1-1 GIS information will be kept synchronized with the MSAG
 - 6.4. How and by whom the updated E9-1-1 GIS information will be distributed to the twenty-seven PSAPs on a regular schedule established by the Board

⁷ <http://www.metrogis.org/>

⁸ <http://www.datafinder.org>

- 6.5. How and by whom will errors identified by the dispatchers at the PSAPs be documented and corrected
- 6.6. How and by whom can PSAP specific information be added to the regional GIS information (i.e. PSAP A would like to have all fire hydrant locations plotted on the map – the other PSAPs do not want this information – how can the information be added)

The Metropolitan 911 Board has been in contact with other regional 911 authorities who have already completed and are maintaining E9-1-1 GIS information systems. In those discussions, three different project structures have been identified. These structures are:

1. Contract for the development and maintenance of all E9-1-1 GIS information with no significant staff, hardware, or software investment by the 911 authority. (similar to the Mid-America Regional Council project in the Kansas City metro area)
2. Hire sufficient staff and purchase the tools necessary to develop and maintain all of the E9-1-1 GIS information within the 911 authority, including the distribution to the PSAPs (similar to the Tarrant Co. 911 Authority in the Fort Worth metro area)
3. Contract for the development of the E9-1-1 GIS information and hire an E9-1-1 GIS coordinator for the 911 authority to maintain and /or coordinate the maintenance of the E9-1-1 GIS information by outside resources, including the distribution of the updated information to the PSAPs (similar to the King Co. 911 Authority in the Seattle metro area)

The Board recognizes that these structures are overly simplified and that there are many variations that could work effectively in our area.

Information Requested:

The Metropolitan 911 Board would like qualified consultants or organizations to review the MetroGIS information⁹, distribution, and maintenance procedures; consider the tasks identified by the Board that remain to be completed; and provide recommendations and budgetary cost estimates on:

1. Methods to enhance the MetroGIS information that will already include the PSAP boundaries and ESN information, to meet the needs of the PSAPs and public safety responders in the seven county metropolitan area, including a measurable accuracy standard.
2. Methods to maintain the E9-1-1 GIS information after it has been developed
3. Methods to distribute the updated E9-1-1 GIS information to the PSAPs on a regular schedule
4. Recommendations on how the PSAPs can best utilize, integrate, and / or display the GIS information, including any recommended standards.
5. Recommendations on the type of organizational structure that the Metropolitan 911 Board should create to best implement and maintain this project. Please include the pros and cons of the three structures described above, with a final recommendation.

⁹ The MetroGIS information provided to you by the Board for your review is not public information. You will be expected to sign a confidentiality agreement before the information can be sent to you.

6. Recommendations on how the Metropolitan 911 Board can continue to work cooperatively with MetroGIS to leverage collection, distribution, and maintenance resources for the GIS information necessary to support E9-1-1 in the metropolitan area. The designated contact person for questions or additional information at MetroGIS is:

Randy Johnson, AICP
GIS Liaison – MetroGIS Staff Coordinator
Mears Park Centre
230 5th Street E.
St. Paul, MN 55101-1633
651 602 1638
randy.johnson@metc.state.mn.us

The information you provide in response to this request should be considered public unless specific portions are marked “confidential” or “trade secret”. Please send your information response to this request by July 21, 2003 to:

Pete Eggimann
Director of 911 Services
Metropolitan 911 Board
2099 University Ave. W
St. Paul, MN 55104

651 603 0104
peggimann@mn-metro911.org

Please direct any questions, request for clarification, or comments about this request for information to Pete Eggimann. Once a decision has been made on the type of structure the Metropolitan 911 Board should implement to support this project, it is anticipated that a request for proposal for equipment and services necessary to complete the project will be prepared and issued by the Board, with project completion by the end of 2003 or 1Q, 2004.



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Welcome to MetroGIS

MetroGIS is an innovative, regional geographic information systems initiative serving the seven-county Minneapolis-St. Paul (Minnesota) metropolitan area. It provides a regional forum to promote and facilitate widespread sharing of geospatial data. MetroGIS is a voluntary collaboration of local and regional governments, with partners in state and federal government, academic institutions, nonprofit organizations and businesses.

In August 2002, MetroGIS received designation as an I-Team, in conjunction with the national [I-Team GeoSpatial Information Initiative](#) initiated by the Federal Office of Management and Budget (OMB).

MetroGIS is also the 2002 recipient of URISA's Exemplary Systems in Government (ESIG) Award for Enterprise Systems. See the [Awards](#) section for more information.

Mission

The mission of MetroGIS is to provide an ongoing, stakeholder-governed, metro-wide mechanism through which participants easily and equitably share geographically referenced data that are accurate, current, secure, of common benefit and readily usable. The desired outcomes of MetroGIS include:

- Improve participant operations
- Reduce costs
- Support cross-jurisdictional decision making

Current

- [What's new at MetroGIS: October 2003 Project Updates and Information Sharing](#)
- How is MetroGIS benefiting the Twin Cities region? See our updated [Testimonials](#) page.
- [Upcoming meetings, forums, and other events](#)

Please [contact us](#) - we appreciate your comments about MetroGIS.

Victoria Reinhardt, Ramsey County Commissioner, Policy Board Chair
 Jane Harper, Washington County, Coordinating Committee Chair
 Randall Johnson, MetroGIS Staff Coordinator

230 E. 5th St., Saint Paul, MN 55101 / phone: 651-602-1638 / fax: 651-602-1674
metrogis-contacts@metc.state.mn.us

Page last updated on November 25, 2003.

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Attachment 3

E9-1-1 GIS COORDINATOR

Effective: 10/03

General Description:

Under general direction of the Executive Director, performs complex administrative and professional duties related to the creation and maintenance of the Metropolitan 9-1-1 Board regional E9-1-1 GIS program. Key responsibilities include assisting in the development of program goals and objectives, developing and implementing policies and procedures related to management of the Metropolitan 9-1-1 Board regional E9-1-1 GIS database, and carrying out the functions and tasks necessary to achieve Board objectives.

Duties and Responsibilities:

These examples do not include all possible tasks in this work and do not limit the assignment of related tasks in any position of this class.

- Develops and directs the implementation of goals, objectives, policies, procedures and work standards for assigned program area; interprets and complies with all applicable federal and state regulations.
- Works with the local and regional governments, Public Safety Answering Point (PSAP) managers and designated personnel, wireless service providers, telephone service providers and PSAP equipment providers to successfully integrate geospatial (GIS) data with the metropolitan area E9-1-1 system to enable efficient and timely response to the location of all 9-1-1 callers, including:
 - work with PSAPs and E9-1-1 service providers to define the spatial data needs and options for developing and using GIS related applications for E9-1-1 call dispatching
 - work with MetroGIS ; city ,county, regional and state GIS departments; vendors; and the PSAPs for the coordination, creation, documentation, and maintenance of the GIS datasets necessary to support coordinate-based, positionally accurate map displays at the metropolitan area 9-1-1 call answering positions;
 - create and maintain an enterprise geographic information system that supports the geospatial data needs of the metropolitan area PSAPs, for use in the display of wireless and wireline 9-1-1 caller location.
 - act as a resource for PSAPs and vendors on how various vender software systems may work in conjunction with available GIS datasets .

- coordinate with the PSAPs for the on-going maintenance of the GIS datasets and display of the digital maps at the 9-1-1 call answering positions;
 - coordinate with the wireless carriers for the geospatial information for their cell sites;
 - coordinate with the 9-1-1 Database Coordinator for the initial and ongoing reconciliation of the master street address guide (MSAG) and the GIS data;
 - distribute the geospatial data updates on a regularly scheduled basis;
 - receive, initiate, and monitor the GIS data discrepancy and error correction reports.
 - train personnel at the PSAPs on the use and interpretation of the GIS datasets and derived products;
 - provide technical support and trouble shooting of both end-user and system problems;
 - provide advice and recommendations to the Executive Director on issues related to the Board's regional E9-1-1 GIS database.
- Work with the Executive Director as the Metropolitan 9-1-1 Board coordinates efforts with MetroGIS by directly representing the GIS interests of the PSAPs and indirectly the emergency service organizations served by the metropolitan area PSAPs.
 - In the absence of the Executive Director, represent the Metropolitan 9-1-1 Board E9-1-1 GIS program in meetings with a variety of public, business and community organizations.
 - Develops systems and maintains records that provide for the proper evaluation, control and documentation of assigned activities; prepares and directs the preparation of a variety of written correspondence, reports, procedures, directives and other materials.

Knowledge, Skills and Abilities

- In-depth experience with Geographic Information Systems, including database design, development, maintenance, and documentation..
- A working knowledge of analytical and cartographic principles for GIS.
- Knowledge of and the ability to work effectively with complex databases and GIS programs.
- Project management experience in the field of GIS is required.
- Knowledge of public safety communications and 9-1-1 equipment is desired.
- Ability to write and review Requests for Qualifications or Information.
- Excellent oral and written communications skills required.

- Ability to work independently and in teams, handle multiple projects and deal with diverse constituencies is essential.
- Must display high levels of self-motivation, knowledge, professionalism and expertise.
- Ability to interact tactfully and effectively with the public, telephone companies, local agencies and others to coordinate various technical activities involved in operating the regional E9-1-1 GIS program.

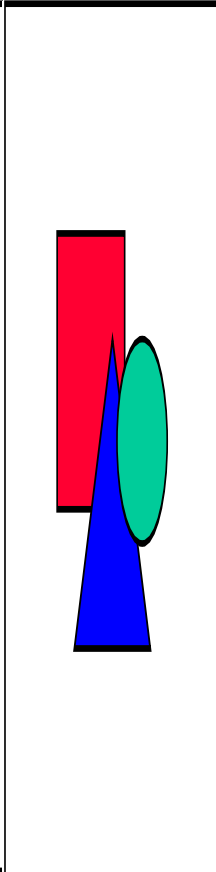
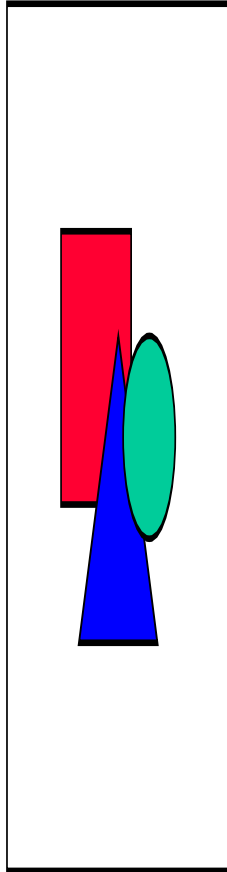
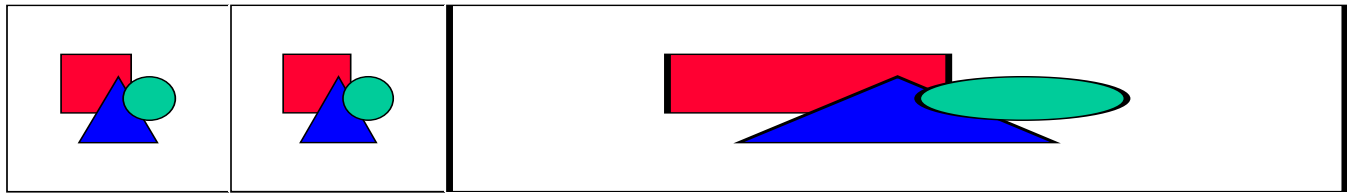
Qualifications

A four-year college or university degree with major coursework related to the area of assignment and two years of supervisory or managerial experience within or related to the area of assignment; or, an equivalent combination of education and experience sufficient to successfully perform the essential duties of the job as listed above.

Work Environment:

Work is performed in an office building. Occasional local travel will be required. Equipment used may include personal computers, printers, map plotters, telephone, fax and copy machines, calculator, and other standard office equipment.

Attachment 4



LOGIS Kicks Off Printrak Implementation

LOGIS is pleased to announce that negotiations for the purchase of a new Police System were completed this spring. LOGIS Executive Director Mike Garris signed the purchase contract for the Printrak system in late March.

Printrak, a Motorola company, is an internationally known supplier of public safety software, whose customers currently include the police departments of New York City, St. Paul, Milwaukee, and Des Moines. LOGIS has purchased the CAD (Computer- Aided Dispatch), Mobiles, and Records modules from the Printrak product line.

The new Police System is entirely Windows based and offers features like real time transfer and mapping of 911 location information to CAD, intuitive data search tools for investigative use, data sharing between agencies, and a visually-oriented report writer.

Extensive implementation work has begun for the first group of agencies (Group One): Lakeville, Eagan, Farmington, Rosemount, and the Dakota County Sheriff's Department. LOGIS plans to bring all Group One agencies live on the Printrak CAD, Mobiles, and Records modules by the end of the first quarter of 2004. Other agencies will follow, in an order yet to be determined. When implementation is complete, 18 agencies will be using Printrak—including two new agencies: Bloomington and Dakota County.

The research phase of Printrak contract negotiations concluded on December 9, 2002, when LOGIS staff visited the City of Mesquite, Texas, to observe and discuss use of the new Printrak Records Management Module. This visit helped clear up some lingering questions about the Records Management software and strengthened overall confidence in the Printrak suite.

Detailed negotiations regarding cost, Statement of Work, and the project plan were carried out during January, February, and March, culminating in the decision by the LOGIS Executive Committee to authorize signing of the contract. Chief LOGIS negotiators were Mike Garris, Executive Director, and Chris Norton, Manager of Application Support and Administration.

LOGIS hosted an official Printrak Kick Off Week April 22-25. Project team members from the Group One agencies and staff from Printrak and LOGIS began intensive work on the implementation process. Topics of discussion included site preparation, a detailed study of CAD (including functional specifications and a pre-configuration workshop), and work on the Geofile and Service Boundary areas (e.g., beats). Geofiles are the building blocks of city location information, and are used to aid in mapping and CAD validation.

LOGIS has dedicated five experienced staff members to the success of this

project. Senior Support Analyst Renee Hosch will focus on the Records Module. Support Analyst Mark Tande, a retired police officer, will focus on the Mobiles Module. Support Analyst Terry Hoium (see Profiles elsewhere in this issue) will focus on the CAD Module. Two Network Services staff members, Glenn Thier and John Wondra, have also been assigned to the Printrak project.

LOGIS has made a number of infrastructure improvements to better support Printrak and other applications. During May and June, LOGIS installed a new and more powerful backup generator at its Golden Valley headquarters. The electrical service was upgraded to better handle the demands of advanced systems. The last half of May saw installation of the Printrak CAD servers, Records Servers, and data storage devices at LOGIS.

A great deal of work must still be done before Printrak goes live at the Group One agencies. The designs for all three modules must be drafted out on paper and then implemented in the system. Interfaces to state and federal agencies must be built and tested, and the Geofile must be built. Agency rollouts will begin during the last quarter of 2003, and Group One Agencies will be completed in the first quarter of 2004. At rollout time, agencies will receive the CAD and Mobiles modules first, followed shortly by Records.

A specialized training room will be created at LOGIS to handle training needs for the CAD module. The training room will emulate the CAD stations installed at the agencies, with multiple screens and functions. LOGIS will host Train the Trainer sessions for all three Printrak modules, and agency staff trained at those sessions will serve as trainers for their own offices.

Progress reports on the Printrak implementation are now available on the new LOGIS Intranet site (navigate to http://intranet.logis.org/LO-PD_PRINTRAK_IMPL/ and select Project Updates). Please refer to the Intranet article elsewhere in this issue for more information about the LOGIS Intranet.

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Attachment 5 – Number of PSAP Answering Positions by PSAP and County

MODEL A (3 Controllers)

**Controller 1: ANOKA /
RAMSEY /
WASHINGTON
COUNTIES**

<i>ANOKA COUNTY</i>			
PSAP's	Trunks	Positions	Call Load
Anoka	10	6	118522
Subtotal:	10	6	118522
<i>RAMSEY COUNTY</i>			
Maplewood	6	3	9022 (Jun-Dec)
Ramsey County	8	6	41368
St Paul	10	12	156028
White Bear Lake	6	2	7886
Subtotal:	30	23	214304
<i>WASHINGTON COUNTY</i>			
Washington County	6	4	27131
Cottage Grove	4	4	4816
Subtotal:	10	8	31947

**Controller 2: CARVER
COUNTY /
HENNEPIN
COUNTY**

<i>CARVER COUNTY</i>			
PSAP's	Trunks	Positions	
Carver County	6	4	16305
Subtotal:	6	4	16305
<i>HENNEPIN COUNTY</i>			
Airport	4	4	11148
Bloomington	6	6	35553
Brooklyn Controller	6	3	19106
Eden Prairie	6	4	18104
Edina	6	3	18147
Hennepin County	18	15	143825
Hopkins	6	2	6207
Minneapolis	14	15	352954
Minnetonka	6	4	13336
Richfield	6	3	13351
St Louis Park	6	3	28423
Subtotal:	84	62	660154

**Controller 3: DAKOTA
COUNTY /
SCOTT**

COUNTY

<u>DAKOTA COUNTY</u>			
	PSAP's	Trunks	Positions
Apple Valley	4	2	10431
Burnsville	6	3	18459
Dakota County	6	5	20720
Eagan	6	5	18277
Lakeville	6	3	9157
W St Paul	6	3	9257
Subtotal:	34	21	86301
<u>SCOTT COUNTY</u>			
Scott County	6	4	55494
Subtotal:	6	4	55494
<hr/>			
Total:	180	128	1183027

Attachment 6

Figure 1: Sample of a screen the dispatcher would use to enter GIS data errors before finishing the 911 call.

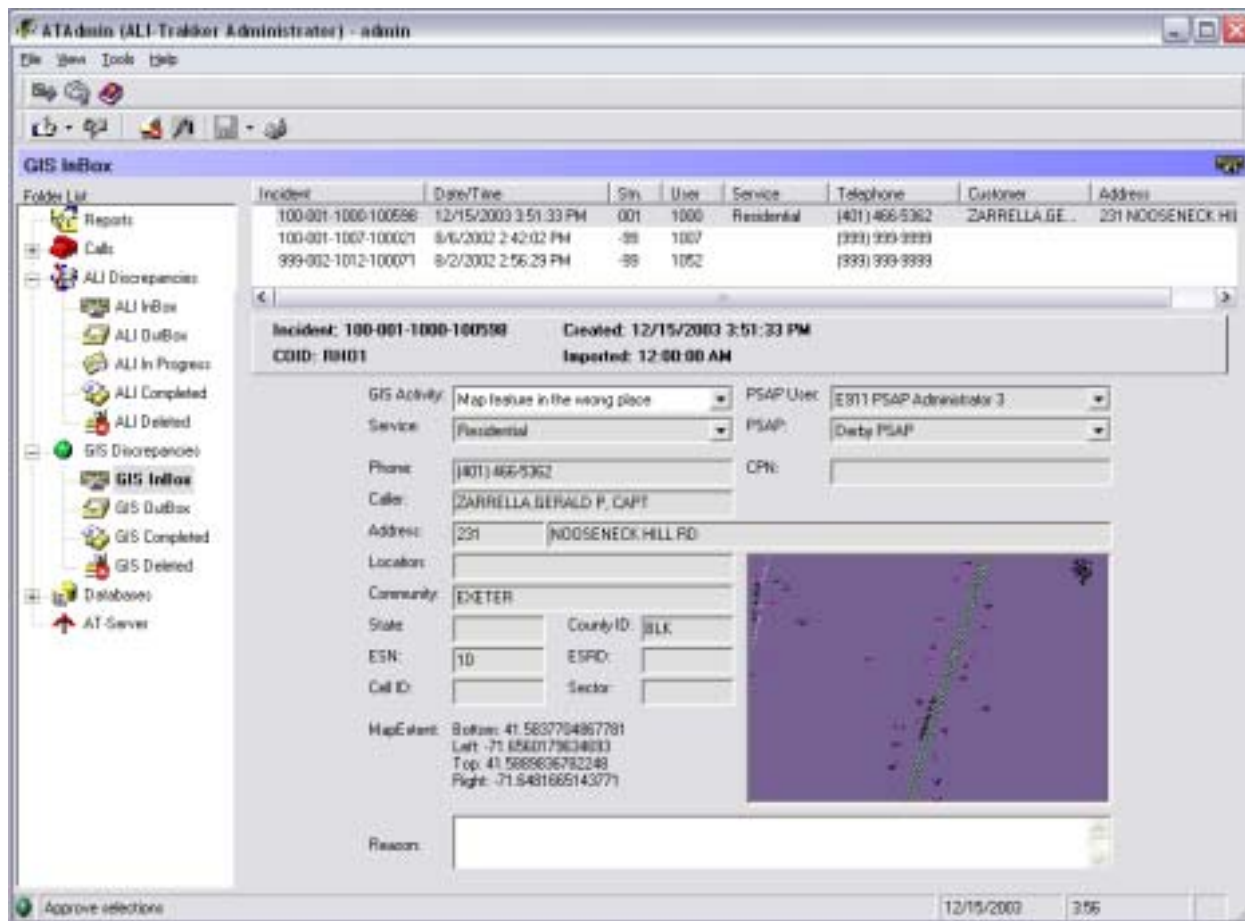


Figure 2: Sample screen that the E911 GIS Coordinator would use to correct an error sent by a dispatcher.

1000011034100334 (Buddy Trip)

Problem: Unknown map display failure
GIS Foundation Comments: RANDOM ST SHOULD BE LABELED RANDOM RD - THERE IS NO RANDOM ST IN CORRY

Address: ...
 Discrepancy Date: 3/23/2003 11:48:18P
 Core Date: 20031003 16:45:1
 Input Date: 20031003 04:0
 Population: 0
 In Progress:
 Resolved:
 Pending:
 Note:
 Delete:
 Save:

AT Address not updated with any changes

Address	Alter	Project	Project	Alter	Project	Alter	Project
00844	CITY OF CORRY			754	11260	101	A
00845	FRANKLIN TWP			750	11264	117	A
00846	CITY OF CORRY			754	11230	101	A
00847	CITY OF CORRY			754	11017	101	A
00843	CITY OF CORRY			754	11189	101	A
00843	CITY OF CORRY			754	11230	101	A
00850	CITY OF CORRY			754	11230	101	A

Address	Alter	Name	Proj	Alter	Project	Alter	Project
10001	STATELINE RD	STATELINE RD	0	102			
10002	ADHTON RD		0	102			
10003	CALONG RD		0	100			
10004	DAVIS RD		0	100			
10005	DOW AL RD		0	102			
10006	DOWMAN RD		0	100			
10007	RRA RD		0	100			

Address	Alter	Address	Alter	Project	Project	Alter	Project	Alter	Project
125	1001	11526	3	8	0.800	1236	125%	12307	12433
125	1002	11526	3	8	0.800	1236	12500	284	1236
125	1003	11526	3	8	0.800	1236	12500	0	0
125	1004	11526	3	8	0.800	0	0	80	80
125	1005	11526	3	8	0.800	200	200	0	0
125	1006	11541	3	8	0.800	0	0	0	0
125	1007	11750	3	8	0.800	0	0	0	0

Address	Alter	Alter	Project	Alter	Project	Alter	Project		
10000102010304	Alan Ramsey	36	01103	42	10708	36	01098	42	11030
10000102010310	Markus Ramsey	78	00901	42	10811	78	00990	42	10370
10000102010316	Shirley G. Adams	78	00800	42	08100	78	00722	42	01000
100001020103050	Shirley G. Adams	38	02240	41	00140	38	02008	41	00041
100001014100904	Nancy Trip	78	03150	41	01905	78	02052	41	00034
100001014100918	Nancy Trip	78	01940	41	01980	78	01970	41	00006
100001014100917	Nancy Trip	78	02804	41	01708	78	02077	41	00005

Address	Alter	Name	Project	Alter	Project	
1001	L	ALBION COLLEGE		15	00021	ALBION
1002	L	OSCARO COLLEGE		582	01030	OSCARO
1003	L	CORRY CITY		28	001	CORRY
1004	L	EDWARDS RD		134	00001	EDWARDS
1005	L	EDWARDS UNIVERSITY		64	001	EDWARDS
1006	L	OSCARO		430	001	OSCARO
1007	L	OSCARO BORO		34	001	OSCARO