METROGIS

POTENTIAL ENHANCEMENTS TO REGIONAL DATA SOLUTIONS

STANDARD PROCEDURES

This document contains standard procedures, guidelines and templates used throughout the *Potential Enhancements to Regional Data Solutions* project. It also provides some best practices for using various online tools in future MetroGIS endeavors.

Each section corresponds to a phase in the project, and includes details of why that particular method was used, and the standard procedures followed.

1 PRIORITIZE REGIONAL DATA SOLUTION ENHANCEMENTS

Task Overview: AppGeo developed a simple on-line survey to prioritize potential improvements to existing regional data solutions.

Chosen Tool: Online survey tool (*SurveyMonkey* – see www.SurveyMonkey.com)

Reason for Tool: The decision was made to use a survey for this phase of the project as it was necessary to gather standardized information that would allow for straightforward analysis to determine what the overall priorities were across all MetroGIS stakeholders (or at least those that chose to participate).

a. Standard Survey Procedures

The following outlines the procedure and workflow used to develop the online survey for prioritizing potential data improvements. For this project, the survey was done using *SurveyMonkey*.

1. Determine who the target audience (participants) are.
2. Determine what questions were to be answered, and the best question formats to do so (see next section)
3. Create a Draft version of the online the survey
4. Have a limited audience answer sample questions to test/verify output format. Revise questions as needed.
5. Publish survey and collect responses
    - SurveyMonkey allows you to track responses in real time to gain an understanding of survey participation
    - If participation is lacking, reminders to respondents can be sent out

6. Close the survey and analyze the results.
    - The following criteria was used to determine which enhancements would be considered "top priority" to move onto phase 2:
        - *The enhancement rated the highest importance within that individual regional data solution enhancement ranking*

          OR
        - *At least 25% of respondents indicated that the suggested enhancement "would most positively impact" their organization in the overall ranking.*
    - In this case, criteria was determined after the survey was completed, and based on the results. Determining the criteria ahead of time will be an important step in future MetroGIS surveys.

b. Standard Survey Questions

The following three questions should be included at the outset of all MetroGIS surveys. These are the same questions used thus far in the *Shared Service Needs Assessment* project.

1. **Please provide us with the following information which will ONLY be used for internal purposes:**

First Name	
Last Name	
Organization	
Street Address	
City	
Email	
Phone Number	

2. **The following category best describes my organization:**

- ○ City or Township
- ○ County
- ○ Watershed/Water Management District
- ○ School District
- ○ Metropolitan Government Entity
- ○ State of Minnesota Agency
- ○ Federal Agency
- ○ Academic (College or University)
- ○ Utility
- ○ Private sector
- ○ Private Non-Profit
- ○ Other

If Other, please specify

3. **The following category best describes my professional expertise:**

- ○ Community Development; Planning; Demographics; Housing; Research
- ○ Property Records
- ○ Public Works; Transportation; Telecommunications
- ○ Parks and Recreation; Environmental Protection; Natural Resources
- ○ Public Safety; Judicial
- ○ Human, Social, Educational Services; Public Health; Libraries
- ○ GIS or Information Technology (e.g. supports multiple expertise)
- ○ Other

If Other, please specify

Questions #2 and #3 in particular allow responses to be filtered/sorted by the type and expertise of the respondents.

c. Survey Question Types

Below are some samples of different types of survey questions used, and an explanation of the purpose of each.

MULTIPLE CHOICE

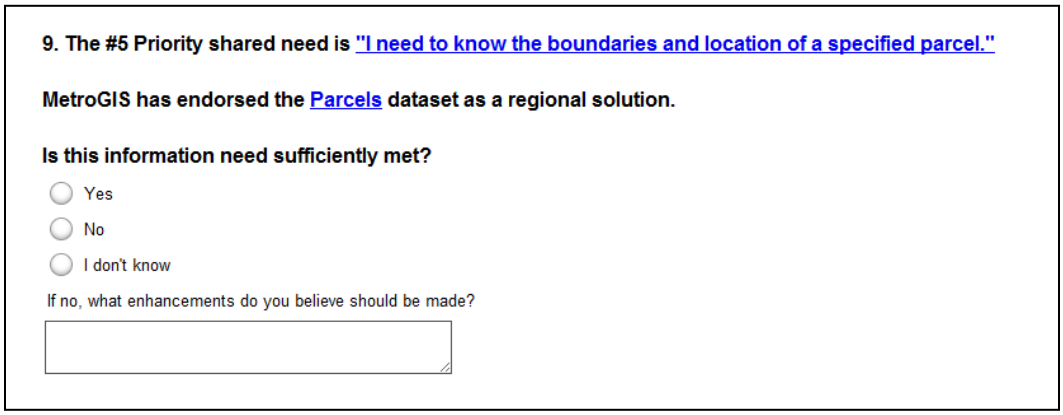
Multiple choice questions should be used when you want the user to choose from a discrete list of items. A good multiple-choice question has mutually exclusive answers, and the most basic type of multiple choice is a simple Yes/No question. Multiple choice questions can either allow a user to make only one choice, or they can allow a user to make multiple selections, depending on the desired outcome. In most cases, it is generally preferable to limit users to making one choice, as this makes the survey output more straightforward.

Below are two examples of multiple choice questions that have been used in MetroGIS surveys. Note that each one has the option for added user input.

2. The following category best describes my professional expertise:

- ○ Community Development; Planning; Demographics; Housing; Research
- ○ Property Records
- ○ Public Works; Transportation; Telecommunications
- ○ Parks and Recreation; Environmental Protection; Natural Resources
- ○ Public Safety; Judicial
- ○ Human, Social, Educational Services; Public Health; Libraries
- ○ GIS or Information Technology (e.g. supports multiple expertise)

If Other, please specify



9. The #5 Priority shared need is "I need to know the boundaries and location of a specified parcel."

MetroGIS has endorsed the Parcels dataset as a regional solution.

Is this information need sufficiently met?

- ○ Yes
- ○ No
- ○ I don't know

If no, what enhancements do you believe should be made?

LIKERT SCALE

A Likert Scale question is used to gather a user's opinion based on a scale. For example, this scale can be used to understand their experience with data or applications as shown in the example below. Likert Scale questions can also gather input by asking a respondent to indicate whether they agree or disagree with a given statement (e.g. "MetroGIS serves an important purpose"). In this case, the scale might be "1 - Strongly Disagree" through "5 - Strongly Agree".

The following is an example of a Likert Scale question used in the *MetroGIS Shared Needs Assessment* Survey:

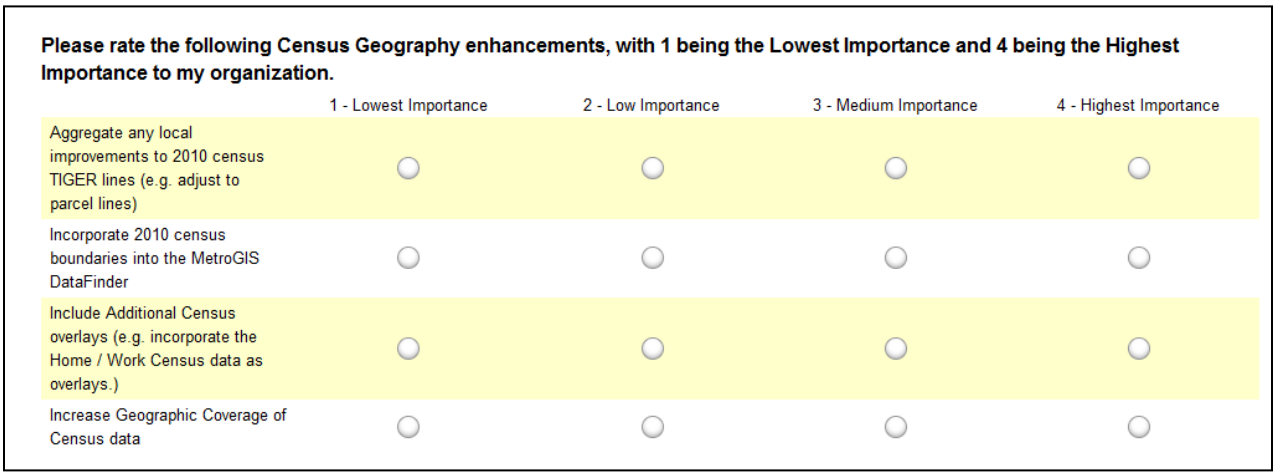
20. Please rate, on a scale of 1 - 5, how well the following MetroGIS regional datasets meet your business needs.

	1 - Does not meet my needs	2	3	4	5 - Meets my needs very well	I do not use this data
Census geography (1990 & 2000)	○	○	○	○	○	○
Land cover	○	○	○	○	○	○
MCD/county jurisdictional boundaries	○	○	○	○	○	○
Parcels boundaries	○	○	○	○	○	○
Planned land use	○	○	○	○	○	○
Socioeconomic characteristics of areas	○	○	○	○	○	○
Street centerlines and address ranges	○	○	○	○	○	○

RANKING

Ranking questions are used to determine the priorities and importance of a list of items. These questions can force rankings (each "rank" can be used only once) which will get at the *relative* importance of the items. This was the method used in the *Prioritizing Potential Regional Data Solution Enhancements* survey as the goal was to get respondents to make the decisions about which item was most important to them. However, ranking questions can also be set up to allow a respondent to assign the same rank (e.g. "most important") to more than one item.

Below is an example of a ranking question used in the *Prioritizing Potential Regional Data Solution Enhancements* survey



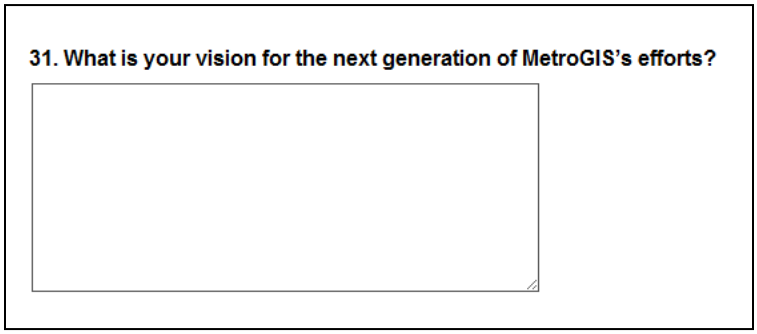
Please rate the following Census Geography enhancements, with 1 being the Lowest Importance and 4 being the Highest Importance to my organization.

	1 - Lowest Importance	2 - Low Importance	3 - Medium Importance	4 - Highest Importance
Aggregate any local improvements to 2010 census TIGER lines (e.g. adjust to parcel lines)	○	○	○	○
Incorporate 2010 census boundaries into the MetroGIS DataFinder	○	○	○	○
Include Additional Census overlays (e.g. incorporate the Home / Work Census data as overlays.)	○	○	○	○
Increase Geographic Coverage of Census data	○	○	○	○

Open Ended

Open ended questions allow for maximum flexibility in response, but require additional time and effort in the response review phase as they do not allow for straightforward summary or statistical analysis. These types of questions are very useful when gathering ideas and general opinions from respondents. Most often, an open-ended question is used at the end of a survey and invites respondents to make further suggestions, comment on areas that haven't been covered by the rest of the survey or provide recommendations for improvement. Open-ended questions can also be joined with the types of questions mentioned above to allow a respondent to elaborate on their selections (see examples above in the *Multiple Choice* section).

The following is an example of an open ended question used in the *MetroGIS Shared Needs Assessment* Survey:



31. What is your vision for the next generation of MetroGIS's efforts?

d. Lessons Learned

The following list summarizes lessons learned while using the Online Survey (www.SurveyMonkey.com)

- Be mindful of the frequency of survey requests to stakeholders, and as best possible attempt to gauge the willingness of potential respondents to respond prior to deciding to use a survey.
- Clearly and succinctly articulate the purpose, expectations and results of the survey, so that respondents can make an informed decision about how much effort/detail to put into survey responses.

- If appropriate, determine what would constitute a credible number of survey responses prior to publishing the survey. (ex: quorums of specific teams)
- Be sure the survey questions and formats are straightforward and easy to understand
- Keep the survey to a reasonable length. Use question skipping logic to cut down on the number of a questions a respondent sees (i.e. skip questions that are not applicable to them)
- Be sure the tabular results that come from the survey are in a format that will allow the type of analysis desired. Test the output from a test set of responses prior to collecting survey responses from the entire audience.
- Monitor the response rate and send survey reminders if need be
- Evaluate the level of response and determine if valid results have been achieved based on the purpose of the survey.

2 GATHER IDEAS FOR HOW TO MAKE IMPROVEMENTS

Task Overview: AppGeo and MetroGIS utilized a collaborative online tool that allowed users to interactively brainstorm ideas for how to accomplish candidate enhancements and "vote" for the ideas posted by the community.

Chosen Tool: Online collaboration/brainstorming tool (*Tricider* – see www.tricider.com/en/t/)

Reason for Tool: In this phase of the project, it was necessary for participants to be able to interact with each other in an online space, generate ideas, discuss pros and cons, but still maintain some level of organization in the feedback t hat was collected.

a. Standard Procedures

The following outlines the procedure and workflow used to gather ideas for how to make the potential data improvements.

1. AppGeo and MetroGIS assessed three different options (see next section) to determine what would likely work best for this project.
2. Once the decision was made, the candidate enhancements were input into the tool along with an explanatory introduction.
3. The participants were given a set time to collaborate (2 weeks) and MetroGIS staff sent out reminders to help encourage participation.
4. At the end of the collaboration period, the results were exported and MetroGIS and AppGeo team members reviewed the results. These results include the following information
    a. Ideas Proposed, and who proposed them
    b. Comments made about each idea (pro and con) and who made the comments
    c. Number of people who voted for each idea (and who voted)
5. These results were then compiled into a summary document, which included a table indicating the number of votes each idea received.

Because the results provide a log of who participated, and who commented or posted about a particular idea, as a follow-up step, MetroGIS could reach out to those who posted ideas and gave comments about specific topics to gauge whether they would be interested in getting involved in further work or implementation.

b. Collaboration Tools Considered

For this project, the collaboration tool chosen would need to have the following characteristics to be successful

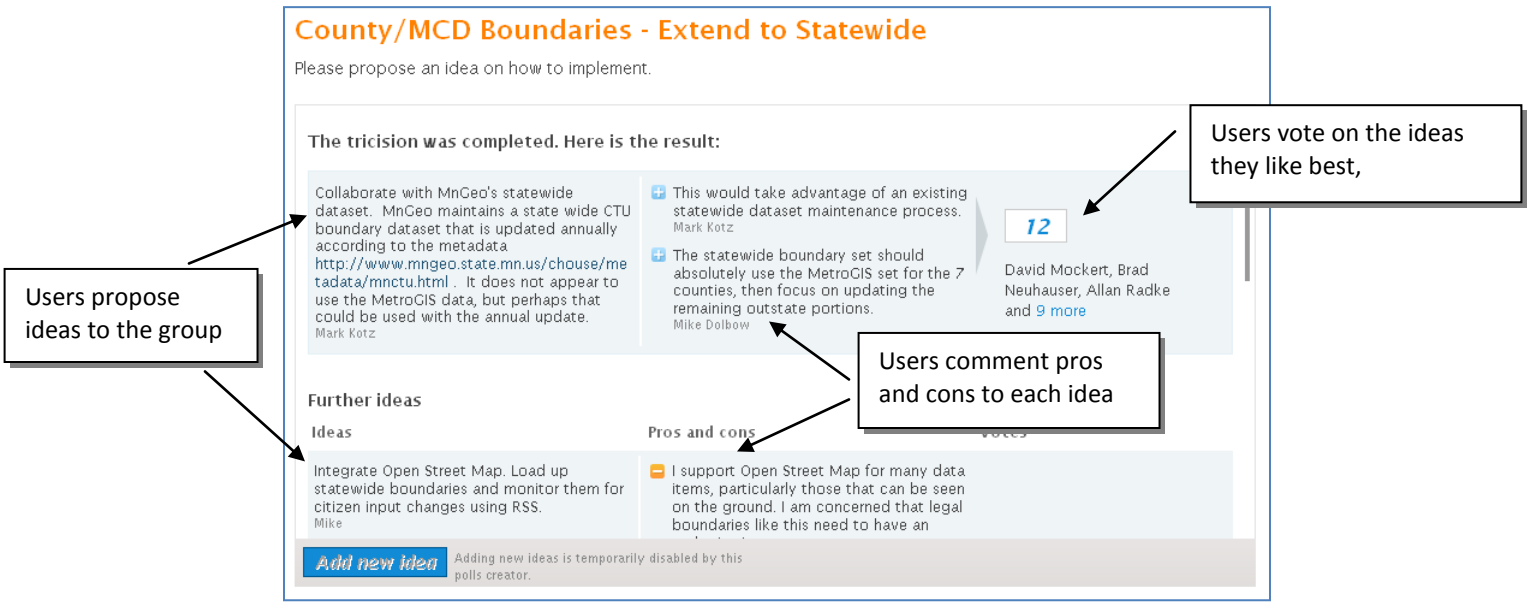
- The tool is commercially available and free
- The tool must be user-friendly and effective
- Participants can view the prioritized list of potential improvements and make suggestions for how to make these improvements
- Participants can comment, vote, and propose new ideas for making the improvements
- Participants can easily re-visit the page several times to check for additional ideas to vote and/or expand on.
- Those proposing ideas identify themselves to allow for future follow-up

AppGeo and MetroGIS considered three different options for this phase of the project, each is described below. The team ultimately chose *Tricider* for this project, but it is anticipated that MetroGIS will likely test out other collaboration tools on future initiatives.

TRICIDER

Tricider is a free tool and seemed to be the simplest user interface, and no login was required which would help to encourage easy participation. This tool has the basic functionality needed (give ideas, comments, and vote) and is presented in a very clean, easy to use interface. The voting and commenting asks for participants to enter their name so that follow-up with individuals is possible.

Below is a screenshot from the actual Tricider forum used in this project.



IDEASCALE

IdeaScale (www.ideascale.com) is a slightly more robust tool when compared to *Tricider* and it is expected that MetroGIS might test this as a collaboration tool in the future. It does require a user to login, but also contains some nice features such as grouping and as a user adds ideas, it does a check to see if there are similar ideas. It also provides the ability to add a follow-on question for each idea such as "Who might take the lead on this". As ideas are voted for, the "best" ideas (most votes) move to the top of the list, so this would be ideal in cases where several ideas are expected for each item. This additional functionality is very useful, however it does result in a more complex/cluttered user experience. There is a free version, but to take advantage of some of the functions, it may have been necessary to subscribe to a $15/month version.

ONLINE FORUM

The third alternative considered was a basic online forum such as a *Google Group*, which would allow for more open/informal communication. However, with no voting mechanism nor ability to organize ideas like the above options, it was determined that this was not the right tool for this project. This type of tool is useful in situations where the goal is to have an open dialog and allow users to simply share their thoughts as open-ended comments. Like open-ended survey questions, this can be a very useful way to get information, but creates a challenge at the end to organize/evaluate and come to meaningful conclusions from purely open-ended comments. As a side note, it appears that there is already a group called MetroGIS http://groups.google.com/group/metrogis_mn/about?hl=en but it doesn't appear to have any activity.

c. Collaboration Tool Feedback

Feedback was collected from the user community about the *Tricider* tool itself to assess its usefulness as an online collaboration tool.

Below is a summary of some of the comments given:

- Pros of *Tricider*
  - Easy to use
  - Great way to generate ideas without a long meeting
  - Much better than SurveyMonkey for true team collaboration and interaction
- Cons of *Tricider*
  - Text editing windows can be challenging when trying to write more than a short sentence.
  - Would be good if it was possible to give a comment without indicating + or -. Some comments are just thoughts and not necessarily for or against the idea.
- Reasons to Try *IdeaScale* for another project
  - Timestamping of ideas/votes
  - Better interface for entering comments
  - Login allows a user to delete or modify previous comments or ideas
  - Functionality to assign "points" for participation which provides incentive to participate
  - Orders ideas by number of votes
- General Feedback about this type of tool
  - Expectations for the results were unclear.

        - Were the ideas that got the most votes the "official" decision, or simply ideas for further investigation?
    - Need to determine if the results are valid
        - What the group decides in an informal manner may not be possible/feasible given resources, and may not match the overall goals and mission of MetroGIS.

d. Lessons Learned

The following list summarizes lessons learned while using the Tricider Brainstorming/Collaboration Forum (www.tricider.com/en/t/)

- Clearly and succinctly articulate the purpose, expectations, procedures/rules and results of the exercise, so that participants can make an informed decision about whether to participate and how much effort/detail to put into comments.
- If appropriate, determine what would constitute a credible/valid number of participants prior to initiating the forum.
- Do a reality check. Can this process really achieve the desired result?
- Present each item/question in a straightforward manner so that the issue to be considered and discussed is clear to the participants.
- Be sure expectations and results of the brainstorming/collaboration are made clear.
    - Were the ideas that got the most votes the "official" decision, or simply ideas for further investigation?
- Review validity of results.
    - Were there enough participants? From appropriate MetroGIS stakeholder groups?
    - What the group decides in an informal manner may not be possible/feasible given resources, and may not match the overall goals and mission of MetroGIS.

e. Future Use of Collaboration Tools at MetroGIS

The process of determining and setting up an online collaboration forum would be very similar for any future uses by MetroGIS. It is critical to think about the users of the tool and ensure that it will generate the desired outcome. If the end-results of the forum needs to answer a specific question(s) or come to some agreement, a more organized collaboration tool may be needed (such as *Tricider* or *IdeaScale*). However, if the tool is simply meant to gather thoughts and start a conversation, perhaps a more informal/open discussion forum can be used. In all cases, some planning at the start that consider the outcomes that are desired from the collaboration is critical.

In addition to the tools investigated for this project, MetroGIS might also consider even more robust online collaboration tools such as Microsoft *SharePoint* (http://sharepoint.microsoft.com) or *Huddle* (www.huddle.com *)*. *Huddle* is a cloud-based tool similar to *SharePoint* that offers file sharing, discussion boards, task management, brainstorming tools, web-meeting tools, and much more. Tools such as these will be useful beyond just the initial idea gathering phases and into actual project planning and implementation when documents, files and project t asks need to be managed across a large group of people.

A summary of all tools and their potential uses is provided in the data improvement plan.

3 DEVELOP DATA IMPROVEMENT PLAN

Task Overview: AppGeo and MetroGIS will compile the results of the first two phases and make recommendations on the feasibility and next steps of the suggested enhancements, with the end result being a Data Improvement Plan. This task consists mainly of collaboration and communication between MetroGIS and AppGeo. Project team members will work together to review the results of phase 1 and phase 2 to come up with the final Data Improvement Plan.

Below is an outline that provides the general steps taken when developing a data improvement plan:

1. Establish Project Background and Context
    a. What activities have taken place? What is the current status?
    b. Consider available budget and resources
2. Determine Project Goals
    a. What are the specific things MetroGIS wants to achieve? In this case, it was how to achieve the priority improvements.
3. Determine how to reach these goals
    a. Take into account budget, resources and priorities.
    b. Develop a feasible work plan whereby activities can be pursued in parallel and ideally don't require significant new investment. Some items may be actions, some may be organizational/policy changes, some may simply require further investigation.
    c. Consider tools that could be used to reach goals (e.g. online collaboration tools)