

Interim Project Report - NSDI CAP Grant Category 5
MetroGIS Quantify Public Value Study
Reporting Period: January 1 to March 31, 2011

Report Date: April 29, 2011

Agreement Number: G10AC00239

Project Title: Measuring Public Value of Geospatial Commons: A MetroGIS Case Study

Organization: Metropolitan Council

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<http://www.metrocouncil.org/about/index.htm>

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Executive Summary (163 words. Revised from the original submittal)

This study proposes development of a methodology capable of quantitatively measuring public value (QPV) created when organizations actively participate in a geospatial commons. The territorial focus is Hennepin County, Minnesota; the 32nd largest county in the United States by population, and the local government jurisdictions within it. The study involves interviewing representatives of all forms of government, non-profit, utility, industry, and academic interests serving the seven-county, Minneapolis-St. Paul metropolitan area - the MetroGIS community.

Understanding public value created, when public producers of geospatial data openly share their data, is a key issue in discussions surrounding spatial data infrastructure (SDI) development and continued support. The scope of this prototyping effort has been limited to parcel data (spatial and tabular), in particular, which adheres to standards that support interoperability. The proposed QPV methodology, which is to be developed as a component of the study, will attempt to account for public benefit created through reuse and chaining of parcel data by others who use these data.

Project Narrative

Our focus during this reporting period has been on regrouping and defining a QPV Study methodology from scratch. Regrouping was necessitated following the September 2010 finding that the originally required GITA ROI methodology is not appropriate for our objectives. In addition to the significant loss of both project funds and time as result of our need to develop a methodology from scratch, another equally significant impact occurred during this reporting period: our contractor withdrew from the study resulting in the need to further push back the target completion date. Our contractor concluded that they were not able to commit to the revised study scope and extended time

line, consequences of the failure of the GITA ROI methodology not being appropriate for our study objectives. Combined, these two setbacks have resulted in delays of a minimum of nine months, necessitating a time extension request, which has been granted.

Notwithstanding the significant setbacks encountered to date, the positive side of our work this past quarter is that our team has had the opportunity to coalesce, rethink the methods, and reach general agreement on a high-level approach. We believe this approach will provide the empirical information needed by policy makers to effectively assess the relative value of placing parcel data into the public domain versus that received with current access policies.

A total of \$4,831.53 in grant eligible expense claims were encumbered this reporting period for a total of 23,951.26 in grant eligible expenses to date or 47.9 percent of the \$50,000 grant awarded to the project. None of these expenses was able to be reimbursed as April 29, due to unexpected delays encountered setting up the accounting protocols under the new federal ASAP system. Hence, the attached Form 425 does not show reimbursement of the \$4,831.53 of expenses encumbered this reporting period.

Our In-kind contribution increased \$11,846 this quarter for a total of \$54,808.74¹ or \$15,558.74 (139.6 percent) more than our \$39, 250 pledged obligation. The March 24th confirmation from the FGDC grant administrators noted above, authorizing a time extension, also authorized stopping the tracking of in-kind contributions, given that our pledged obligation has been exceeded.

Major outcomes accomplished during this reporting period included:

Administrative:

- a) In accordance with direction received from Milo Robinson on December 8, 2010 (see our 4th Quarter 2010 project report regarding next steps authorized following the finding that the GITA ROI did not fit our needs), a Project Advisory Team² was created to provide advice concerning accomplishing Task 3, the outward looking component of our study (organizations benefiting from access to parcel data produced by Hennepin County).
- b) Prepared and submitted 4thQuarter 2010 Project Report in January 2011.
- c) Updated our public facing project [website](#).
- d) Maintained a database for tracking in-kind time contributions.
- e) Set up and administered protocols for reimbursement of expenses by scientific advisors to ensure standardized reporting and clarity on expectations.
- f) Continued to refine a listing of interview candidates for Task 3.
- g) Developed and submitted a request to the NSDI grant administrator in mid-March for a time extension from April 29, 2011 to April 29, 2012. On March 24, 2011 an email confirmation was received from FGDC grant officials stating that a no cost, time extension had been approved. In addition, a finding was made by the NSDI grant administrator that we had met our in-kind contribution obligation and, as such, are exempted from tracking these expenses from that time forward. On April 28, 2011, a formal contract amendment was executed.

¹ On March 24, 2011, the NSDI CAP Cat 5 Grant administration team found that MetroGIS had met its in-kind contribution obligation and authorized us to stop tracking these contributions as of that time. Hence, the figures presented herein are as shared with the team on March 23, 2011.

² The members of the QPV Project Advisory Team are listed the team's meeting summaries, which are available upon request. The members represent most major organizational perspectives to be interviewed during the study – city, county, regional, and state government, together with academic, non-profit and for-profit interests.

- h) Johnson participated as a reviewer of the 2011 NSDI Cat 5 Benefit CAP Grant proposals. He initiated a conversation to investigate the potential of collaborating with an awarded project that appears to have similar objectives to this MetroGIS QPV study.

Project - Task 1- Measure Benefit to Hennepin County of Geo-Enabling Parcel Data (Complete):

The results were not what we expected – the GITA ROI methodology required to be used as a condition of grant funding is not appropriate for our study objectives. (See the July to September 2010 Quarterly Project Report for the issues encountered).

Project - Task 2 – Define “Outward Looking” OPV Methodology (In progress):

As reported in our previous quarterly project report, the objective of our Task 2 was radically affected in September 2010 when our team realized that the GITA ROI methodology is not appropriate for our objectives. Instead of being able to leverage the results from applying the defined GITA-ROI methodology to Hennepin County’s situation in Task 1, as had been originally proposed, suddenly we had no model upon which to build the outward looking QPV component of our study – a principal reason for pursuing this study. Consequently, our focus during this reporting period has involved defining an alternate path forward. Key accomplishments during this reporting period:

- a) Following the December 8, 2010 understanding with Milo Robinson (see Administrative Item “a”, above), Johnson and Harvey developed a draft revised project work plan and budget and Harvey developed a draft listing of interview questions and high-level study methodology to share with the Study Advisory Team.
- b) On January 29, the Study Advisory Team³ provided comment and direction on the preliminary revised work plan, budget, and interview questions. A key discussion point was a proposed test interview.
- c) Our contractor conducted a test interview on February 8. The need was discovered for three major refinements to the interview questions. A detailed explanation is presented in Attachment B. (Our contractor subsequently withdrew from the study after this task. See the Project Narrative, above, for why they elected to leave the project.)
- d) The results of the February 8th test interview, options to modify the interview questions and overall study methodology were developed by Harvey and Johnson and presented to the Study Advisory Team⁴ on March 17, 2011. The Team tentatively agreed on a preliminary revised study methodology, subject to further consideration of a concept offered by the Chairperson of the MetroGIS Policy Board. This concept involves defining categories of benefit and public value creation opportunities, by organizational category. A meeting was set for April 25, 2011 to further discuss this concept.
- e) Johnson and Harvey developed a suggested list of skill sets and experience desired of a new contractor to assist Harvey with the proposed Task 3 survey, interviews and focus groups.⁵ Johnson also created a draft letter of solicitation and set up the protocols required to publish and evaluate proposals from interested candidates. The Study Advisory Team postponed consideration of the draft skills until the study methodology is finalized.

Project-Task 3– Implement “Outward Looking” OPV Methodology (Pending):

Assuming a contractor with the desired skills and expertise can be secured, work on Task 3 is expected to begin in earnest in August 2011. Harvey, the lead investigator, has an obligation in Europe from mid May through early August.

³ The summary of the January 29, 2011 Study Advisory Team meeting is available upon request.

⁴ The summary of the March 17, 2011 Study Advisory Team meeting is available upon request.

⁵ A listing of the desired skills sets and experience is available upon request.

Although the study method will differ substantially from that described in our grant application, the objective for the Outward Looking QPV Study Component remains the same as originally conceived and explained for our awarded project. Our yet to be finalized methodology involves conducting several focus groups, and potentially interviewing several individuals, who represent academic, non-profits/neighborhood advocacy organizations, for-profit, first responders, and utility interests, as well as, other government interests that serve the geographic extent of Hennepin County, and:

- a) Whose operations do/could benefit from access to parcel data produced by Hennepin County.

AND

- b) Who believe their value added data/web service/ application(s) do/could improve the cost - effectiveness of:

- (1) Hennepin County operations.

AND/OR

- (2) Operations of one or more taxing jurisdictions that serve Hennepin County's citizens.

Other information requested in / for the interim project report:

1. Draft ROI Case study and related documents - Premature

2. Photographs, graphics, or illustrations) - Premature or not possible to provide at this time.

ATTACHMENT A

Standard Federal Form 425

(Reporting Period: January 1 to March 31, 2011)

(See Next Page)

FEDERAL FINANCIAL REPORT

(Follow form instructions)

1. Federal Agency and Organizational Element to Which Report is Submitted United States Geology Survey		2. Federal Grant or Other Identifying Number Assigned by Federal Agency (To report multiple grants, use FFR Attachment) G10AC00239			Page 1	of 1	
pages							
3. Recipient Organization (Name and complete address including Zip code) Metropolitan Council 390 Robert Street North, St. Paul, MN 55101							
4a. DUNS Number '0300185760001	4b. EIN 416008898	5. Recipient Account Number or Identifying Number (To report multiple grants, use FFR Attachment) A3335P1		6. Report Type <input checked="" type="checkbox"/> Quarterly <input type="checkbox"/> Semi-Annual <input type="checkbox"/> Annual <input type="checkbox"/> Final	7. Basis of Accounting <input checked="" type="checkbox"/> Cash <input type="checkbox"/> Accrual		
8. Project/Grant Period From: (Month, Day, Year) 04/30/10			To: (Month, Day, Year) 04/29/11		9. Reporting Period End Date (Month, Day, Year) '3/31/2011		
10. Transactions					Cumulative		
<i>(Use lines a-c for single or multiple grant reporting)</i>							
Federal Cash (To report multiple grants, also use FFR Attachment):							
a. Cash Receipts				\$19,129.93 previously reported		\$19,129.93	
b. Cash Disbursements -				<i>note</i> - \$4,831.53 encumbered this period not able to be drawn due to delays setting up the A		\$19,129.93	
c. Cash on Hand (line a minus b)						\$0.00	
<i>(Use lines d-o for single grant reporting)</i>							
Federal Expenditures and Unobligated Balance:							
d. Total Federal funds authorized						\$50,000.00	
e. Federal share of expenditures				\$19,129.93 previously reported		\$19,129.93	
f. Federal share of unliquidated obligations				+ \$4,831.53 this report - for which reimbursement not yet received		\$4,831.53	
g. Total Federal share (sum of lines e and f)						\$23,961.46	
h. Unobligated balance of Federal funds (line d minus g)						\$26,038.54	
Recipient Share:							
i. Total recipient share required				In-Kind Contributions		\$39,250.00	
j. Recipient share of expenditures				\$42,961.74 declared last report + new \$11,846.40 (1st quarter 2011)		\$54,808.40	
k. Remaining recipient share to be provided (line i minus j)				Beyond Amount Pledged		(\$15,558.40)	
Program Income:							
l. Total Federal program income earned						\$0.00	
m. Program income expended in accordance with the deduction alternative						\$0.00	
n. Program income expended in accordance with the addition alternative						\$0.00	
o. Unexpended program income (line l minus line m or line n)						\$0.00	
11. Indirect Expense	a. Type	b. Rate	c. Period From	Period To	d. Base	e. Amount Charged	f. Federal Share
g. Totals:							
12. Remarks: Attach any explanations deemed necessary or information required by Federal sponsoring agency in compliance with governing legislation:							
13. Certification: By signing this report, I certify that it is true, complete, and accurate to the best of my knowledge. I am aware that any false, fictitious, or fraudulent information may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)							
a. Typed or Printed Name and Title of Authorized Certifying Official Mercy Ndungu Financial Analyst - Treasury				c. Telephone (Area code, number and extension) 651-602-1629			
				d. Email address Mercy.Ndungu@metc.state.mn.us			
b. Signature of Authorized Certifying Official				e. Date Report Submitted (Month, Day, Year) Created 04/29/2011			
				14. Agency use only:			

Standard Form 425
OMB Approval Number: 0348-0061
Expiration Date: 10/31/2011

Paperwork Burden Statement
According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is 0348-0061. Public reporting burden for this collection of information is estimated to average 1.5 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0061), Washington, DC 20503.

ATTACHMENT B

February 8 Test Interview Results

(Excerpt from materials shared with the Project Advisory Team for discussion on March 17, 2011. Referenced Attachments are available upon request.)

Task 2: Define Extended ROI Methodology prototype Quantify Public Value (QPV) methodology focused on use of publically-produced parcel data.

In the original proposal approved for funding, Task 3 was to follow on the creation of an extended, but prototype, ROI methodology. This was referred to as the Quantify Public Value (QPV) model, which would have been applied in Task 3 to study the value of Hennepin County parcel data for uses outside of the Hennepin County Administration. The objectives in the original proposal were complex, but centered on refining the prototype method through application and producing results with significance for MetroGIS. The QPV methodology and results were to be reviewed in Task 4 by a panel of international experts on Spatial Data Infrastructures and subsequently the enhanced methodology and findings were to be documented in a project report and presented to the broader geospatial community through conferences and meetings.

The original plan became moot when in September 2010 we learned that use of the required GITA-ROI model, the focus of Task 1, was not capable of accomplishing the outcomes, as originally proposed. The project team sought and received permission in December 2010 to propose a revised project plan that involved a fundamental revision of project activities which attempts to retain the proposed deliverables of the originally proposed study, with the exception of Numbers 1 and 2, which are related to the GITA-ROI:

- 1) Complete the analysis of Hennepin County operations applying the GITA ROI methodology.
- 2) Building on the GITA ROI methodology, create a trusted methodology to measure public value created from the point of view of the public (taxpayer), that is, not limited to a particular agency's operational objectives - the taxpayer expects public institutions to work together to minimize duplication of effort and leverage limited resources.
- 3) Include assessment of intangible (effectiveness and socio-political) benefits.
- 4) Create a means to assess public value created via collaborative ventures (partnerships among organizations) to address shared information needs that cross over existing stovepipes - critical to achieving MetroGIS's objectives as well as those of the broader NSDI community.
- 5) The methods and variables must account for the range of uses, mixture of quantitative and qualitative measures and various stakeholder interests – elected official, citizen, etc. and variety of themes – financial, political, social, strategic, ideological, and stewardship in both the short- and long-term horizons.
- 6) The method must produce findings that can be directly compared and contrasted against related costs to support local government operations.
- 7) The methodology will leverage best practices from European Commission, Australia, and elsewhere where models have been developed for similar purposes.
- 8) The methodology will be integrated into the next-generation MetroGIS Performance Measurement program providing for ongoing assessment.
- 9) The resulting methodology will be able to be used as a building block to support analysis of benefits for other regional (multi-county) SDI that serve Minnesota and elsewhere.

The project support team subsequently began to investigate the possibility of moving forward with a methodology developed from scratch, given the importance of the deliverables to needs currently facing the MetroGIS community. To do so, it was necessary to decouple our original proposal to apply an enhanced QPV methodology (for quantifying the value potential by parcel data users outside Hennepin County because required information was missing) from the GITA-based Hennepin county internal ROI analysis conducted in Task 1. The project team also recognized that the redefined study would need to draw more heavily on local advisors at key junctions to assess and inform the project. This situation and preliminary thoughts for redefining the study were shared with a panel of Scientific Advisors and the local the Project Advisory Team as explained below.

Scientific Advisors: A panel of nine individuals from across the globe was asked to offer advice on possible next steps. In the original proposal, this panel was to have assisted with defining enhancements to the GITA-ROI needed to accomplish the cited above. Instead, their advice was sought on options for proceeding with a methodology developed from scratch. In exchange for providing written comments and participating in a December 1 Webinar, each who submitted an invoice was compensated with a \$400 stipend. A listing of the individuals invited to participate in the Webinar and a summary of the December 1 Webinar are presented in Attachment A.

Local Project Advisory Team: On January 27, 2011, the QPV Research Coordinator, Francis Harvey, shared preliminary thoughts on a revised methodology for comment and direction from team members. One of the proposed tasks called for a test interview to be conducted on February 8. The purpose was to refine questions developed to elicit desired information from stakeholders concerning the value/potential value to their operations if they had access to parcel data. Team members concurred the proposed test should be conducted. The team also offered ideas that resulted in modifications to the preliminary ideas offered by the Research Coordinator, which included:

- The task of developing a methodology, from scratch, faces several challenges, beginning with creating an effective method that accounts for the broad range of values associated with use of geographically-referenced parcel data and the anticipated lack of budgetary information required to quantify the value creation potential of using parcel data.
- The Research Coordinator acknowledged that a focus on key public values, with connections to the costs of creating public goods, is central to assuring the significance of the project findings. That is, produce an effective means to better understand the value of shared data for decision making. Though attempting to account for indirect benefits, as encouraged by the Advisory Team, significantly increases the complexity of the task.
- A focus-group, facilitated process was encouraged by Advisory Team as potentially a more effective to accomplish the objectives of individual stakeholder interviews as had been earlier anticipated.

Task 2a: Test Interview

On February 8, 2011, Danielle Scarfe of W4Sight, Inc. conducted the test interview with Joanne Foust and Jim Bunning from Metropolitan Development Corp. Ms. Scarfe's meeting summary notes, formatted according to the questions asked, and the Research Coordinator's conclusions, including further refinements to the preliminary methodology, are presented in Attachment C. In brief, two major findings, with methodology altering impacts, and the need for three refinements to the preliminary interview questions were among the lessons learned. They are summarized as follows:

1) Methodology Altering Findings:

- a) The results may be primarily anecdotal and less useful than the quantitative results desired effectively to address current needs of the MetroGIS community (e.g., pending negotiations to transition to the next generation parcel data sharing agreement).

Discussion Point: The need for revisions to the interview questions (see Item 2 below) raises more specific points about values and uses. If this is the case, should work on the QPV Study be postponed until more is known about whether a recently awarded study in Oregon (Agenda item 2b) might offer a solution without having to develop a methodology from scratch? The downside is that two inquiries have been made to the principle researcher seeking approval to share the grant application with Harvey and the Advisory Team but thus far no response.

- b) The organization-based focus group technique that the Advisory Team suggested at the January 27th meeting will likely need to be preceded by a one-on-one interview to define core business drivers/activities from which specific values can be derived from use /enhanced use of geo-referenced parcel data to support business operations.

Discussion Point: (Related to Items 2b and c, below). A revised high-level interview methodology is offered to address this need

- Conduct six, one-on-one interviews to define core business drivers for each major organizational type by working with officials from an organization in each category that understand the issues
- Conduct one focus group of several individuals from each organizational theme to corroborate and expand upon the initial interview.
- Consolidate the results of the six theme-based focus groups and share with the Advisory Team in a workshop setting to further refine business drivers and anticipated benefits of enhanced use of parcel data.

- 2) **Need for Refinement of Interview Questions.** Responses to the preliminary interview questions **did not**:

- a) **Provide insight into “value”, mostly costs-based information.**

Discussion Point: Need to define what we mean by tangible and intangible value created and incorporate questions that will effectively assess these components. E.g., Tangible benefits - reduced costs and ability to do something not currently possible. Intangible benefits – benefits to others. This information to be used by the interview team to facilitate interviews/focus groups.

(If the Advisory Team concurs, a separate agenda item exercise is proposed to start this process using the strategy offered at the January 27th meeting (bottom of page three of the meeting summary in Attachment B) “...*exercise in which they would list major public value theme categories and specific themes within those major categories for each of their respective organizational types...*”)

- b) **Reveal specific business drivers/activities.**

Discussion Point: Specifying business drivers is a critical need that was confirmed during our debriefing with Nancy Lerner, the lead architect of the GITA-ROI methodology. We need to be certain that the interview team possesses the skills and experience to elicit sufficiently detailed descriptions of business objectives and operational requirements from interviewees and that individuals invited to participate in the interviews have knowledge of their organization’s core business requirements.

(If the Advisory Team concurs, in a separate agenda item, a draft listing of expertise is offered for comment.)

c) **Offer much insight into benefits/value created.**

Discussion Point: Understanding the specifics about how access to/enhanced use of geographically-referenced parcel data could benefit each interviewee's business operations is also critical to the success of the study. We need to be certain that the interview team possesses the ability to effectively assess and document how use or enhanced use of parcel data could improve operational support. In effect, a type of geospatial needs assessment. A key ingredient is that the interview team must have experience using geographical-referenced parcel data to support decision making.

(Suggested Team action is the same as for Item 2b, above)

Due to the pending changes in scope and extension of timeframe well beyond that involved in the original proposal, W4Sight has elected to withdraw from the study. W4Sight conducted the Task 1 investigation and the Test Interview. W4Sight's withdrawal necessitates the need to rethink our approach concerning retaining of supplemental support, given the relatively small remaining budget (a maximum of less than \$20,000) for consultant assistance, if the Advisory Team believes there remains merit to retaining a consultant to carry out Task 3 as opposed to carrying it out as a research project (see below). If a new consultant is to be retained, the procurement process must be competitive and, as such, involve publishing of new Request for Proposals. Qualified PhD candidates are suggested to be considered, along with other candidates.