PROJECT CLOSEOUT REPORT

Submitted to Large Project Oversight on 07/18/2016

GENERAL INFORMATION

Program/Project Name: Statewide Seamless Base Map (BMAP)
Agency Name: Department of Emergency Services, Division of State Radio
Project Sponsor: Mike Lynk, Director of State Radio
Project Manager: Justin Data, ITD Project Manager

PROJECT BASELINES

Original/ Final	Baseline Start Date	Baseline End Date	Baseline Budget	Actual Finish Date	Schedule Variance	Actual Cost	Cost Variance
Originally Baselined Information	7/1/2010	9/28/2012	$1,959,809	NA (see notes)	NA	NA	NA
Final Baseline Information	7/1/2010	10/22/2015	$3,927,957	4/12/2016	9.2% behind	$3,900,000	0.1% under

Notes:

(1) When this project was started up, only state-staff based work for was known and estimated. Along the course of the project additional funding was secured through general funds and federal grants. The additional funding was used to complete some of the originally anticipated scope by securing a vendor to perform that work for the 22 counties. The additional funding was then also used to perform that same work across the remaining ND counties. When the "original baseline" above was set, it was anticipated that if funding was secured that the scope and budget would increase and be re-baselined to the "final baseline" level. Therefore to calculate the final "product's" variance against the original baseline is not relevant as the final product is comprised of three times the scope and value of the original phase.

(2) The project costs also include a proof-of-concept that was conducted between Q4 2009 and Q2 2010.

MAJOR SCOPE CHANGES

- Securing the GeoComm contract to add data points and address ranges to the 22 PSAP counties
- Enacting the GeoComm contract option to add data points and address ranges to the "Western" counties
- Enacting the GeoComm contract option to add data points and address ranges to the "Eastern" counties

PROJECT OBJECTIVES

Business Objective	Measurement Description	Met/ Not Met	Measurement Outcome
Prepare the DOT/Photogrammetry data storage infrastructure to accommodate the volume of information to be processed	Infrastructure is in a condition that can process the information	Met	The infrastructure was established and was able to manage the large volume of data

Capture raw, high resolution aerial photography at "sub-foot pixel resolution" for the 53 North Dakota counties	Flight lines for the state have been flown, with the images captured, and subsequently downloaded onto a storage environment at the DOT	Met	Imagery was captured at sub-foot pixel resolution or better.
Post-processing of the photo data to create a seamless map of the state that includes centerline information for established, maintained roads	Final image produced that is a seamless image of the state containing the designated road information	Met	The seamless map was created and is available to the general public via the GIS Hub, is being used by DES, and is also being leveraged by multiple state agencies.
Transfer of final imagery and associated data products to the ND GIS Hub for distribution to a general audience	Appropriate data is available on the GIS Hub	Met	The seamless map was created and is available to the general public via the GIS Hub, is being used by DES, and is also being leveraged by multiple state agencies.

POST-IMPLEMENTATION REPORT

Post-Implementation Reports are performed after a project is completed. A "PIR" is a process that utilizes surveys and meetings to determine what happened in the project and identifies actions for improvement going forward. Typical PIR findings include, "What did we do well?" "What did we learn?" "What should we do differently next time?" Notable findings are presented in this closeout report.

Lesson learned, success story, ideas for future projects, etc.

Lesson Learned:

- It would be good to have the counties more involved with project. There were instances when resources were received very late in the project instead of when requested up front causing shakeups in the schedule and getting things done. It would be better to have better communication with the local stakeholders and have the local stakeholders be more accountable for providing assistance.
- There are different levels of expertise in GIS around the state responsible for data. A lesson for the state/local entities in general is to be able to hire appropriate staff to manage GIS data.
- Because this project was data intensive, a good "pre-project" would have been to coordinate an effort to cleanse and normalize the existing data set before establishing new data schemas.
- With so much data ... it was almost a given that some data would slip through the cracks. I believe we met our assigned level of accuracy but I would have preferred to have had even better control of quality and accuracy. (Time was a controlling factor. We could have done better with more time to experiment and develop processes but overall I think we did well.)
- We had several temporary employees involved in our part of the process and it was difficult to train them in whilst maintaining high productivity from the "trainers." Most of our quality issues came from temp work, so it would be preferable to have a more permanent workforce to work on a project like this.
- It is difficult to remind team members from such diverse areas, to explain certain terminology during briefings. However it is also very time-consuming to go over topics in this way ... so there has to be a happy medium.

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- In the future, everyone involved on the project should be copied on ALL the emails regardless if it's directed towards them or not for records purposes.
- There was a lot of local outreach and education early in the project. We assumed that would be enough education and outreach. However, it would have better to continue the outreach and education throughout.

Success Stories:

- Being able to have members of the team share their work environment with others was very "eye-opening" and a valuable asset to have. I felt like I learned a lot about other operations involved in this complex process.
- Everybody on the Photogrammetry team was involved in the development of processes, so there was significant "buy-in" to the workflow. I think that made everybody much more comfortable with the challenge of taking on new processes.
- Getting as many individuals involved in problem solving as possible was critical to developing our workflow. We had never done this before and we needed to sit back and ask the obvious questions, and feel comfortable in that team environment. I think the Photogrammetry team was a great example of flexible problem solving.
- This was a very challenging project for us but we were given excellent support from our management team and all the other participants in the project.
- Having a good cross section of the team available for discussion at each meeting was important. We were able to get different viewpoints and assess potential solutions much better with input from each team member.
- The key members of the project team were able to function with a level of professionalism, tempered with good humor and a positive outlook. This was critical in achieving the optimum results from each sector of the project.
- As we developed our statewide coverage of aerial imagery, we got more and more requests from other agencies within the State to share with them, the resources we had developed. When we give tours of our facility to various groups, it has been wonderful to see them absorb the technology and realize how this base map project will benefit every citizen within the State.
- An entirely new skillset was developed during the project. This new skillset has helped us tremendously with our normal job duties. We will be benefiting from this experience for years to come. Some of the base map data was repurposed to assist with the DOTs oil boom influx. The data was used on several occasions to assist in determining the best location for new highway bypasses.
- The project was a partnership between three state agencies (DES, DOT, ITD) and a private company (GeoComm). On top of that it required participation and buy-in from a diverse set of local jurisdictions. In the end this has been a stellar example of the great things that can be accomplished through partnership and team work when all parties come together to achieve a unified goal.
- Through this project, the state teams were recognized nationally. Team members have spoken at ESRI GIS user conference, National Emergency Number Association (NENA) conference, and at the ASHTO Subcommittee for Information Systems.