



Efficiency & Cost Saving Study Based on Updating of St. Clair Township Locates Software and Administration

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Executive Summary-P1



As part of the agreement between St. Clair Township and GVEX Consulting agency, the Township of St. Clair requested a Study that summarizes the efficiencies & cost savings based on the upgrade of the locate process & administrative system.

To kick this initiative off, an initial meeting was facilitated by GVEX , confirming requirements, and the receipt of predetermined background information. To have a more transparent understanding of the current locate process, administrative system and the plan to upgrade, interviews were held with all key stakeholders directly impacted.

Upon the completion of data collection, existing, & future locates process & administrative system were mapped end-to-end. Which identified a list of efficiency & other work process opportunities related to the current locate system & processes.

To evaluate the business impact of the future state and new locate system and process, a list of cost savings related to efficiency gains & other process improvements through system upgrade were calculated.

This report summarizes all discussion points, current and future states as well as the details of efficiency gains and cost savings related to the future upgraded process.

Executive Summary-P2



- The 5 Levels of Need Assessment, Objective Setting, & Metrics were developed.
- To identify the monetary equivalence of the project, Administrative, Crew Leader, & Locate Operators direct overhead & infringe, & commute costs we held a comparison between the current/future states, with the Delta of \$113K.
- To avoid overestimation throughout the calculations we factored in a confidence level of 90%, resulting in 101.7k Savings.
- The electronic locate process system is the ONLY upcoming initiative planned for the next few months and there are no other concurrent projects impacted on the results of this initiative. Therefore, all gained values will be related to this project.
- Throughout our analysis we gathered several potential intangible benefits:
 - Quality
 - Process Synchronization
 - Automation – record keeping
 - Elimination of losing track for requests
 - File/Request Organization
- To ensure the validity of savings & efficiencies gained, it is recommended to keep all reports updated, and conduct a flow up time study.

About GVEX and ROI Institute



About GVEX:

- With Over 20 years of experience in Business Transformations as Growth Partners, Global Value Expanders (GVEX) Consulting Firm has generated millions of dollars in savings. Implementing a combination of conventional and state of the art management philosophies.
- Achieving outstanding results, Increasing Revenue, & Throughput, while Reducing Cost, & Turn-Around-Time in a Guaranteed and Sustainable manner. Delivering us a continuous record of accomplishments exceeding the highest levels of performance and productivity.
- Here at GVEX we're a Top Tier ROI Institute International Partner & Certified Vendor of Record in Consulting Services. Exceeding mastery throughout countless sectors ranging from Public, & Private, across a diverse set of industries globally. Employing world renowned consultants across a spectrum of all essential business functions.

About ROI institute:

ROI INSTITUTE®

- ROI Institute helps inc organizations evaluate the success of projects and programs, including measuring the financial return on investment (ROI). We do this by providing workshops, consulting, coaching, briefings, keynote presentations, research, and benchmarking services.
- ROI Institute operates through a network of partners and associates in the United States and in 70 countries, assisted by more than 100 ROI consultants. Our services are tailored to important professional fields. All types of organizations benefit from our services, including businesses, non-profits, government and nongovernmental organizations, educational institutions, associations, religious institutions, and healthcare providers.

Our Team



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CEO, GVEX

Certified ROI Professional

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ROI Methodology – P1



Plan the Evaluation

Data Collection

Level 0:
Input

Level 1:
Reaction,
Satisfaction, and
Planned Actions

Level 3:
Application/
Implementation

Start with why
align
programs with
The business

Make it feasible:
Select the right
solution

Expect success
Plan for results

Develop
Evaluation
Plans and
Baseline Data

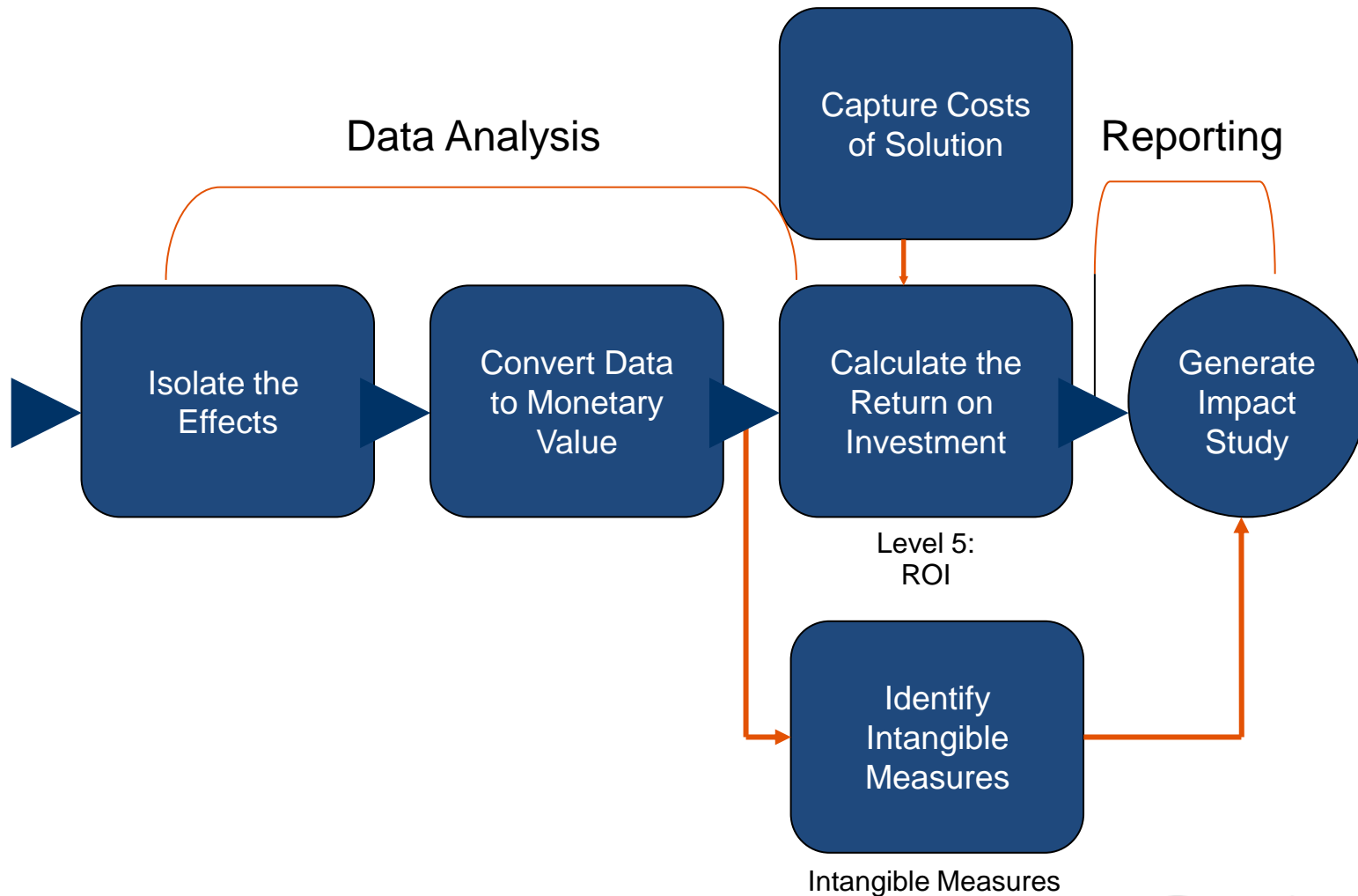
Collect
Data During
Solution
Implementation

Collect
Data After
Solution
Implementation

Level 2:
Learning

Level 4:
Business
Impact

ROI Methodology – P2



Background – St Clair Township



The Township of St. Clair is a lower tier municipality located in the County of Lambton. The Township was formed in 2001 as a result of the amalgamation of the former Townships of Moore and Sombra. We are located immediately south of the City of Sarnia and north of Municipality of Chatham-Kent. The current population is approximately 15,000 people. St. Clair Township owns & operates 232 km of storm & sanitary main as well as 420 of watermain that is field located by St. Clair Township Operations Staff. Approximately 3000 field locates are completed each year on these underground facilities.

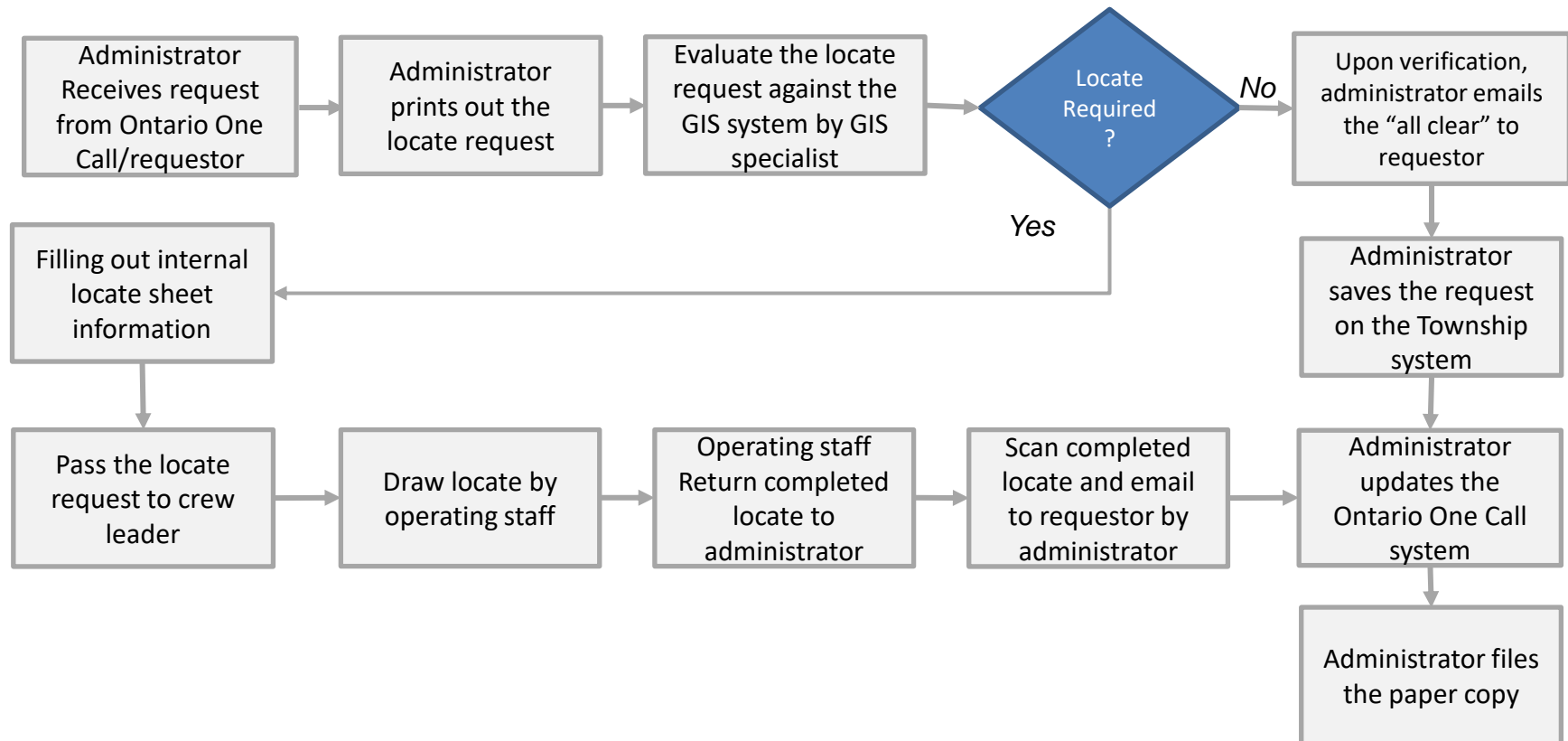
The locate system currently in place is paper based which inherently includes the risk of lost locate requests / completed locates. Locate drawings are hand drawn which introduces legibility challenges and allows for non-standard drawing elements which could lead to misinterpretation. Locate requests are received from the “Ontario One Call” locate request centre and are printed out to be processed. Locate requests are passed to a staff member to be evaluated against the GIS system for “all clear” and then physically passed to operating staff for locate completion. Completed locates are then physically returned to administrative staff for scanning and completion on the “Ontario One Call” System.

The process generally lacks efficiency, security and clarity in the locate completion information. This leads to considerable time spent handling the locate request & completed locate for processing, exposing the locate to potential loss and possible misinterpretation.

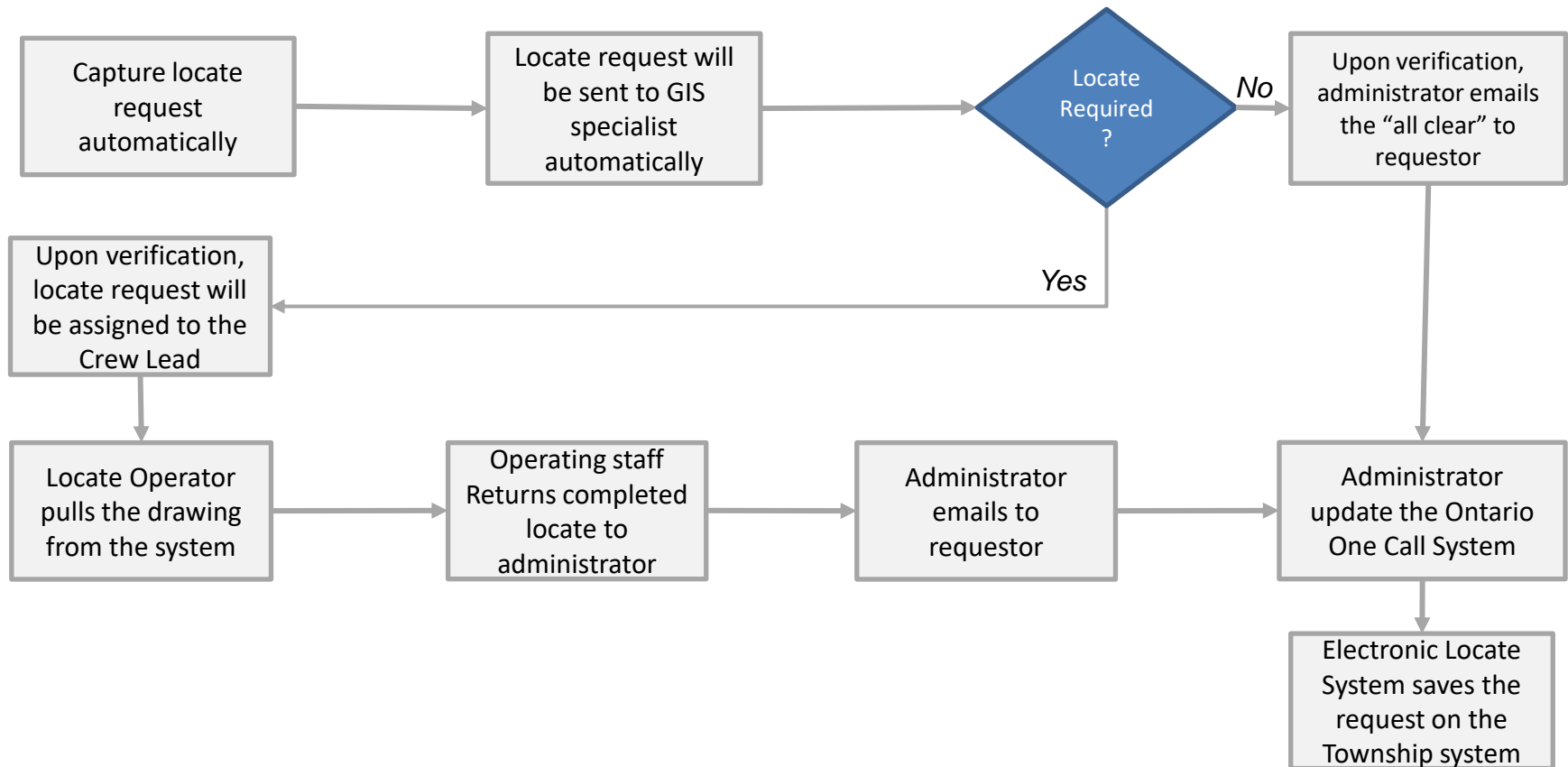
St. Clair Township is planning to move to an electronic locate package providing a more efficient and secure process. The package will also provide for electronic field locate completion drawings that utilize standard locate elements resulting in more comprehensible drawings. Locate requests and completed locate information will automatically be captured in the system for future reference.

In order to quantify the economics related to upgrading the locate processing & administrative system St. Clair Township feels it is important to report on the efficiency gains & cost savings related to the system upgrades.

Current Process Map – Paper-based Locate System



Future Process Map – Electronic Locate System



Business Alignment Model



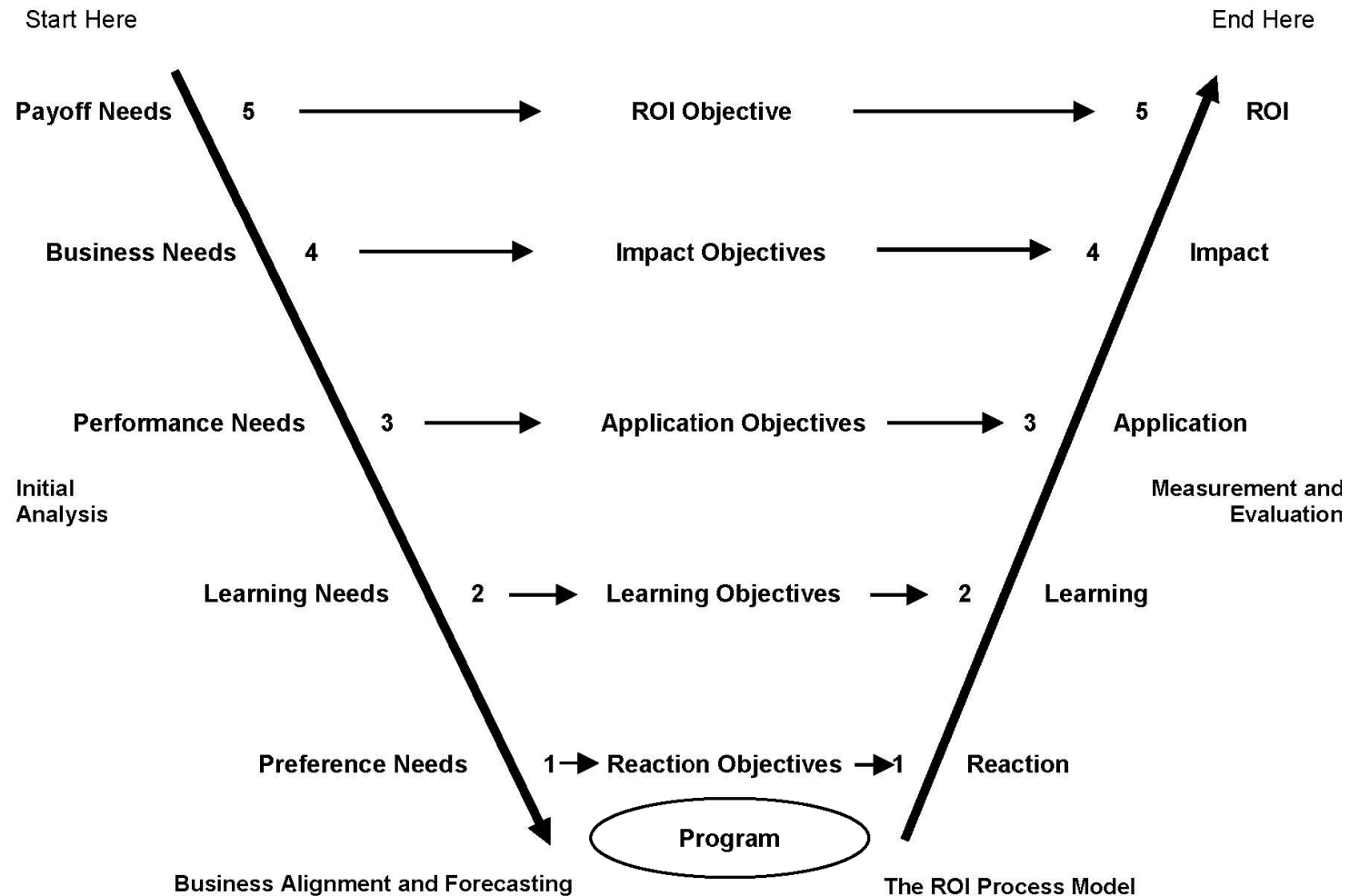
- According to this methodology, the new locate system is reviewed to achieve the objectives at five levels. The program can be evaluated at each level, based on the objectives.
- The V Model illustrates this process as it presents the relationship between needs assessment, objectives, and evaluation.
- Developing the Alignment of your program, project or initiative to the business is critical for a success
- Evaluation begins with the objectives of the program, project or solution. The objectives must go beyond typical learning objectives and include up to five levels of data.

Business Alignment Levels



| Level | Measurement Focus |
|---------------------------------------|---|
| 1. Reaction and Planned Action | Measures participant reaction to the program and captures planned action. |
| 2. Learning | Measures changes in knowledge and skills. |
| 3. Application | Measures implementation, action, and changes in behavior on the job. |
| 4. Business Impact | Measures changes in business impact variables. |
| 5. Return on Investment | Compares monetary benefits of the impact of the program. |

Business Alignment Model (V Model)



LEVEL 1: Reaction and Planned Action



| PREFERENCE NEEDS | REACTION OBJECTIVES | REACTION MEASURES |
|---|--|---|
| <ul style="list-style-type: none">• Develop a communication channel to Inform all staff and ask for feedback regarding the electronic locate system (staff include locate administrator(s), Crew Lead(s) and locate operators)• Assign advocates to communicate with staff | <ul style="list-style-type: none">• All staff need to be buy-in about the new system | <ul style="list-style-type: none">• Design at least one Survey to review the staff feedback and learning competency |

Level 2: Learning & Skill Sets



| LEARNING NEEDS | LEARNING OBJECTIVES | LEARNING MEASURES |
|--|---|--|
| <ul style="list-style-type: none">• Training for locate operators to use electronic locate drawing software• Generic workshop to review the electronic system and its functionality | <ul style="list-style-type: none">• All staff need to attend the generic training• All locate operators need to attend drawing software training | <ul style="list-style-type: none">• # of drawing errors by operators• Delays or redo's due to lack of efficient use of electronic system• # of complains from requestors |

Level 3: Application/Implementation



| PERFORMANCE NEEDS | APPLICATION OBJECTIVES | APPLICATION MEASURES |
|--|---|--|
| <ul style="list-style-type: none">▪ Improved security and compliance▪ Improve quality of Data and data management system▪ Streamlining Business Processes▪ Ease of Access and Control | <ul style="list-style-type: none">• All manual administrative, operating work and communication will be done electronically | <p># of electronic requests completed by admins</p> <p># of drawing completed by operators</p> <p># of completed locates/month</p> |

Level 4: Business Impact



| BUSINESS NEEDS | IMPACT OBJECTIVES | IMPACT MEASURES |
|---|---|--|
| <ul style="list-style-type: none">• Generate value by upgrading system• Improve staff and requestor satisfaction• Higher quality and timely service | <ul style="list-style-type: none">• Save admin, crew lead and operator time to do paper-work and related follow ups | <ul style="list-style-type: none">• Reduce administrator time for paperwork and follow ups• Reduce crew leader travel time to receive and distribute locate request among operators• Reduce drawing time to draw hand locate drawing |

Level 5: ROI



| PAYOFF NEEDS | ROI OBJECTIVES | ROI |
|--|---|--|
| <ul style="list-style-type: none">Return on investment by transiting to the new electronic locate system | Benefit/Cost Ratio of 100% the initial investment by saving staff time, transportation, printing etc. | Generated values related to saved times of administrators, crew leads and operators by using the electronic system |

Monetary Values- Staff Cost Savings



| Task | Paper-based process | Electronic Process | Standard value (\$) | Gained Value per year (\$) |
|-----------------------------|--|---|---------------------------------|----------------------------|
| Admin work by administrator | <ul style="list-style-type: none"> 10 min x 1361 annual locates: $13610 / 60 = 226.8$ Hrs/yr 5 min x 966 annual "all clear": $4630 / 60 = 80.5$ Hrs / yr Total time: 307 Hrs / yr | <ul style="list-style-type: none"> 3 min x 1361 annual locates: $4083 / 60 = 68$ Hrs/yr 2 min x 966 annual "all clear": $1932 / 60 = 32$ Hrs/yr Total time: 100 Hrs/yr | \$37.74 (Admin charge out rate) | |
| Total Time & Cost savings | | Time savings: 207 Hrs | 207 Hrs x \$37.74 | \$7,812.18 |

Monetary Values- Staff Cost Savings



| Task | Paper-based process | Electronic Process | Standard value (\$) | Gained Value (\$) |
|----------------------------|---|---|---------------------------------------|----------------------|
| Travel time by crew Leader | Administering, transporting locate documents; 5 Hrs / wk | administering electronic docs; 2.5 Hrs / wk | \$56.19 (Crew Leader Charge Out rate) | |
| Total Time & Cost savings | | Time savings with electronic system 2.5 Hrs / wk | 130 hrs / yr x \$56.19 | \$7,304.70/yr |

Monetary Values- Staff Cost Savings



| Task | Paper-based process | Electronic Process | Standard value (\$) | Gained Value (\$) |
|---------------------------------|--|--|--------------------------------------|----------------------|
| Drawing time by locate Operator | Current Hand Locate Dwg; 1361 annual locates x 22 min/ 60 1500 Hr / yr | Electronic Locate Dwg; 1361 annual locates x 11 min / 60 750 Hr / yr | \$41.76 (Locate Op. Charge Out Rate) | |
| Total Time & Cost savings | | Time Savings; 1500 Hr / yr - 750Hr / yr | 750 Hr /yr x \$41.76 | \$31,320 / yr |

Total Forecasted Staff Cost Savings



Forecasted ROI:

By transitioning to an electronic locate system creates a more streamlined locate process resulting in considerable time and cost savings.

The elimination of paper handling, inefficient administration and hand drawing at the locate administrator, Crew Leader and locate operator position saves a total of 1087 Hrs annually based on annual locate requests of 2,327. This results in an annual staff cost savings of \$46,440.03 when applying the charge out rate for each impacted position.

Standard Values & Total Forecasted Cost Savings



| Item | Charge Out Cost hourly rate (\$) | Amount (\$) |
|--|-------------------------------------|---------------|
| Locate Administrator salary | 37.74 | \$7,812.18 |
| Crew Leader salary | 56.19 | \$7,304.70 |
| Locate operator salary | 41.76 | \$31,320 / yr |
| Truck (half ton) | 15.40 | \$13,552 |
| Overhead costs on the outside workers | 105% of the Charge out Cost | \$40,555.94 |
| Fringe Benefits Cost Saving from Crew leader and Locate Operator | 32.58% | \$12,583.93 |
| Total Forecasted Cost Savings/year | \$113,128.75 | |

Isolate the Effect of the Project



The electronic locate process system is the ONLY upcoming initiative planned for the next few months and there are no other concurrent projects impacted on the results of this initiative.

Therefore, all gained values will be related to this project.

A trend chart (time series analysis technique) might be used to display total times and cost savings resulted from this project to isolate the impact from any other future improvement plans.

Confidence level



Cost savings were estimated by St. Clair Township staff based on the forecasted improvement related to this program. Because the exact amount of improvement is not always accurate, the estimates are adjusted for error, using a confidence percentage.

90% confident level reflected in calculation of costs inserted in the cost saving formulas and applied in the total saving.

Conservative Forecasted Saving



$113,128.75 \times 90\% = 101,815.90$

The saving will be over 100 K with confidence level of 90%

Intangible Benefits



- Improve Quality of Locate
- Synchronized process and less variation in the process and the diagrams
- Automated record keeping of the requests and the actions instead of log books and paper based trail
- Eliminate loss of track for the request
- No missing request and lost files
- No need to relocate for the missing requests
- No redundancy for admin work

Monitor Realized Savings



By launching the new locate electronic system, the cost saving template provided by GVEX will be updated

Values will be compared with the post implementation time study analysis to verify the outcomes.

Next Steps



To continue validating the savings, St. Clair Township will conduct time studies followed by relevant ROI calculations according to the template and formulas provided in the report by GVEX.