Prevent. Empower. Protect.

UPSA Annual Meeting June 2018

About GSS

Gold Shovel Standard (GSS) is a nonprofit organization committed to improving workforce and public safety and the integrity of buried infrastructure.

GSS believes that greater transparency in all aspects of damage prevention among buried-asset operators, locators and excavators is essential to drive continuous improvement, and vital to increasingly safe working conditions and communities.

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The Goal

2015

2025

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Four Pillars of GSS

Standardized DP Metrics

That which gets measured, can be managed

Gold Shovel Standard Communities

Partnering with municipalities to help make their communities safer

Safety Management Systems (DP-SMS)

Zero-incidents goal requires systematic use of SMS

Technology

Success depends on access to the right tools for the job

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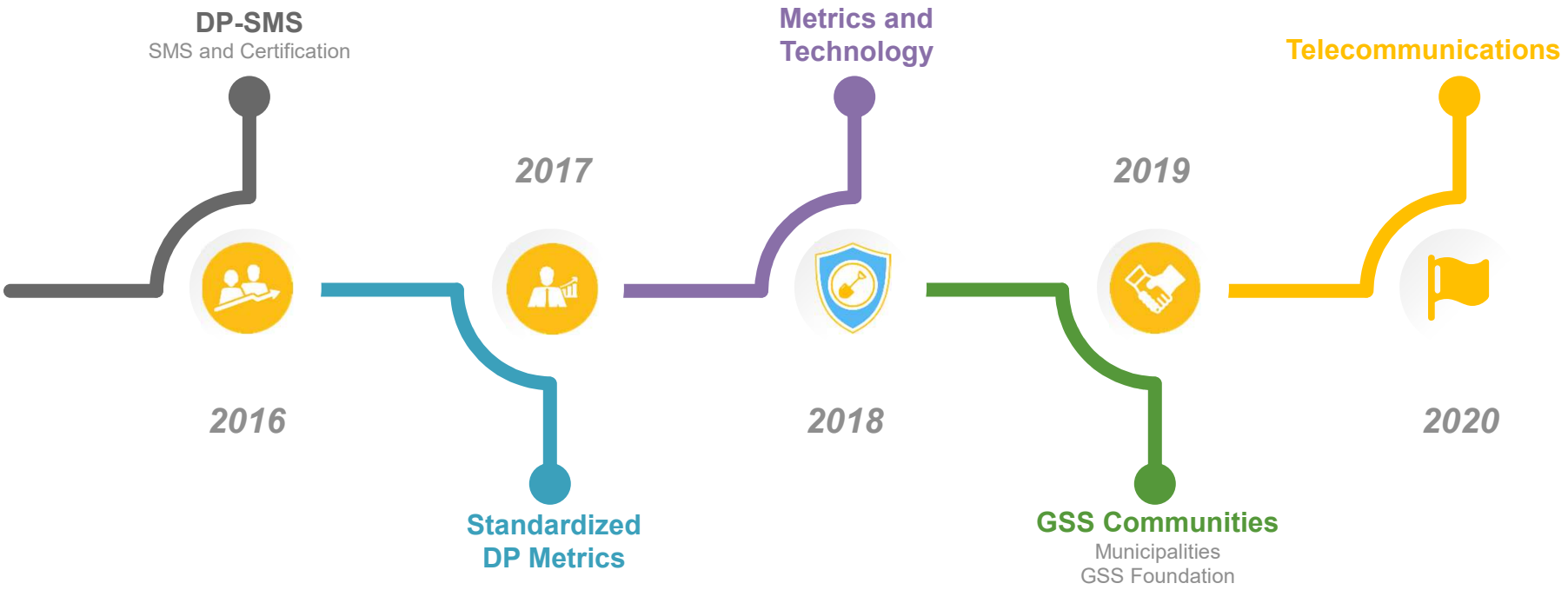
The First 5 Years

(Incorporation Date: 4/14/2016)



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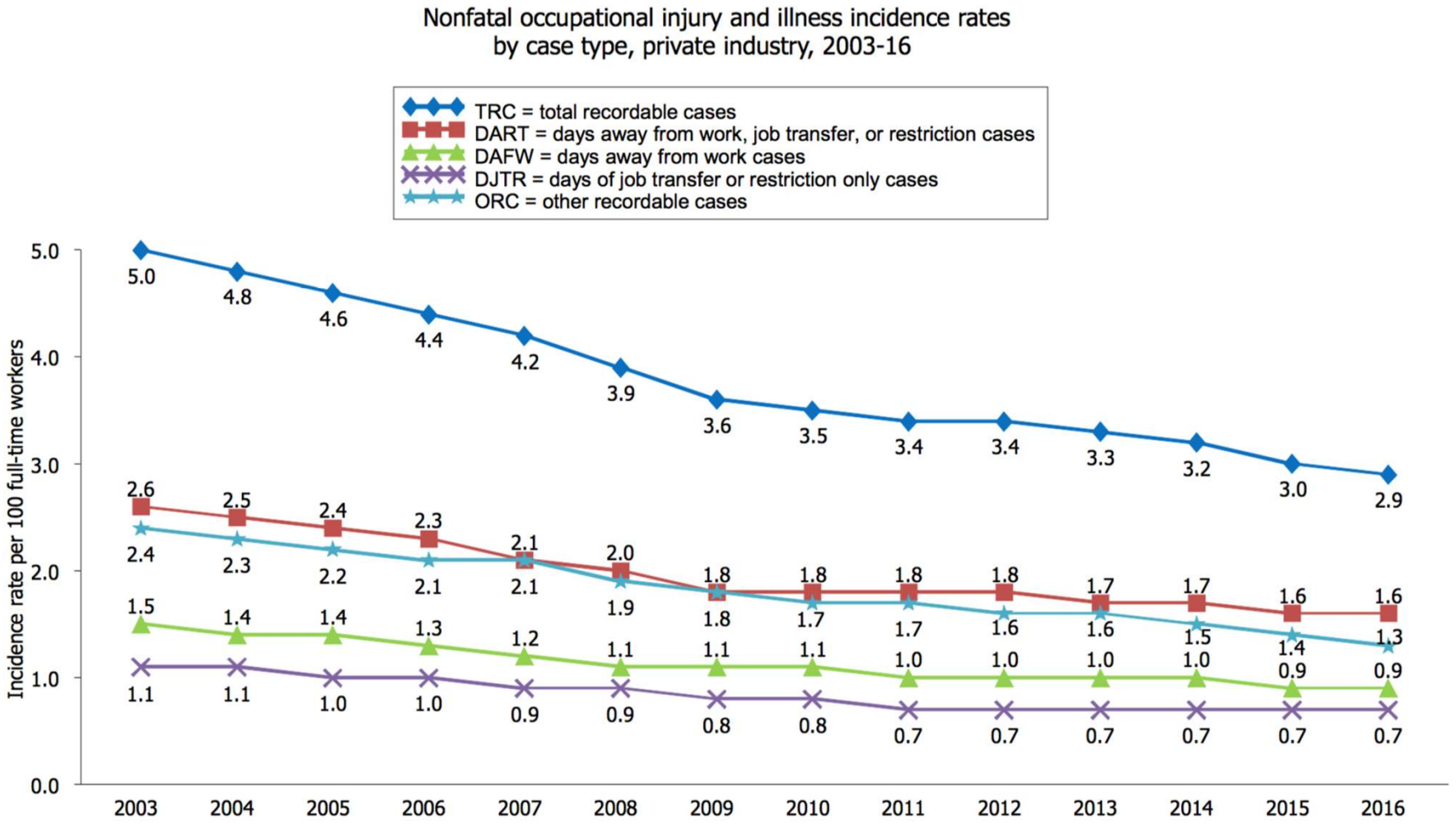
Why Standardized Metrics?

That which gets measured, gets managed

Commitment by ***ALL*** (*owner/operators, excavators & locators)* is critical to achieve a dramatic reduction in damages; measurement systems reinforce continuous and sustainable improvement.

Success Case Study: Health and Safety Metrics



Statement of Intent

To establish a set of ***excavator-developed*** metrics that all excavators[1] can use that would be accepted by the industry and allow for continual improvement in safe excavating.

- ✓ ***Standardization***
- ✓ ***Self-reported data***
- ✓ ***Cross-checking***
- ✓ ***Reliability***
- ✓ ***Benchmarking***

[1] *contractors & owner/operators across multiple disciplines*

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Objectives

- ✓ Is truly representative of the level of caution that an excavation company uses
- ✓ Is perceived as fair by all excavators
- ✓ Is clear and understandable
- ✓ Is reliable and not easy to be gamed
- ✓ Does not create new or increase existing litigation liability
- ✓ Has low compliance overheads
- ✓ Supports lowering of costs and risks of excavation damages
- ✓ Avoids the challenges of lack of portability
  i.e. Operator Qualification rule

Methodology and Process

- Plan-Do-Check-Adjust
- Excavators drive development
- Do not allow perfect to be the enemy of progress

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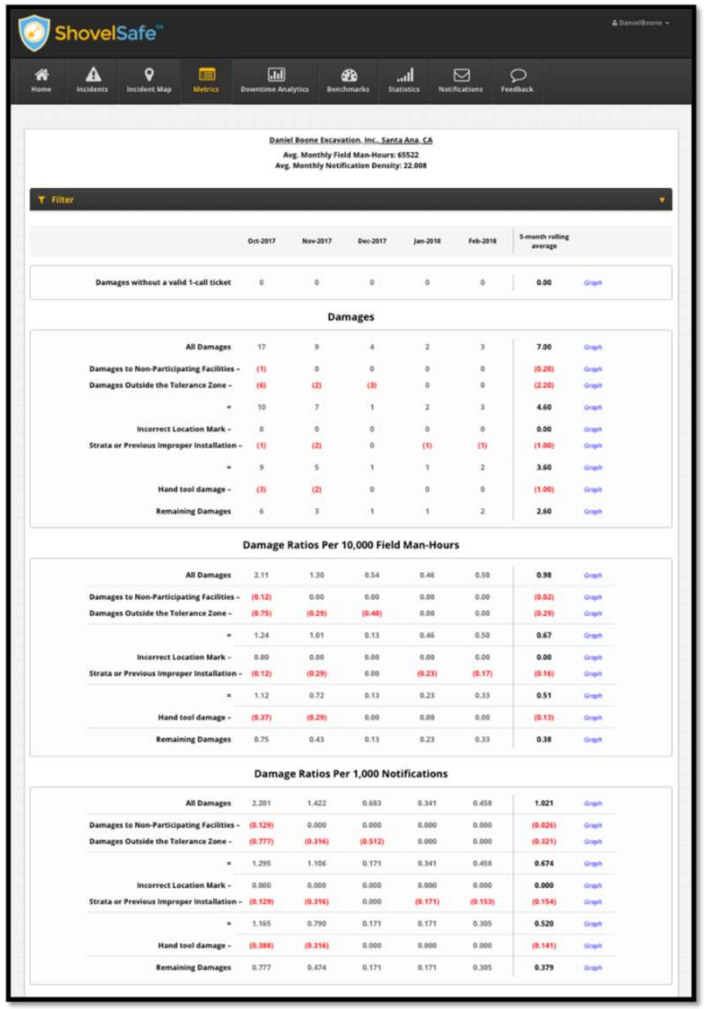
Policy Statements

- ✓ Excavators control access to its information
- ✓ GSS does not interpret data, judge or score
- ✓ In-house crews to use same system of measurement
- ✓ Maintain portability; no custom one-offs

What are the metrics?

A *committee-approved presentation* of damages, itemized with *specific attributes* and *normalized* by man-hours and *notifications*

Committee-Approved Presentation



Committee-Approved Presentation

- Specific formatting
- Helps ensure a complete picture
- Helps with standardization

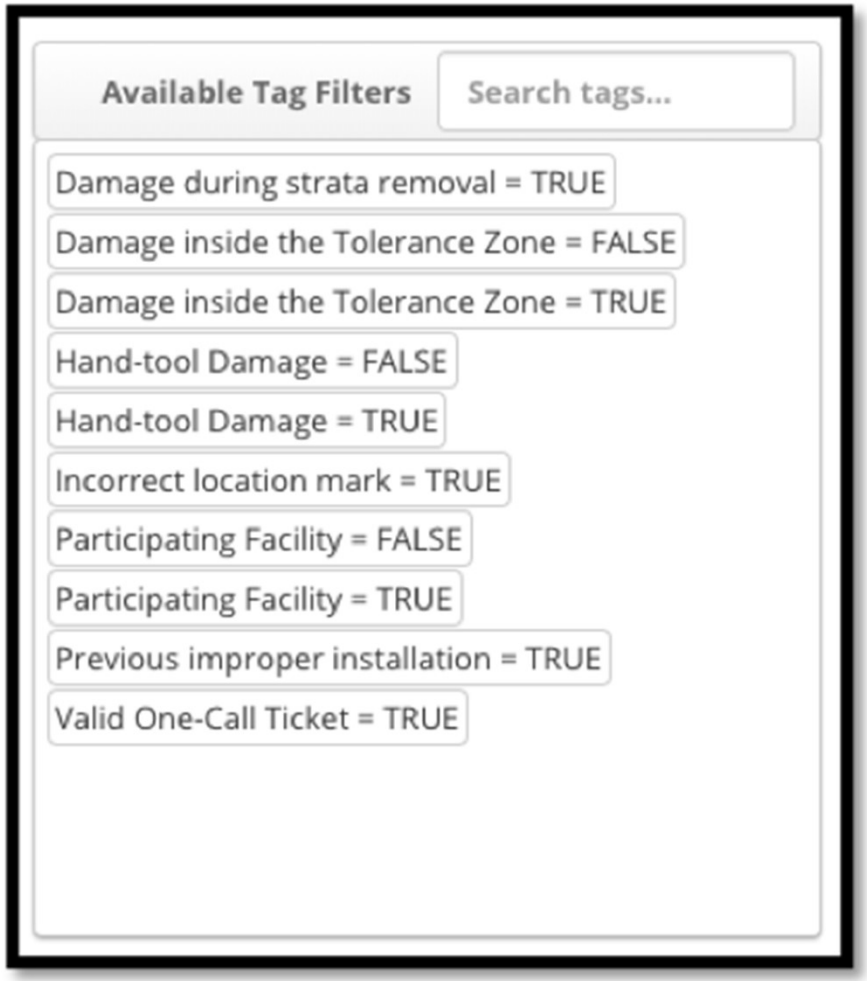
What are the metrics?

A committee-approved presentation of damages, itemized with ***specific attributes*** and normalized by man-hours and notifications

Specific Attributes

- Whether there was a valid one-call ticket;
- Whether the operator of the damaged facility participates in the one-call process;
- Whether the damage was inside or outside the tolerance zone;
- Whether the damage was related to incorrect location marks;
- Whether the damage was done with non-mechanized hand tools or something else; and
- Whether the damage was during removal of the strata or related to a previous improper installation.

Specific Attributes



Fault and root cause

Fault and its associated subjectivity have been removed from the committee's metrics. Instead, facts with minimal subjectivity have been used. No assignment of blame, fault or root-cause has been incorporated into the standardized format.

What are the metrics?

A committee-approved presentation of damages, itemized with specific attributes and ***normalized*** by man-hours and notifications

Normalization

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Normalization

In order to be as fair as practical, damage prevention measurements must be *normalized* against the opportunity to damage infrastructure. For example, an excavator operating in a forest where no buried infrastructure exists would have no opportunity to damage buried infrastructure, while the opposite is true for one working in downtown New York City.

Normalization Factor
Man-hours

- Man-hours
  - Indicates company size
  - Easy to obtain and verifiable
  - Used in other metrics
  - Well understood

Normalization Factor Notifications

- Indicates density of buried infrastructure
- Number of facility owners identified on one-call tickets
- Provided by the one-call center
- Equals the total number of facility operators notified as a result of the tickets created during the period.
- Provides a better estimation of utility density than one-call ticket volume alone.

Normalization Factor Notifications

- Example, if Company A called in 2 tickets with 4 facility operators notified, it is likely that the density of utilities encountered is less than Company B, also with 2 tickets, but with 16 facility operators notified.

Excavation Metrics

ShovelSafe™

Demonstration

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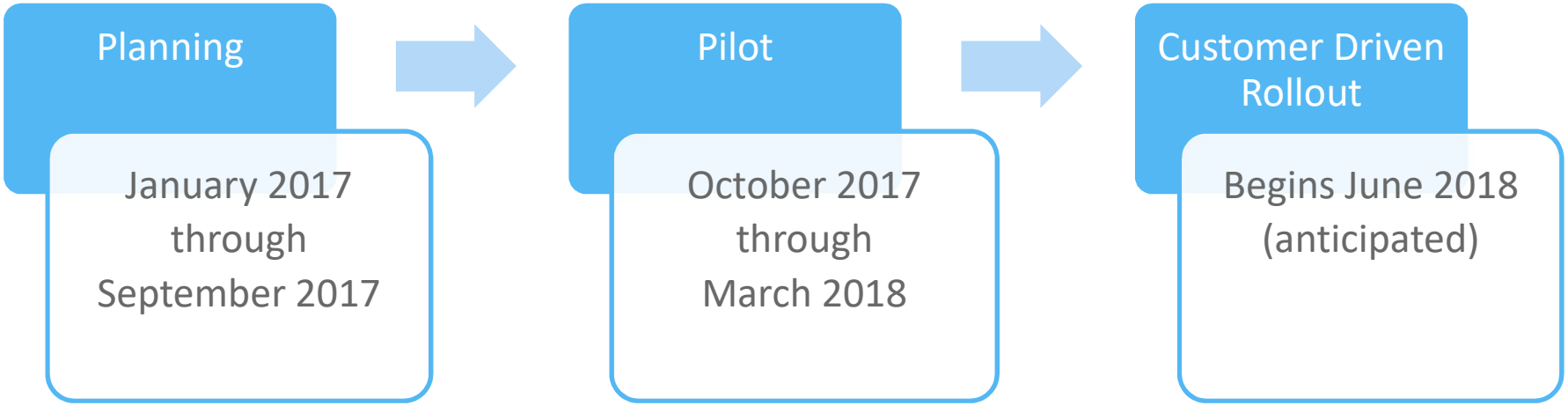
Metrics – Looking Forward
Customer Driven Rollout



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What's that mean?

- The committee is recommending that GSS begin to allow select member companies (owner / operators) to request metrics information from their contractors and subcontractors.
- In-house crews and contractors will get access to ShovelSafe to support them.

What's this mean for excavators?

- Contractors should anticipate an increasing number of their member owner / operator customers will begin requesting metrics information, delivered in the standardized format and cross-checked within the GSS system.
- At the same time, as a performance metric, excavators (all) should begin to use this same new information to seek improved performance within their ongoing operations.

What's this mean for owner / operators?

- Owner / operators in the GSS program are gaining access to a new set of tools to reduce risk to their networks. GSS will prioritize requests to assist owner / operator members and help integrate these tools into their operations.
- GSS member owner / operators should begin tracking the metrics information for their own excavation crews, if applicable.

Uniform Date

The program will use January 1, 2018 as the earliest date that the program will provide or request normalization data.

Uniform Geographic Size

The program will use states and provinces as the most granular size that the program will support with normalization data.

2018 Roadmap

- Customer Driven Rollout (Excavation Metrics)
- ShovelSafe Roadmap
- One-call integration
- Pre-Excavation DP metrics to pilot

- ? – RCA / CA follow up cycle

ShovelSafe Roadmap

- Version 1.0
  - Collects, formats, normalizes, delivers
- Next version
  - Benchmarking, cross-references, notify of likely non-reporters, import from other systems

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The First 5 Years

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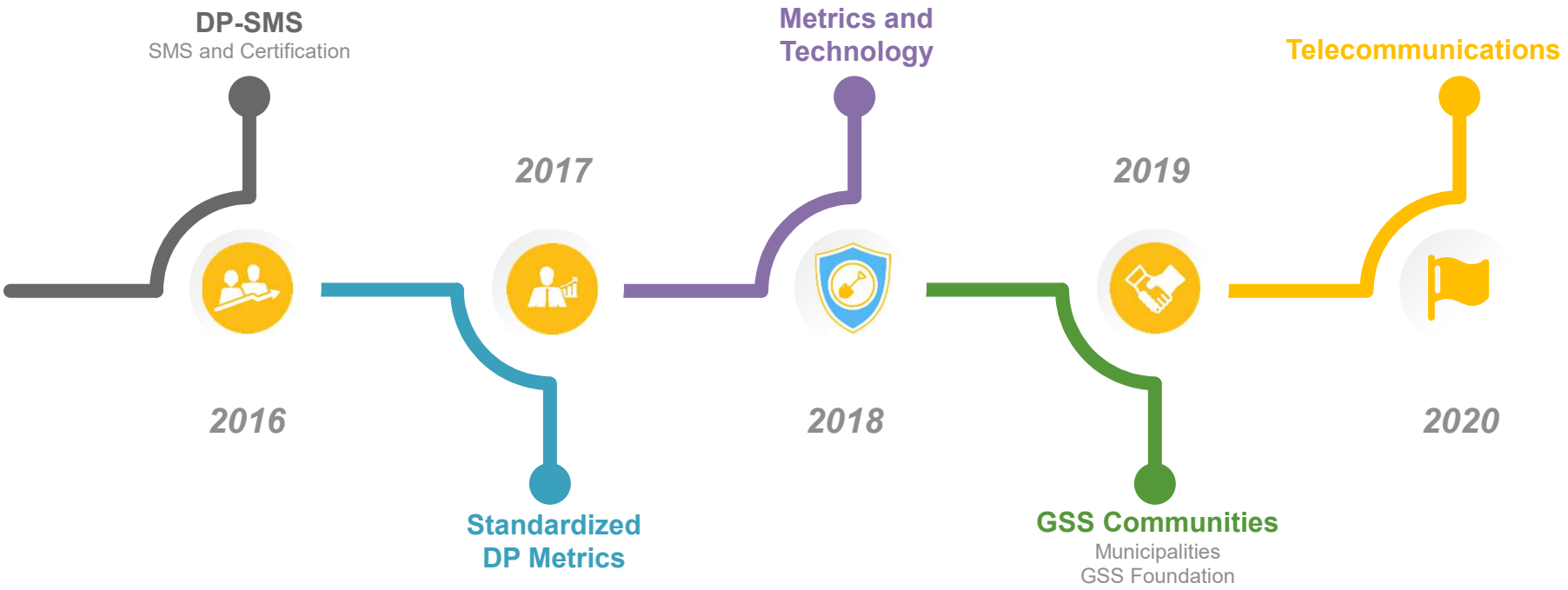

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About GSS

Standardized DP Metrics

That which gets measured, can be managed

Gold Shovel Standard Communities

Everybody's third party is someone else's second party

Safety Management Systems (DP-SMS)

Zero-incidents goal requires systematic use of SMS

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2019

The Year of Municipality

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2019: Municipal Partnerships

GSS works to establish innovative partnerships between utilities (electric, gas, pipelines, telecommunication, sewer and water / wastewater) known as Gold Shovel Standard Communities, to collaboratively form ever-expanding regions of increased safety and decreased risk to buried infrastructure.

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GSS Communities

Entities working for ***and within*** cities

Community Approach

- Impossibly easy to adopt
  - Low barrier to entry
  - Established program
  - GSS staffs the project
- Flip the paradigm
  - Whose problem is it?
- Engage the politicians

Pilot Community
Sacramento, CA

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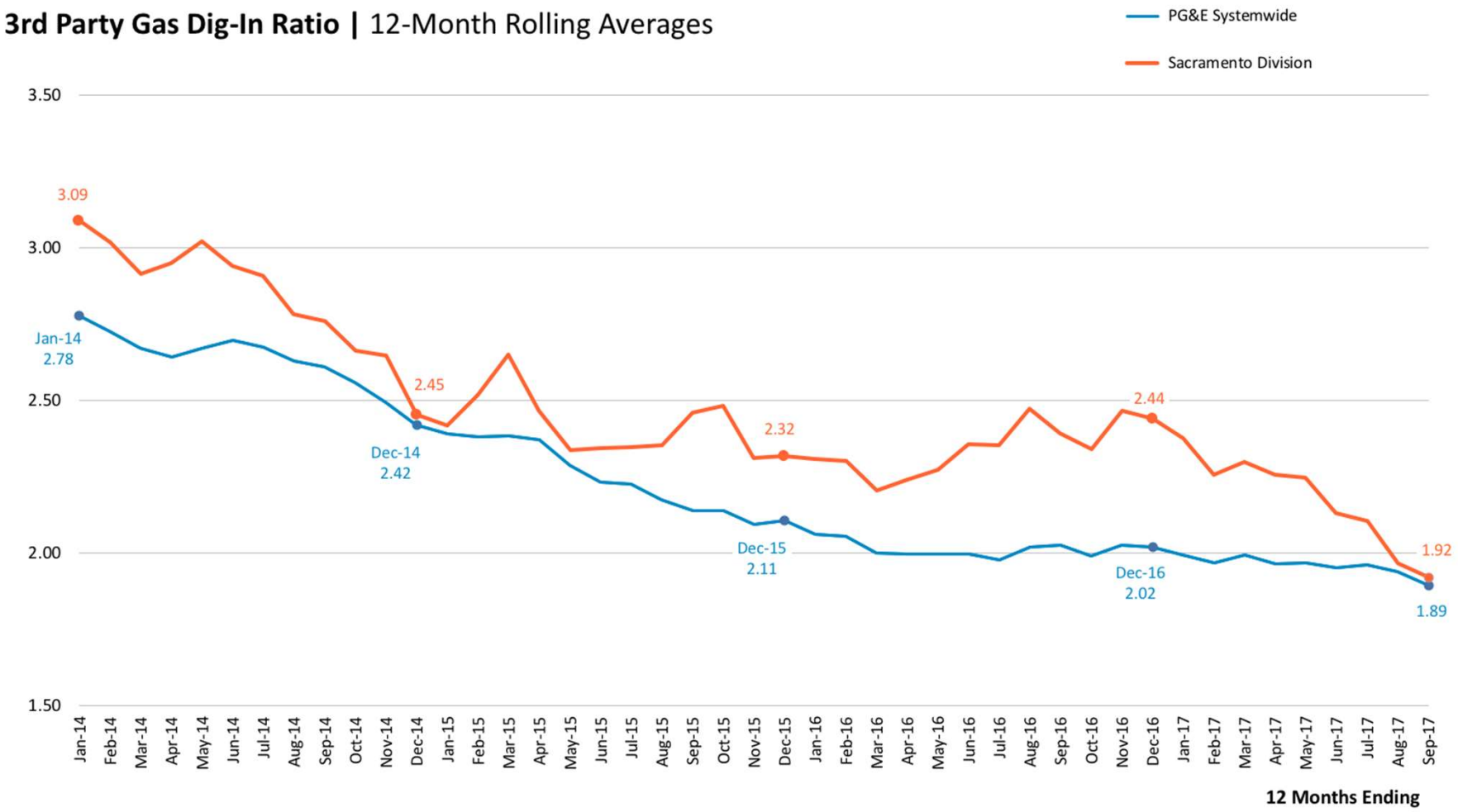
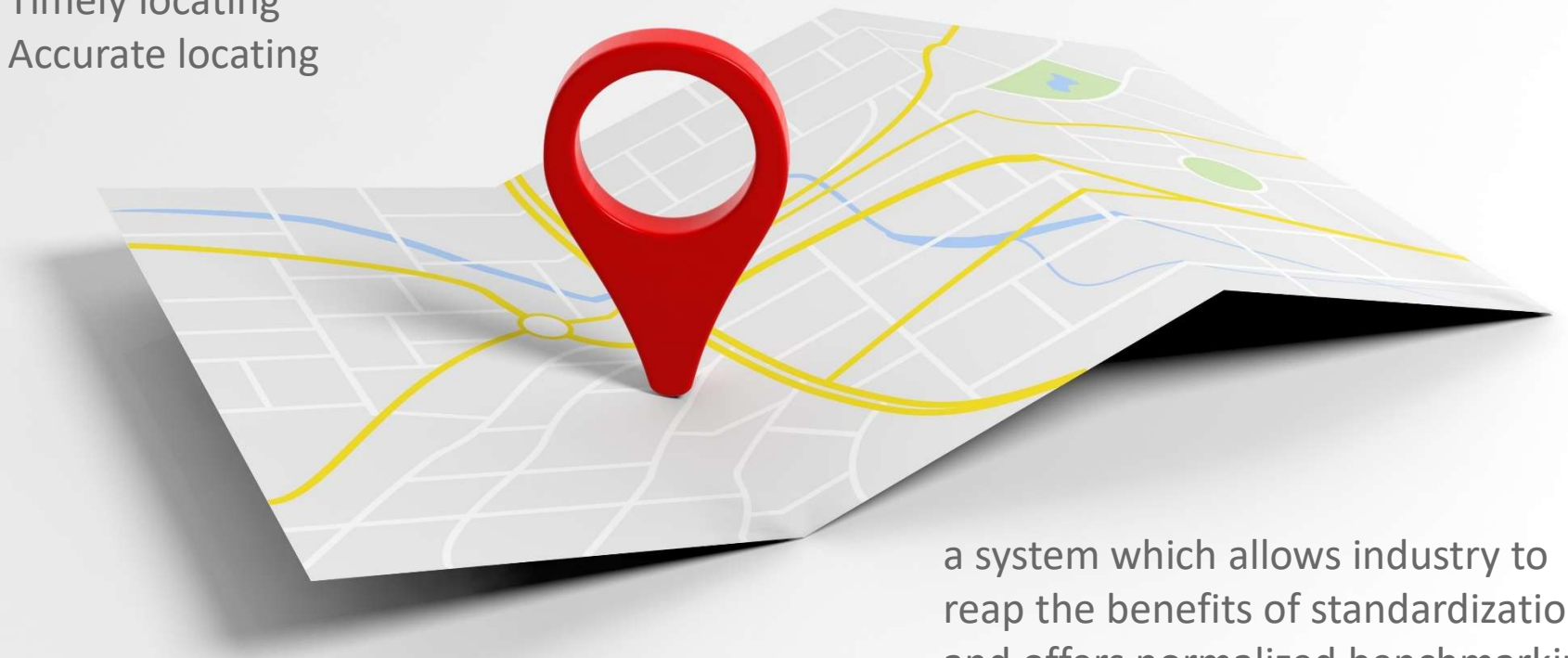
Result: 38% Reduction



2018: Pre-Excavation Metrics

Owner / operators and their locators

Correct mapping
Timely locating
Accurate locating



a system which allows industry to reap the benefits of standardization and offers normalized benchmarking

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2018: Pre-excavation Metrics

- The charter of the *Pre-excavation Damage Prevention Metrics Committee* is to create a program with these results:
  - Delivers industry standard metrics which are representative of the quality of the services provided by in-house staff or contracted damage prevention services;
  - Delivers industry standard metrics which are representative of the timeliness of the services provided;
  - Can be used by small and large locate companies alike as a tool to manage their businesses;
  - Is an industry standard language for comparing oneself to industry averages and promoting excellent performance to potential customers;

2018: Pre-excavation Metrics

- Is clear and understandable, such that businesses know what to do to affect their metrics and is actionable;
- Is consistent across all locate entities, small and large, in-house and contract;
- Creates transparency about the subsurface utility engineering (SUE) done during the design phase of projects by owner /operators;
- Creates transparency about the assistance provided by owner / operators to others to assist their efforts to properly perform subsurface utility engineering (SUE) during the design phase;
- Creates transparency about the quality of prints provided to locate companies;

2018: Pre-excavation Metrics

- Creates transparency about the print maintenance practices of owner / operators;
- Is reliable and not easy to be gamed, tricked or fooled;
- Does not create new or increase existing litigation liability either for locators or owner / operators;
- Has low compliance overhead (reporting effort / time); and
- Has low negative impact on productivity while lowering costs and risks of excavation damages.
- And also to
  - Architect the quality software tools needed to support program participants with this effort; and
  - Communicate progress professionally and thoroughly throughout industry as progress is made.
  - While some of these are inherently conflicting, it is the goal of the committee to find the right balance

Prevent. Empower. Protect.

Thank you!