Ohio Storm Water Association 2019 Annual Conference

Do you have your MS4 program storm water asset data accounted for?

May 9, 2019
Presenter: Mark McCabe

Gresham Smith

What are we going to talk about today?

- Identifying Storm Water Management Program Assets
- Why is Asset Data Important?
- Data Governance – What is it?
- Storm Water Management Program – Anatomy of Storm Water Management Data
- Wrap up

Identifying Storm Water Management Program Assets

What are these assets?

- Detention or retention facilities
- Underground storage
- Permeable pavements
- Bioretention facilities
- Infiltration trench/basins
- Green infrastructure
- Roadway ditches
- Storm sewer system pipes
- Inlets
- Culverts
- Streams
- Major drainage structures

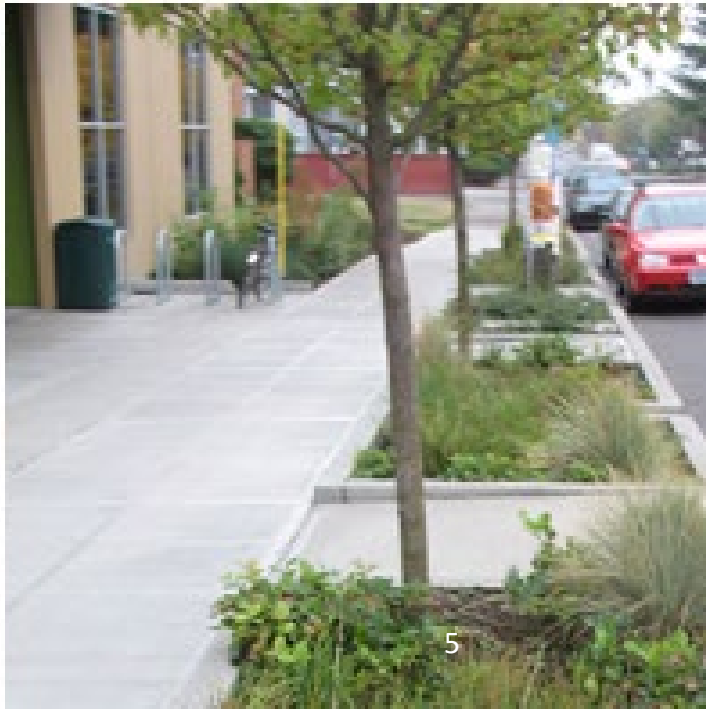
Identifying Storm Water Management Program Assets

Why should we care about these assets?

- Designed and constructed with public monies
- These are public assets just like bridges, roads, schools, etc.
- These need to be operated and maintained like any other public assets.
- They need to be inventoried!

Why is Storm Water Asset Data Important?

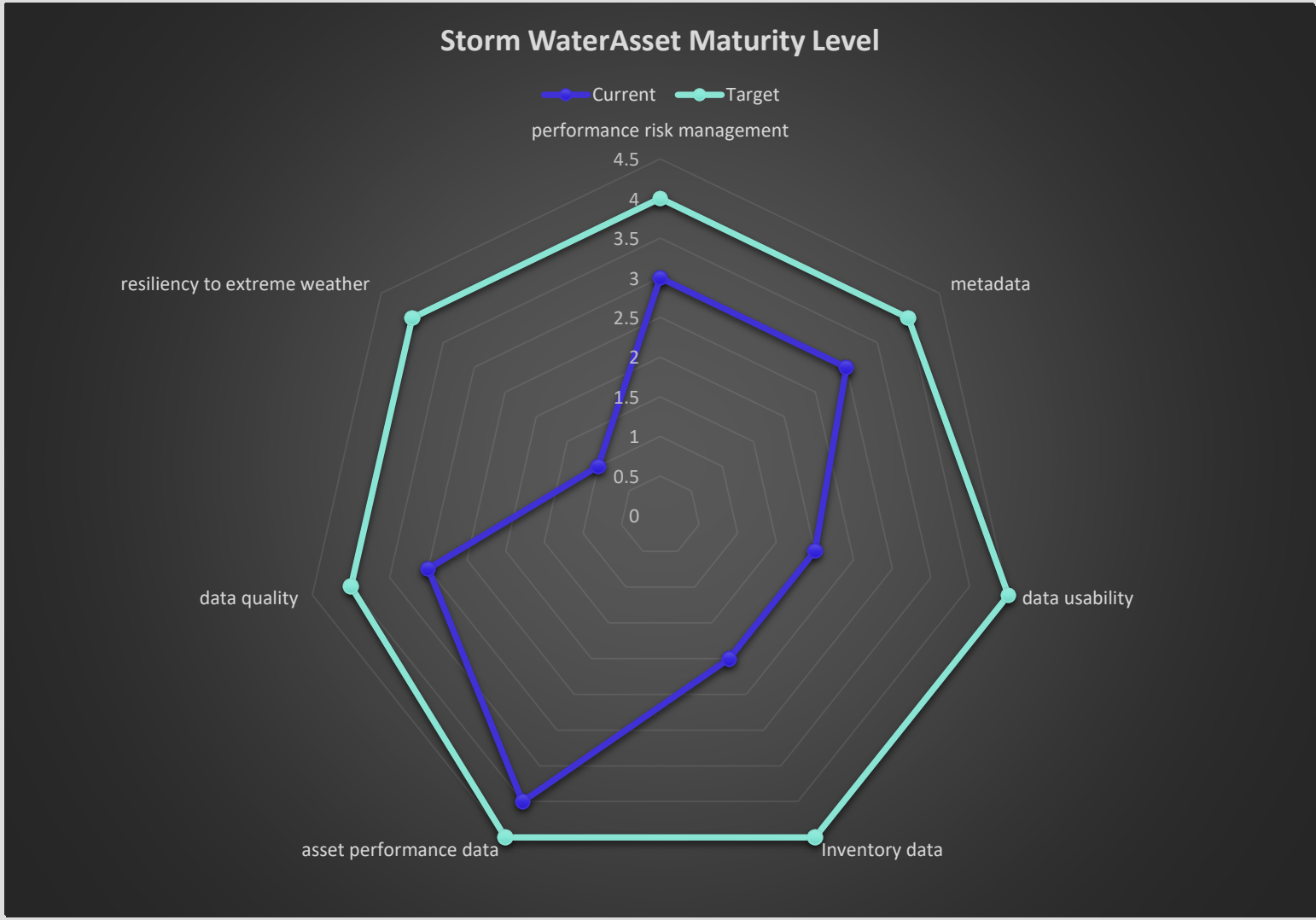
- Allows you to know what you have
- Can be used to identify system needs – Planning and capital improvements
- Can be used to assess performance
- Can be used to make a range of infrastructure management decisions
- Can provide credibility to operation and maintenance decision making.
- Allows you to make replacement decisions



Why is Storm Water Asset Data Important?

Why would we want to know this much about the asset or the asset data?

- If we know where we stand today, we can make better informed decisions tomorrow.
- If we could look at each asset or sets of assets in this manner, we would have a better understanding of where we needed to direct capital funds, maintenance or operational dollars – Planning
- The assessment criteria can vary and should be specific for each asset type



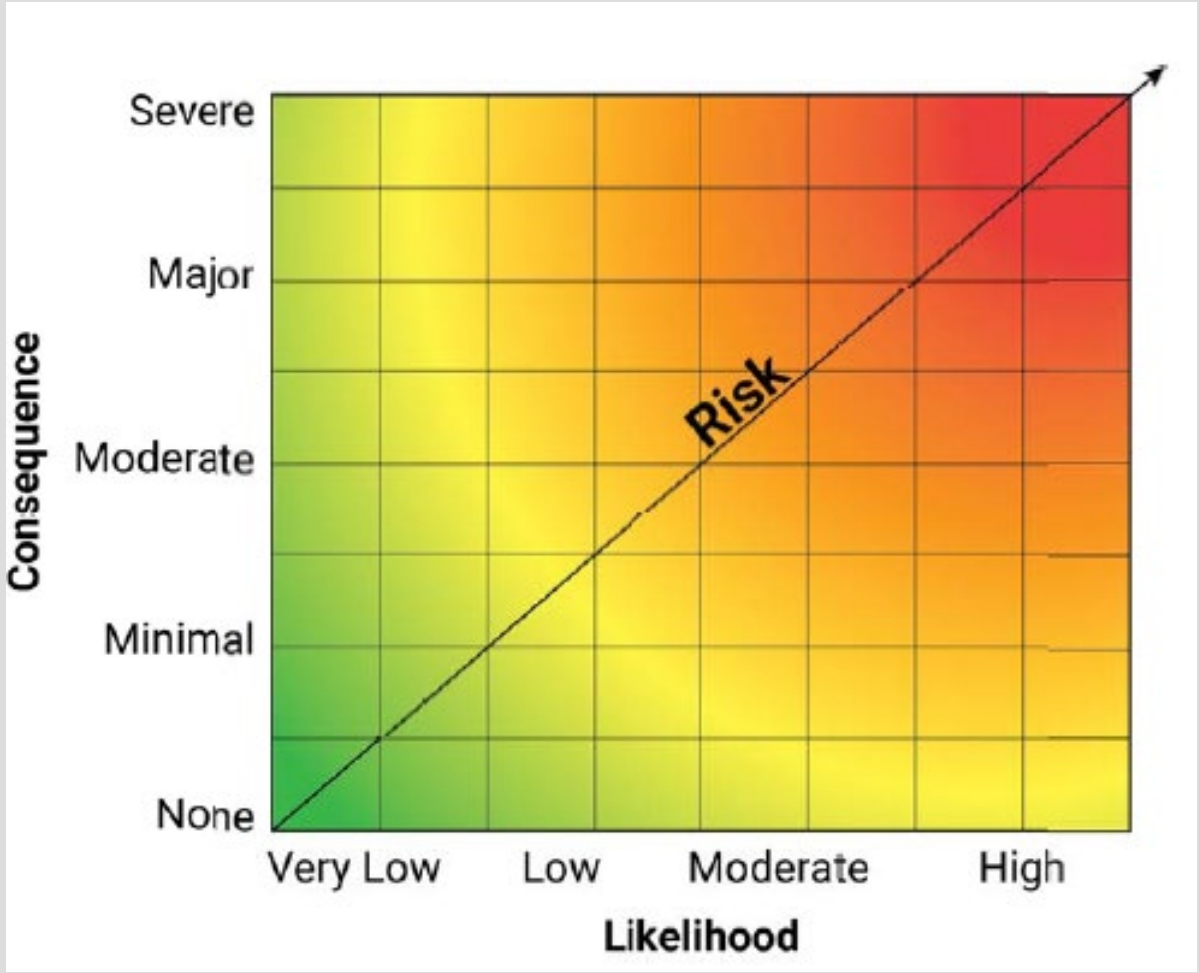
Why is Storm Water Asset Data Important?

Can asset data help us with managing our risk or risk tolerance?

- Let's look at risk in terms of probability/consequence
  - What is the Probability of Failure (PoF)?
  - What is the Consequence of Failure (CoF)?
  - What is your Acceptable Level of Risk (ALR) – This needs to be defined (Refer to radial chart on previous slide).

PoF – The probability of failure curve represents the **annual probability of failure of an asset as a function of its age**.

CoF – is the impact the failure will have on the system or on other assets or the public



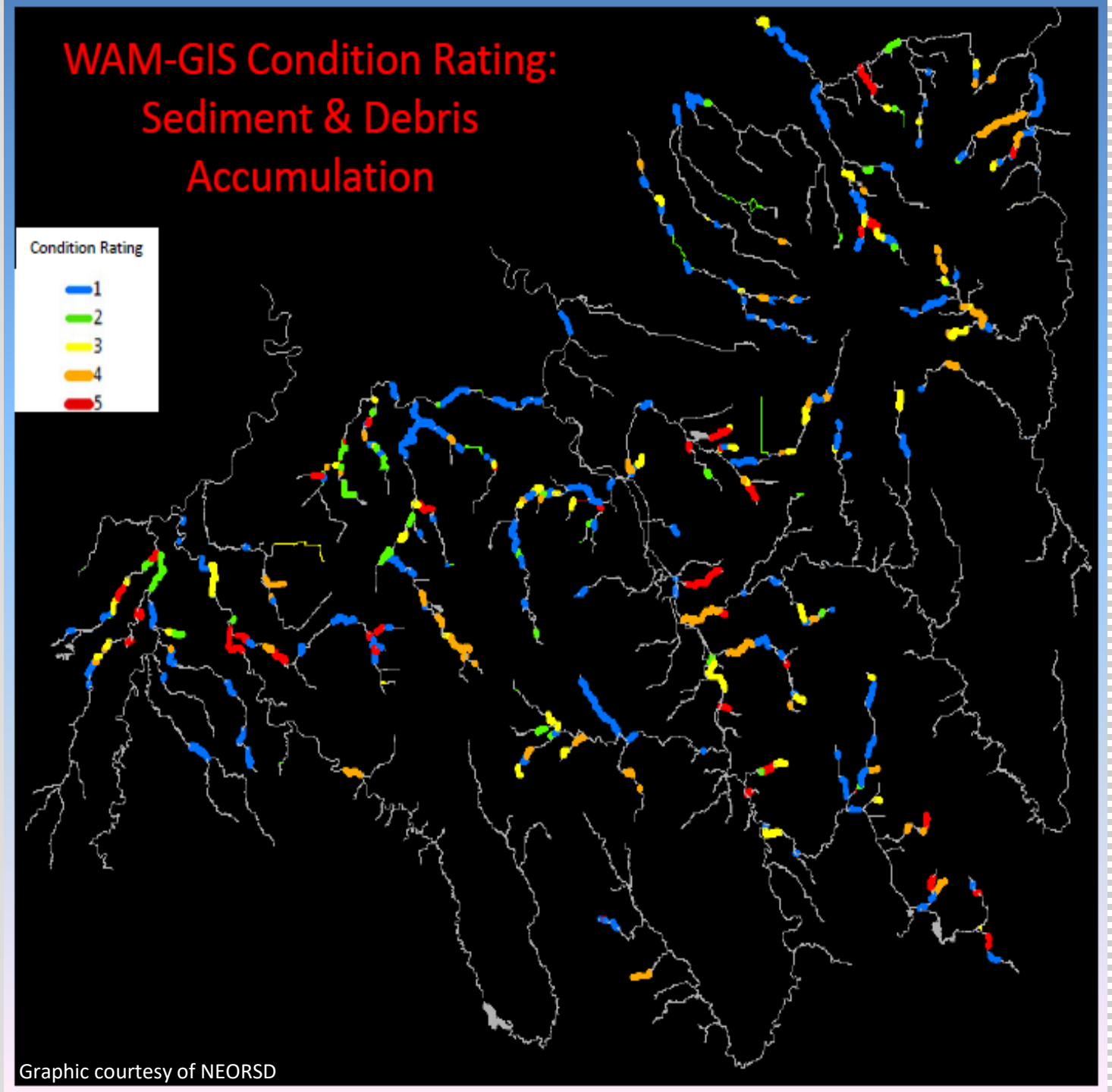
Watershed wide example

Why would we want to know this much about the surface water and drainage system?

- Blockages
- Flooding potential or historic flooding
- Debris build up

This is scalable and can be tailored to specific assets or systems.

Allows for planning, forecasting and CIP budgeting 5- needs immediate attention; 1- can be factored into CIP planning.



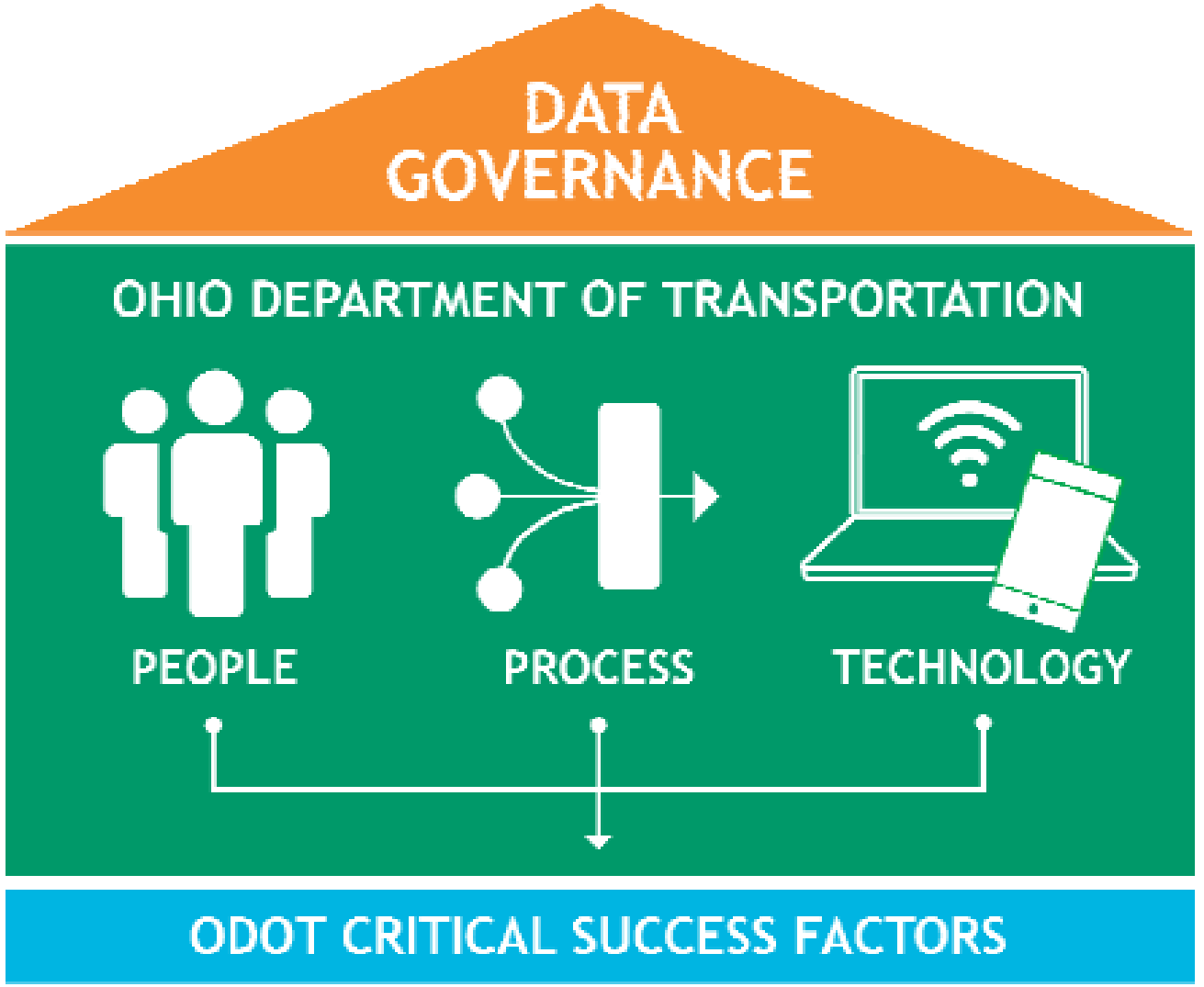
Graphic courtesy of NEORSD

Stream buffer example

Why would we want to perform a buffer analysis on our stream or drainage assets?

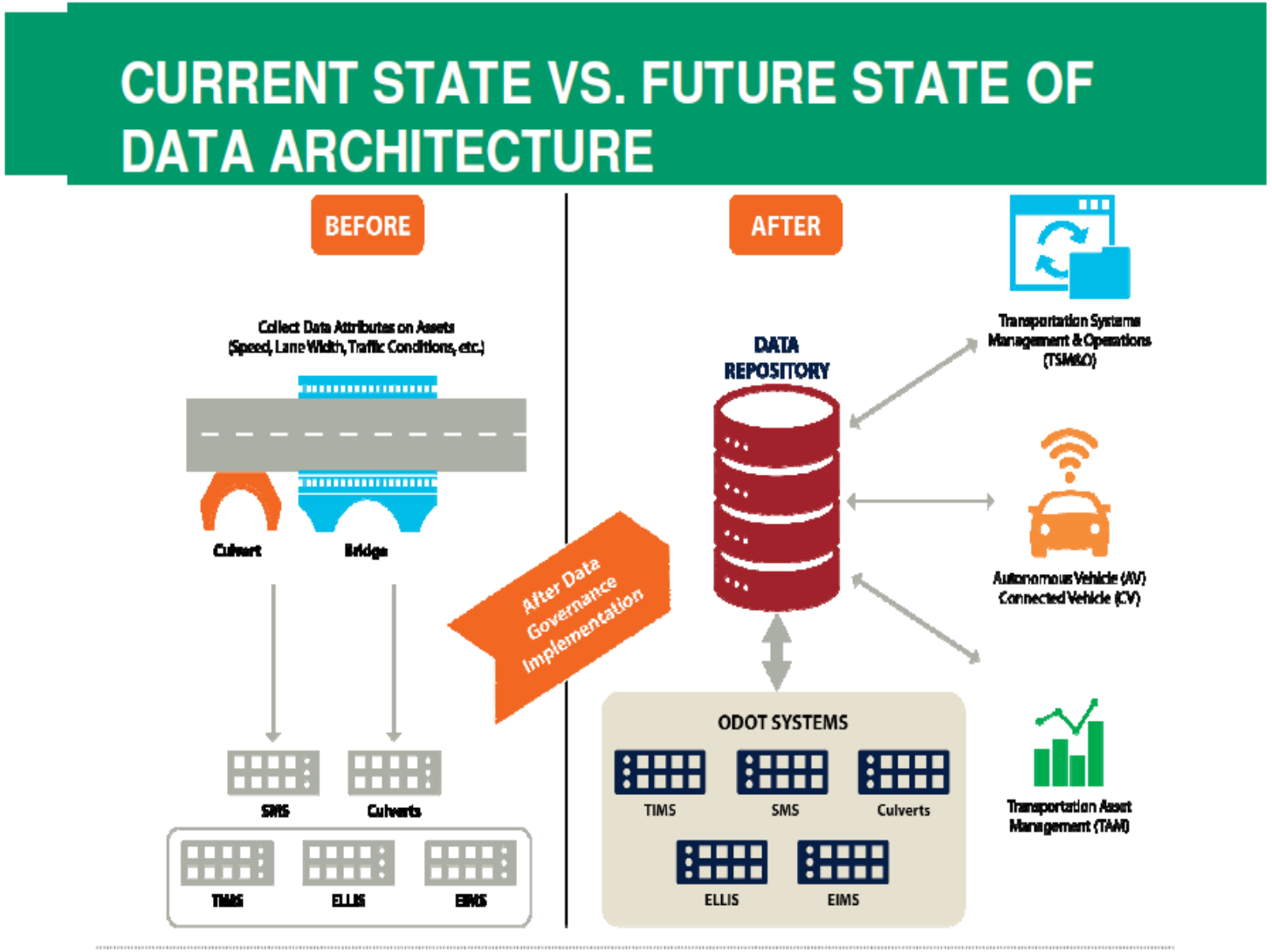
- This would allow us to identify buildings, transportation infrastructure and utilities that are vulnerable
- Could provide justification for buyouts

Data Governance



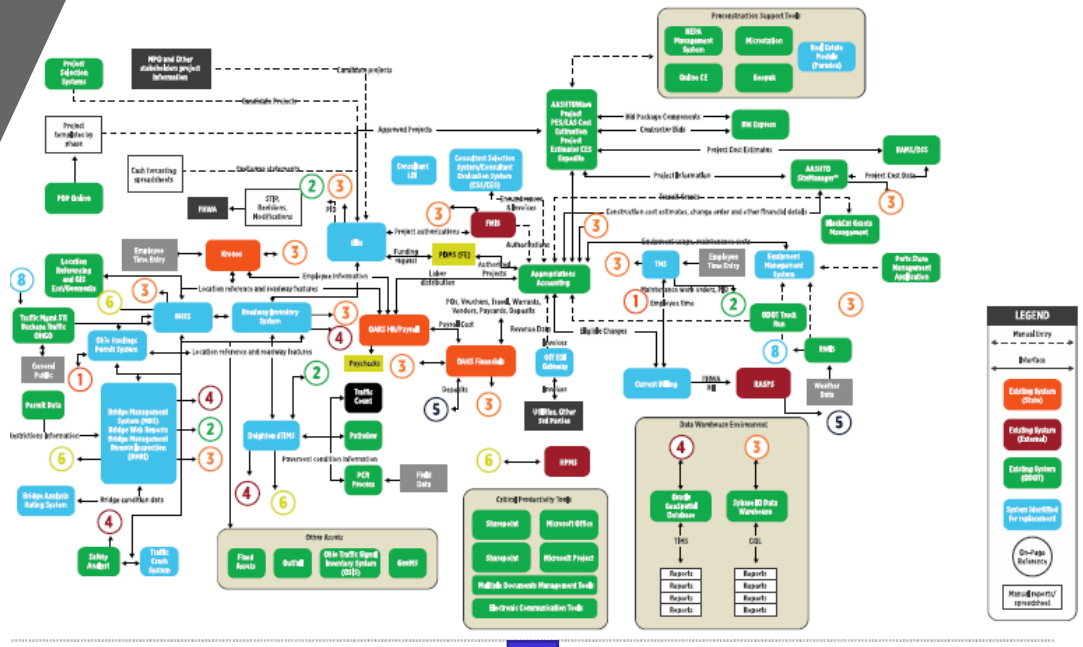
Data Governance

Is a control that ensures that the data entry meets precise standards, such as a business rule, a data definition and data integrity constraints in the data model.



Data Governance

- Why should I care, I do not have anywhere near that level of data?
  - Your public assets have data associated with them.
  - Data today is being viewed as an asset on its own.
  - Data generation continues to expand.



SMART – Specific, measurable, agreed upon, realistic and time bound asset management decisions

Storm Water Management Program - Data Driven Decision Making

Where does the data come from?

- Asset inventory
- Asset installation
- Operations and Maintenance inspections
- Monitoring
- Document repairs, deficiency corrections and retrofits
- Cost to design, construct and operate
- Others

Storm Water Management Program - Data Driven Decision Making

Why should we be using data to make storm water management program decisions?

- Numeric supported outcomes
- CIP Planning/forecasting/risk mgt.
- Operations and maintenance work orders
- Life cycle- Asset Depreciation
- Performance metrics – quantity and quality
- Advances in technology, lowering costs for data.

Anatomy of Storm Water Management Data

Looking at the Biofilter, what types of storm water data comes to mind?

Questions!

When I think of work, it's mostly about having control over your destiny, as opposed to being at the mercy of what's out there.
Gary Sinise -

Gresham Smith