Modeling Dedicated Funding Streams + Asset Eligibility
in FTA's TERM Lite Tool

Nicholas Richter, AICP
Systems Analyst II, WSP

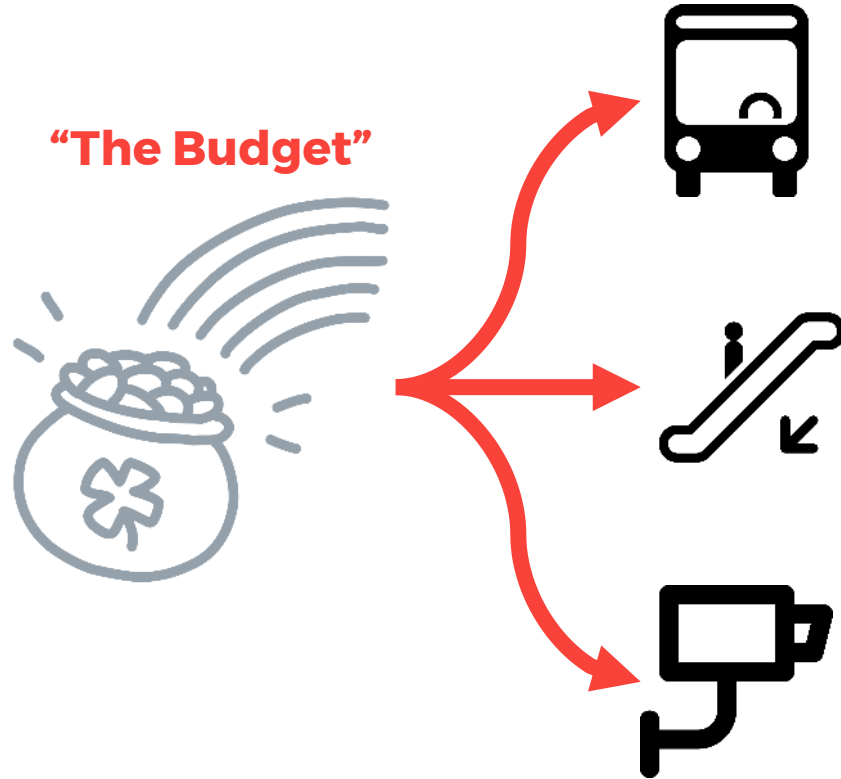*Presented at the 12th National Conference on Transit Asset Management*

What is This Presentation About?

— TERM Lite is an FTA tool that produces 30- (or 20-) year capital needs projections based on your asset inventory

— Free – Get it here: https://www.transit.dot.gov/TAM/TERMLite

— Uses asset data and agency defined typical lifecycle actions to forecast when assets will need replacement or rehabilitation activities

— TERM Lite can be used to predict the impact of specific financial constraints on agency assets

wsp

Where is The Disconnect?

TERM Lite's Funding Model

Actual Agency Funding

"The Budget"

Bond Funding

IT Upgrade Grant

General Fund

WSP
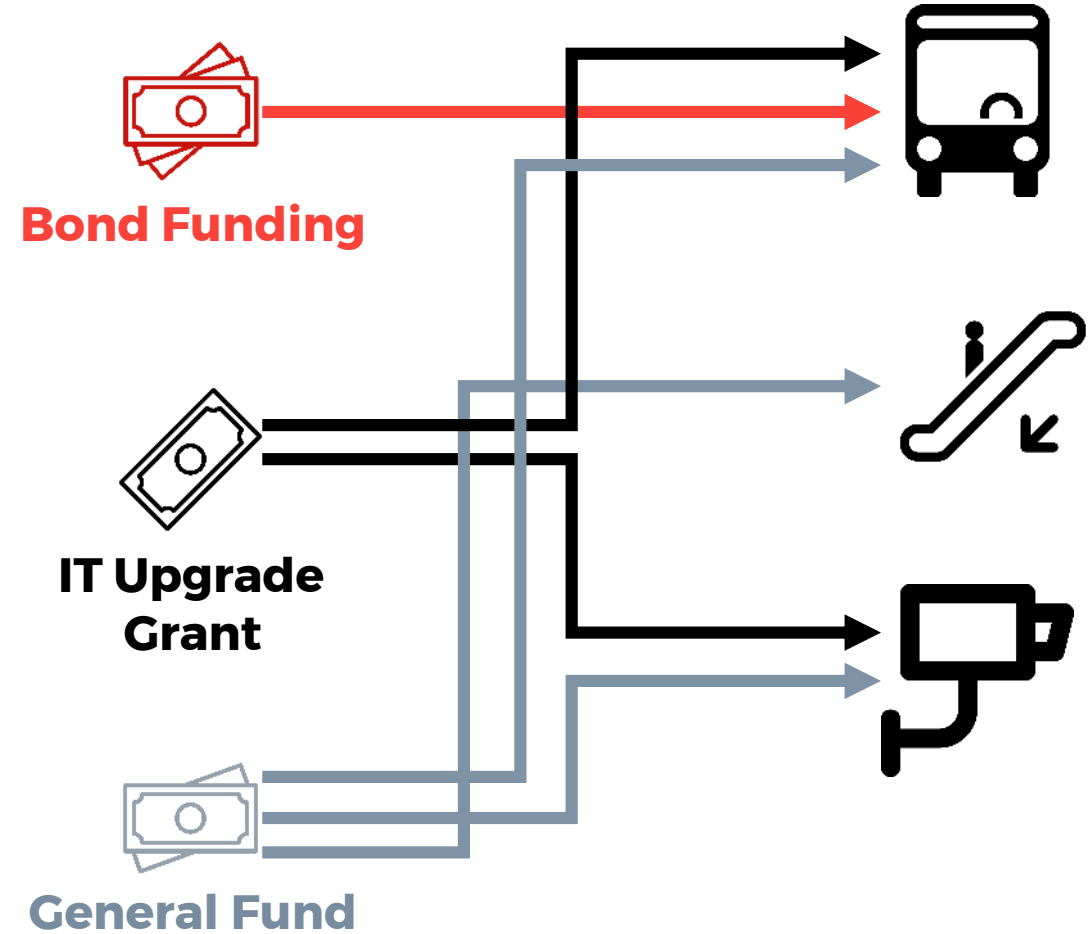
One Approach to Addressing the Disconnect

Constraint: Solution must use stock version of TERM Lite!

— Break each stream into a separate model
  — *Each model has only funding and eligible assets for that stream*

— Run models from most restrictive to least restrictive

— Between model runs update the working inventory to reflect the results of the previous model

— Smartly recombine all modeled streams into a single result

wsp

5

That's a lot of work.

...so we built a tool to automate most of it.

WSP

Background + Development

— The Metropolitan Transportation Commission (SF) is a partner in this work and development
  — *Experienced TERM Lite users, ~10 years of engagement*

— The MTC TERM Lite Scenario Manager automates scenario parameter data entry and model result management

— "Color of Money" Tool is an enhancement to the Scenario Manager

	MTC Scenario Manager	Color of Money Tool
Status	V1.3 – Completed in 2016	Alpha - Completed 2018
Compatibility	TERM Lite v2.3	TERM Lite v2.3
Plans	*Proof of concept for improved version planned*	

wsp

Modeling Process Automation Provided by Tool

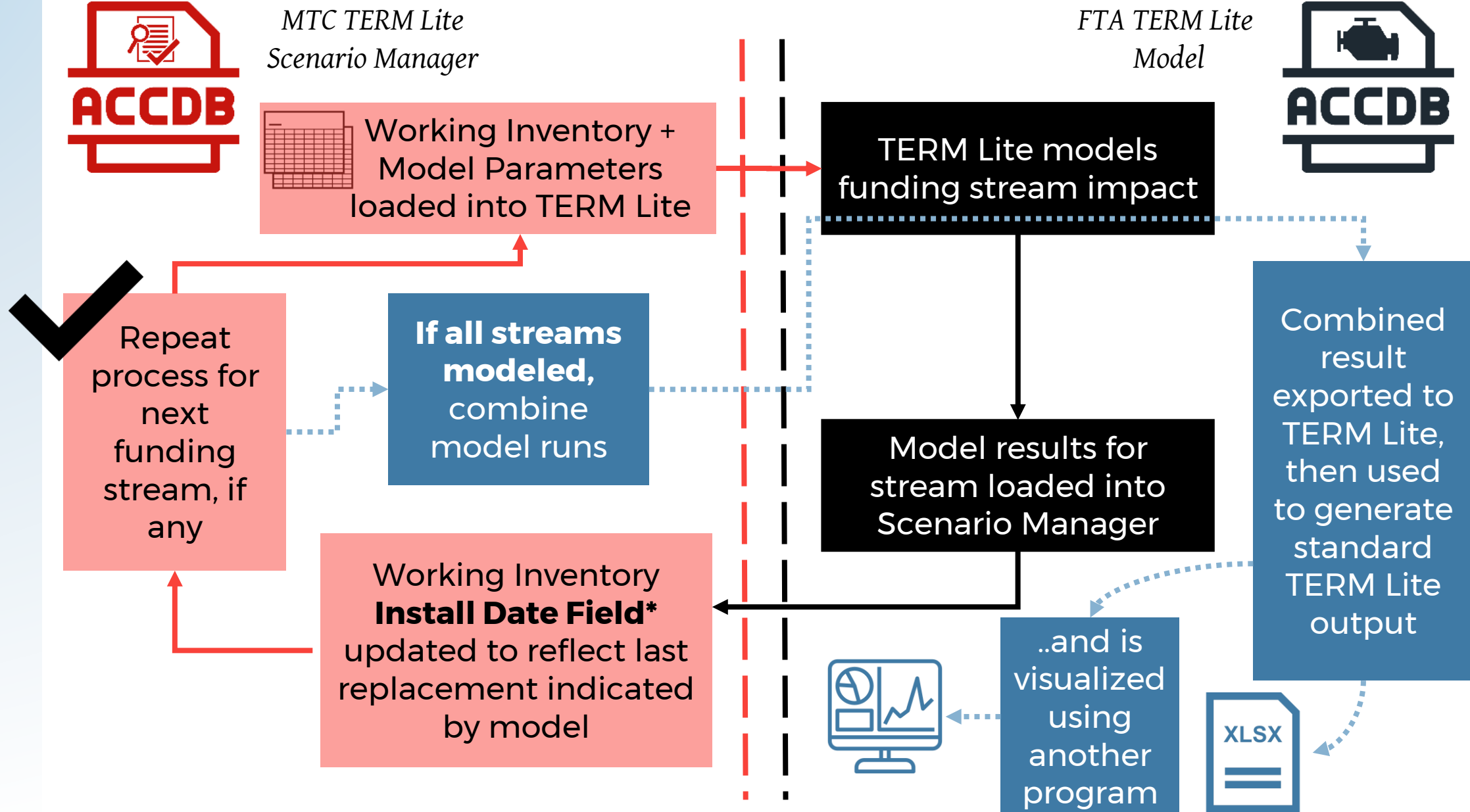*MTC TERM Lite Scenario Manager*

FTA TERM Lite Model

TERM Lite is a separate Access Database from the MTC TERM Lite Scenario Manager with the Color of Money Tool
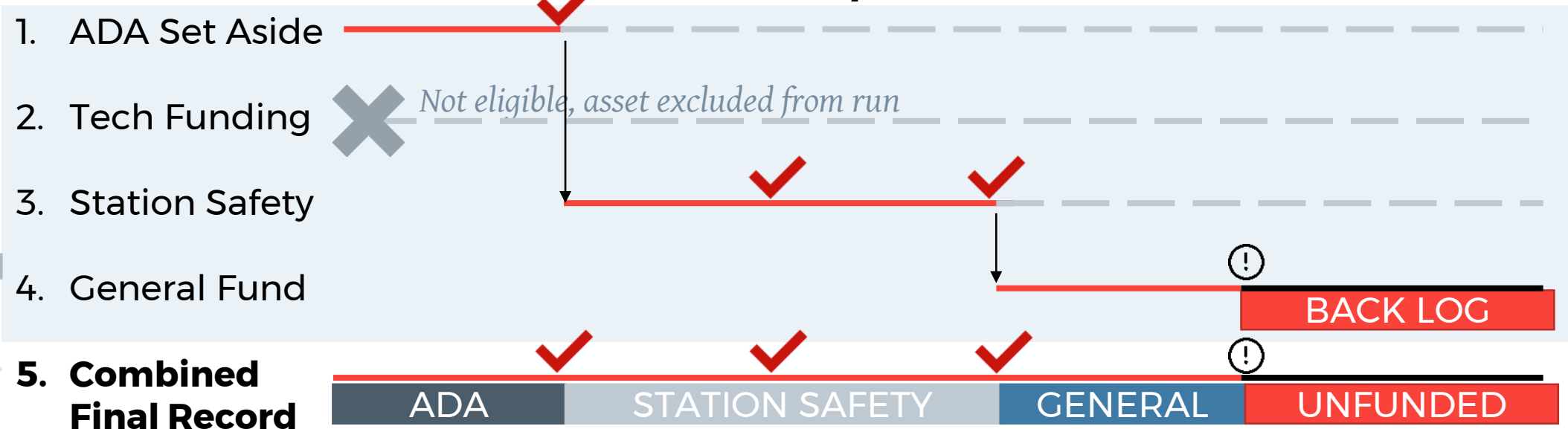
Modeling Process Automation Provided by Tool

MTC TERM Lite Scenario Manager

ACCDB

FTA TERM Lite Model

ACCDB

Working Inventory + Model Parameters loaded into TERM Lite

TERM Lite models funding stream impact

Repeat process for next funding stream, if any

If all streams modeled, combine model runs

Model results for stream loaded into Scenario Manager

Combined result exported to TERM Lite, then used to generate standard TERM Lite output

Working Inventory **Install Date Field*** updated to reflect last replacement indicated by model

..and is visualized using another program

XLSX

8

wsp

Recombination Automation Provided by Tool

— Results in multiple results that separately are not valid

— Results must be smartly merged into a single result (automatic)

— Valid results for each model are stitched together into a final record

✔ = Funded Model Capital Need

⊙ = Unfunded Model Capital Need

ADA Ramps at Central Station

1. ADA Set Aside

2. Tech Funding — *Not eligible, asset excluded from run*

3. Station Safety

4. General Fund

All results combined

5. **Combined Final Record**

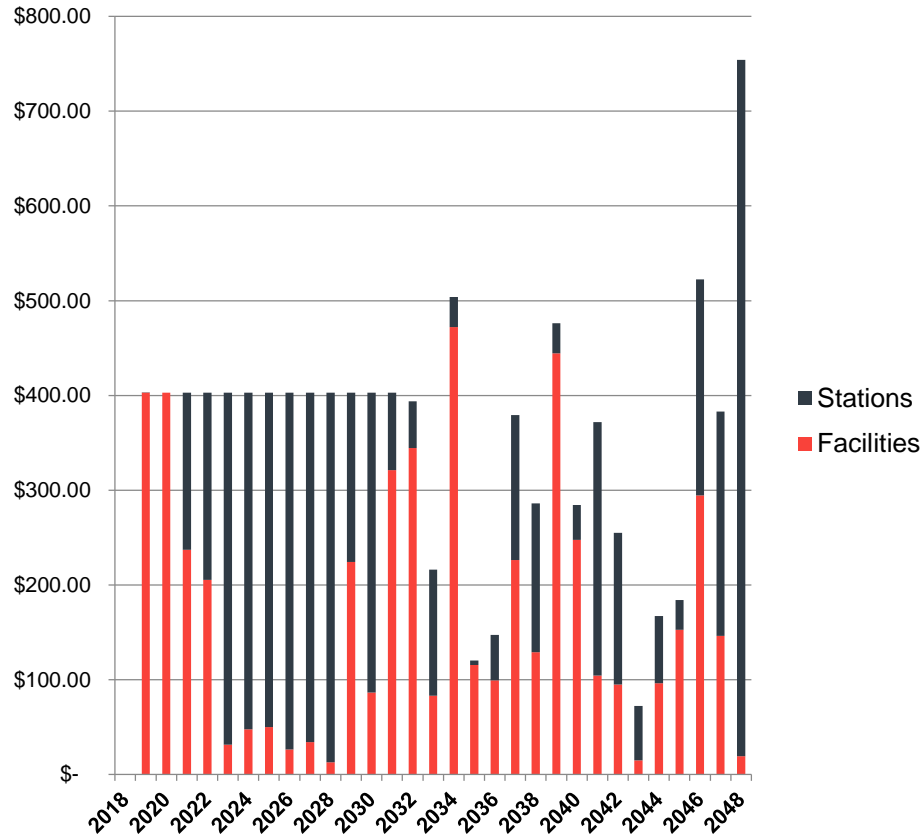BACK LOG

ADA | STATION SAFETY | GENERAL | UNFUNDED

WSP

Benefits of the CoM Tool

— Sensitivity to Color of Money (CoM) in TERM Lite

— Ensures dedicated funding is applied correctly.

— Can apply different TERM Lite models (i.e. Backlog Target Seek) to specific categories instead of limited funding

— Tool can also be used for geographic restrictions

— CoM Tool does have some limitations due to not changing model behavior directly
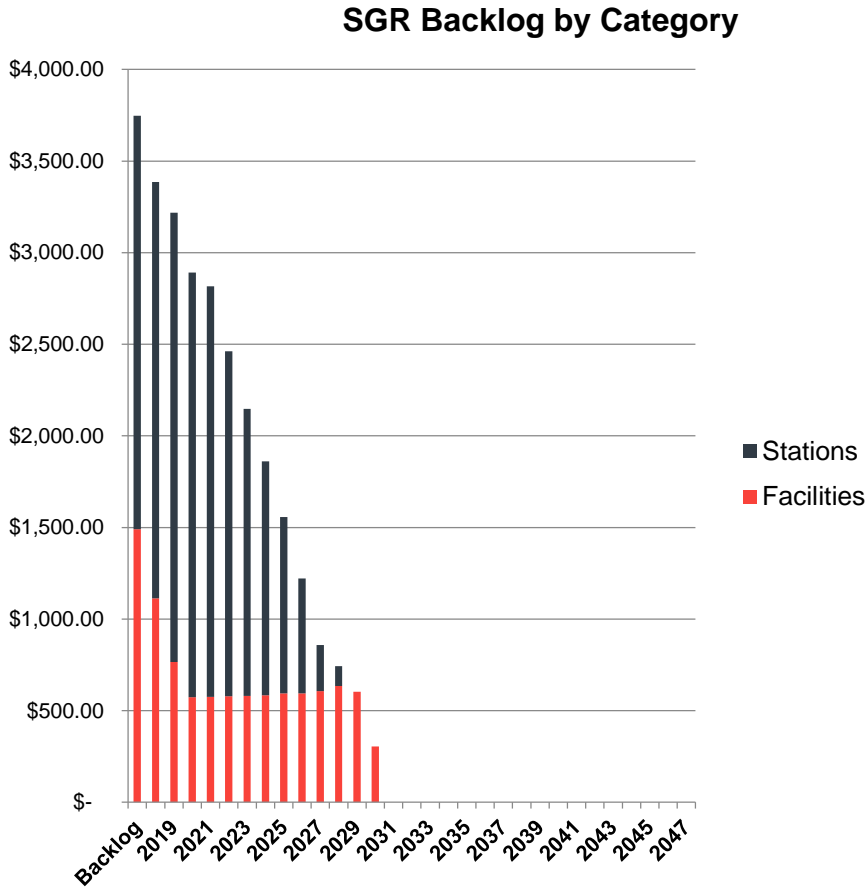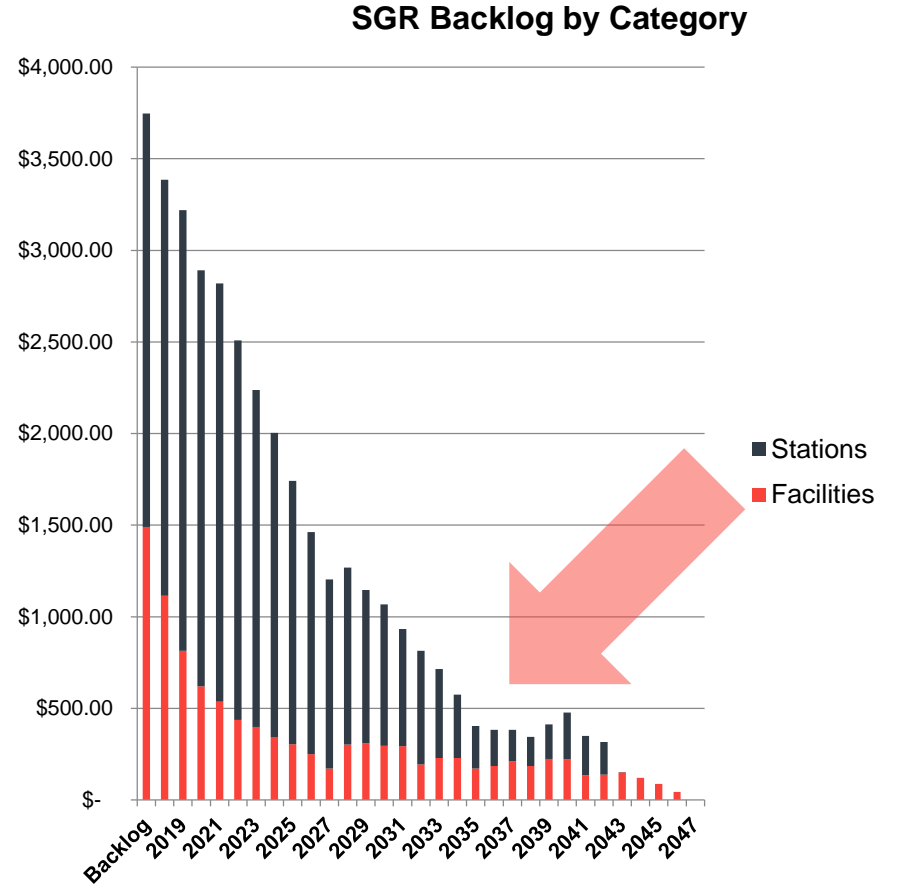
WSP

Note: Graphs and underlying data are _fictitious_. For illustration only.

Geographic Distribution Example (Illustration only)

Note: Graphs and underlying data are fictitious. For illustration only.

Immediate Differences in Results

— Same total funding; different results

— Unspent funds intended for one area are **not** available for capital needs in other areas
  — *Result: Backlog not eliminated, despite sufficient funds*
  — *Result: Spikes in spending due to "carry over" of unspent funds in certain funding streams and limited eligible assets.*

— Distribution between areas and between operators within the overall region altered by using the CoM tool
  — *Dedicated funds are allocated correctly*

wsp

What's Next?

— **A Better Way:** Test each need against each eligible budget in the same year
  — *Funding streams modeled first can't "see" funds in later funding streams*

— **Can only be done via changes to underlying TERM Lite model code**

— Proof of concept of improved process is under development

```
FOR each [Year],
    FOR each [Capital Need],
        Check each available budget
        for which the asset is
        eligible, from most to least
        restrictive.
        IF match, fund from
        that budget.
        IF no match, then
        move to backlog.
    Repeat until all [Capital Needs]
    checked and logged for year.
Repeat until all [Years] modeled.
```

Thank You

15

Nicholas.Richter@WSP.com

WSP