Mobilizing Transit Asset Management at a Regional Scale

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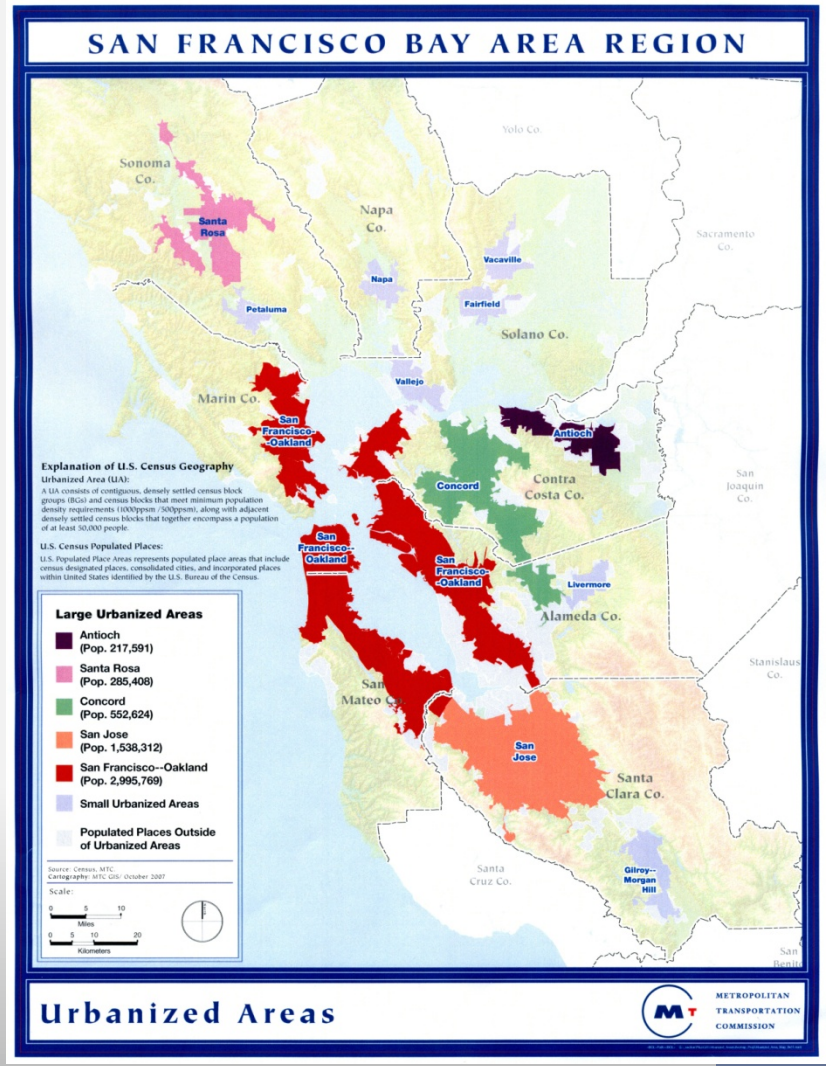
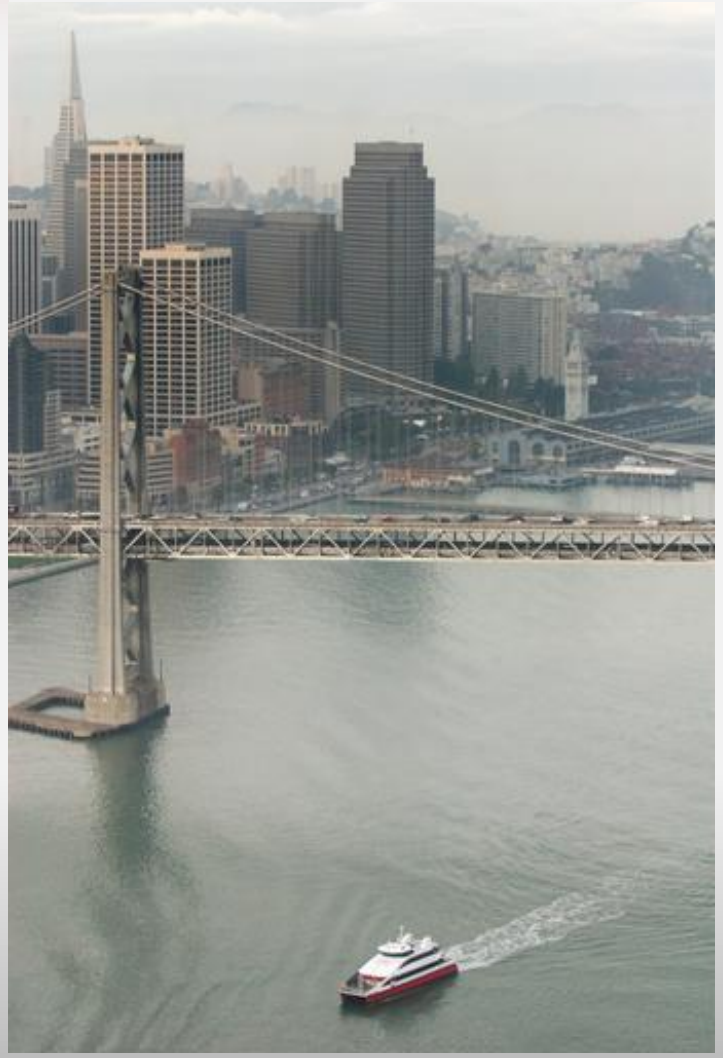
About the Region

Metropolitan Transportation Commission (MTC)

- Metropolitan Planning Organization (MPO) for San Francisco Bay Area
  - 9 counties, 12 urbanized areas, 101 cities & towns
  - 7,000 square miles
  - Population 7.4 million
  - Served by 27 independent transit operators
- Develops long-range Regional Transportation Plan
  - Projected needs & funding for transit capital replacement & rehabilitation



Designated Recipient - Federal funds



- Federal formula funds:
  - FTA 5307, 5337, 5339
  - FHWA Surface Transp. Program
- MTC programs formula funds to 21 transit operators, including:
  - San Francisco MTA
  - SamTrans
  - Caltrain
  - Golden Gate Transit
  - BART
  - Santa Clara VTA
  - AC Transit

Driving need for better information

Need: Improved basis for projecting region's preservation costs for long range planning & annual funding programs

Issues:

- Limited funds, increasing reinvestment needs
- Systems reaching mid-life, e.g., BART car replacement
- Wide variation in asset data by operator & asset type
- Project-based data led to incomplete, unreliable & inconsistent projections (needed an to asset-based need

It started with an Inventory

Roles and Responsibilities

Transit Operators

- Own, Operate, Maintain Assets
- Transit Asset Management Plans
- Performance Targets/ Monitoring

MTC: MPO

- Prioritizes Regional Projects
- Manages Discretionary Funds
- Performance Targets/ Monitoring

Regional Collaboration

- Funding Policies
- Data Sharing
- Regional Standards/ Best Practices

What is the Inventory

- **Database of existing Transit Capital Assets and their attributes**
- **Contains asset type, quantity, year in service, and cost**
  - Vehicles, Guideways, Facilities, Stations, Systems
- **Covers 25 different agencies in 9-county Bay Area Region**
- **Initiated in 2006, Updated in 2011 and 2015**
- **Historically updated every 4 years**
- **Operators submit data to MTC, MTC coordinates/ manages**

Progression of the Inventory

Phase I: 2006 – 2008

- MS Excel based
- Needs Assessments performed though MS Excel

RTCI – 1

- Asset data from 25 operators in one place
- Consistent classes and data
- Standard regional cost base
- Operator replacement costs and lifecycles

Phase II: 2010 – 2011

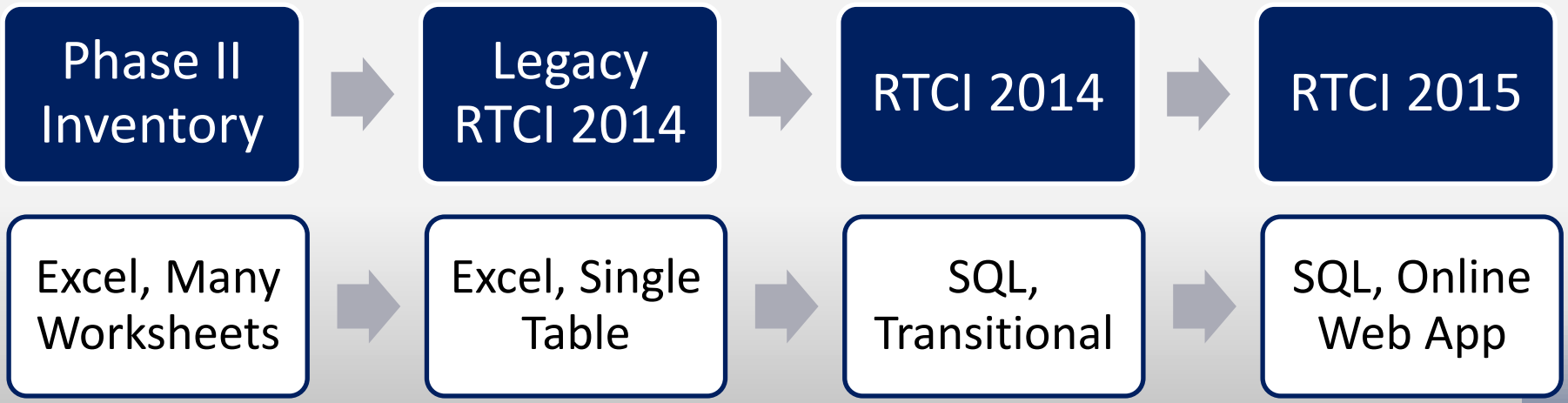
- MS Excel dataset converted to MS Access
- Needs Assessments through TERM

RTCI – 2

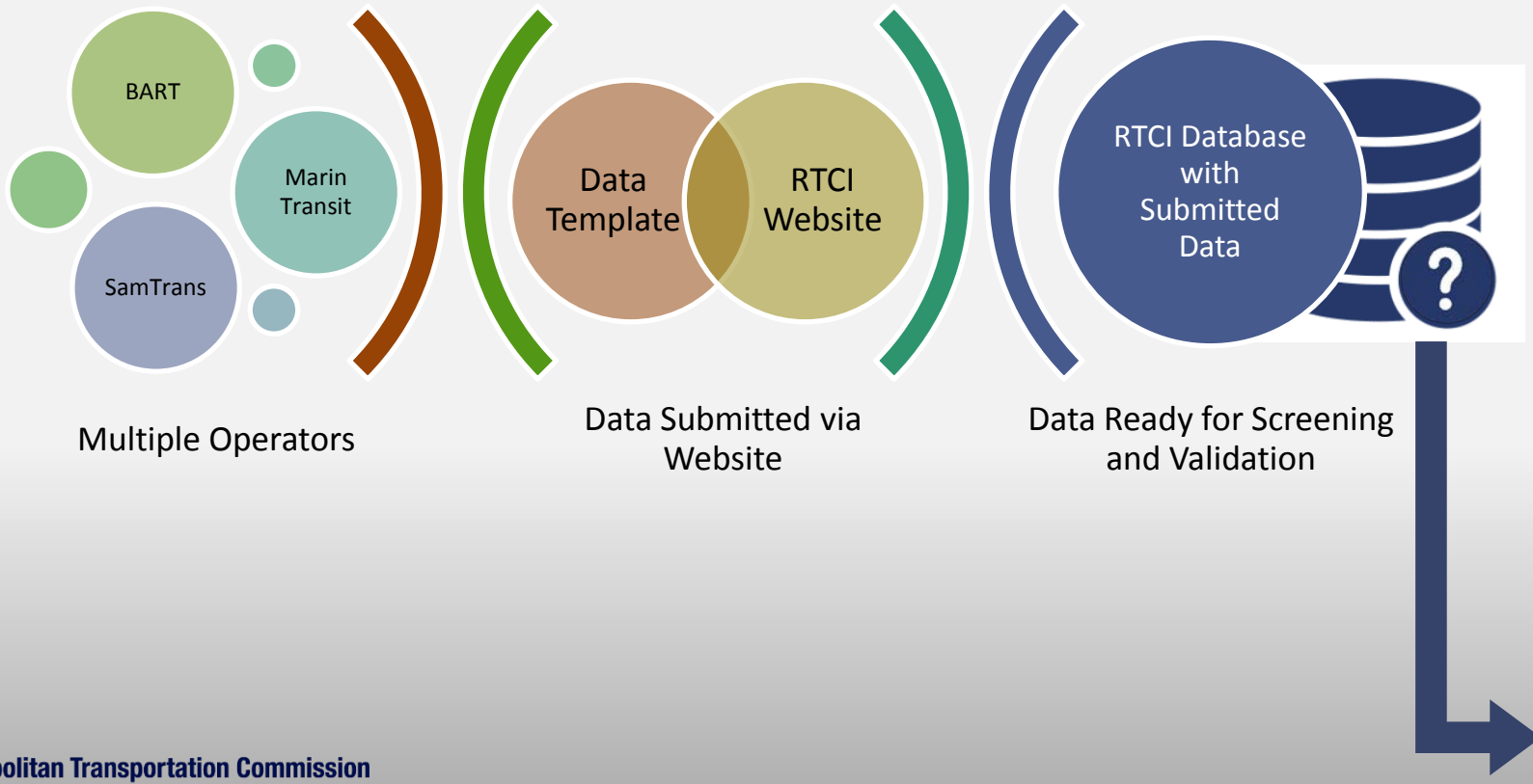
- Focused on Data quality
- Cost refinement (e.g., soft costs)
- Refinements to Asset classification (Ferries, Facilities)
- Rehab histories
- Process improvements

Phase III: 2014-2015

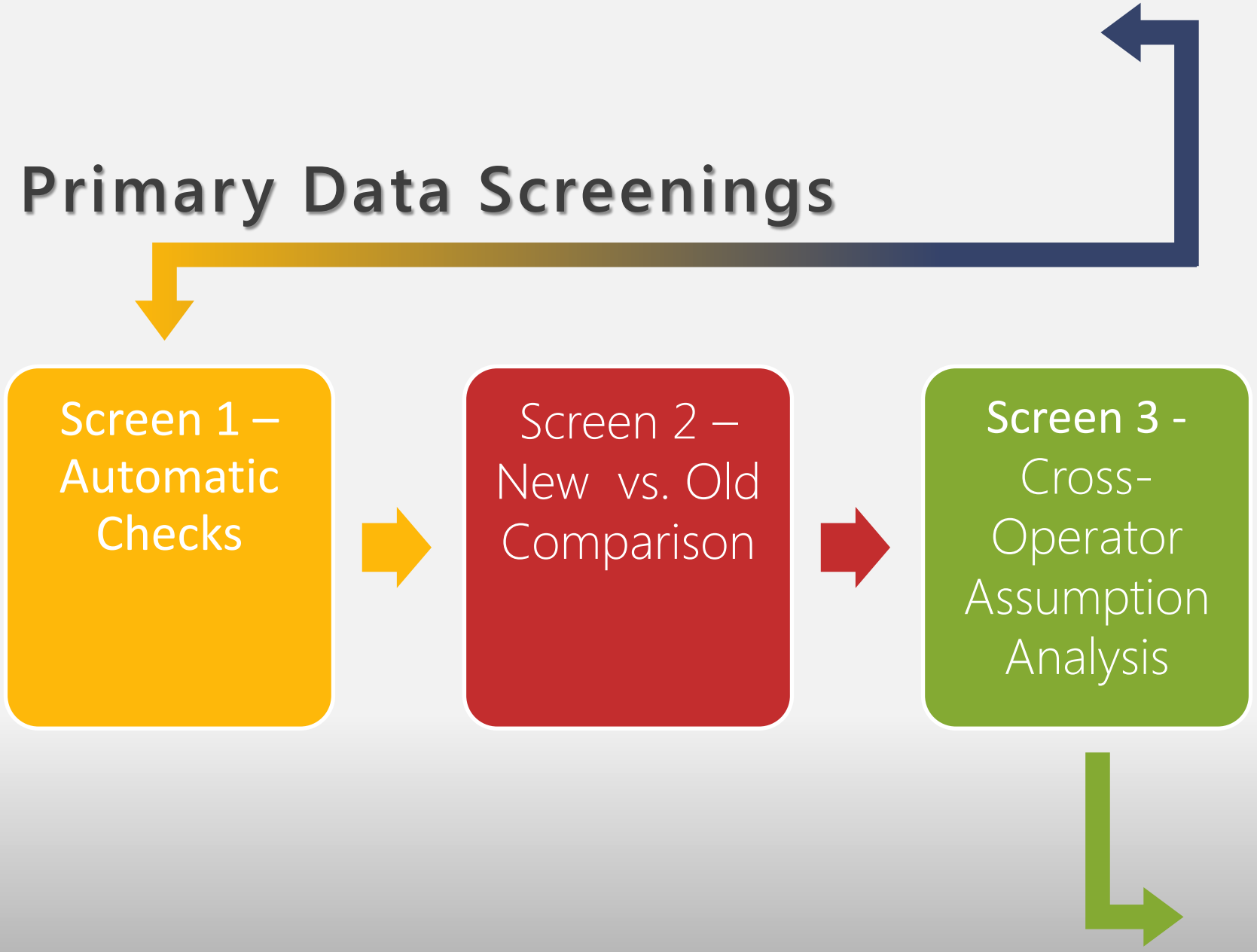
- Migrated to an SQL server platform
- Web-based Inventory Data Portal
- Revision of rehabilitation cost reporting
- Standardizations
- Improved Assumptions and Data Accuracy



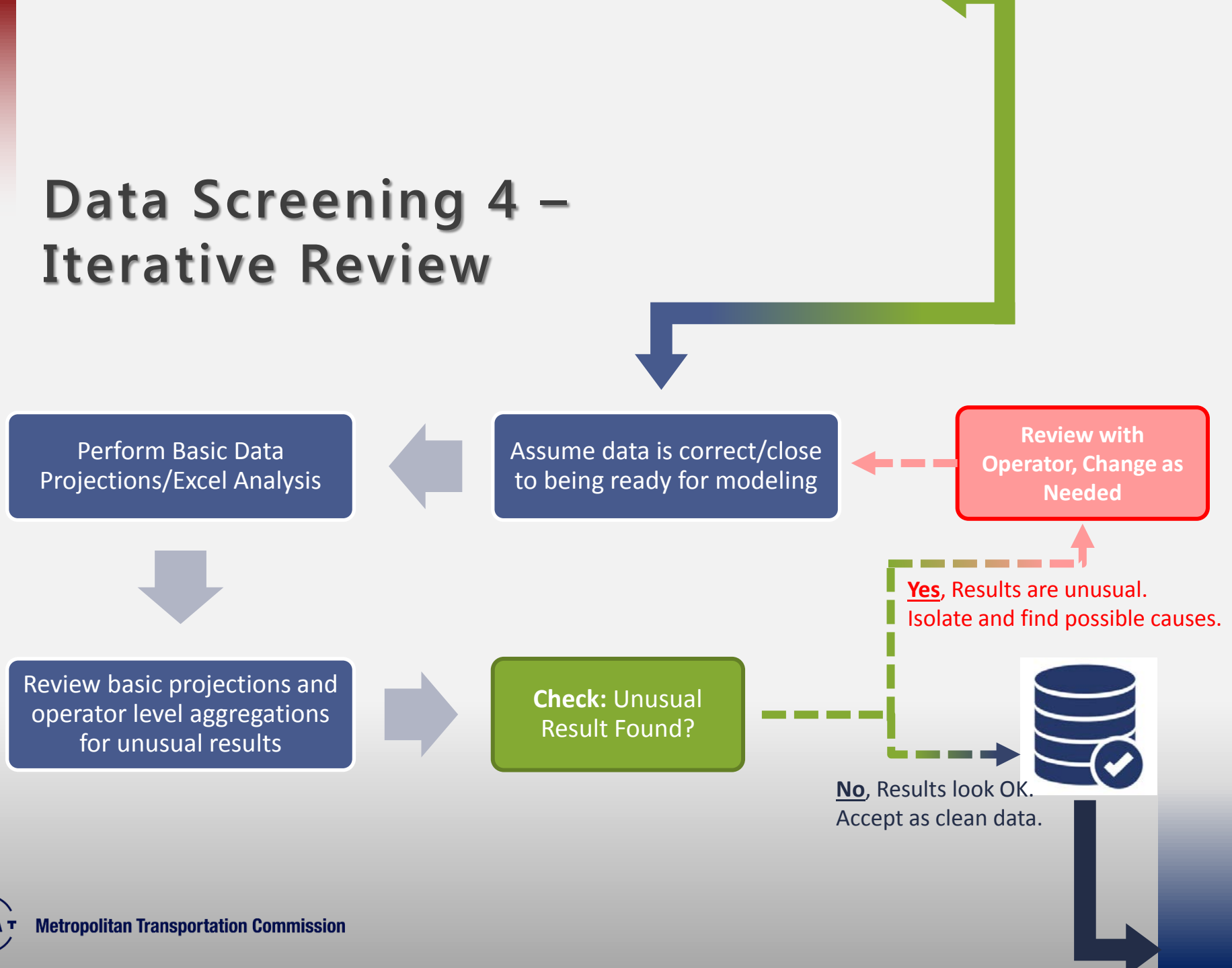
RTCI Update Process



Primary Data Screenings



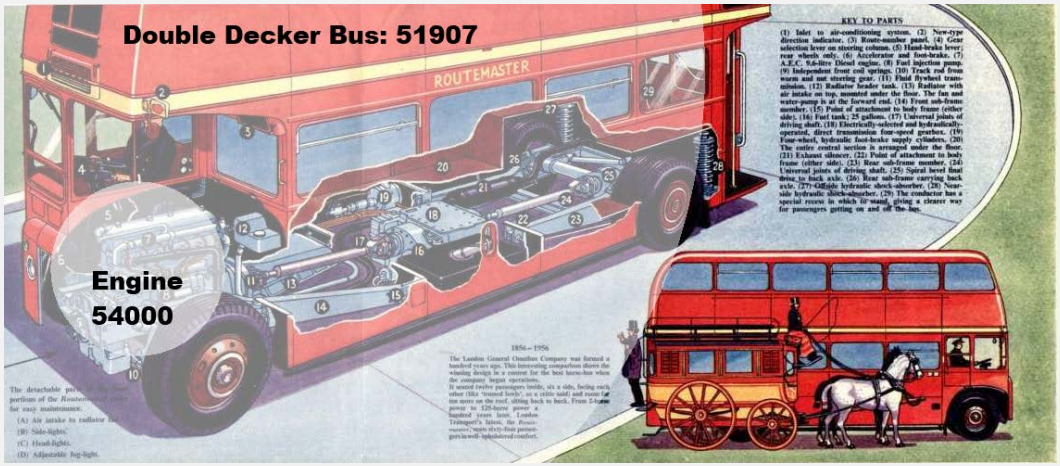
Data Screening 4 – Iterative Review



Complexities of Developing an Inventory

Compound assets

- **Compound Assets are assets that consist of one or more distinct sub-assets that are required for the parent asset to function.**



Asset ID	Parent ID	AssetType	Desc
A1	A1	51907	British Bus
A2	A1	54000	Engine

Complexities of Developing an Inventory

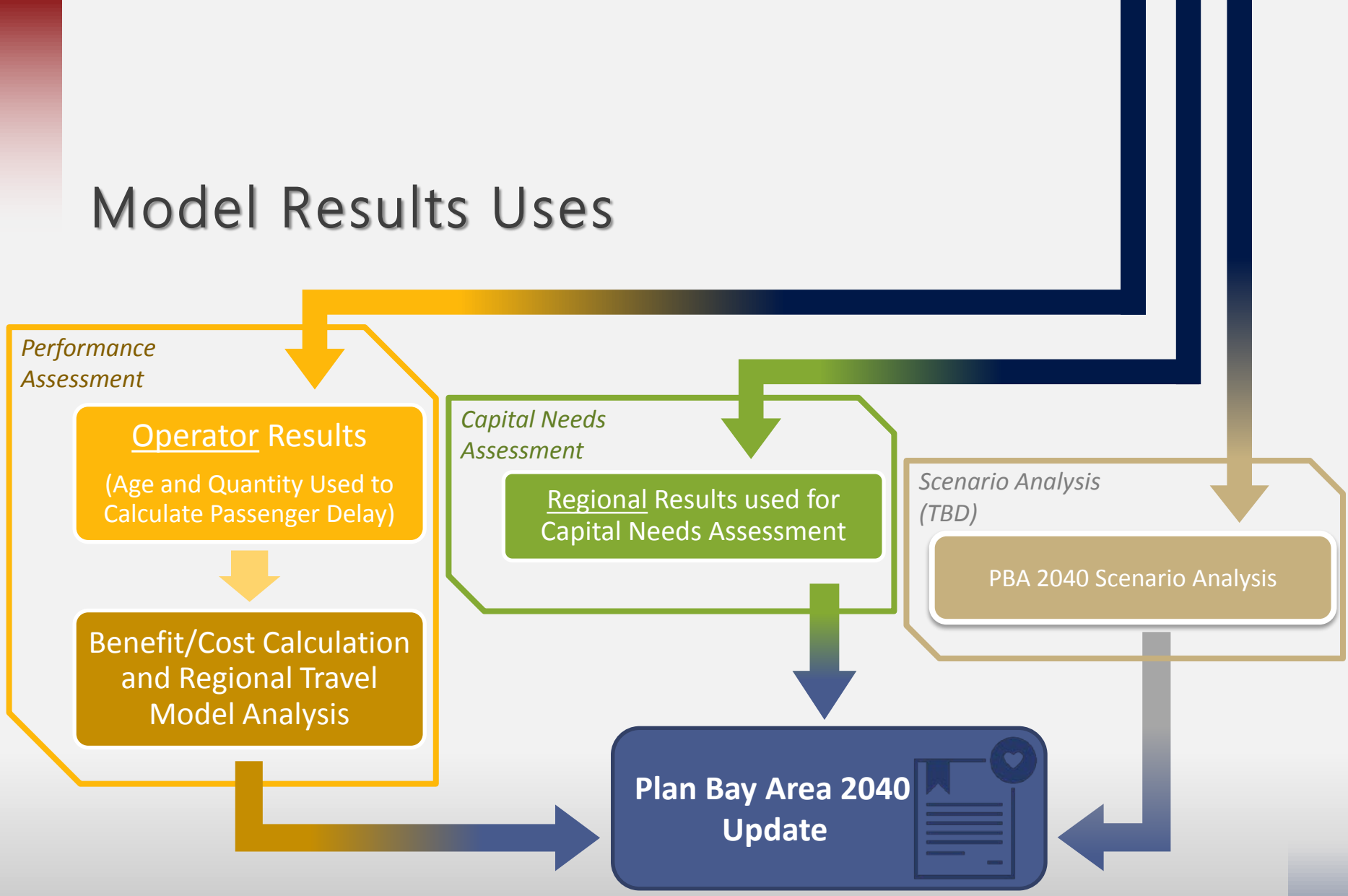
- **How to represent Compound Assets (one or more distinct sub-assets that are required for the parent asset to function) –**
- **Level of Detail (subfleet reporting)**
- **Obtaining usable location data to map**
- **Size of Assets to report in regional inventory**
- **Use tailored or standardized attributes**
- **Unit Consistency often overlooked. Examples:**
  - Linear Feet vs. Linear Miles for rail tangents
  - “Each” vs. Track Mile
  - Square Feet vs. Building
  - Office vs. Building
  - Per System vs. Each vs. Lump Sum (?)

Moving Beyond the Inventory

RTCI Applications

RTCI Database

Model Results Uses



Vision for Multi-function Utility

- **Regional Standardizations**
  - Inventory field Definitions
  - Asset Type Classification: TERM Lite v2.2
- **Performance and Target Setting Reports**
  - Vital Signs for MTC
  - Transit Asset Management Plans
- **Regional template for data portability into TERM Lite or other analysis tools**
- **Integration with NTD reporting**

Inventory Application Examples

- **Extra Slides**

Plan Bay Area – Transit Capital SGR

Regional SGR Target:
Replace all assets at end of useful life

Regional Priorities:
Fund assets most directly related to safety and reliability of services

Total projected needs:
$47B (between 2013 – 2040) to bring region to state of good repair in 10 Years

Breakdown of $47B:

1) Revenue vehicle replacement - $16B
2) Tracks, guideway, train control, traction power, communications, ferry facilities & fare collection systems - $17B
3) Stations, facilities, maintenance equipment - $14B