

GEOGRAPHIC **information system**

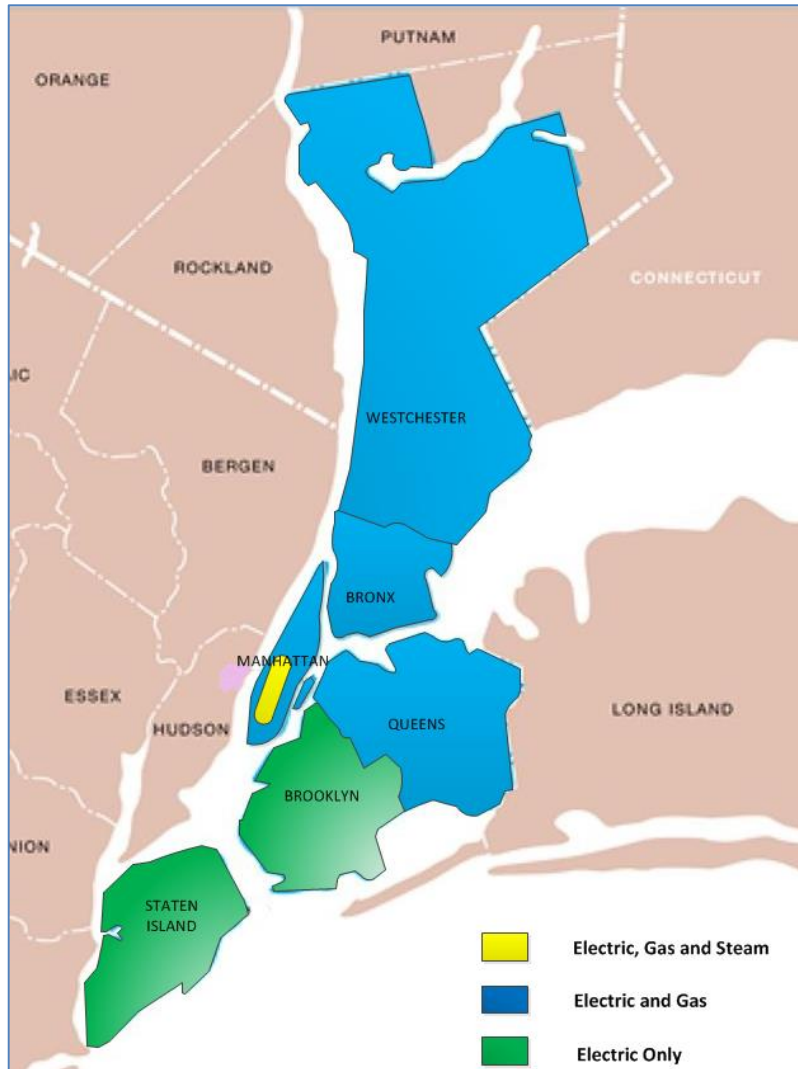
Planning an Enterprise GIS Project

Karen Stanford (Con Edison)

Aaron Patterson (Schneider Electric / Paleon Solutions)



Consolidated Edison



Company Profile as of 2013

- Service Area: 2010 square miles
- Total Revenue: \$12,354 million
- Total Assets: \$40,647 million

Territory		Customers
Electric		
Underground	94,000 miles	3.3 million
Overhead	37,000 miles	
Gas	4,300 miles	1.1 million
Steam	105 miles	1,800

Mission Statement

define the

SCOPE
COST

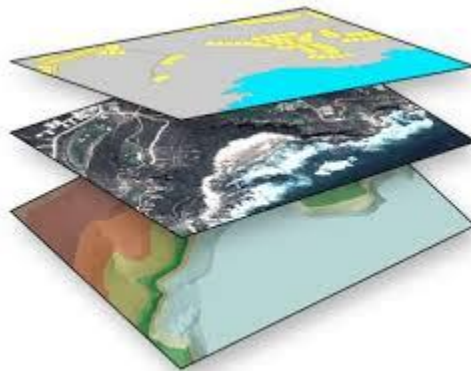
SCHEDULE &

IMPLEMENTATION OPTIONS

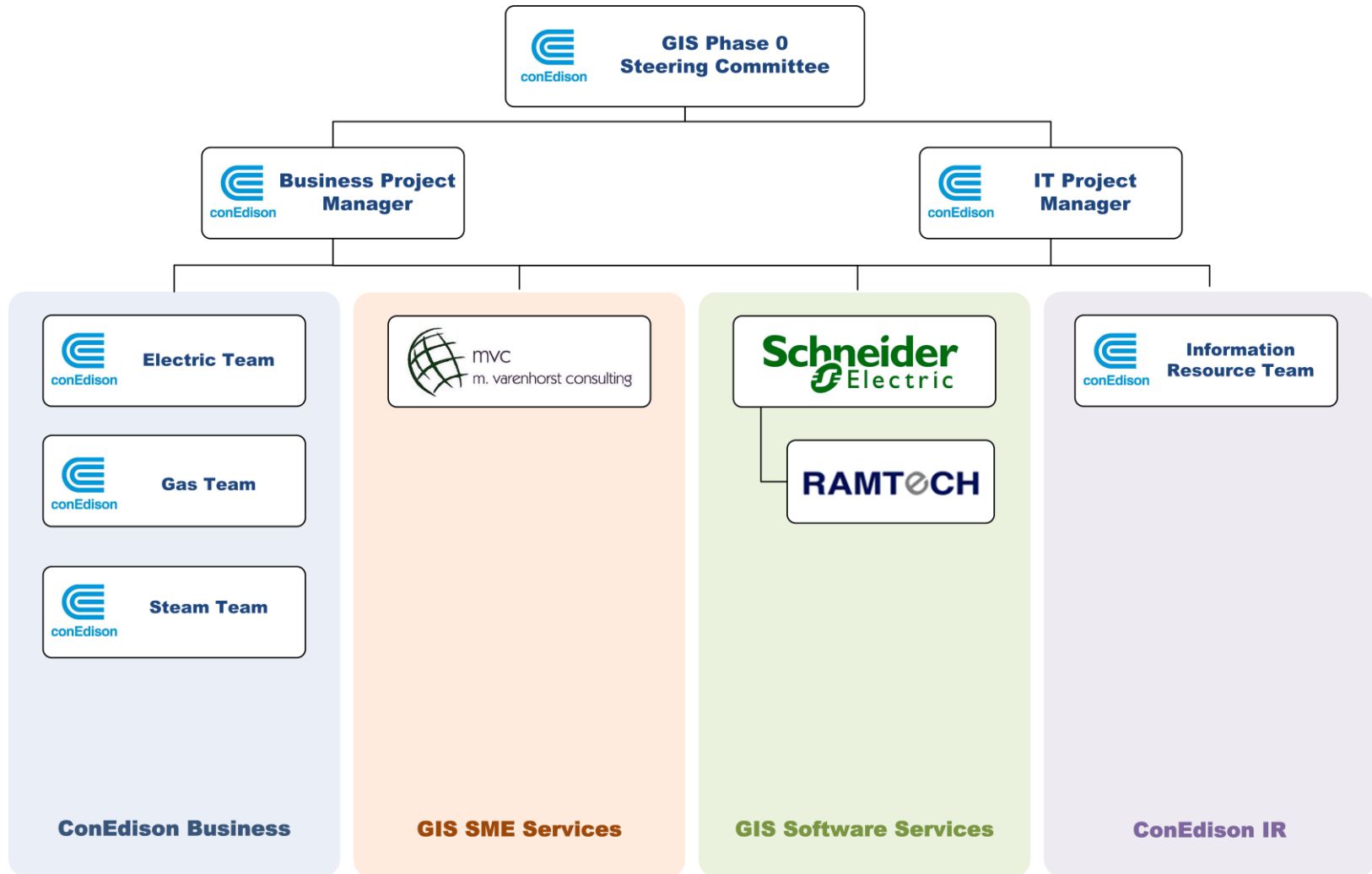
for a corporate

geographic information system (GIS)

solution



GIS Phase 0 Team



Current Software Portfolio

5 Core Mapping Systems

#	Name	Scope	Technology	Region
1	VISION	Electric Secondary Distribution System	Intergraph Framme	BQ, XW, M
		Gas Secondary Distribution System	Intergraph Framme	XW, M, Q
		Conduit	Intergraph Framme	Brooklyn Only
2	Electric Primary	Electric Primary distribution system only	Bentley MicroStation	BQ, XW, M
3	EDFIS	Electric Primary, Secondary & Conduit (SI Mapping)	Bentley MicroStation	SI Only
4	Conduit & Duct Occupancy	Electric Pipes & Structures	Bentley MicroStation & Raster/Vector Hybrid	BQ, XW, M
5	SOMIS	Steam Operations Mapping and Information System	Bentley MicroStation	M Only

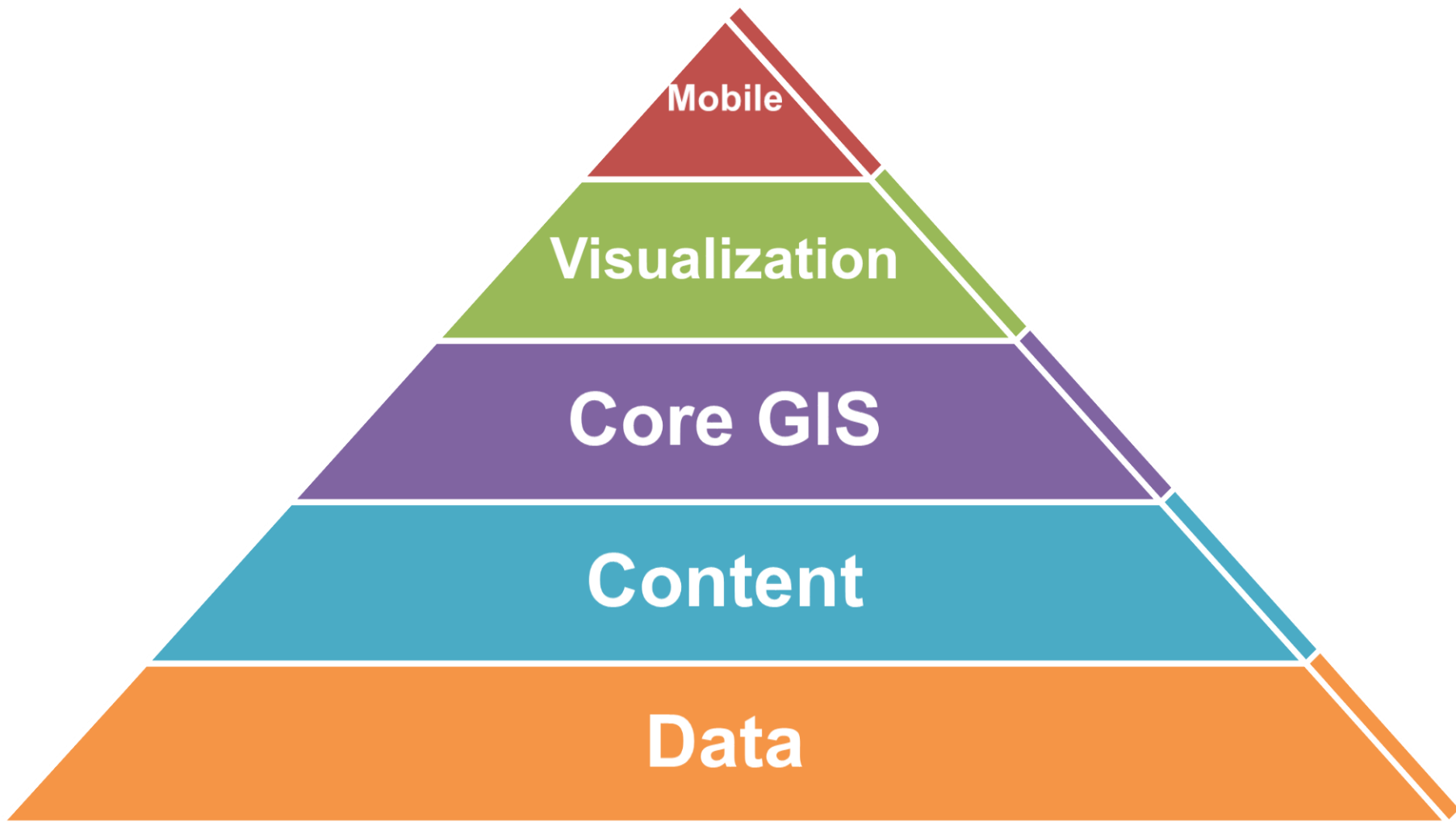
Legend: B–Brooklyn X–Bronx M–Manhattan SI–Staten Island Q–Queens W–Westchester

Current Software Portfolio

Other Applications

- 32 Ancillary Mapping Applications
 - Applications supported by IT that augment the Core Mapping applications
- 15+ Business Unit Applications
 - Applications that business units have developed because the current platform does not meet their immediate business needs
 - Many based on Esri software

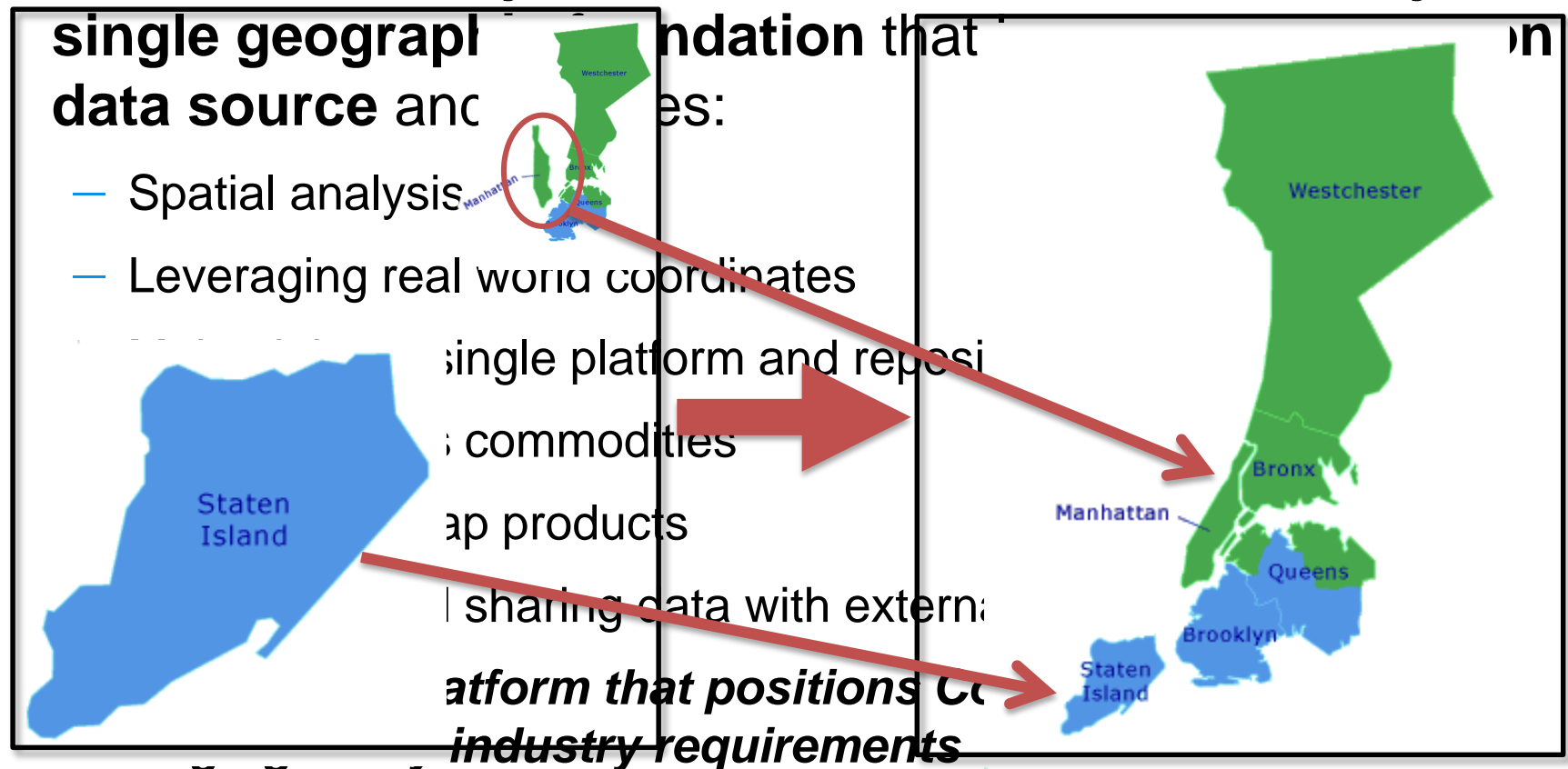
GIS Building Blocks



Goal of Enterprise GIS

We have built our systems to function on our proprietary coordinate systems

- An integrated set of tools that enable us to work from a **single geographic data source** and **single platform and repository** that **positions us to meet industry requirements**



"Real World" coordinates allows external collaboration

GIS PHASE 0 PROJECT

Data Migration Pilot

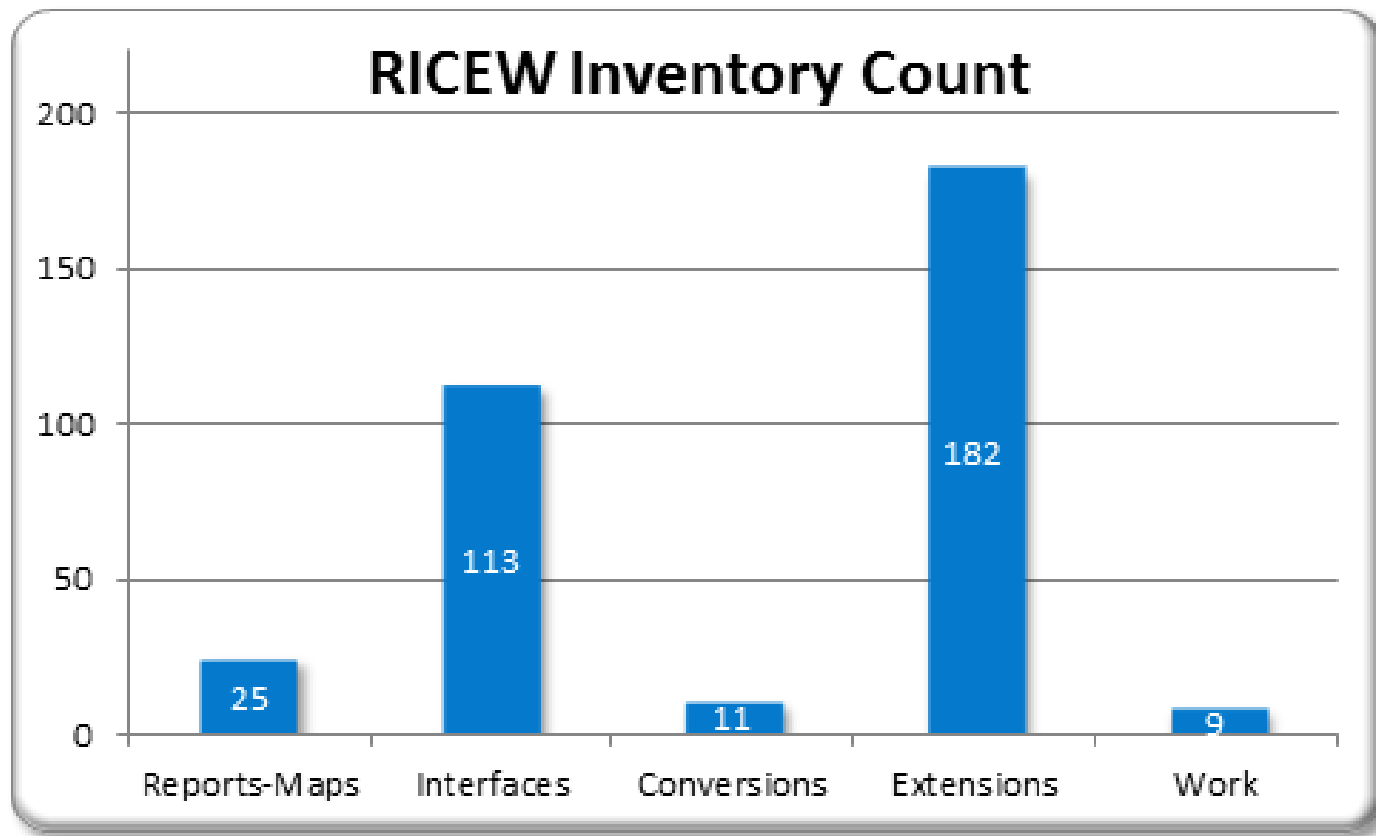
GIS Phase 0 Deliverables

- Scope, Plan and Cost Estimate that includes
 - Business Case
 - Business and IT Requirements (800+ identified)
 - RICEW Inventory (Reports, Interfaces, Conversion*, Extensions, Workflows)
 - Testing Plan
 - Deployment Options and Recommendations
 - Change Management plan



** Data conversion identified as the highest risk based on current mapping challenges as well as lessons learned from previous projects*

Reports, Interfaces, Conversions, Extensions & Workflows



GIS Phase 0 Pilot Data Migrations

Risk Mitigation

Manhattan



Area bounded by
Canal Primary
Network

≈.4 Square Miles

12 Feeders

Electric, Gas and
Conduit

Bronx



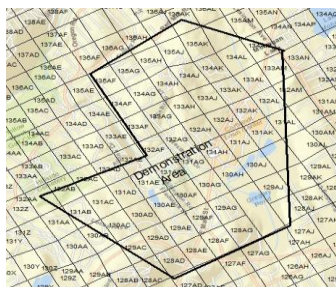
Lower portion of
Central Bronx Network
area

≈ 3 Square Miles

4 Feeders

Electric and Conduit
Only

Westchester



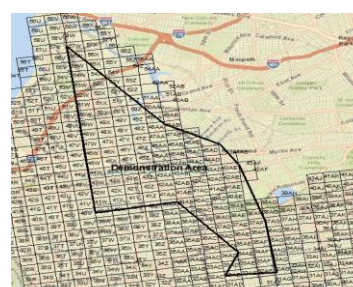
Area covered by
Cortlandt Loop

≈ 4.5 Square Miles

8 Feeders

Electric, C&DO and
Gas

Brooklyn



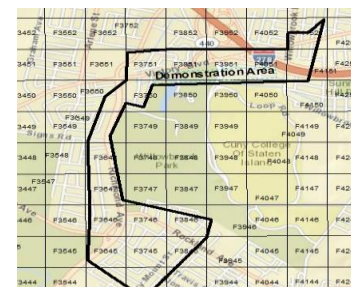
Feeders 5B21, 5B22
and 5B3; 27 KV to
4KV feeders SD3148
and SD3146.

≈ 10 Square Miles

3 27KV , 2-4KV

Electric and C&DO

Staten Island



Area covered by
feeder 4R76

≈ 1 Square Mile

1 Feeders

Electric and C&DO

Data Conversion, Migration & Conflation Challenges

1. Different coordinate systems (15) and landbases (12)
2. Different data models for Electric (5)
3. Duplicate structures for Electric
4. Primary feeder maps are schematic diagrams
5. Conduit & Duct Occupancy maps are pictures (raster)
6. Gas conflation requires more field validation

** Conflation aligns data to the real world landbase*

Landbase - Different for Each Source

Differences – Westchester Electric and Gas



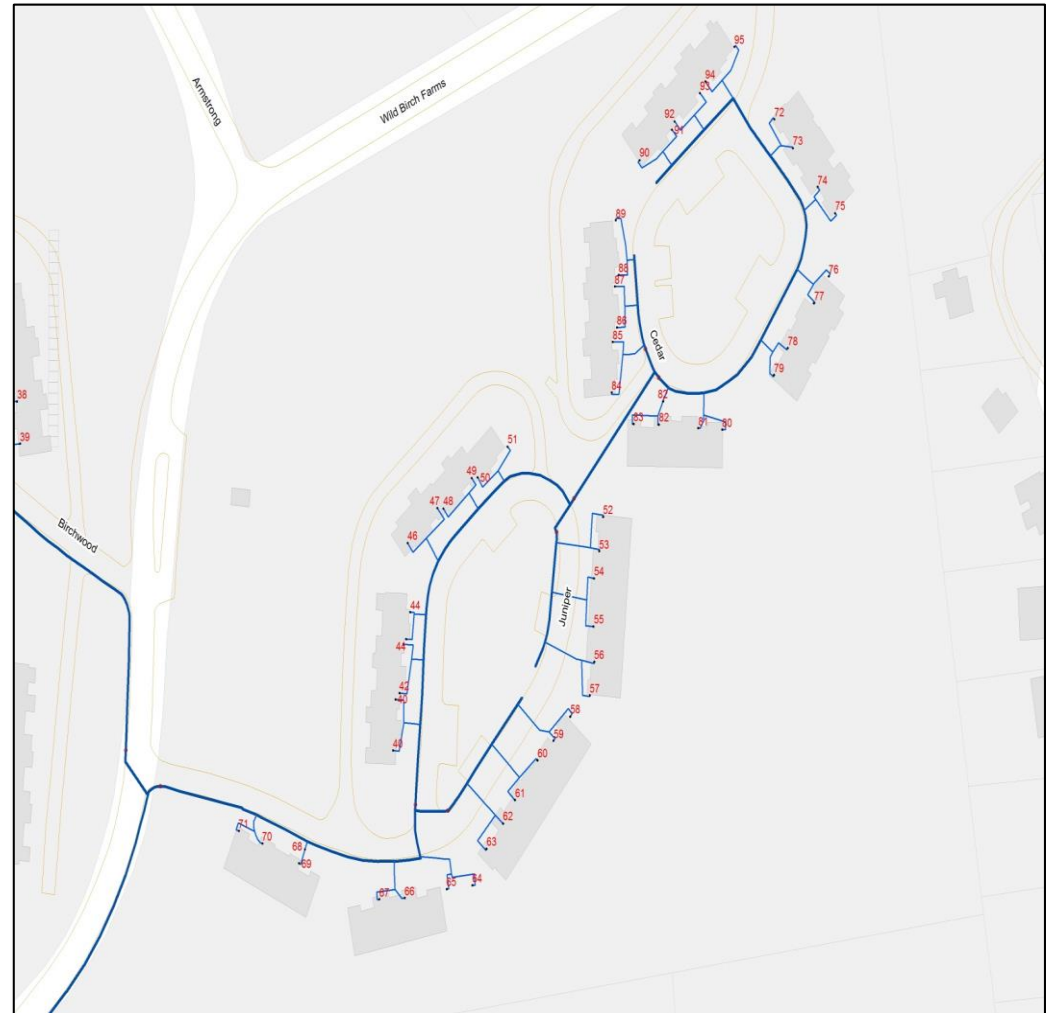
Westchester - Gas



Westchester - Electric

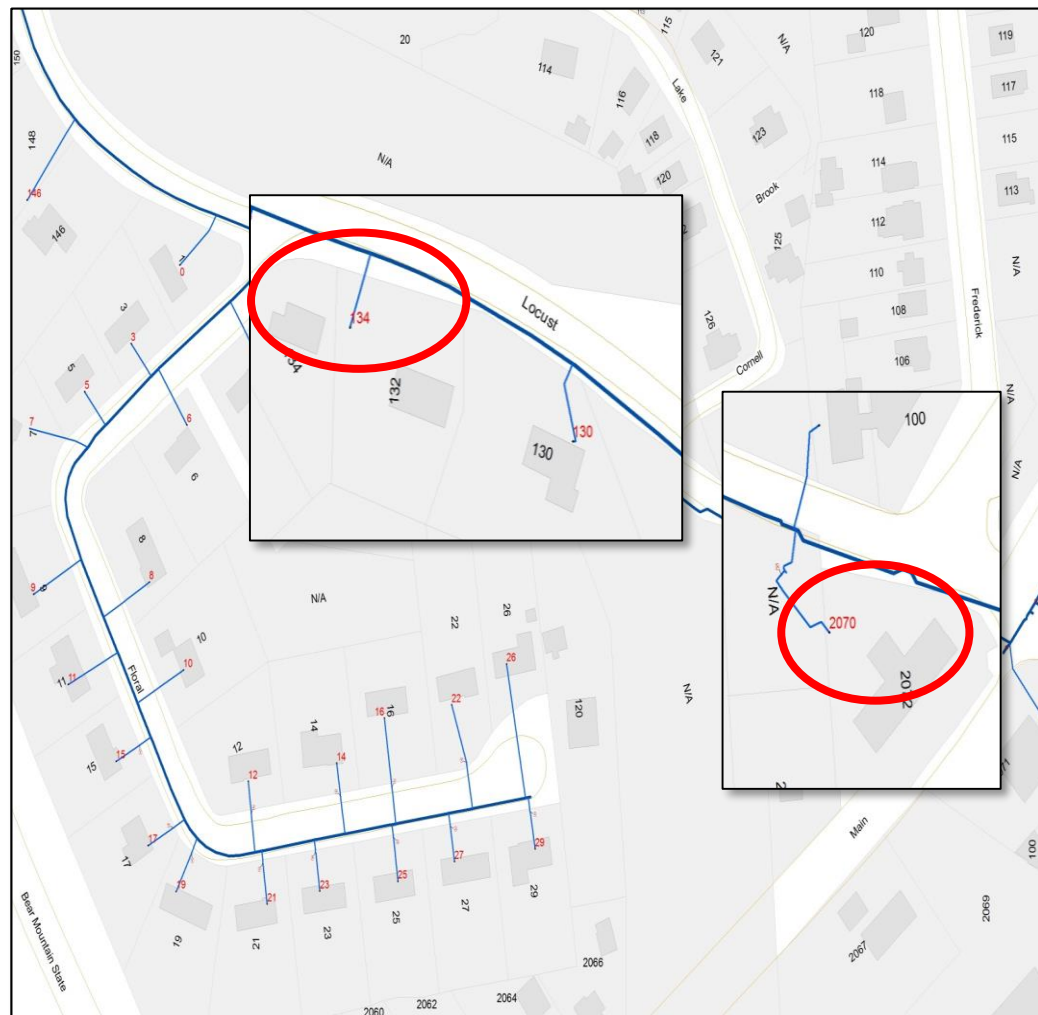
GIS Phase 0 Pilot Gas Conflation

- Relative accuracy for location varies between regions
 - Worse in Westchester County



GIS Phase 0 Pilot Gas Conflation

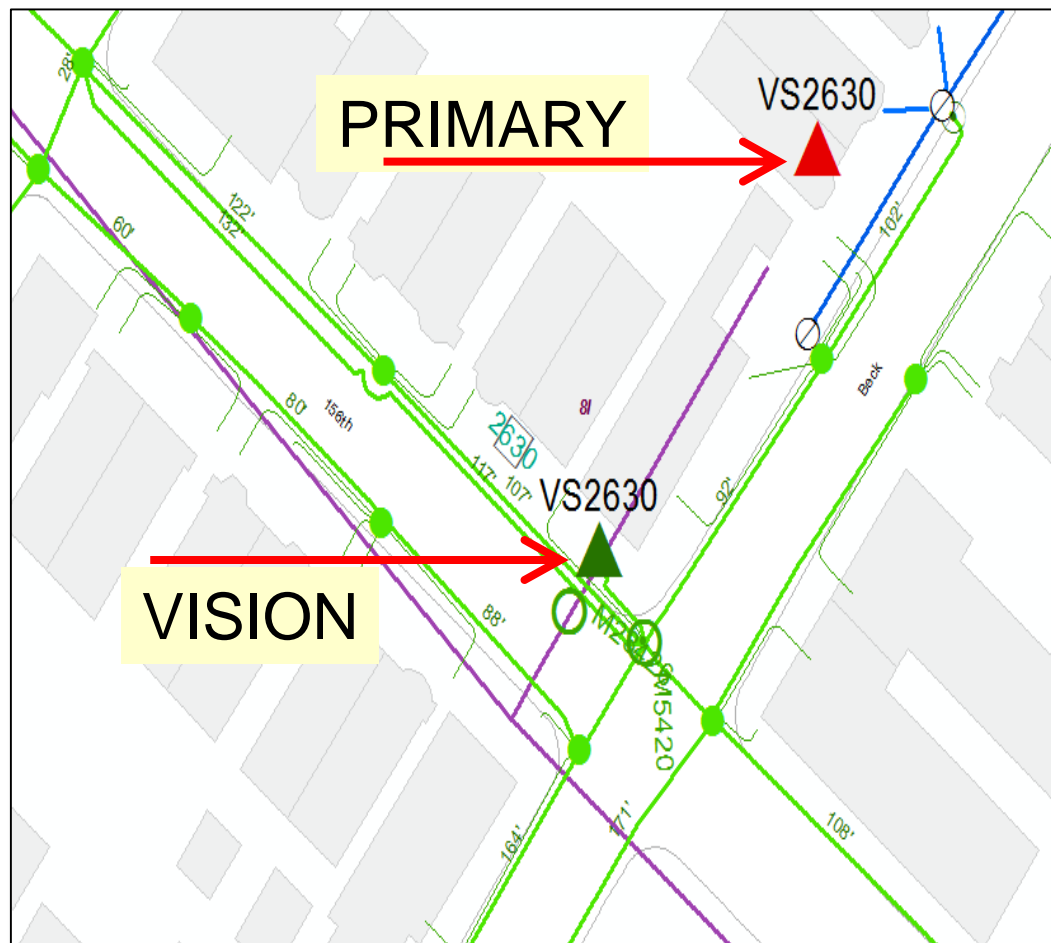
- Conflation cannot correct all positional issues
 - Addresses in Red from VISION
 - Numbers in black from County
 - Service line not connected to proper parcel
 - Service address is incorrect



GIS Phase 0 Pilot Electric

Duplicate Features in Electric Primary and Secondary Mapping

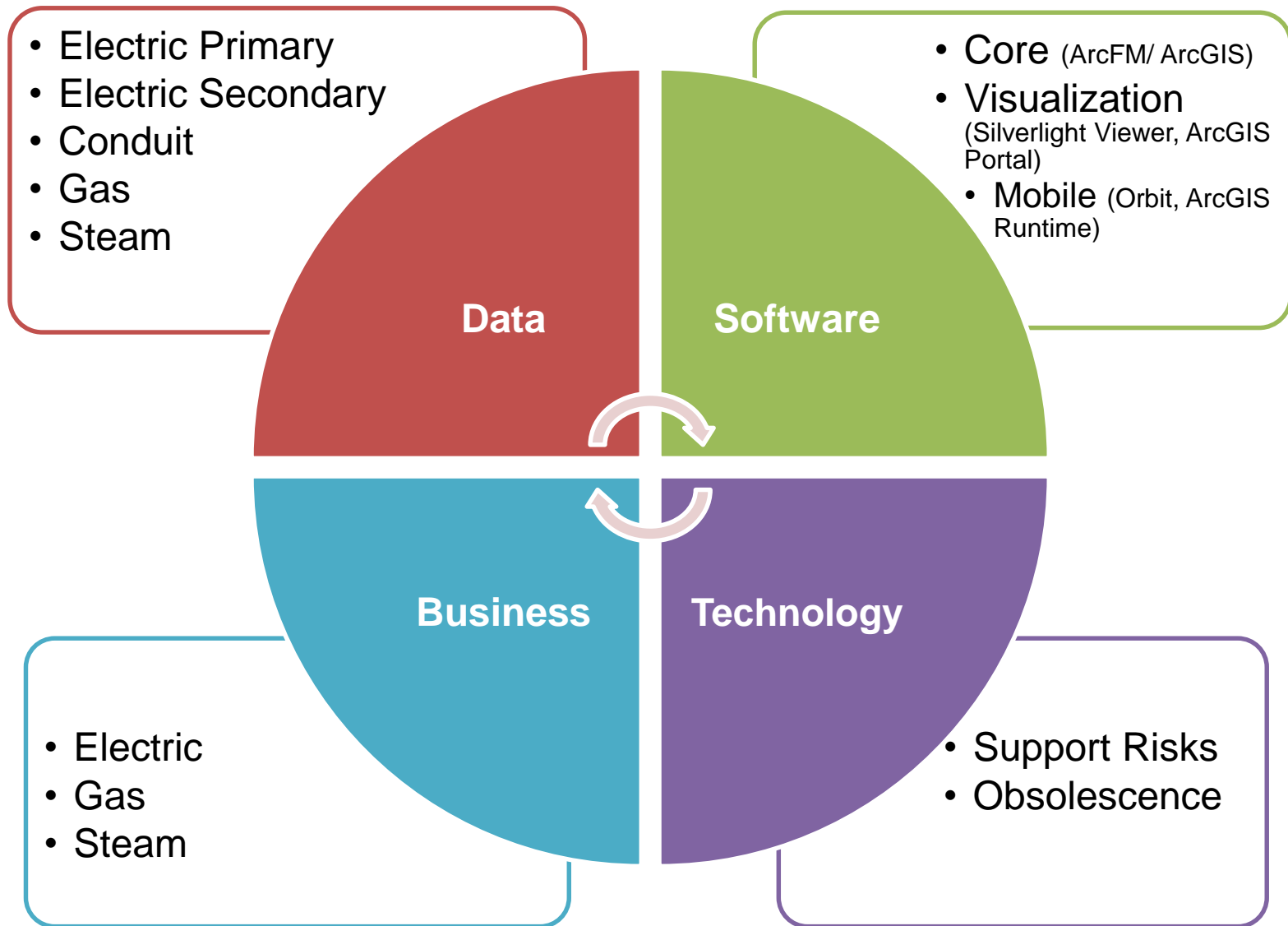
- Transformers are mapped in different locations in both Primary and Secondary Mapping
- All sources need to be consolidated to a single representation



CURRENT STATUS

Where We Are

GIS Deployment Options Evaluated



Current Status

- Wrapping up analysis
- Finalizing estimates and deployment recommendations
- Socializing project results internally



Thank You

- Karen Stanford
 - stanfordk@coned.com
- Aaron Patterson
 - aaron.patterson@paleonsolutions.com