Street Light Management, the 100% ArcGIS online Method

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CDM Smith

Our Story Begins – The City of New Bedford, MA

- Approximately 95,000 people

- About 25 square miles

- 11,000 street and traffic lights

- 7 Million Annual Electric Bill

- 4.2 Million Dollar LED Retrofit Project

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Retrofit for Energy Savings

- Less expensive to replace
- 10 Year lifespan
- $550,000 in annual electric savings

High Pressure Sodium   LED

The Problem

- Inventory 10,000 street and traffic lights in 3 weeks

- Identify potential retrofit issues

- Photograph potential retrofit issues

- Provide interfaces to track progress, show fixture type counts, and help resolve issues

- Link City Ledger to Inventory
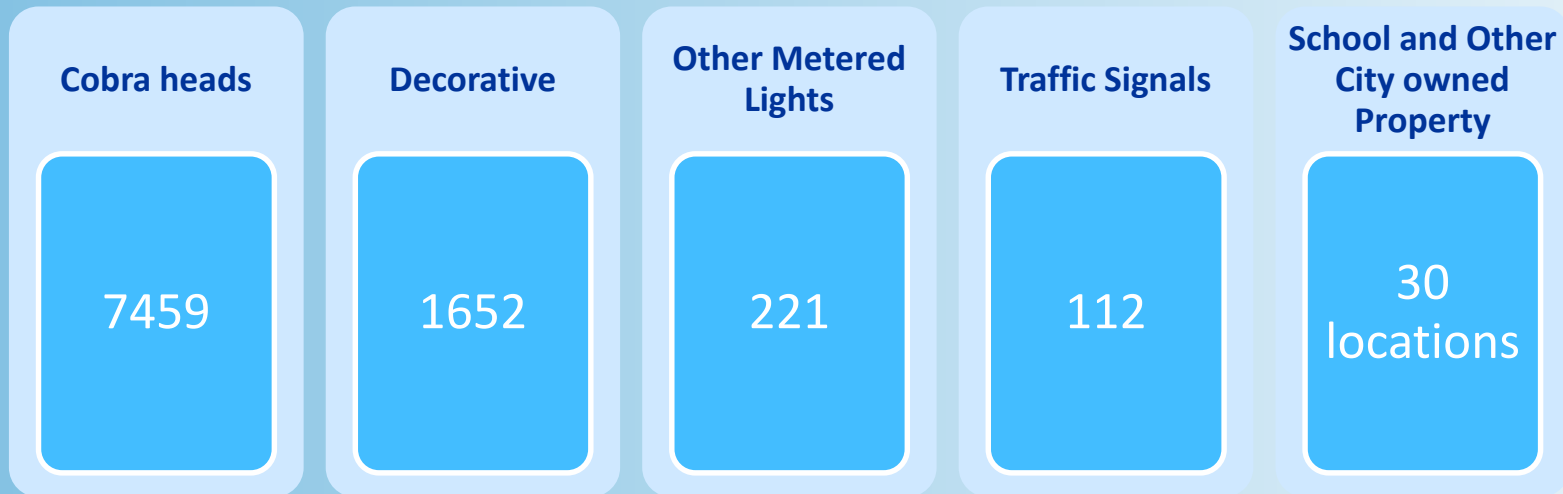
- Provide reporting functionality
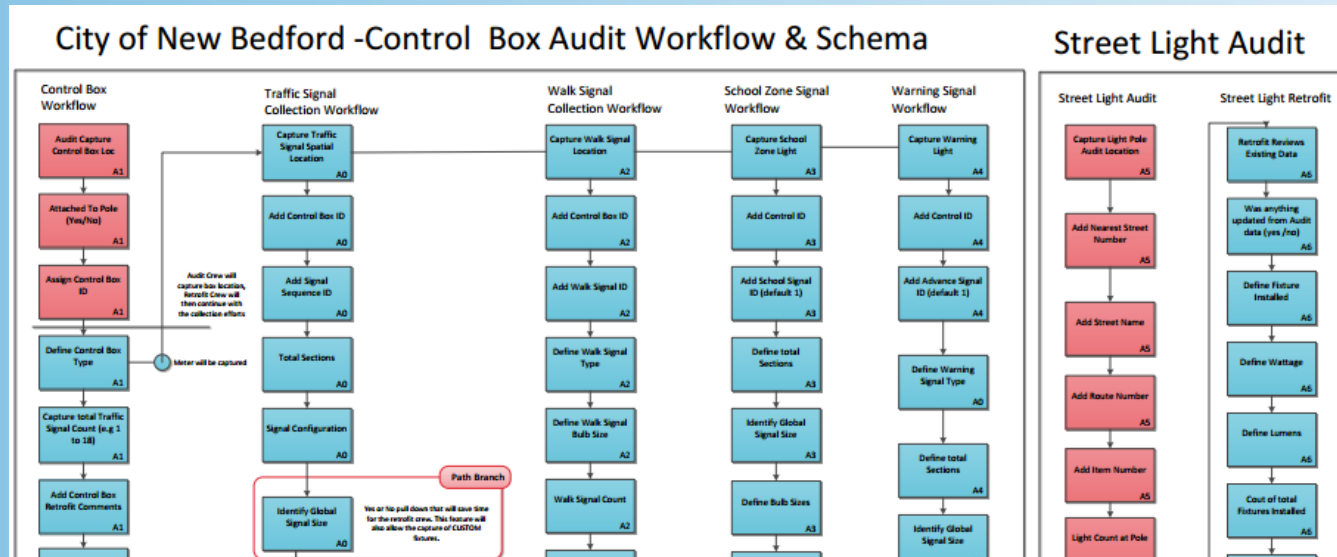
The Solution

ArcGIS Online

- Audit
- Retrofit
- Issue Resolution
- Status Reporting

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The Scope

- The City has made some assumptions based upon fixture counts and locations to Audit

Cobra heads	Decorative	Other Metered Lights	Traffic Signals	School and Other City owned Property
7459	1652	221	112	30 locations

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The Design

- Database design to support;
  - Collector
  - Issue tracking
  - Reporting and Dashboards

The Audit

- Load data and configure web map(s)

- Test and deploy Collector

- Configure Operational Dashboard to track audit metrics

- Deploy Issue tracking web apps

- Reporting to facilitate fixture ordering
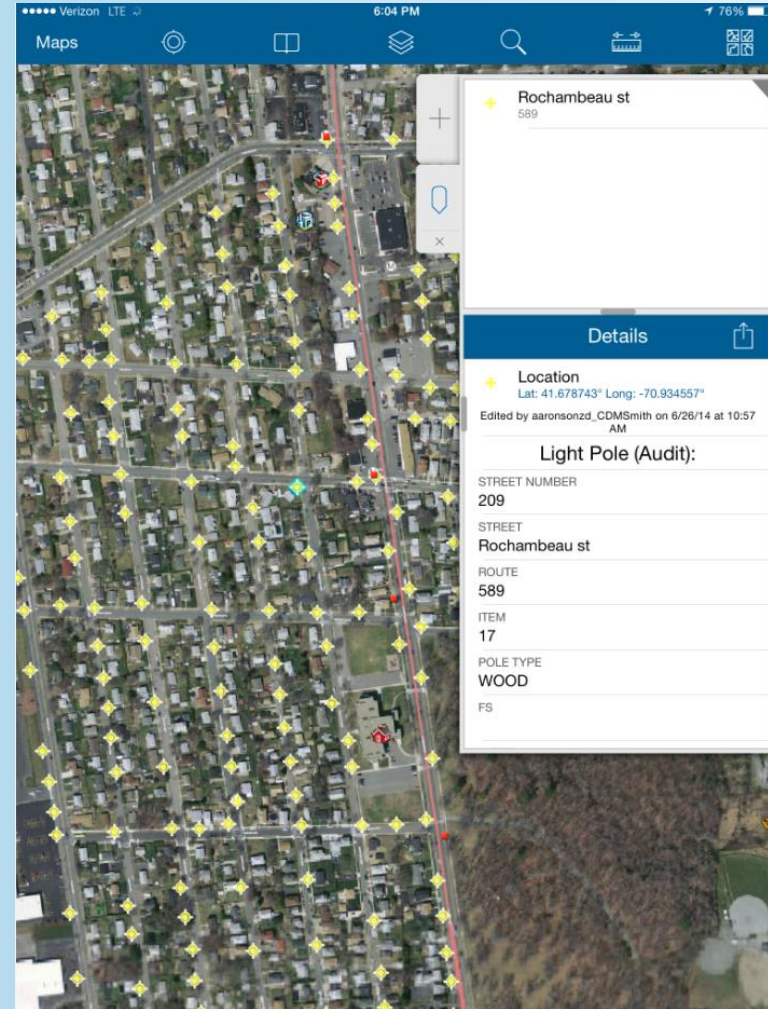
The Retrofit

- Utilize audit data to facilitate fixture installs
  - Cobra head
  - Decorative
  - Traffic signals
- Dashboard to track progress
- Web maps to support issue tracking
- Energy provider reporting
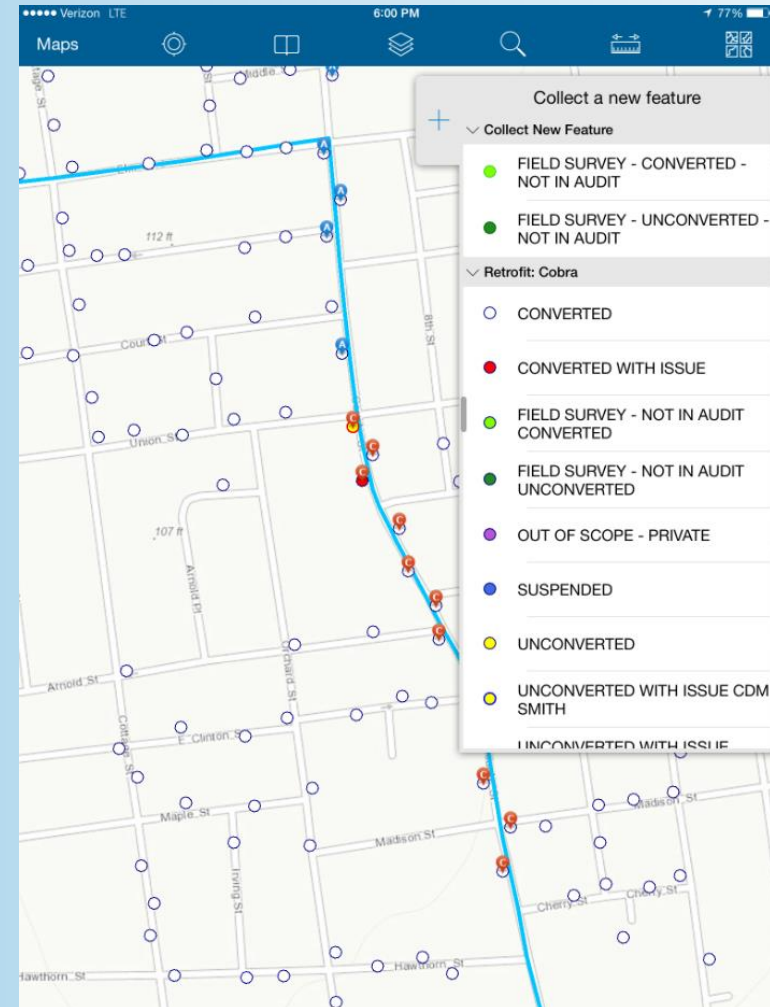
The Reporting

- Real-time metrics available via export from AGO

- Excel reporting

- Retrofit Program managers able to review daily install

- Daily updates on external public site showing progress

- Energy provider reports to receive rebates

City of New Bedford - Street Light Inventory

New Bedford GIS Statistics

Total Records in Inventory	9500	
Total Matchable Records	9354	146 records are considered Pole assets
Total Fixtures Audited by CDM Smith	11500	

Audited Models	Style	Total	Inventory Models	Po... Ma... Fixt... Inv...
COBRA	NO STYLE	7590	COBRA	2
COULD NOT DETERMINE	NO STYLE	110	FLOOD LIGHT	
DECORATIVE	ACORN	1150	POST TOP	
	GLOBE	31		One Match
	WASHINGTONIAN	10	Grand Total	2
FLOOD LIGHT	NO STYLE	171		
OTHER	ADMIRAL HAT	84		
	COLONIAL	2		
	OTHER - SEE PICTURE	2		
	WALLPACK	82		
POST TOP	COLONIAL	33		
	OTHER - SEE PICTURE	7		
	TOWN AND COUNTRY	25		
SHOEBOX	NO STYLE	252		
TEARDROP	OTHER - SEE PICTURE	68		
	Grand Total	3241		

Inventory Report | Inventory Modified | Audit Locations Requested | Unmatched Inven...
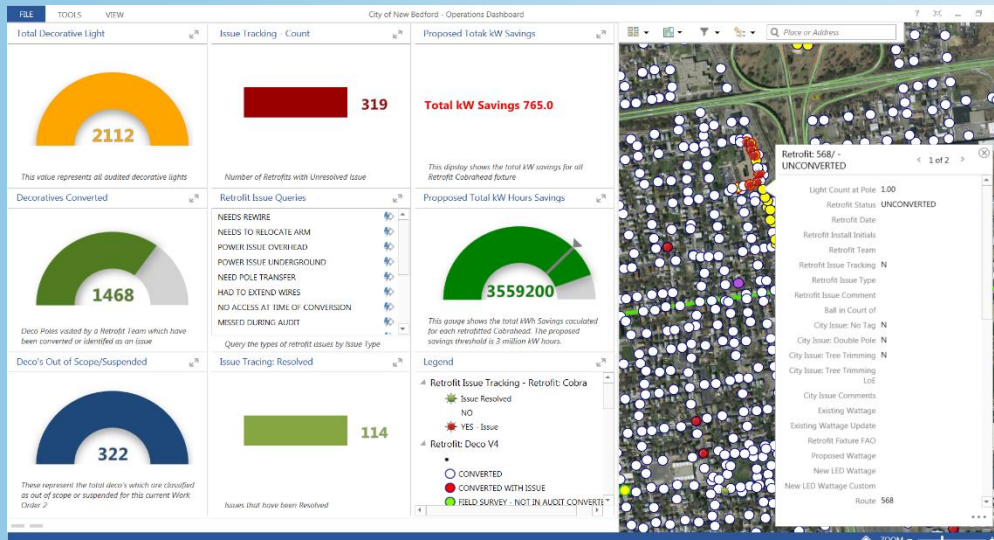
Issue Tracking and Resolution

Public Outreach

The Numbers

- 11,500 audit points collected in 3 weeks

- 6 field crews performing ground-level surveys

- Energy provider rebates of $1.2 million

- $450,000 per year energy savings
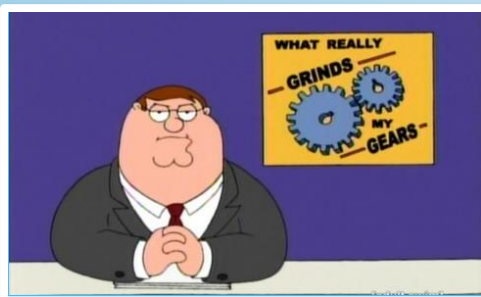
- $100,000 per year maintenance savings

Lessons Learned

Schema Changes

Data Syncing and Disconnected Editing

Feature Layer Performance

Republishing Features/Maps

AGO Web Updates and Bugs

Relationship Table Support

Security Concerns
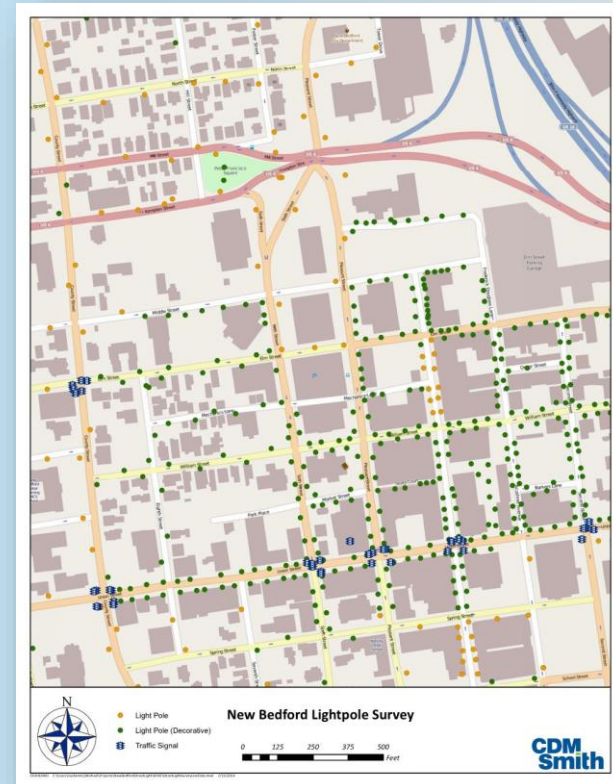
Batch Editing

The Final Product

1. Matched City Ledger

2. GIS Database of lighting inventory

3. City ArcGIS Online Environment
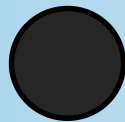
4. Incorporation into asset management

Questions?

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