NAVY Shore Geospatial Energy Module
(NSGEM)

Supporting: Commander, Navy Installations Command (CNIC)

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NAVY Shore Enterprise

Comprises of

- 11 Regions – 70 Installations – 95,000 Facilities
- Utility Systems for Electricity, Steam, Water, Gas
- Renewable Generation

Enhancing Capabilities

Efficient Platforms
Example: LCAC, Amphibious Ships

Efficient Power Generation & Use
Example: On-Board Vehicle Power, ECU

Alternative Power Sources
Example: GREENS (Solar-Powered Battery)

Renewable and Sustainability

- New Construction / Major Renovations LEED Silver or Equivalent
- Integrated Technology Strategy: Watch-Partner-Lead

Energy Efficiency

- Recapitalize Existing Infrastructure with More Energy Efficient Systems
- Annual Energy Audits – Building Level Assessments of Opportunities
- Energy Security

Navy Culture and Behavior

- Increased Transparency at Individual, Command, and Function Levels
- Technology Enabled (Advanced Meters; SmartGrid Pilot)
- Link to Operations

Technological solutions in development will enhance capability

NAVY Shore Energy Program

§ Mission:

- Energy Security & Independence
- Meet Legal Compliance
- Cut Costs

§ CNIC Shore Energy Tool Suite:

- We must understand:
  - § Base's energy profile
  - § Tenant energy profile and behaviors
  - § Investments
  - § Impact on consumption and costs…and energy security

Perfecting Business Processes

Energy Project Tool Suite

In response to Navy Shore Energy objectives, CNIC developed a Navy Shore Energy Management Tool Suite to assist stakeholders in identifying, optimizing and tracking energy opportunities and investments

NSGEM-Map

Map and visualize Navy-wide energy data

Goals-Benchmark

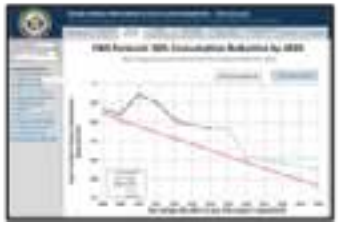
Identify energy efficiency opportunities

eROI-Invest

Develop opportunities into projects and evaluate viability

SEIP-Forecast

Verify current energy goal attainment and forecast investment



What is NSGEM

Navy Shore Geospatial Energy Module (NSGEM) is an interactive web map that uses information from authoritative data systems to visualize monthly energy use **Navy-wide (aka: standardization)**.

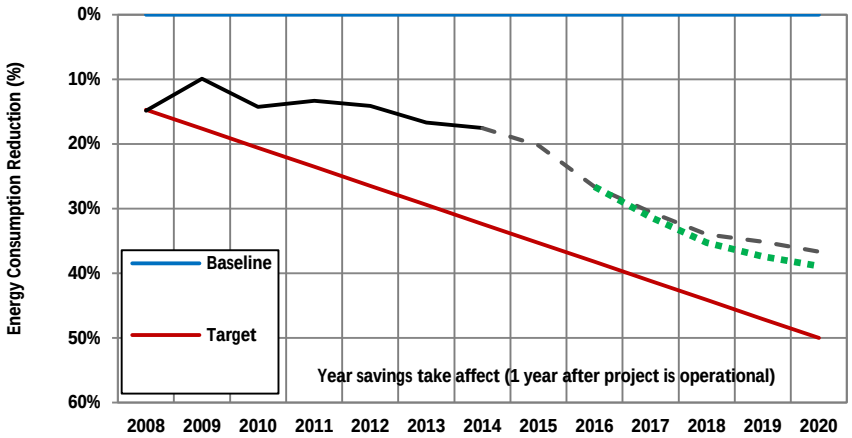
Module Highlights:

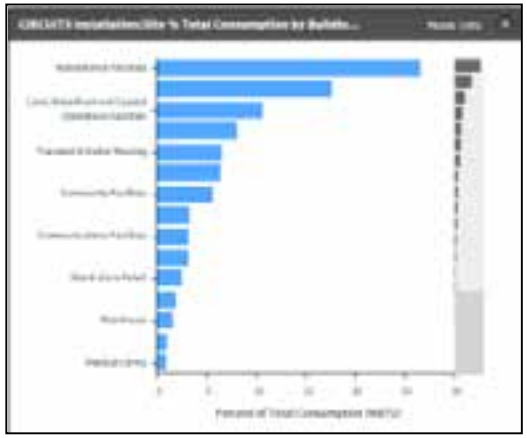
- Utility bills and tenant energy consumption reports that increase accountability and influence behavior change.
- Utilizes Energy Benchmarking the process of accounting and comparing buildings' current energy performance with its energy baseline.
- Data Assessment Score (DAS) that indicate the completeness of data within authoritative sources and encourage user updates.
- Regional Energy Map Books (REMBs) that provide a report on energy consumption for the Region and Installation.

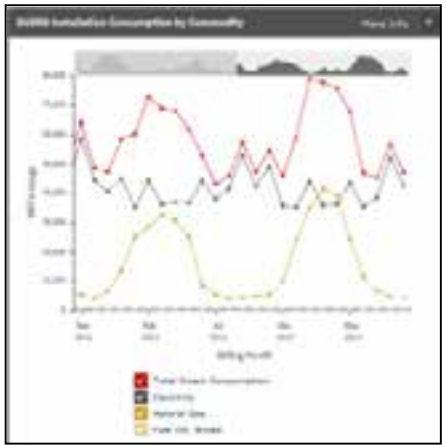
NAVY GIS

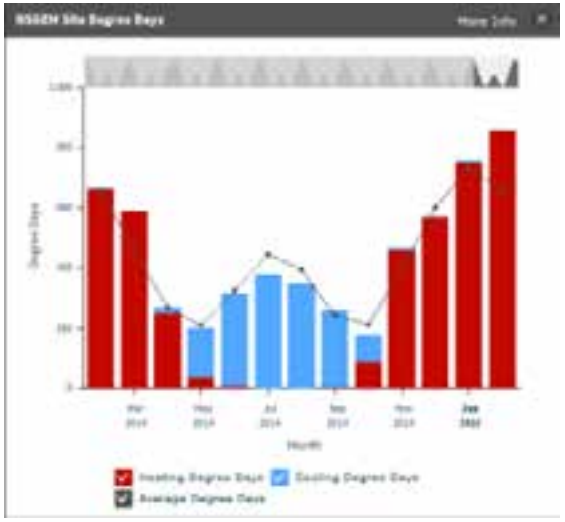
Energy App

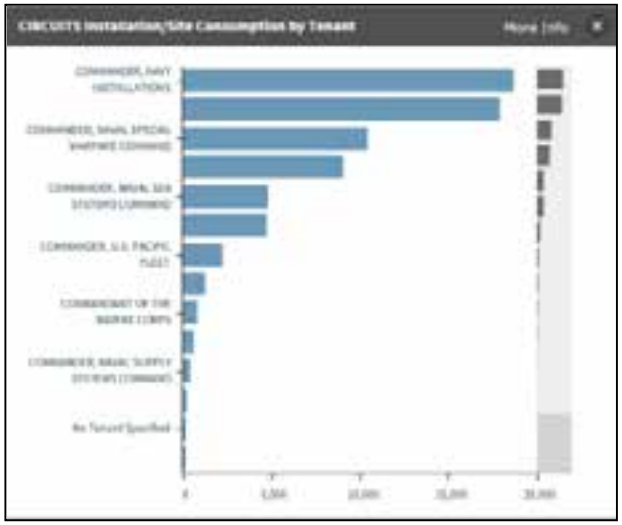
Dashboards : Actionable Information











Challenges

- End Users:
  - New Technology
  - New Capabilities
  - Interoperability of Enterprise Data
  - Not GIS users
- Data:
  - Inaccurate / Incomplete
  - Not Reported
- How do we get non-GIS users to use GIS:
  - Education and expertise
  - Show familiar information
  - Promote capabilities
  - Leverage what the user wants and needs
- How do we improve our data:
  - Tell the story
  - Data Assessment Score
  - Data Improvement / Completeness Layer

NSGEM Levels

NAVY AUTHORITATIVE DATA BECOMES ACTIONABLE INFORMATION TO APPLY TOWARD MEETING ENERGY GOALS

Stakeholders

NAVY LEVEL

Headquarters
Energy
Managers
Utility Managers
Facility
Managers

REGION LEVEL

Regional Energy
Commanders
Regional Energy Program
Managers

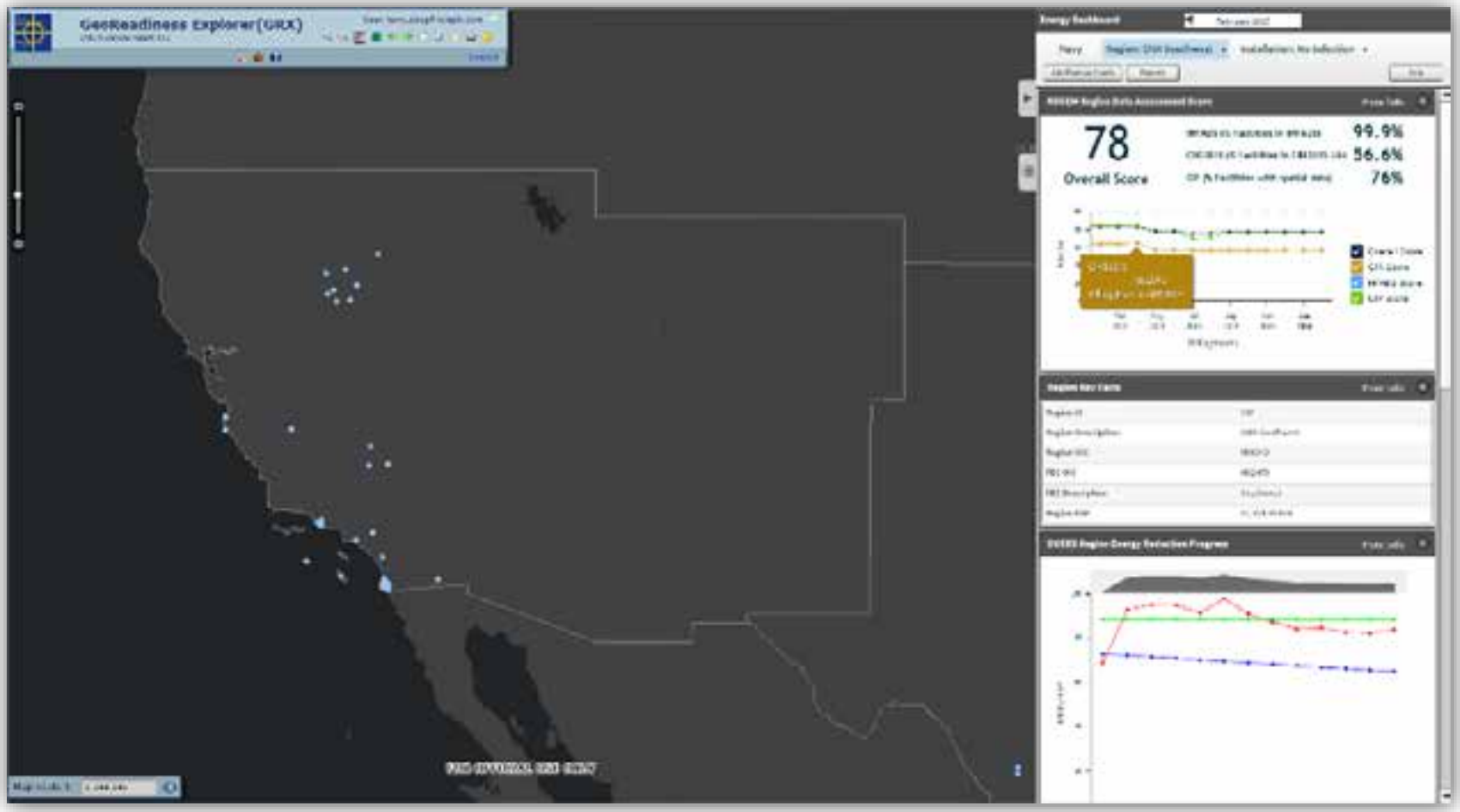
INSTALLATION LEVEL

Installation Commanders
Installation Energy Manager

FACILITY LEVEL

Building Energy Managers
Facility Managers
Utility Managers

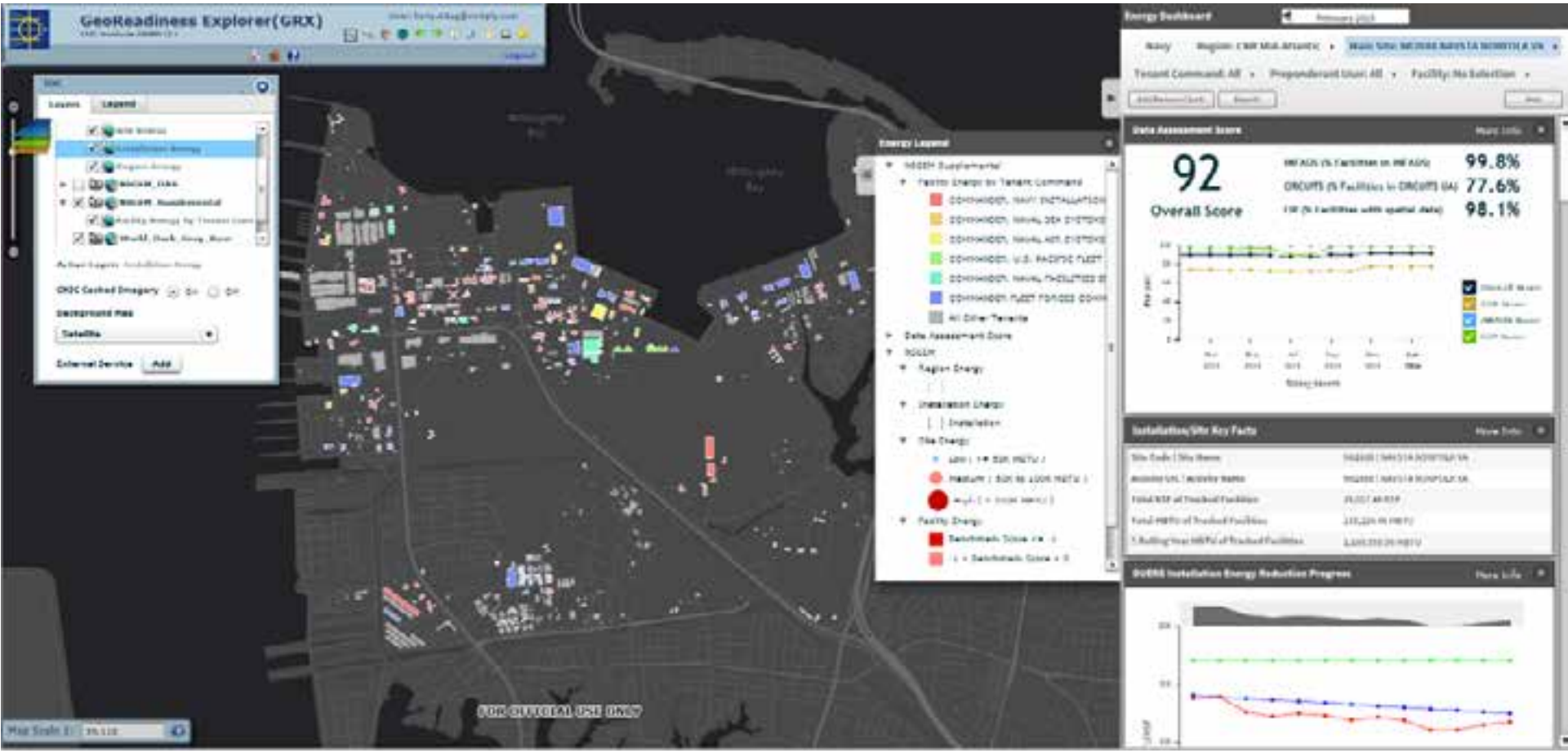
Navy & Region Lens



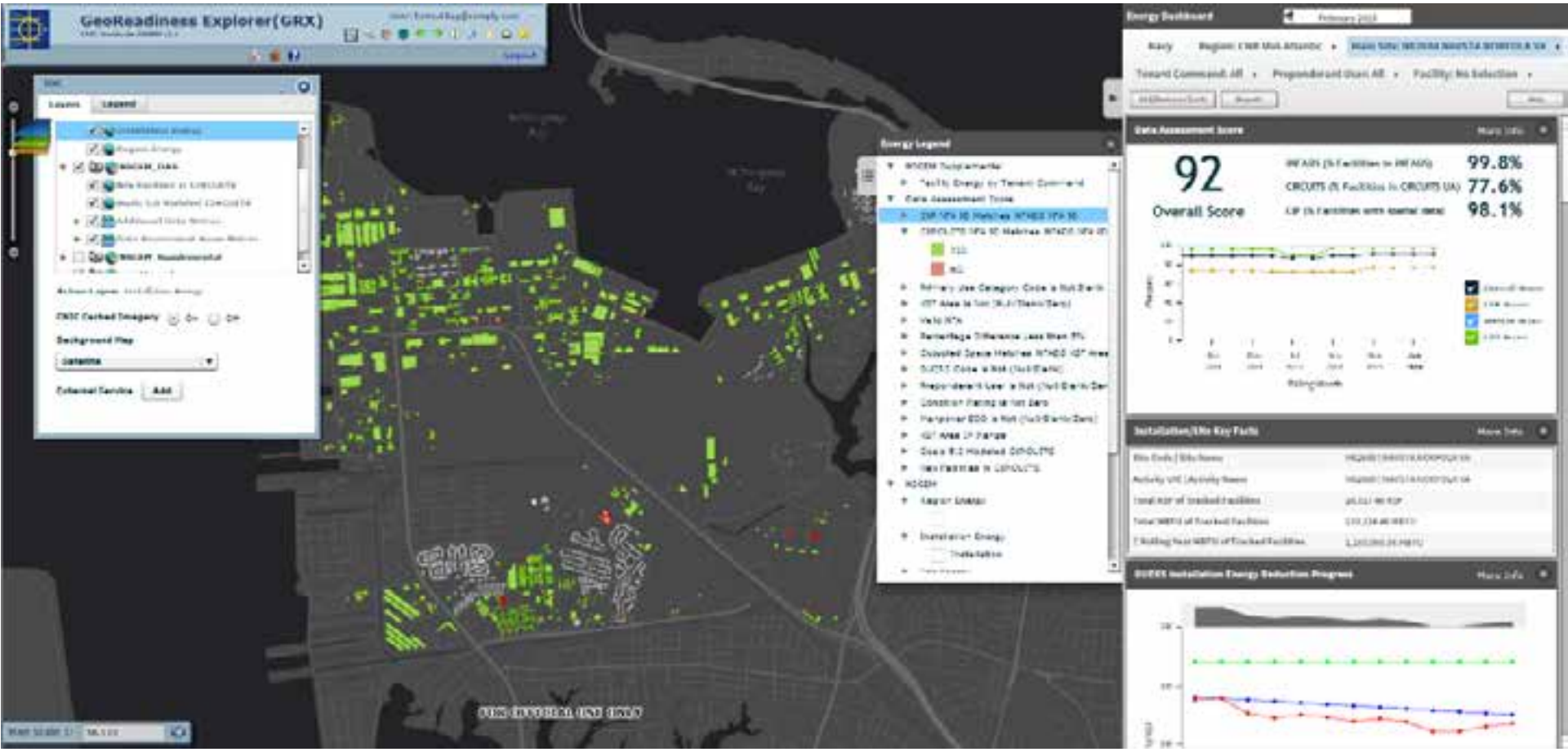
Installation Lens

Facility Lens

Tenant Specific



Data Assessment Score

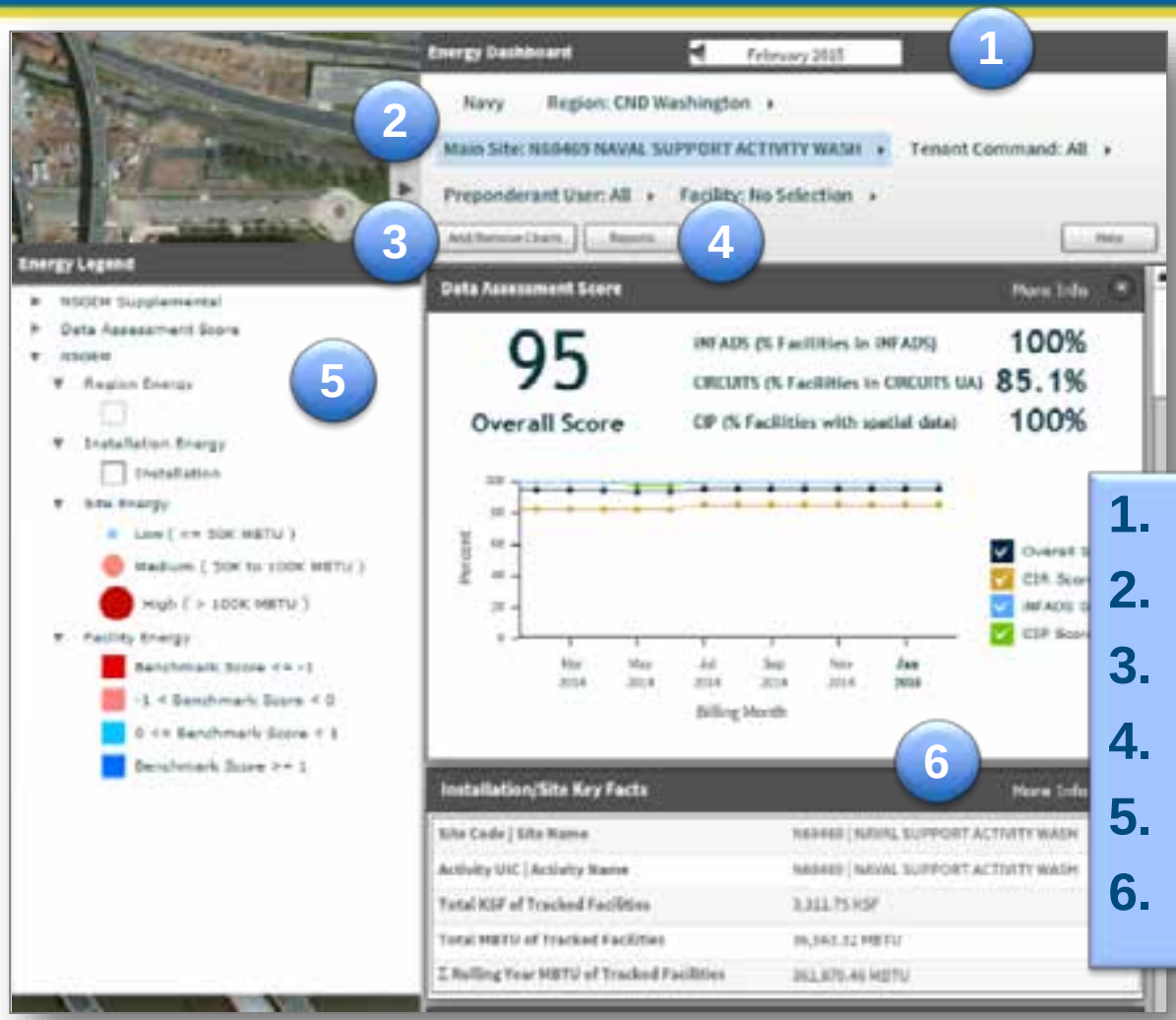


Data Validation and Verification: Increase Data Credibility and Identify Potential Savings

Gap analysis

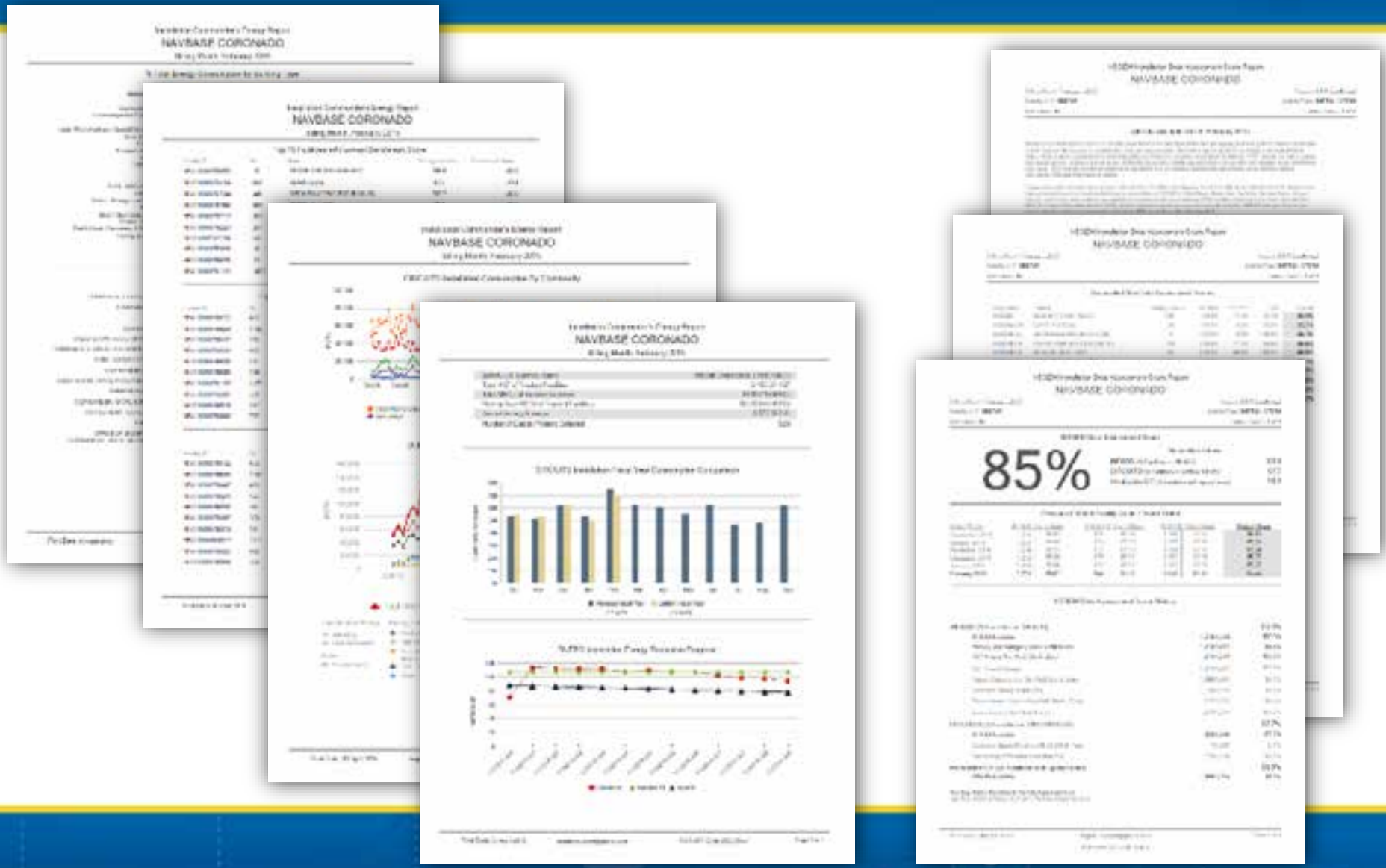
Data Validation and Verification: Increase Data Credibility and Identify Potential Savings
Simplify data validation and correction

Description of Dashboard



1. Date Picker
2. Breadcrumb
3. Add/Remove Charts
4. Reporting
5. Legend
6. Chart Container

Reporting


NAVBASE CORONADO
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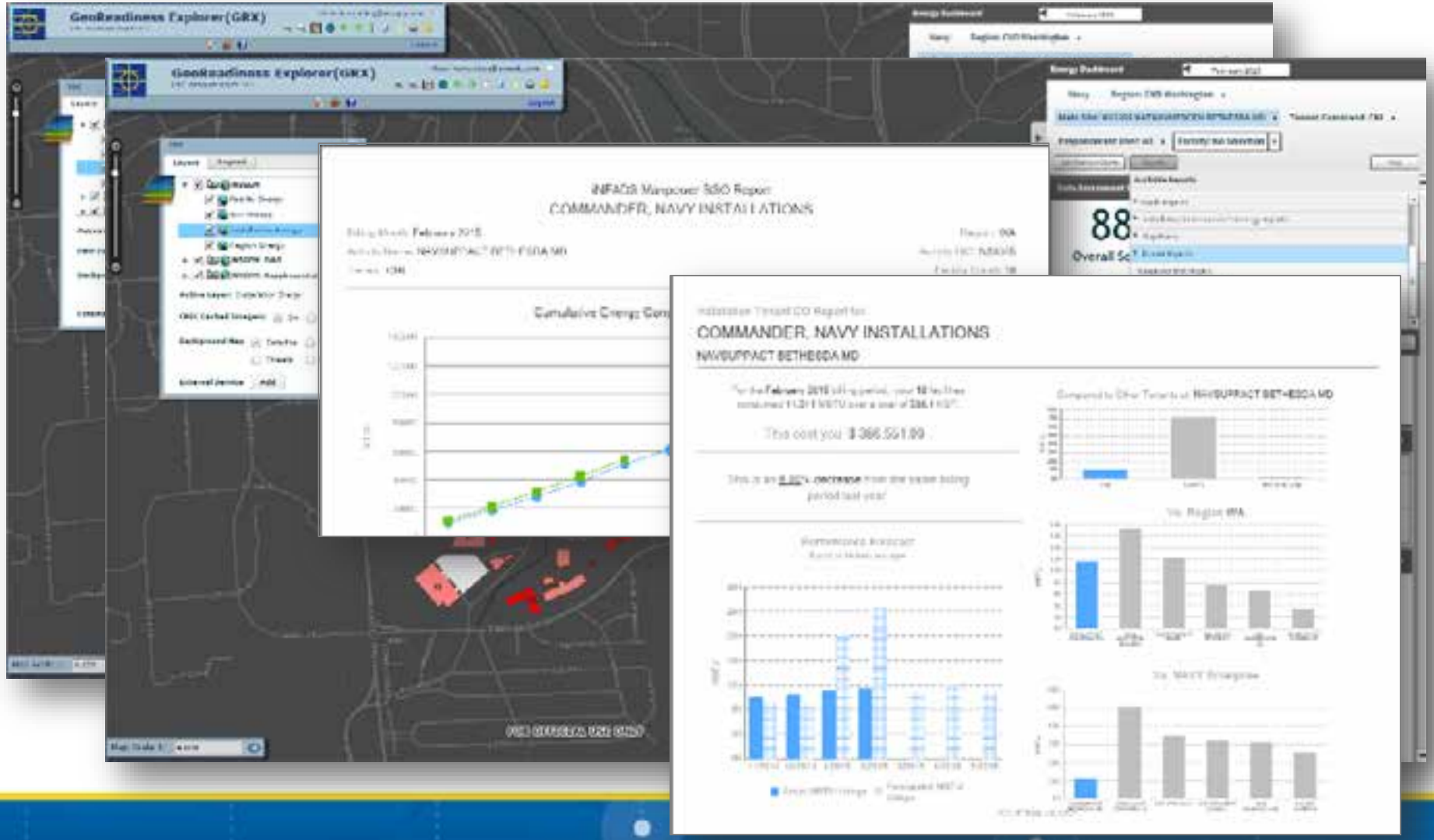
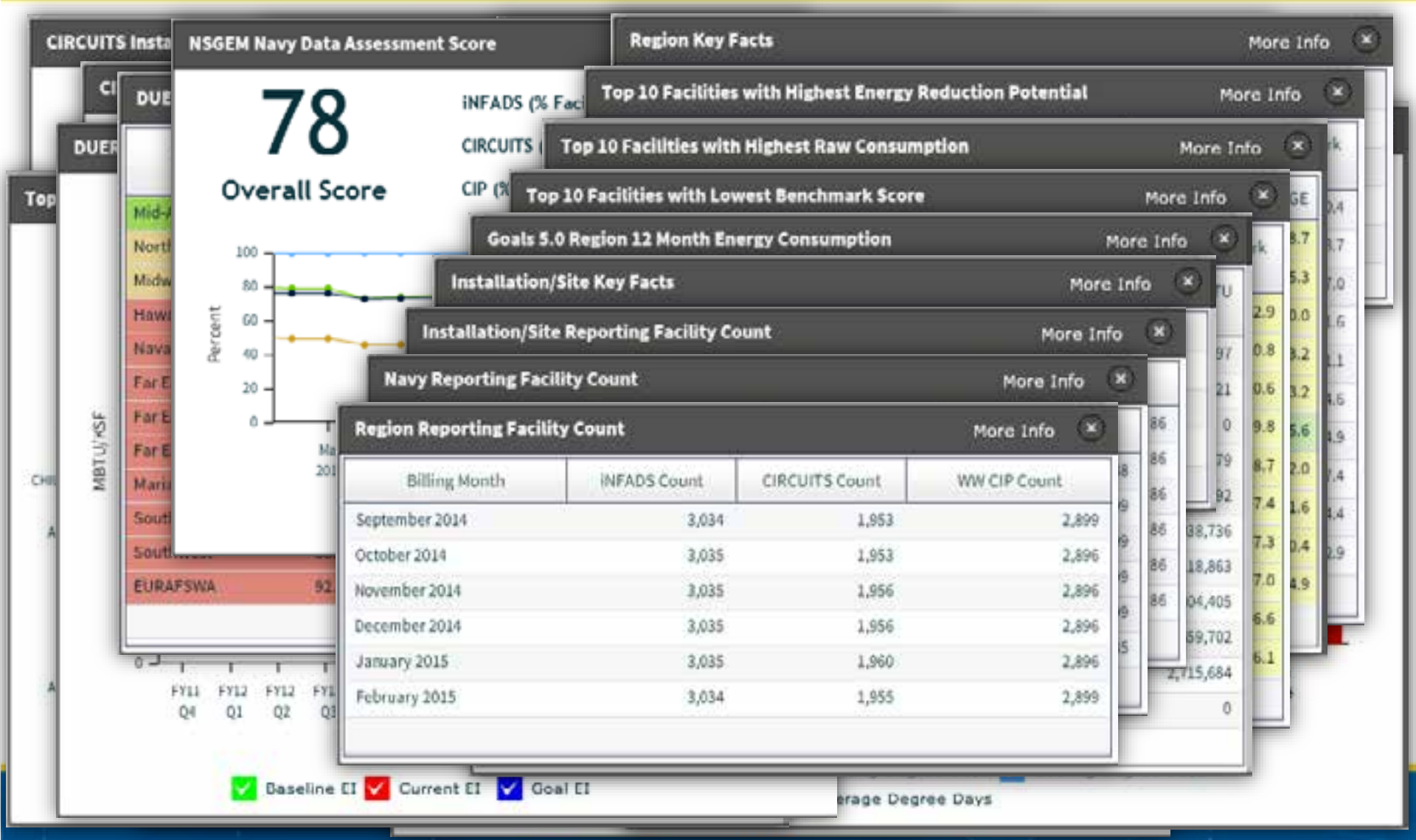
85%

Reporting for the Tenant



Charts



Billing Month	INFADS Count	CIRCUITS Count	WW CIP Count
September 2014	3,034	1,953	2,899
October 2014	3,035	1,953	2,896
November 2014	3,035	1,956	2,896
December 2014	3,035	1,956	2,896
January 2015	3,035	1,960	2,896
February 2015	3,034	1,955	2,899

Way-Ahead

§ Renewable Energy Goals (<10MW)

§ Assist Renewable Energy Program Office

§ Utility System Mapping

§ Meter to Facility Relationship Network

§ Live Data (the most challenging)

Conclusion

§ Geospatial capabilities are changing the way that we do business:

– Collaboration – Innovation – Communication – Performance

§ NSGEM **standardizes processes** and provides actionable information that allows us to integrate and amplify the knowledge of our Energy program across the Navy:

– Accountable – Quality – Excellence in Execution – Transparency

Contact Info

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