

CIM and Project/Asset Management @ CTDOT

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CIM

Civil Integrated Management

What is CIM:

“Civil Integrated Management (CIM) is the technology-enabled collection, organization, managed accessibility, and the use of accurate data and information throughout the life cycle of a transportation asset.

The concept may be used by all affected parties for a wide range of purposes, including planning, environmental assessment, surveying, construction, maintenance, asset management, and risk assessment.”

-FHWA, AASHTO, ARTBA (2012)

CIM

Civil Integrated Management

What is CIM:

- CIM is not just technology – it encompasses changes to the typical work processes supporting projects.
- Application of CIM can range from incremental improvement of functions to leaning out disruptive workflows
- CIM can enable fully digital workflow from project inception to asset management
- Use of CIM is not all or nothing – agencies can select tools for specific applications today, and increase use over time

CIM **Civil Integrated Management**

Driving Forces for CIM:

- TED (Transportation Enterprise Data) a grass routes effort to establish data governance and stewardship involving representation from:
 - AEC Applications
 - Asset Management
 - Planning
 - Safety
 - OIS
- Better and Faster Asset/Safety Data Management through Integration
- Beneficiaries
 - Asset Management Group (TAMP)
 - Network Safety Analysis (RDIP)
 - Engineering
 - Maintenance Operations

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CIM **Civil Integrated Management**

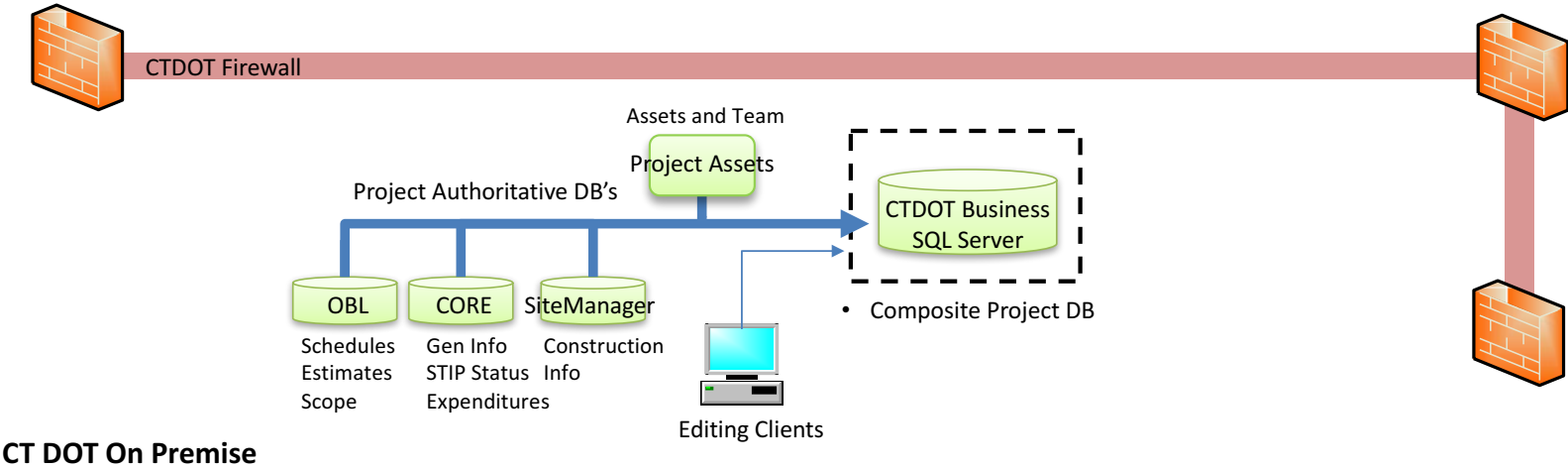
- **Authoritative Data**
 - Asset Management Systems
 - Composite Project Data
- **ATLAS (Asset/Project Tracking + Location) = GIS**
 - Tools Required
 - Proposed Project (PP) Location
 - Recommended Project (RP) Location
 - Asset Location
 - Points, Lines, Polygons & Extracted LRS Registration
 - Project/Asset Data joined with Location
- **Each Asset has a Steward/SME and an Authoritative Management System**
 - Geospatial Metadata Guidelines are being developed
 - CAD to GIS Applications are being developed
 - To Identify Assets for Decommissioning
 - To Identify New and Manage Existing Assets

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CT DOT / Bentley Architecture Diagram
Current Architecture

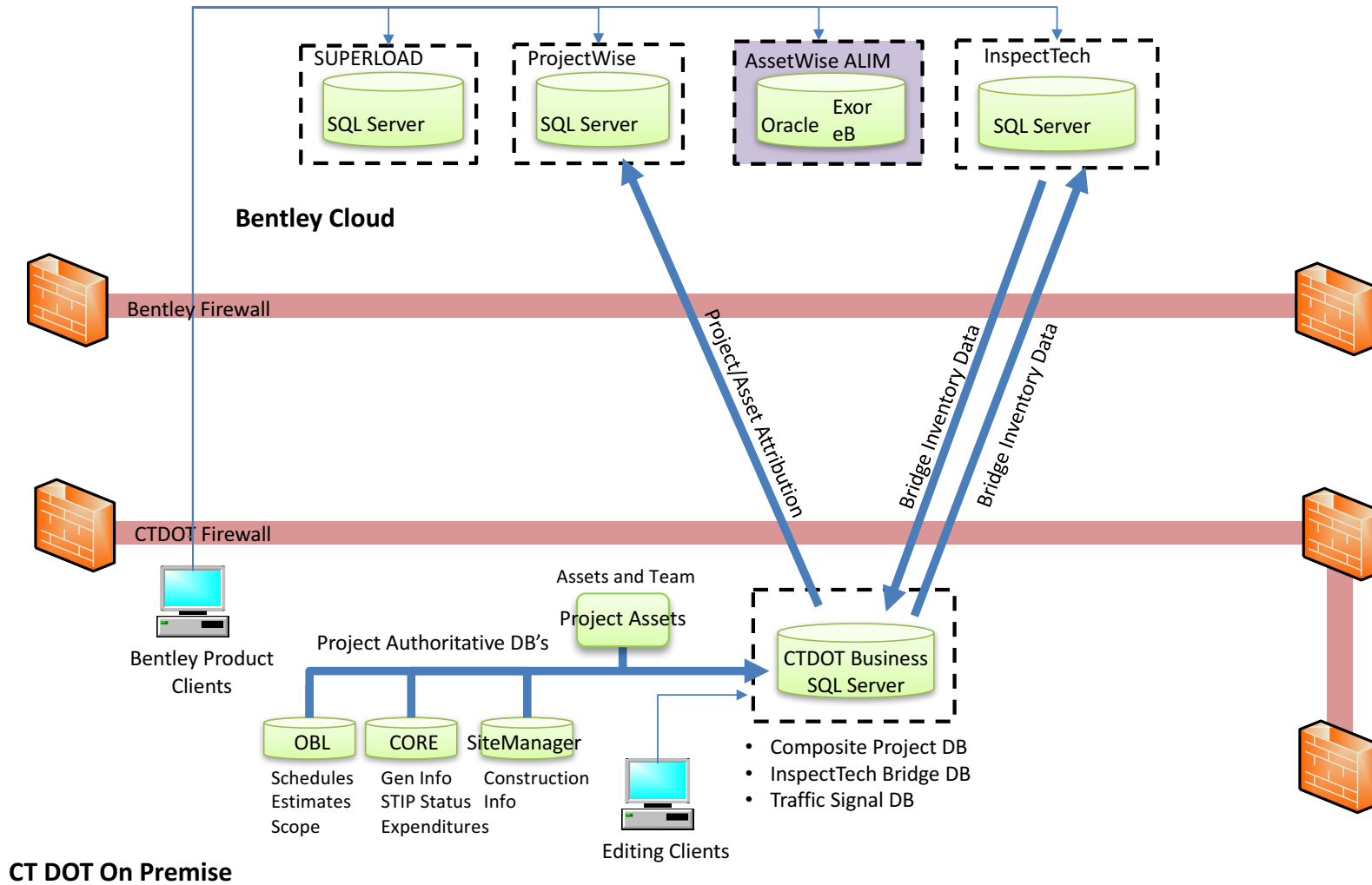
➡ Extract Transform Load Reporting Data
➡ Copy or replicate Business Data
(Using ODATA web service or similar)



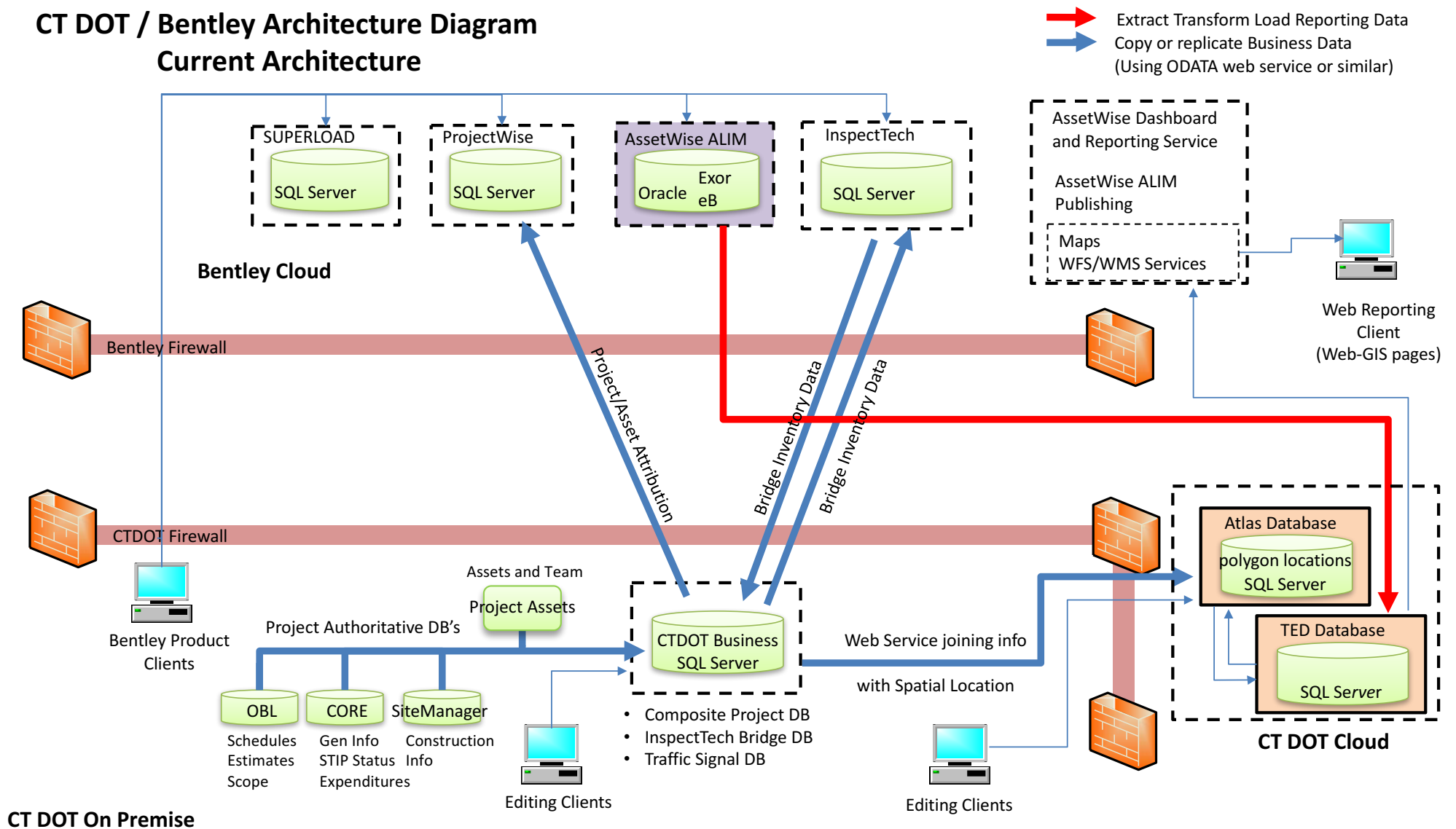
CT DOT / Bentley Architecture Diagram

Current Architecture

 Extract Transform Load Reporting Data
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 (Using ODATA web service or similar)



CT DOT / Bentley Architecture Diagram Current Architecture



CTDOT GIS Data

CTDOT – TED (Transportation Enterprise Data)

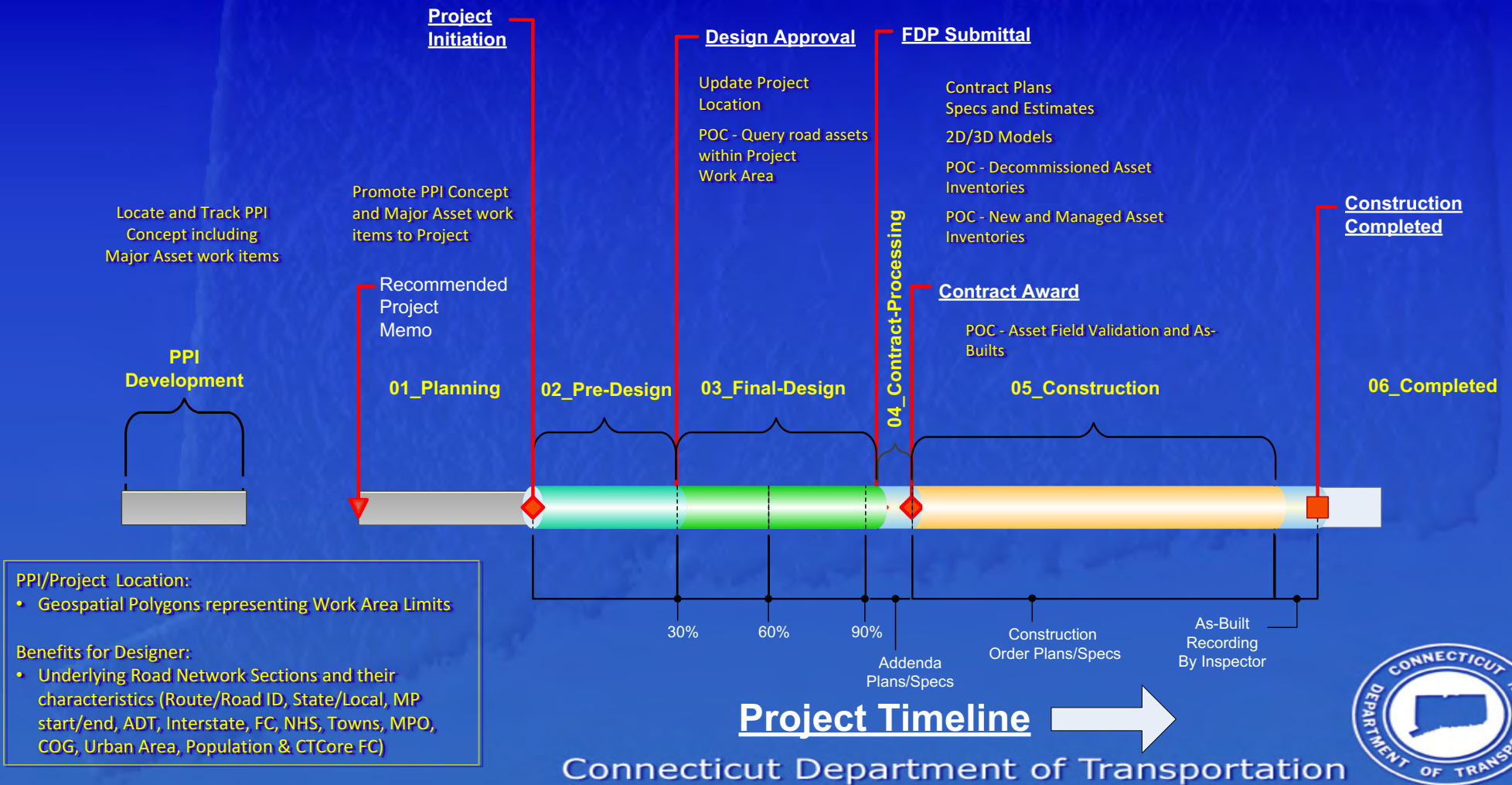
Spatially Based Data - ATLAS/ESRI

- Projects Work Areas
 - Facilities
 - OSTA Permits
- Assets
 - Bridge Deck Areas
 - Traffic Signal Areas
- Orthoimagery
- Hydraulics
- Soil Borings
- ROW
- *Town, County, Regional Boundaries*

LRS Based Data - EXOR

- Road Network
 - Inventory
 - NHS, Func Class
- Projects:
 - Capital
 - Maintenance VIP
- Assets:
 - Bridges
 - Pavements
 - Traffic Signals
- Traffic Monitoring:
 - AADT
 - Accidents
- Public Transportation

Locating and Tracking Capital Projects



Demonstration



Proposed Work Areas:

Work Area ID	Total Area	Towns	District	MPO	COG	Urban Area	Population
2793	235034-Sq.Ft.	Newington	1	Capital Region	Capital Region	Hartford, CT Urbanized Area	924859

Proposed Road Sections:

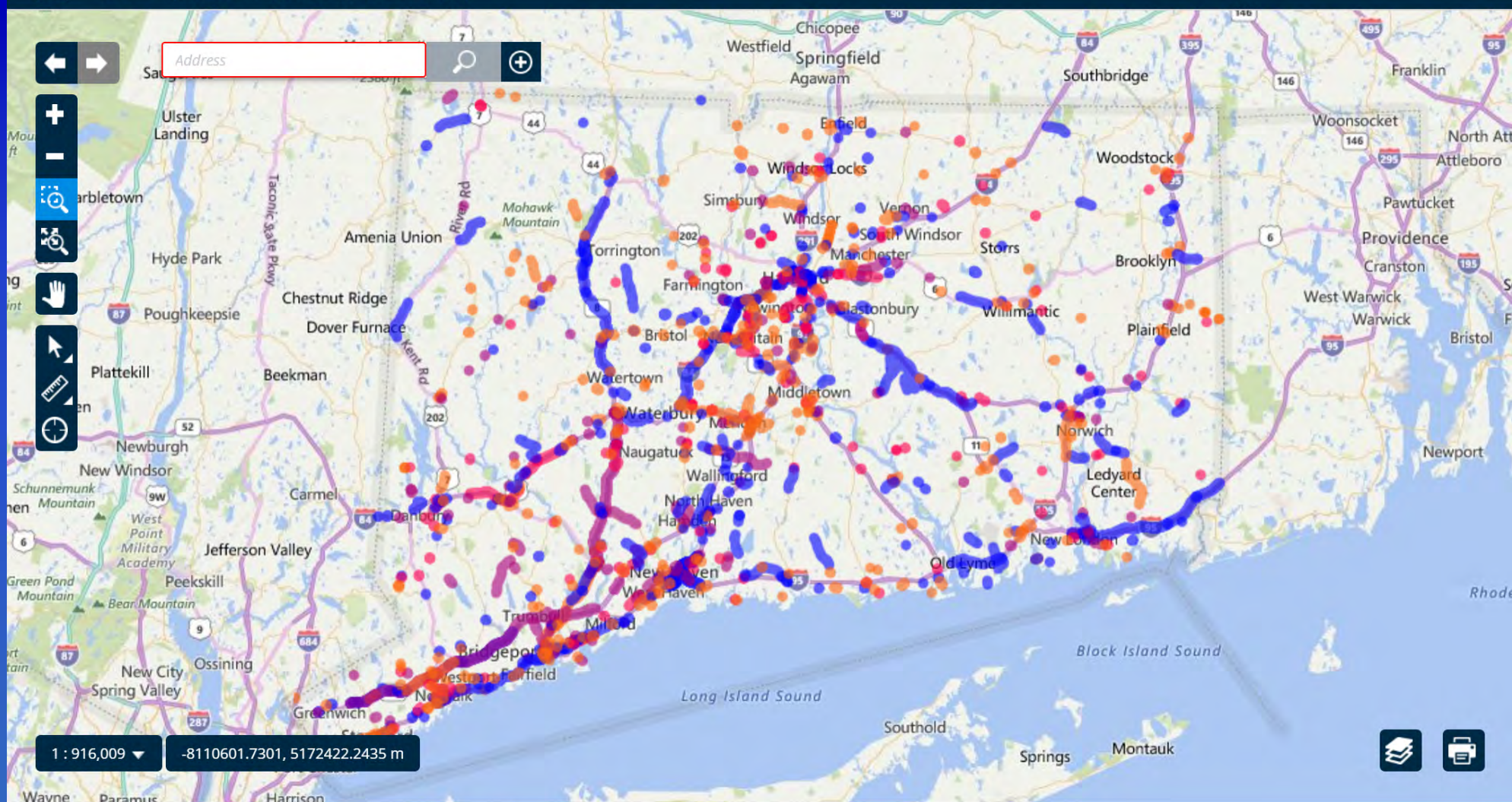
	Route/Road	State/Local	MP Start	MP End	Miles	ADT	Interstate	Func Class	NHS	Towns	MPO	COG	Urban Area	Population	CTCore Func Class
Select	15-N	State	74.535	74.745	0.21	33700	N	3	Y	Newington	Capital Region	Capital Region	Hartford, CT Urbanized Area	924859	414 - Urbanized Other Principal Arterial, over 200k
Select	15-S	State	74.537	74.744	0.207		N	7	Y	Newington	Capital Region	Capital Region	Hartford, CT Urbanized Area	924859	499 - Urbanized Local, over 200k
Select	5-N	State	26.945	27.155	0.21	33700	N	3	Y	Newington	Capital Region	Capital Region	Hartford, CT Urbanized Area	924859	414 - Urbanized Other Principal Arterial, over 200k
Select	PASCON PL	Local	0.344	0.35	0.006		N	7	Y	Newington	Capital Region	Capital Region	Hartford, CT Urbanized Area	924859	499 - Urbanized Local, over 200k

Engineering Data Summary:

Towns = Newington
 State Routes = 15-N, 15-S, 5-N
 Local Roads = PASCON PL
 AADT (Max) = 33700
 Interstate = No
 NHS = Yes
 State Miles = 0.627
 Local Miles = 0.006

Planning Data Summary:

CTCore Functional Classes: = 414 - Urbanized Other Principal Arterial, over 200k
 = 499 - Urbanized Local, over 200k
 MPO's = Capital Region
 COG's = Capital Region



Demonstration

- Pyramid of Geo-Spatial Data Consumption Options
 - AWP (AssetWise Publisher)
 - Assets - Road Network and MP's, Bridges, Signals
 - Active Projects - Project Information, Project 0017-0182