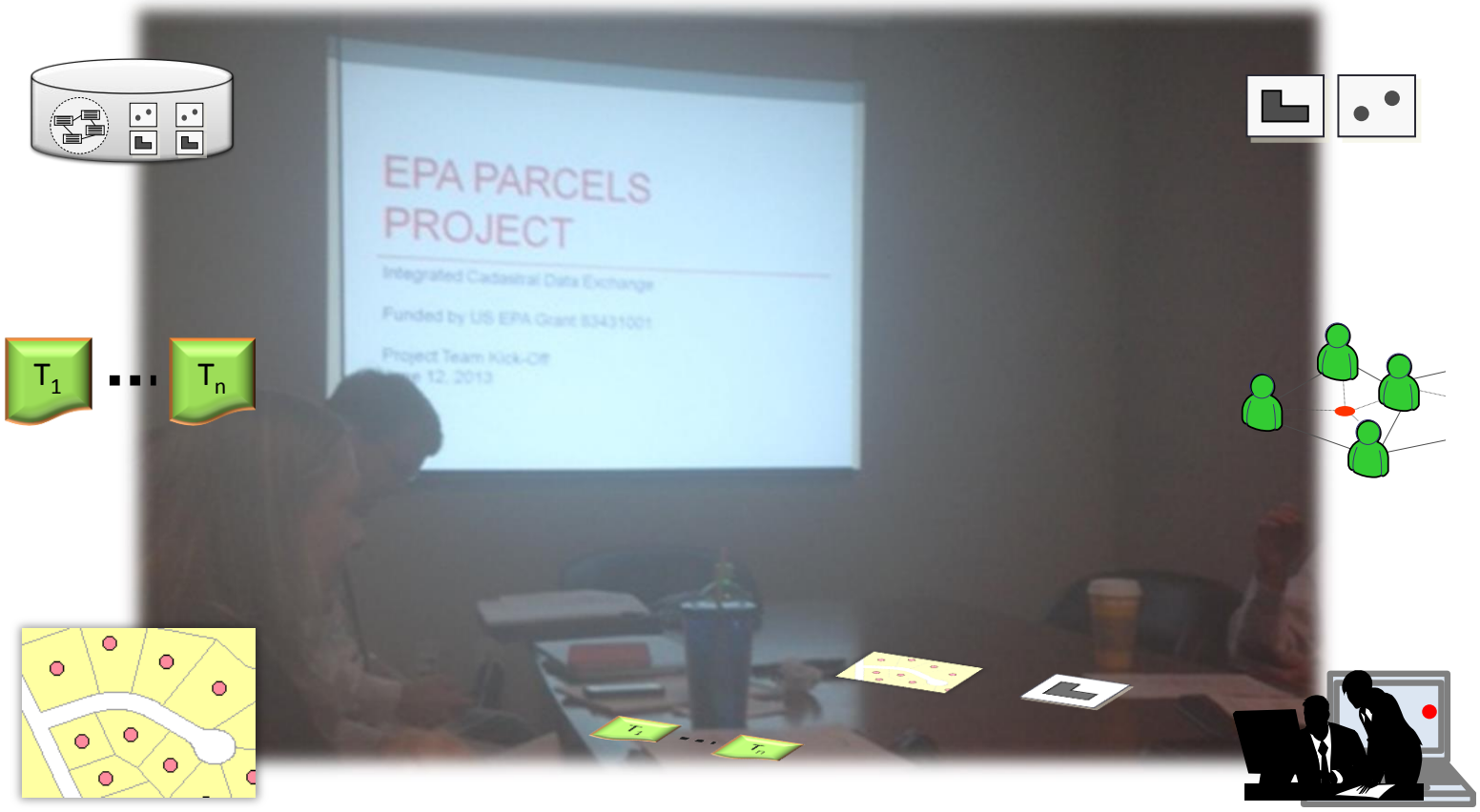
EPA PARCELS PROJECT

Integrated Cadastral Data Exchange

Funded by US EPA Grant 83431001

Project and Quick Technical Overview
July 17, 2013

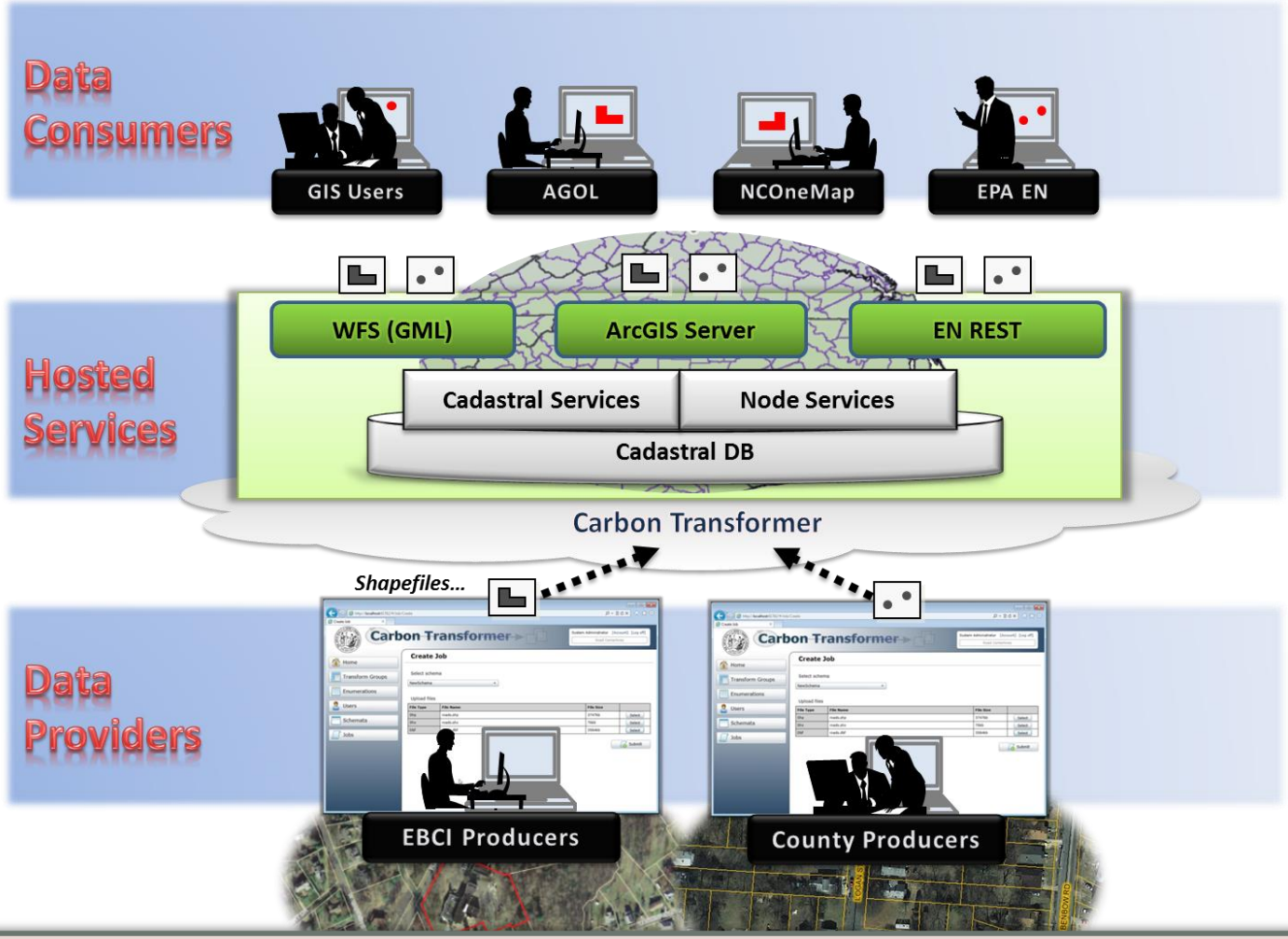
Things are underway…



The Project Team

- Project Partners
  - Working Group for Seamless Parcels
  - Eastern Band of Cherokee Indians
  - Land Records Management Program
  - Henderson County
  - NC Department of Transportation
  - NC CGIA / ITS
- Project Contractor:
  - Carbon Project, Inc.
    - Fairview Industries, Inc.
    - Atlas Geographic Data, Inc.

Project Approach…



Goal - Implement an Integrated Cadastral Data Exchange for county and EBCI data providers and NC OneMap and EPA Exchange Network data consumers and other users

Project Task Overview

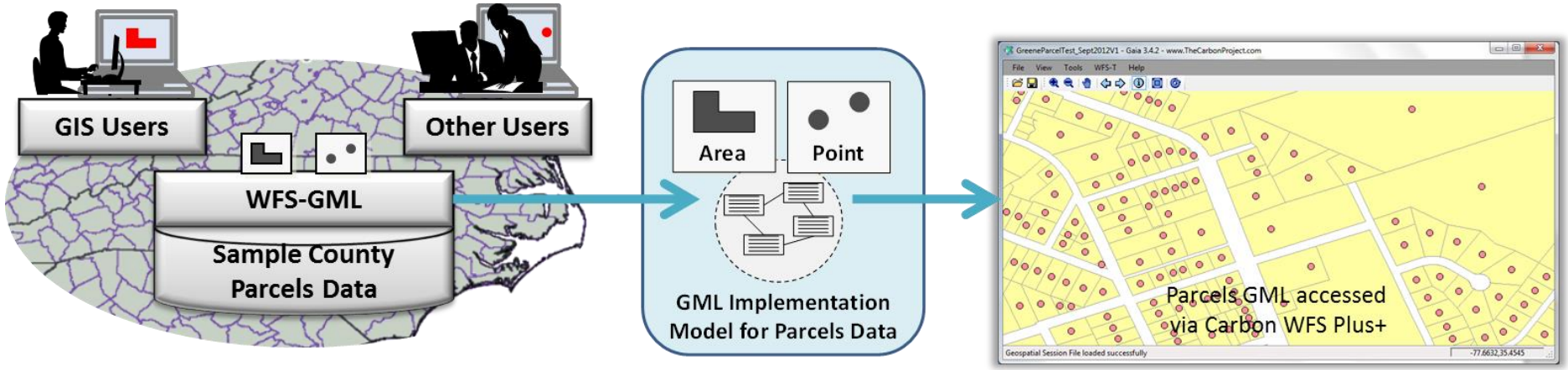
- Seven project tasks will -
  - Develop technical solution for ingesting cadastral datasets
  - Translate fields to a common standard schema
  - Exchange data via US EPA Exchange Network
  - Provide access to published datasets to non-Network users.

- These tasks will establish a hosted system for county and Tribal cadastral data producers - and meet state objectives, associated technical requirements and deliverables.

Project Tasks

- **Task 1: Create Geospatial Database**
- **Task 2: Develop Data Transformer for Cadastral Data**
- **Task 3: Generate Output for Cadastral Data and Services**
- **Task 4: Exchange Data through EPA Exchange Network**
- **Task 5: Share Data with Non-Node Data Consumers**
- **Task 6: Assist Project Team Who Will Engage Local Government and Tribal Data Providers in Evaluating the Project Outcomes**
- **Task 7: Provide and Manage Security**

Leveraging Previous Work on GIS & Standards…

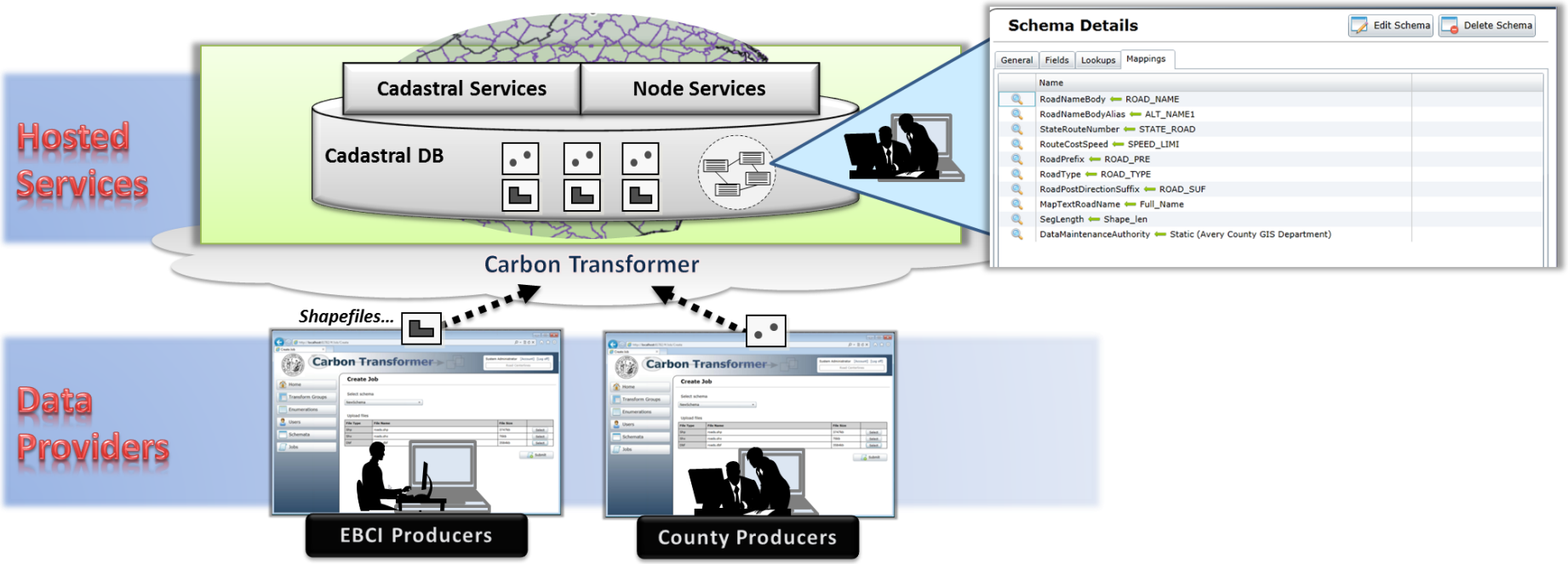


The Carbon Project and Fairview Industries worked with North Carolina on a 2012 FGDC Cooperative Agreement Program (CAP) Grant that successfully developed and tested a Schema and Service for the same Parcels standard specified Attachment C of the RFP

New Approach to EPA Nodes

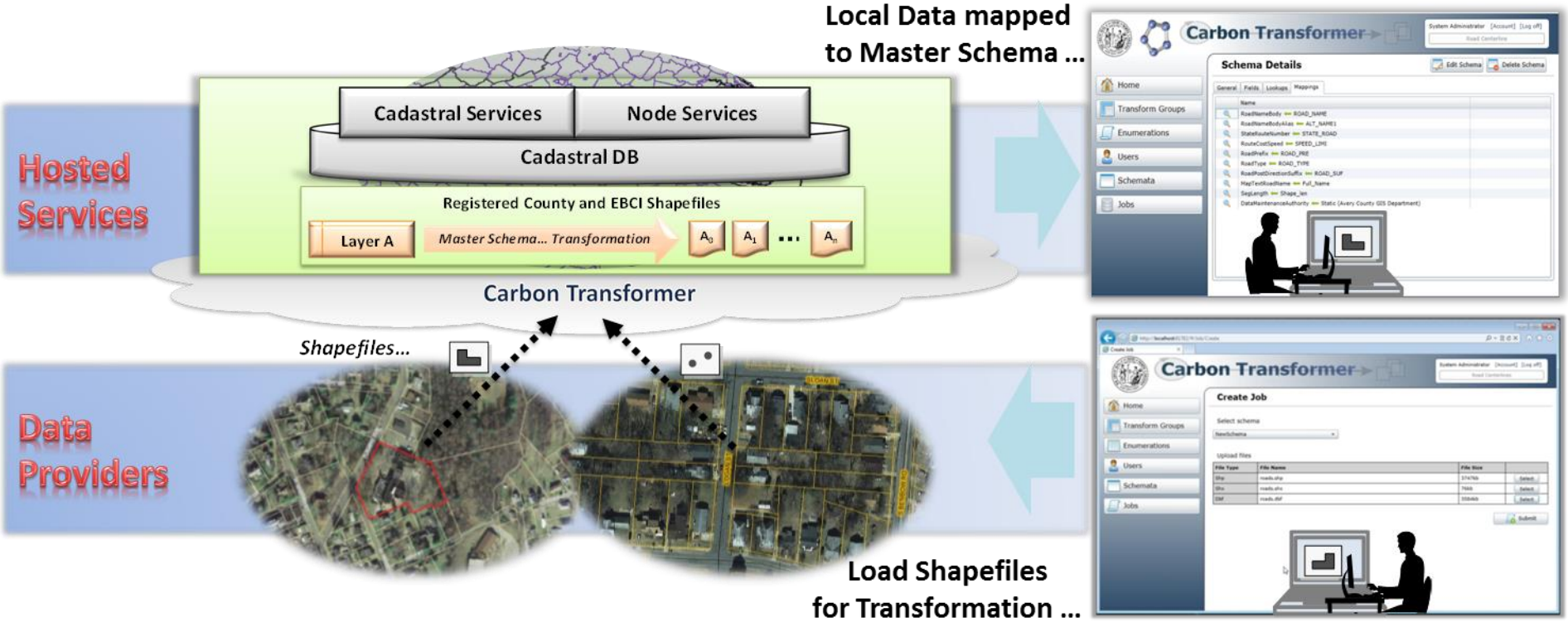
- Simple, powerful method for connecting parcel services to the Exchange Network – ‘Exchange Network REST’
- Deployed in cloud
- Greatly simplifies Node deployment for participants

Task 1 - Create Geospatial Database



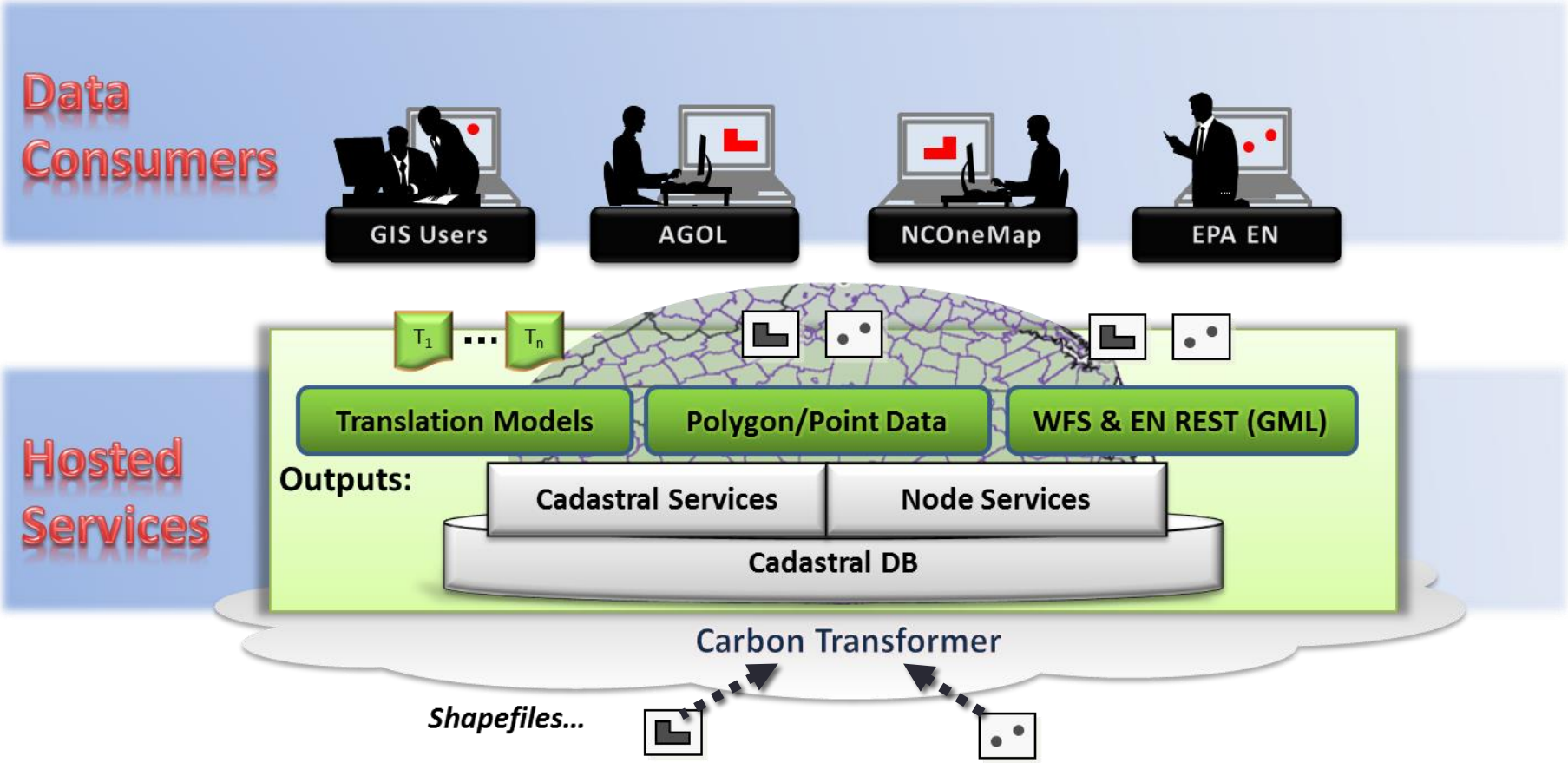
Cadastral geospatial database task will review existing standards, establish Master Schema and crosswalk data, and build database design

Task 2 - Develop Data Transformer



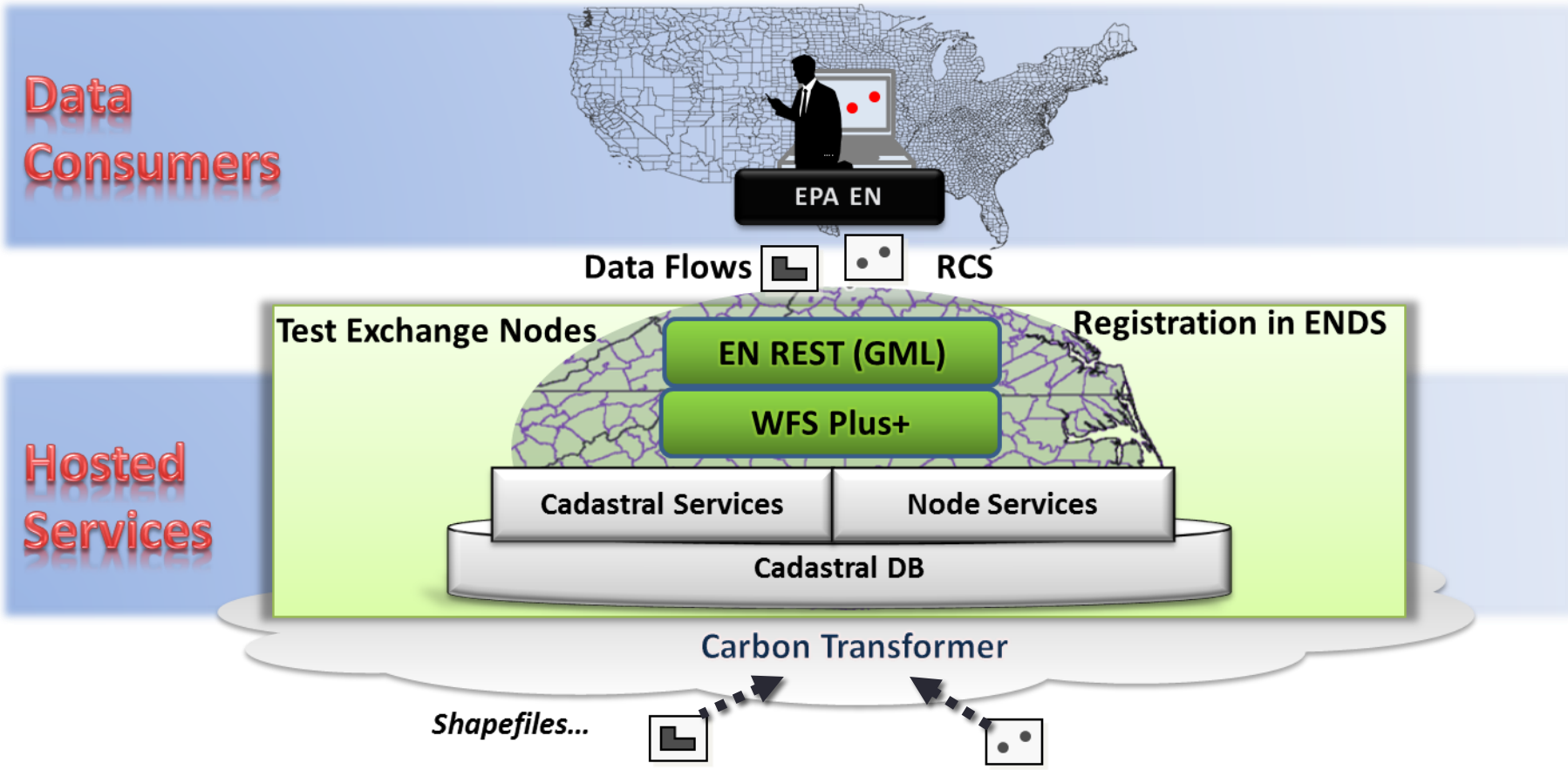
This task develops web and server tools for County/EBCI property mapping offices to upload shapefiles and transform them into normalized parcel data

Task 3 - Output for Cadastral Data and Services



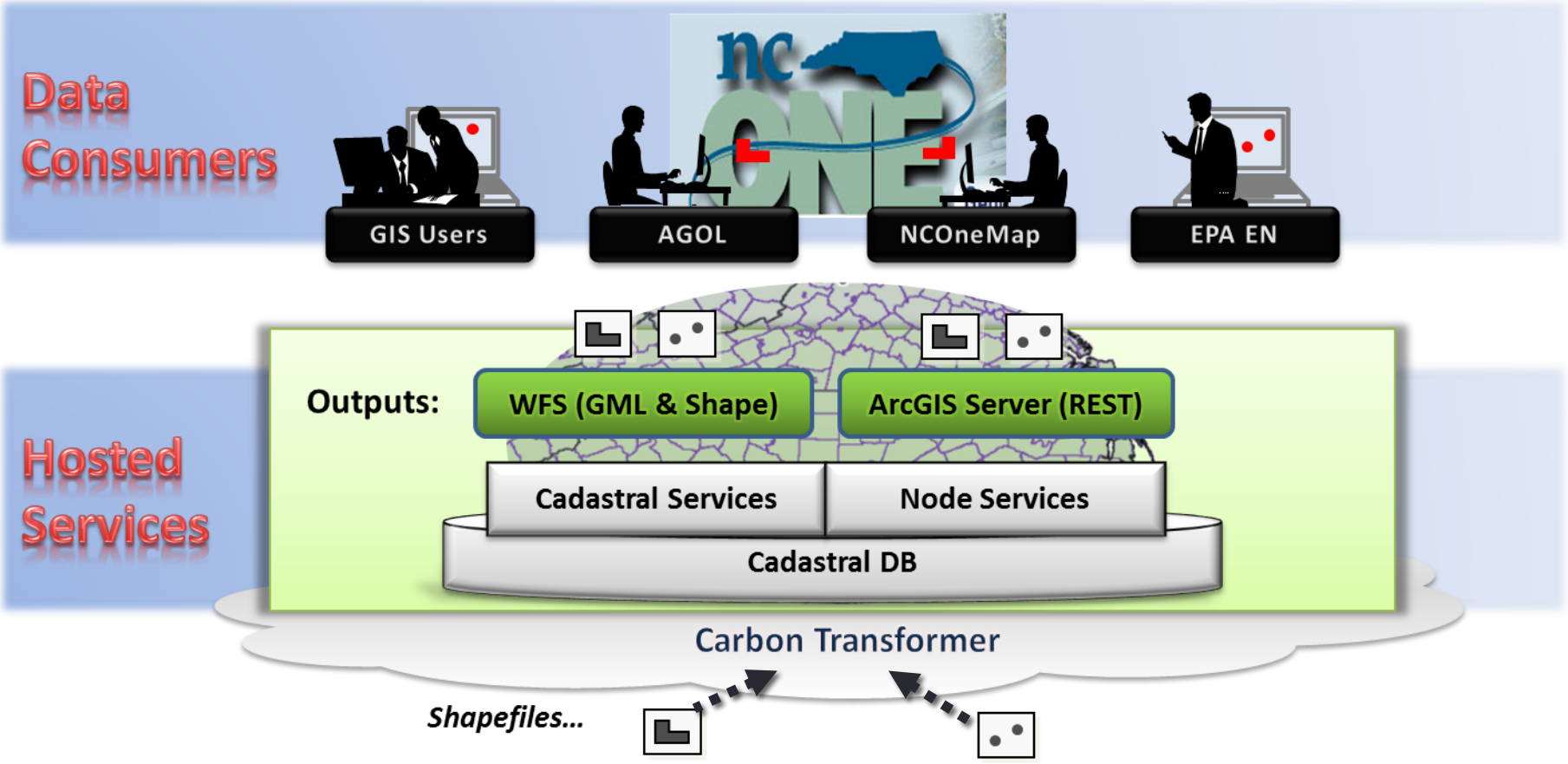
Output for Cadastral Data and Services includes translation models, data as points and polygons and web services that implement GML, WFS and Exchange Network REST standards

Task 4 - Exchange Data Through EPA EN



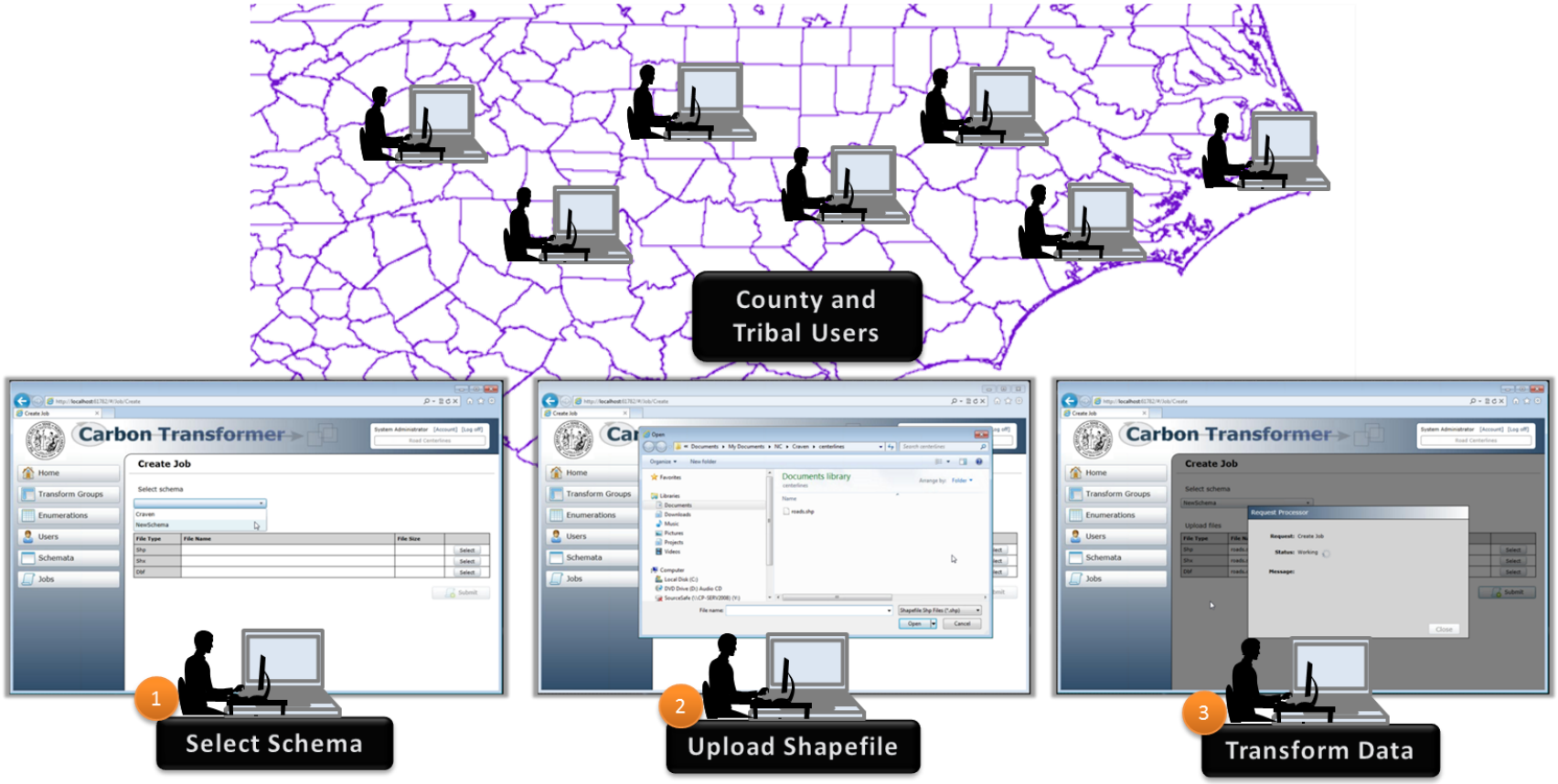
Develop components to deliver data services generated from transformed county and EBCI cadastral data to EPA Exchange Network, using latest advancements in WFS and Exchange Network REST Node

Task 5 – Share Data with Non-Node Consumers



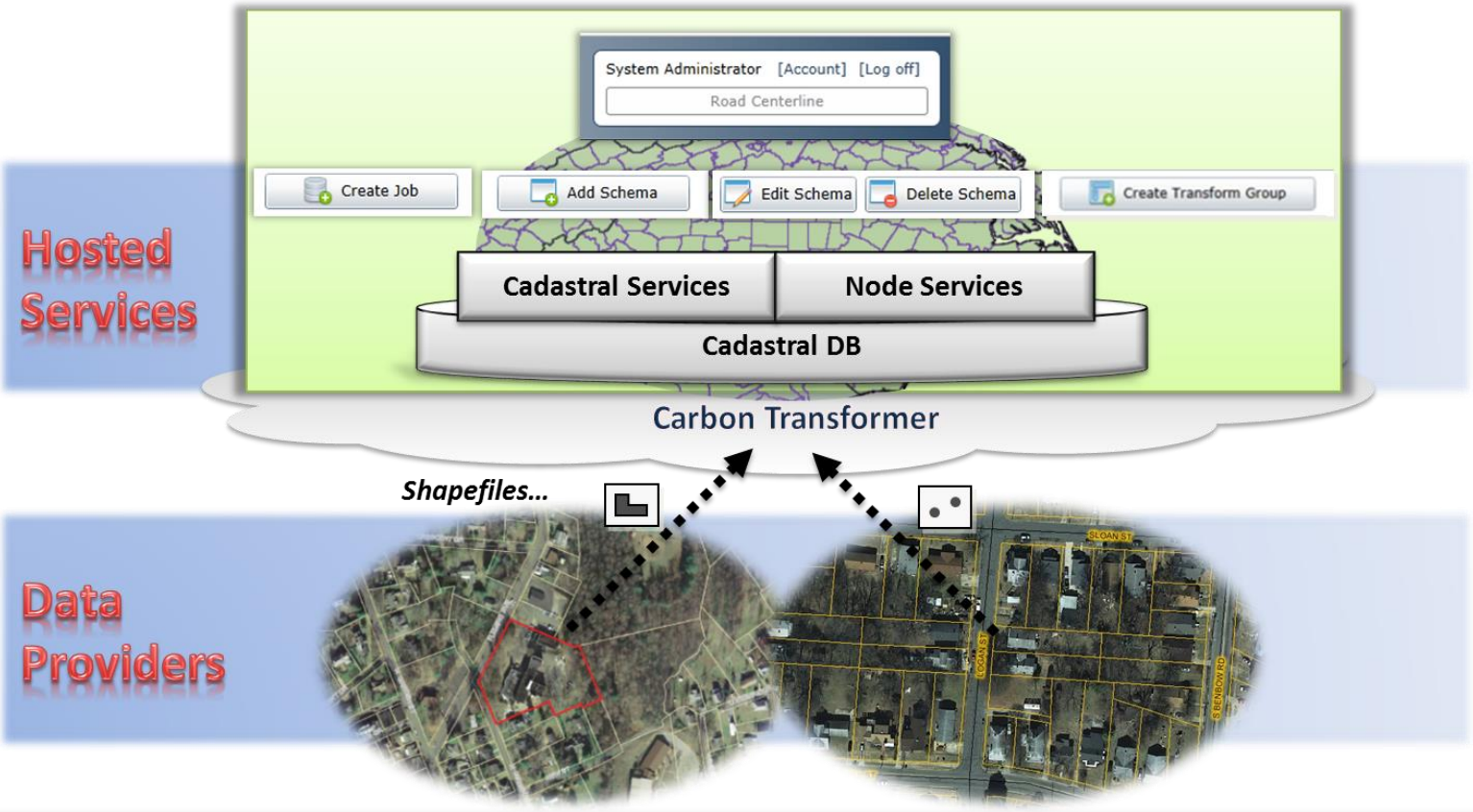
Output for Non-Node Consumers includes ArcGIS Server REST services to connect to NCOneMap and provide access to data and maps, as well as required WFS/GML access

Task 6 – Assist Project Team, Engage Local Govt and Tribal Data Producers in Project Evaluation



Assist the Project Team in engaging county government and Tribal data providers by training the Project Team to demonstrate and explain the tools

Task 7 - Provide and Manage Security



- Users can be assigned the roles, providing control over system functions and services available. NCID Integration…

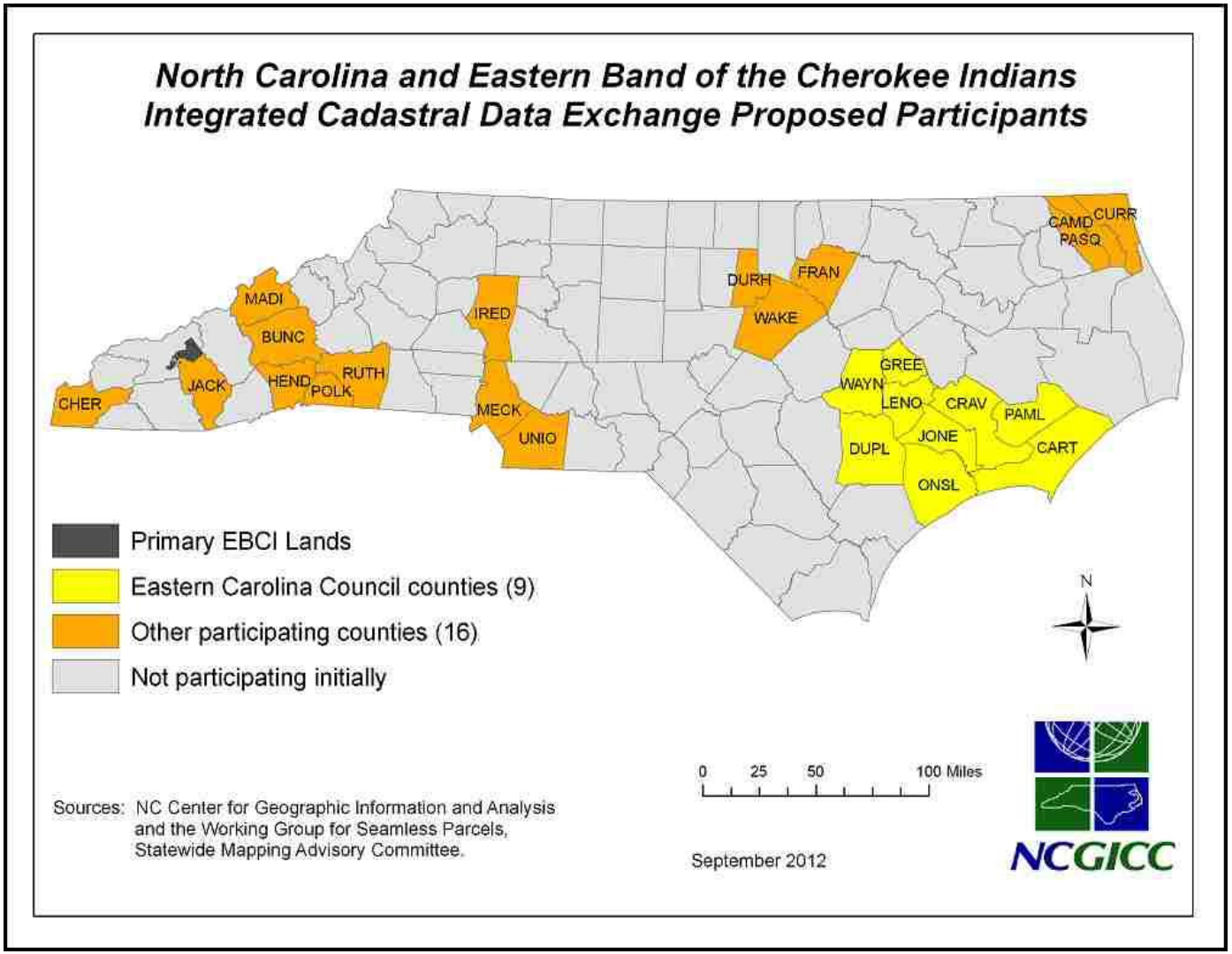
Data Schema

- Data Dictionary (Appendix in RFP) developed by WGSP
- Core Parcel GML Data Element Definitions
- Best combination for this project
- Reviewed and approved by Project Team
- Review for Transformer design underway

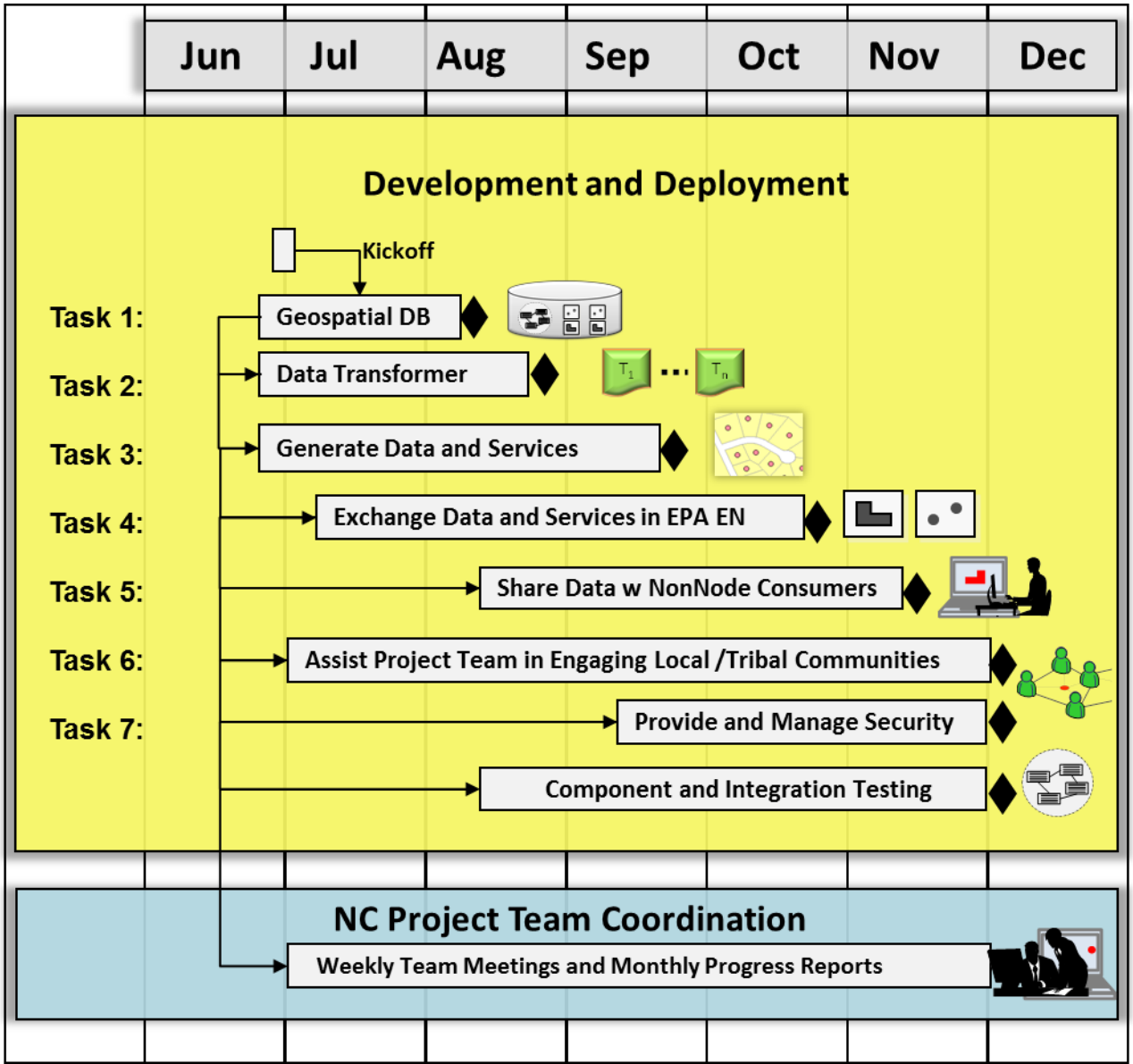
Data Sources

- 25 with initial interest in participating (map)
- Others that could participate with assistance
- EBCI GIS Unit
- Data collection and review underway

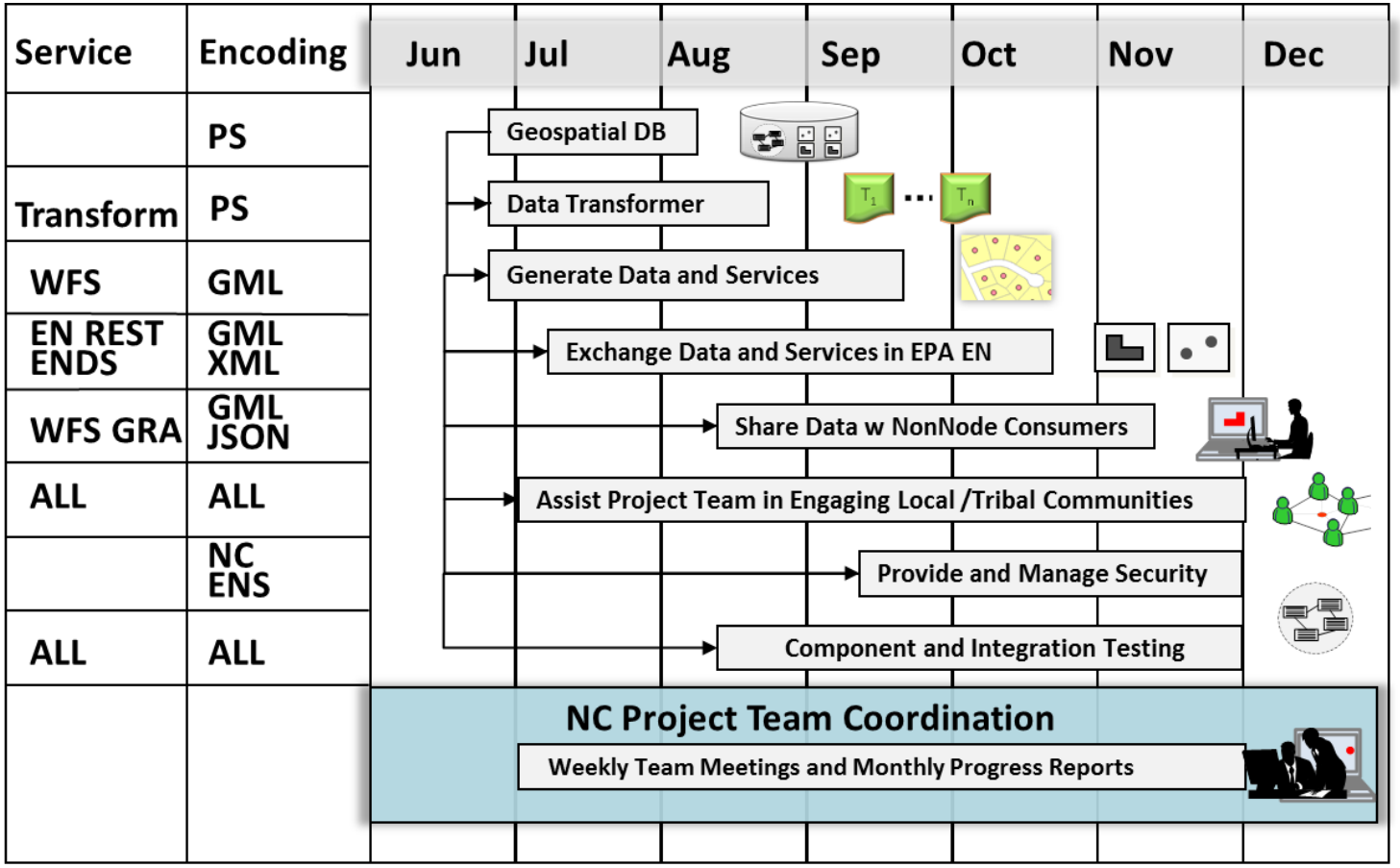
Data Sources – Initial Counties



Schedule


Jun
Jul
Aug
Sep
Oct
Nov
Dec
Development and Deployment
Kickoff
Task 1:
Geospatial DB
Task 2:
Data Transformer
Task 3:
Generate Data and Services
Task 4:
Exchange Data and Services in EPA EN
Task 5:
Share Data w NonNode Consumers
Task 6:
Assist Project Team in Engaging Local /Tribal Communities
Task 7:
Provide and Manage Security
Component and Integration Testing
NC Project Team Coordination
Weekly Team Meetings and Monthly Progress Reports

Build Schedule



PS - Parcel Schema (Attachment C)
WFS - Web Feature Service
GML - Parcel GML
EN REST - Exchange Network REST Node
GRA - Geoservices REST API
JSON - Geoservices JSON
ENDS - Exchange Network Discovery Service
NC - NC Security
ENS – Exchange Network Security

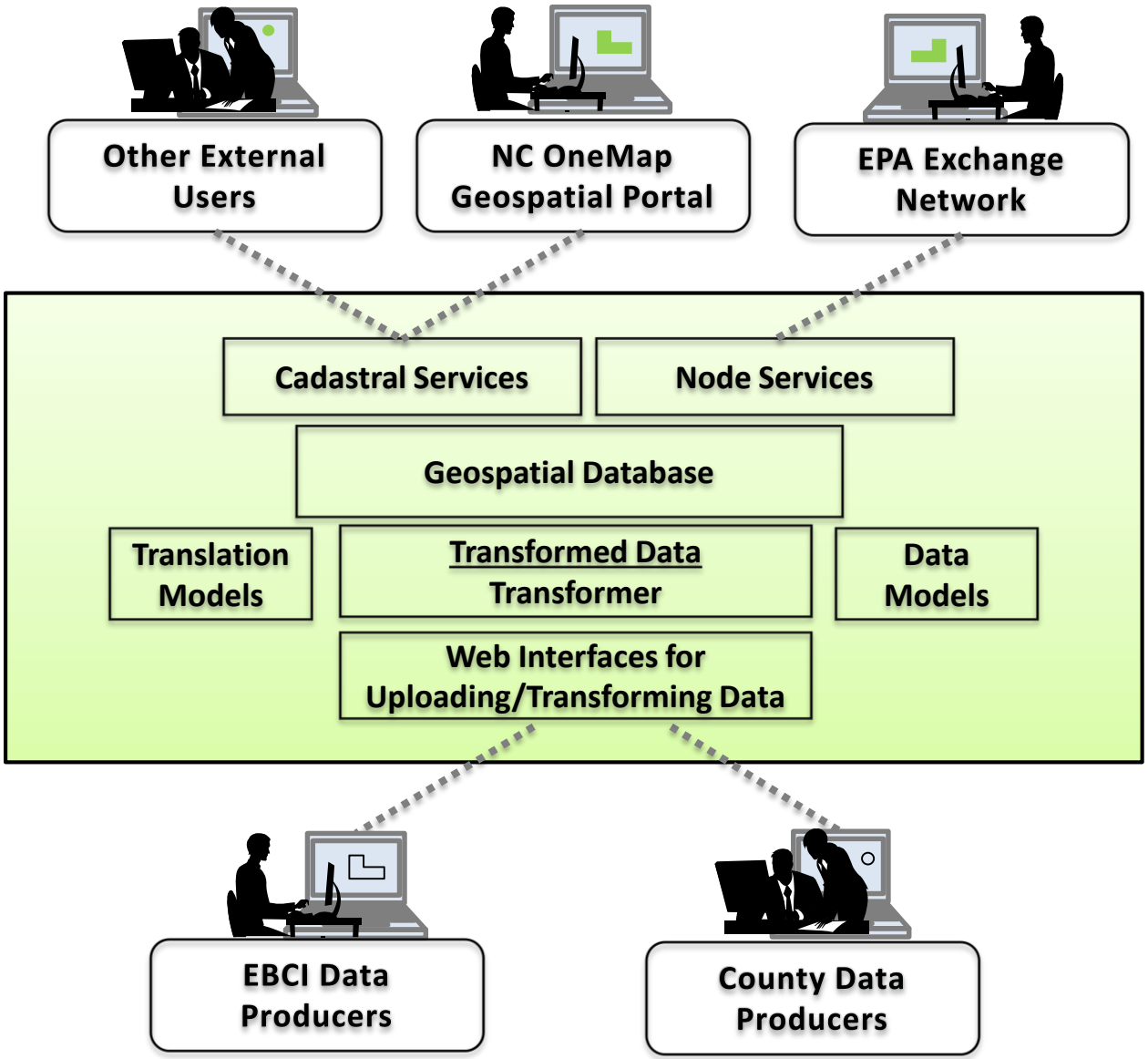
Questions and Discussion

All..

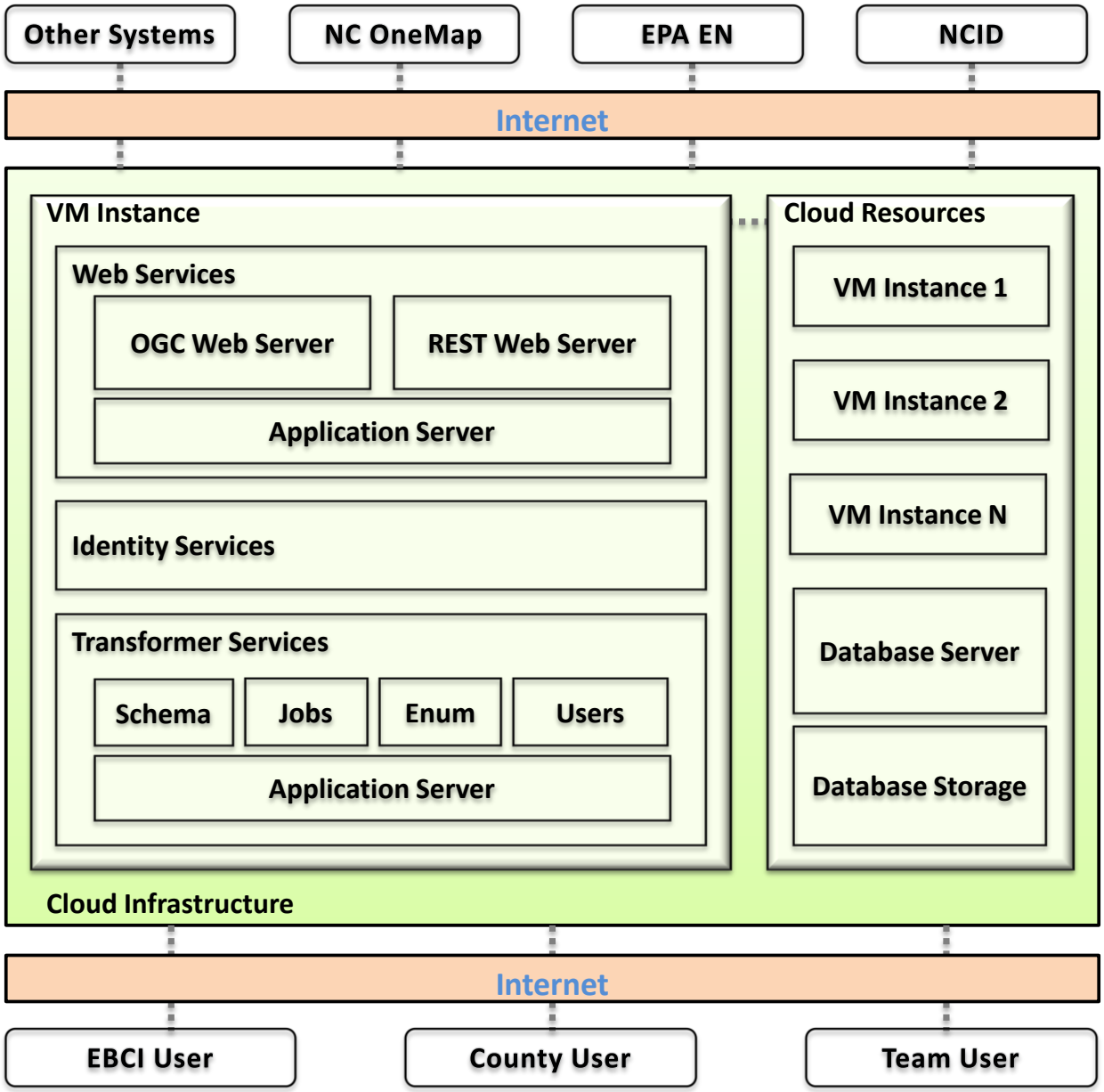
Technical Architecture Backups

Attached..

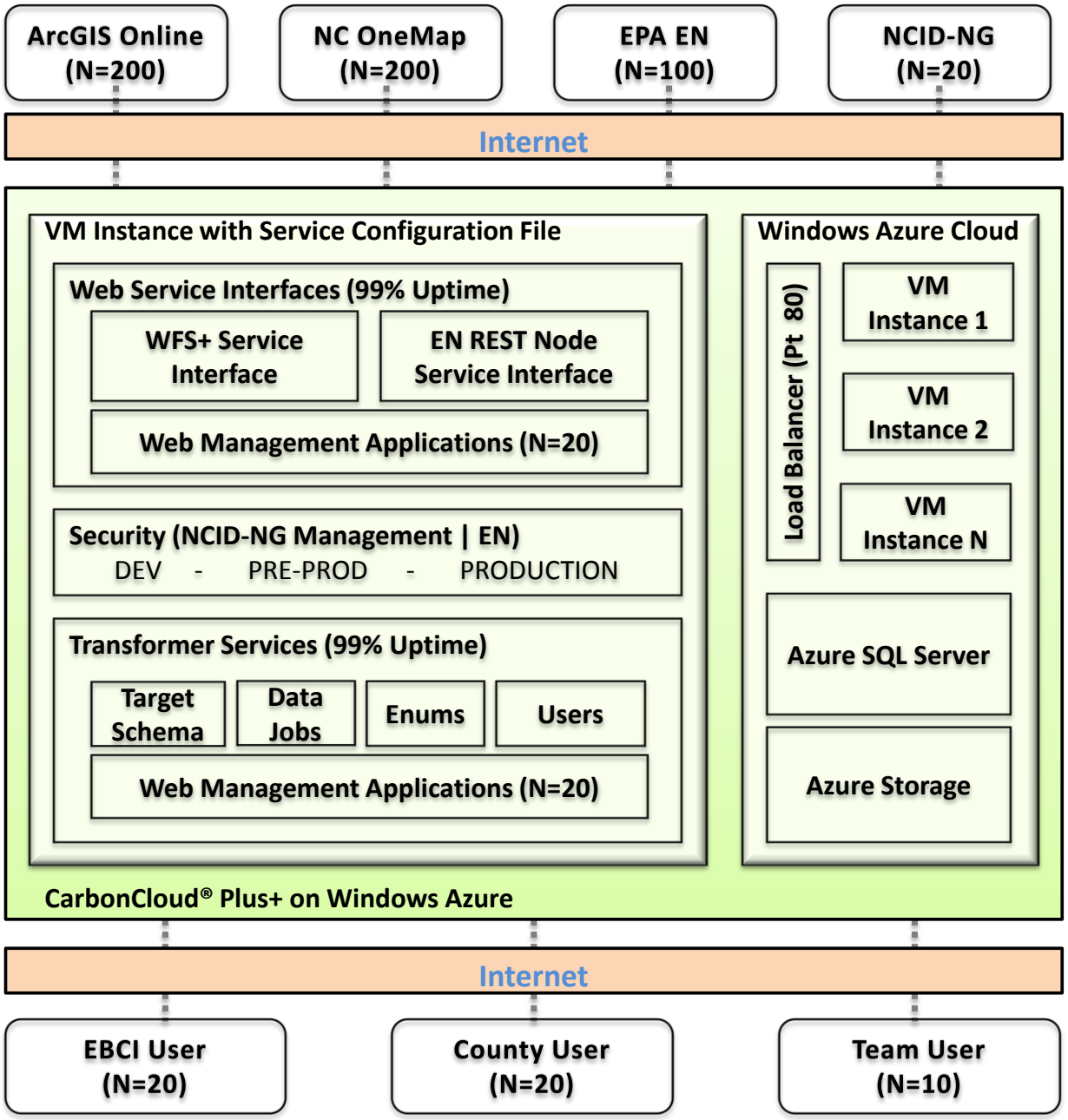
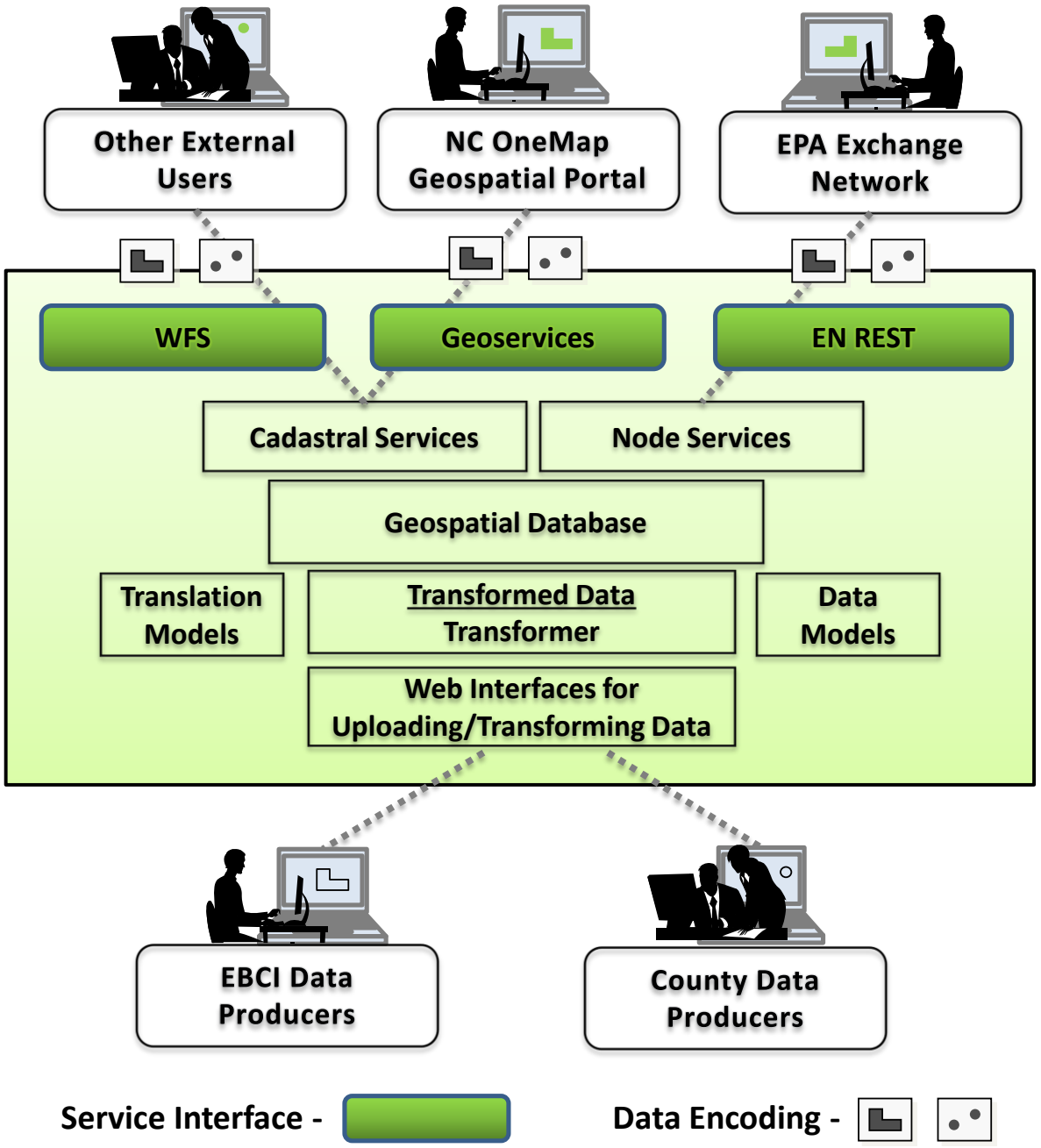
Functional Design



Conceptual Design – Deployed on Cloud



Logical Design



Logical Design – Simple Services and Data Encodings