New Hampshire
NHD GeoSynchronization Network

2010 NSDI CAP Category 2
Framework Data Exchange Through Automated Geo-Synchronization

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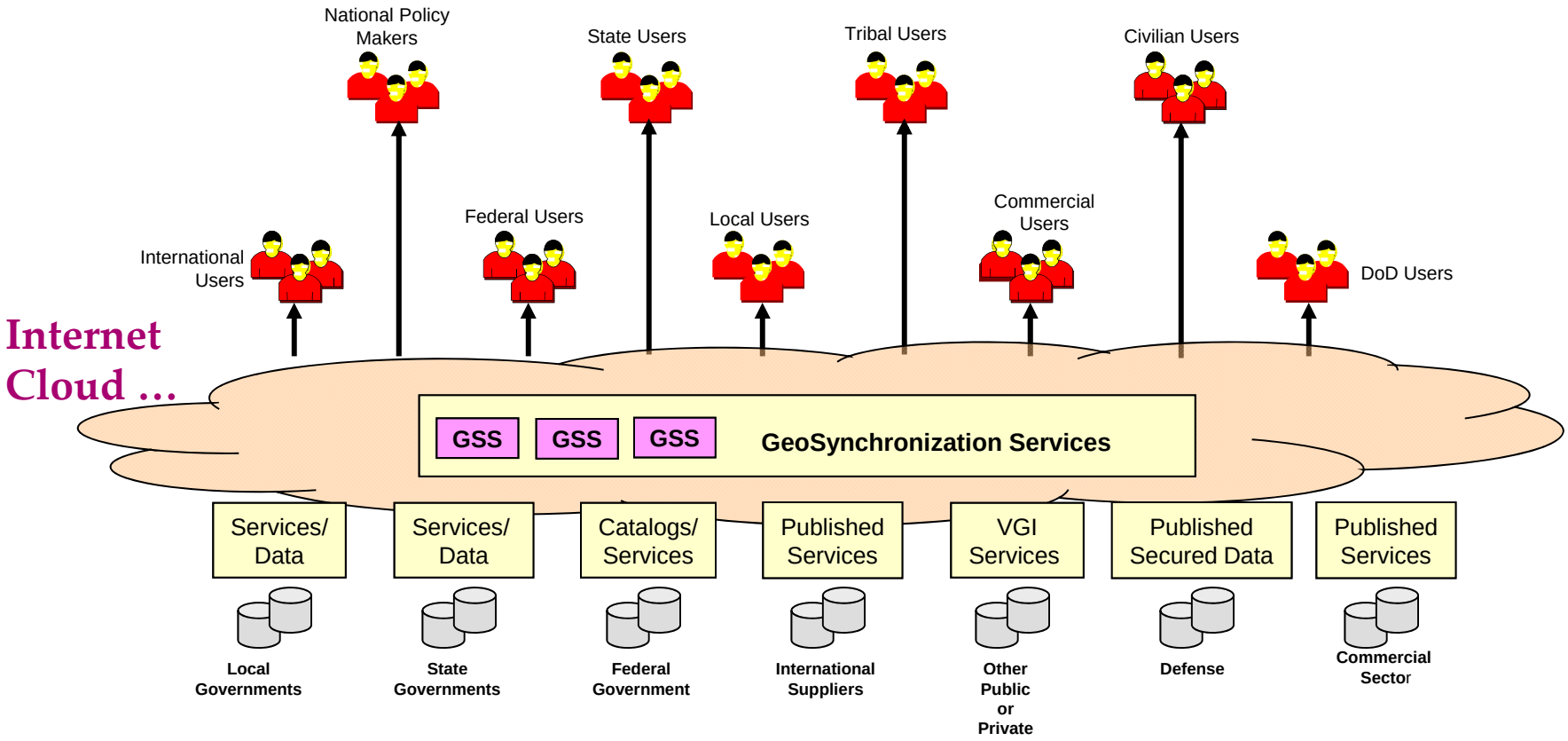
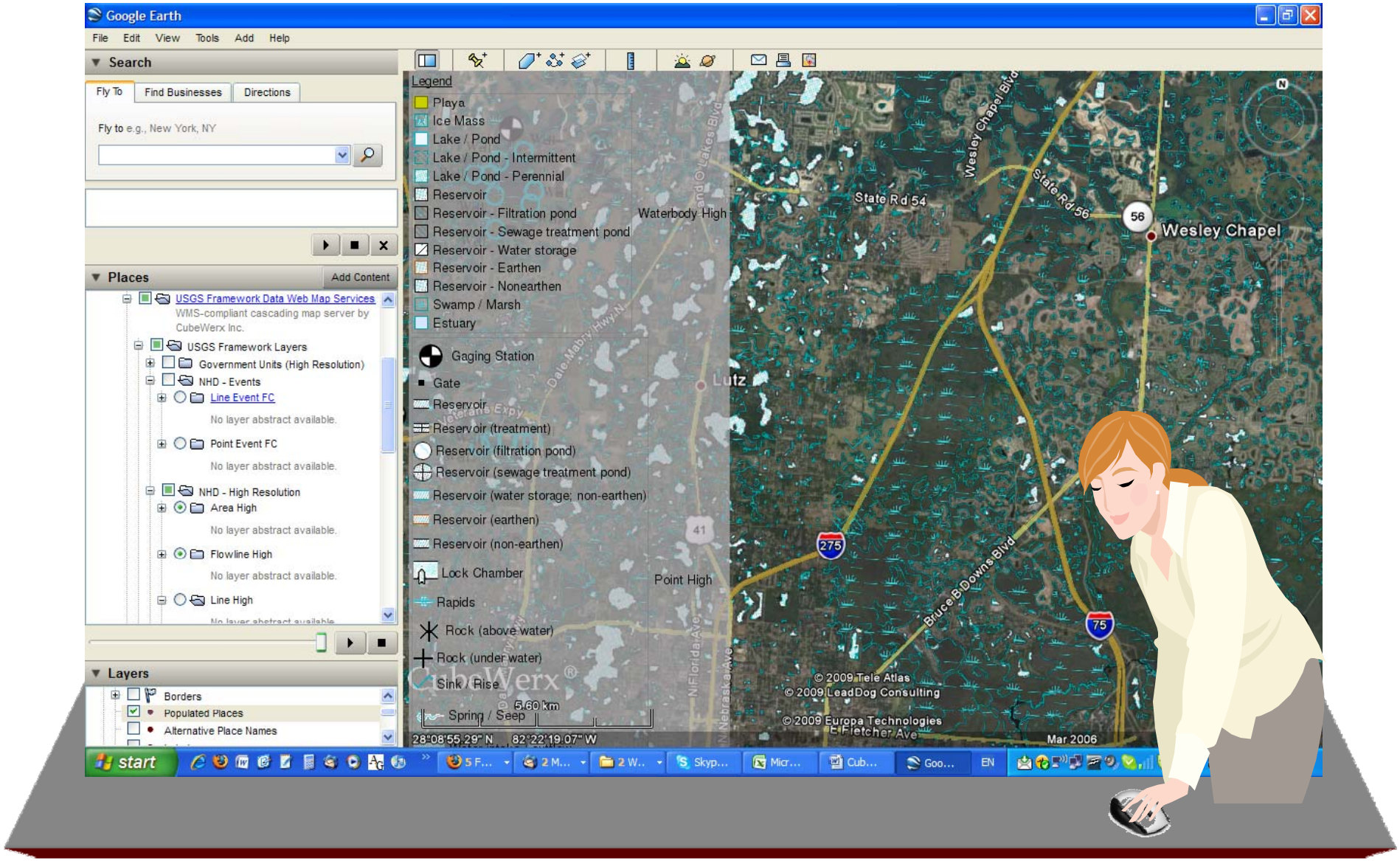
Collaborative SDI Emerging…



Spatial Data Infrastructure (SDI)

National Hydrography Data (NHD) Vital



Overview

- Facilitate framework data exchange between state and national data stores by deploying a Geo-Synchronization capability in New Hampshire using common NHD data models, services and apps
- Bridge gaps between current NHD production operations and vision of CAP grant
- Transform Data Delivery Format XML produced by current NHD geo-edit tools to Web Feature Service Transactions (WFS-T) - support current and future NHD operations simultaneously
- Leverage current business processes without disruption
- Deploy practical leave-behind capability for New Hampshire and free, reusable NHD tools for entire NSDI

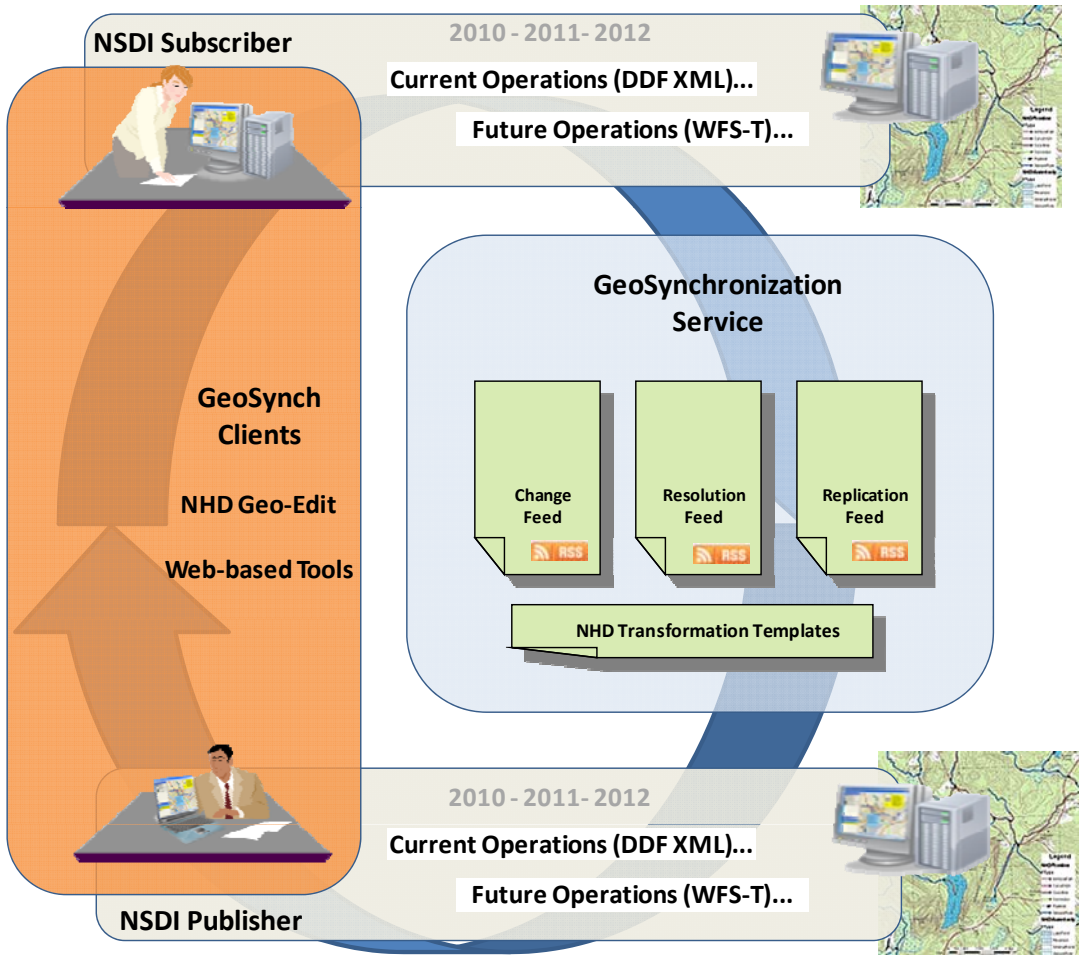
Help evolve hydrography data theme of the NSDI into framework driven by collaborative data maintenance partnerships at local, state and federal levels.

Partners

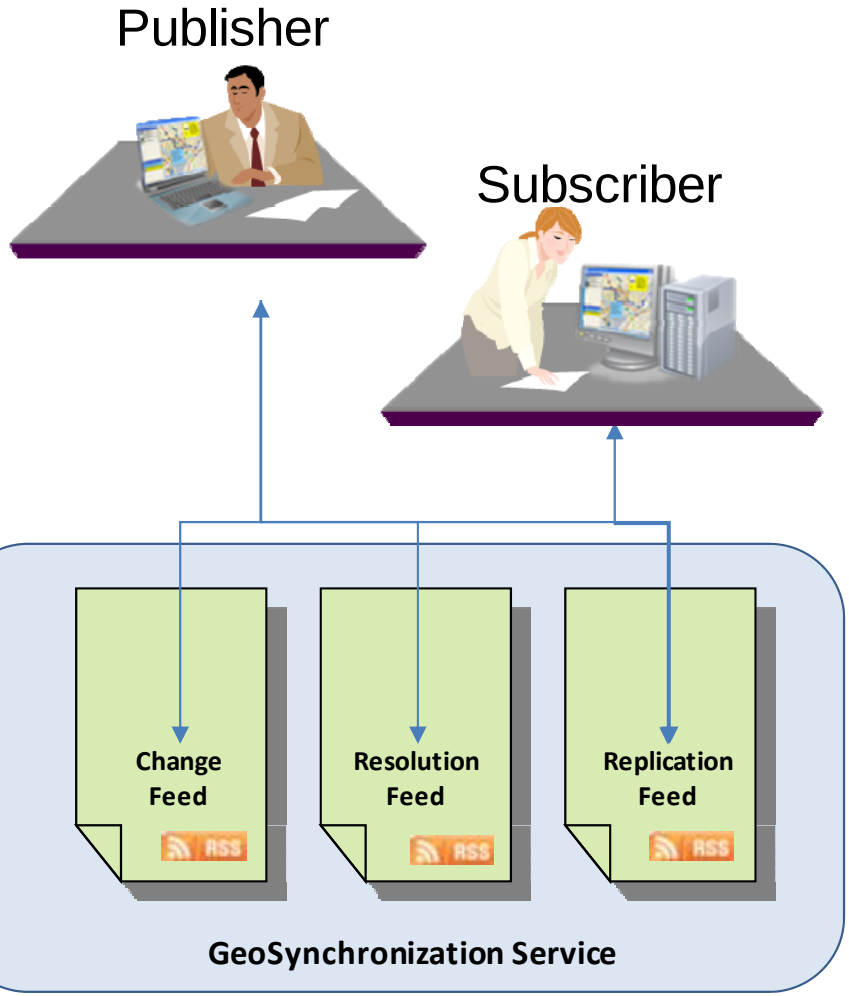
- New Hampshire Geological Survey, New Hampshire Dept. of Environmental Services (NH DES)
- NH GIS Advisory Committee
- Steering committee of representatives from state government
- USGS, EPA (coordination underway)
- Private sector participants (CubeWerx and others)

Standards-based Architecture

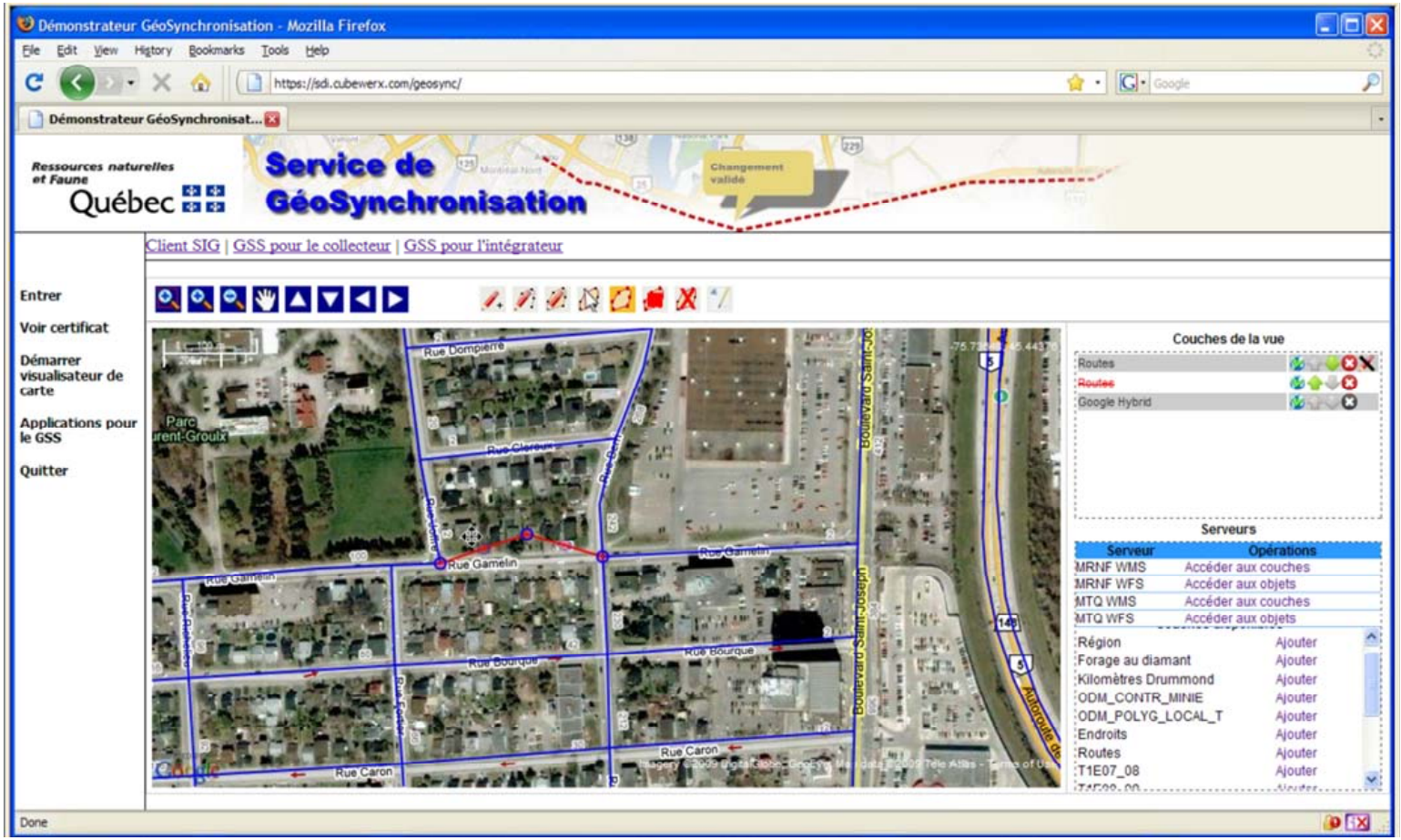
- Based on New Hampshire implementation of the NHD
- GIS comprised of spatial features that represent natural and man-made surface waters
- Features mapped as a combination of stream centerlines and “artificial paths” through water bodies at a scale of 1:24,000



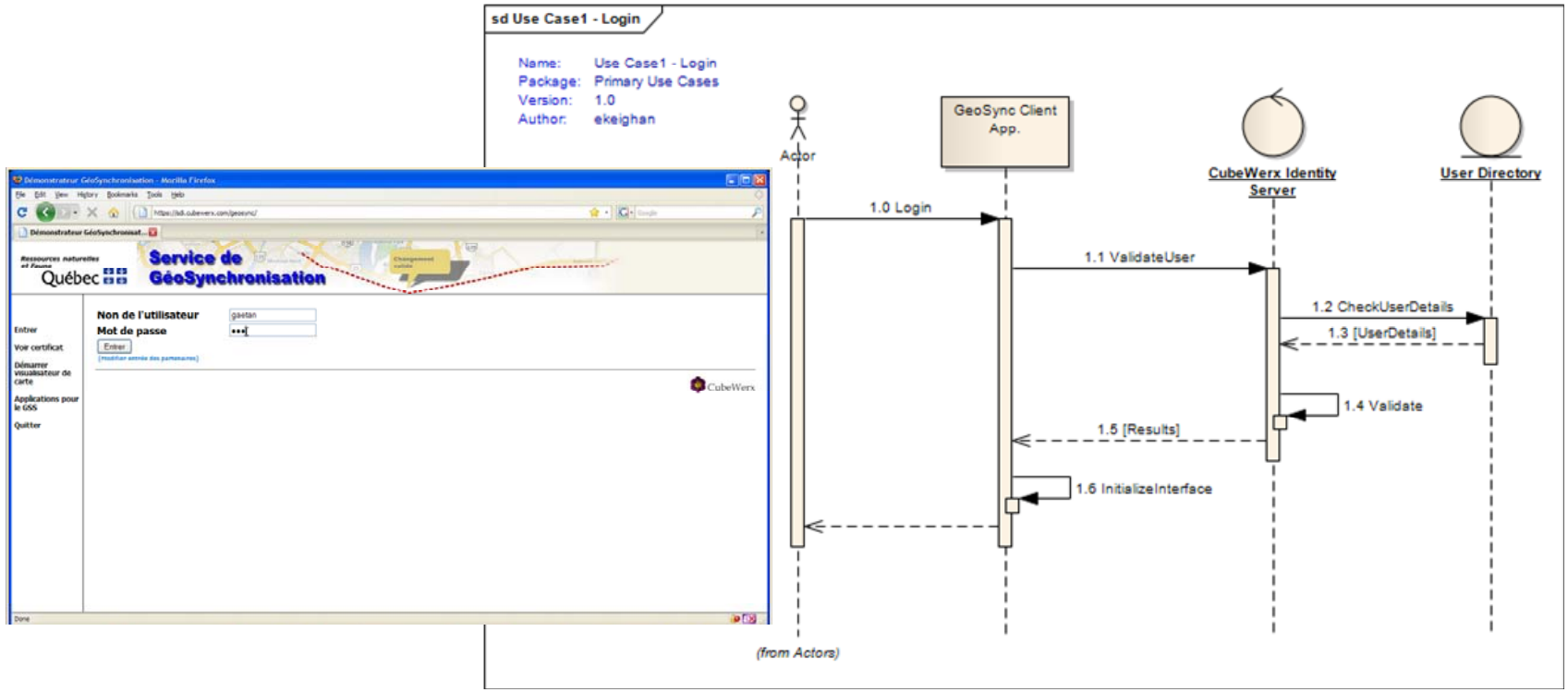
GeoSynchronization Feeds



Builds on Proven Tools



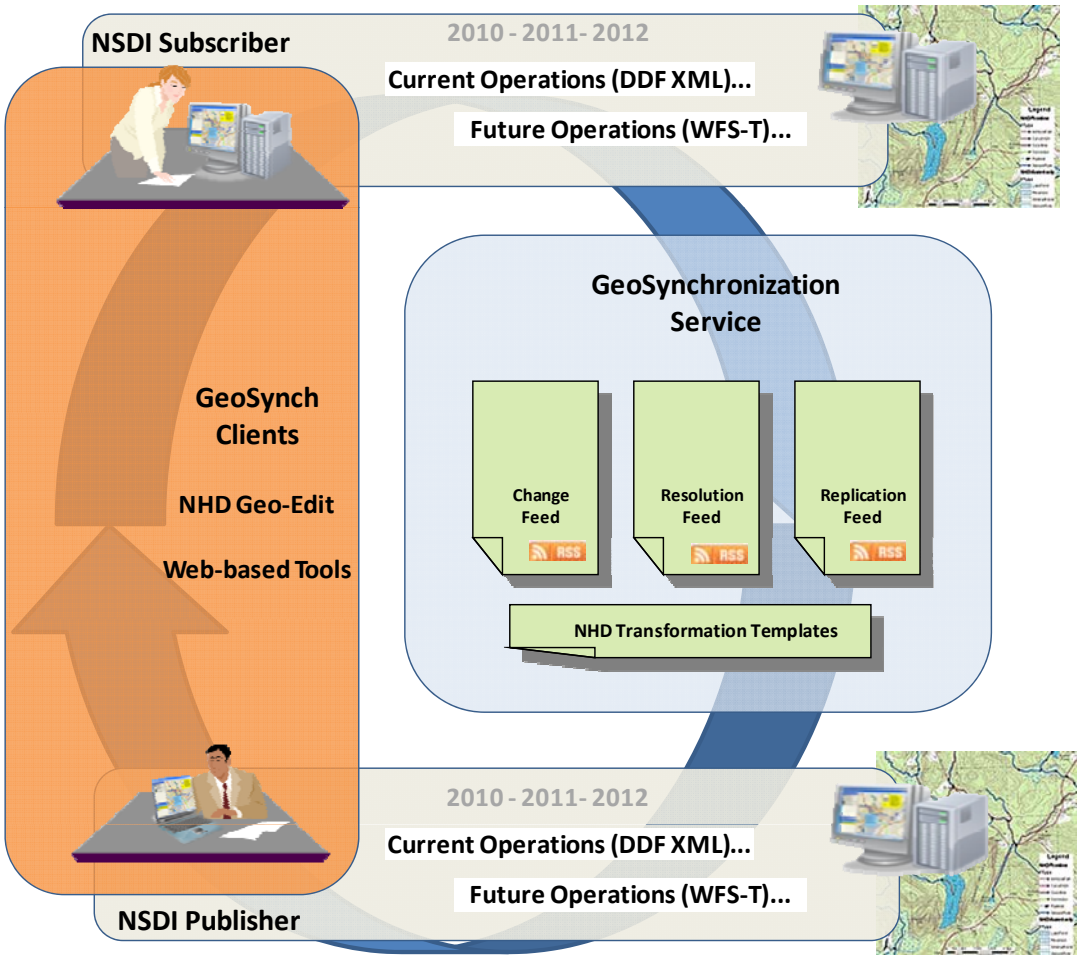
Identity Management



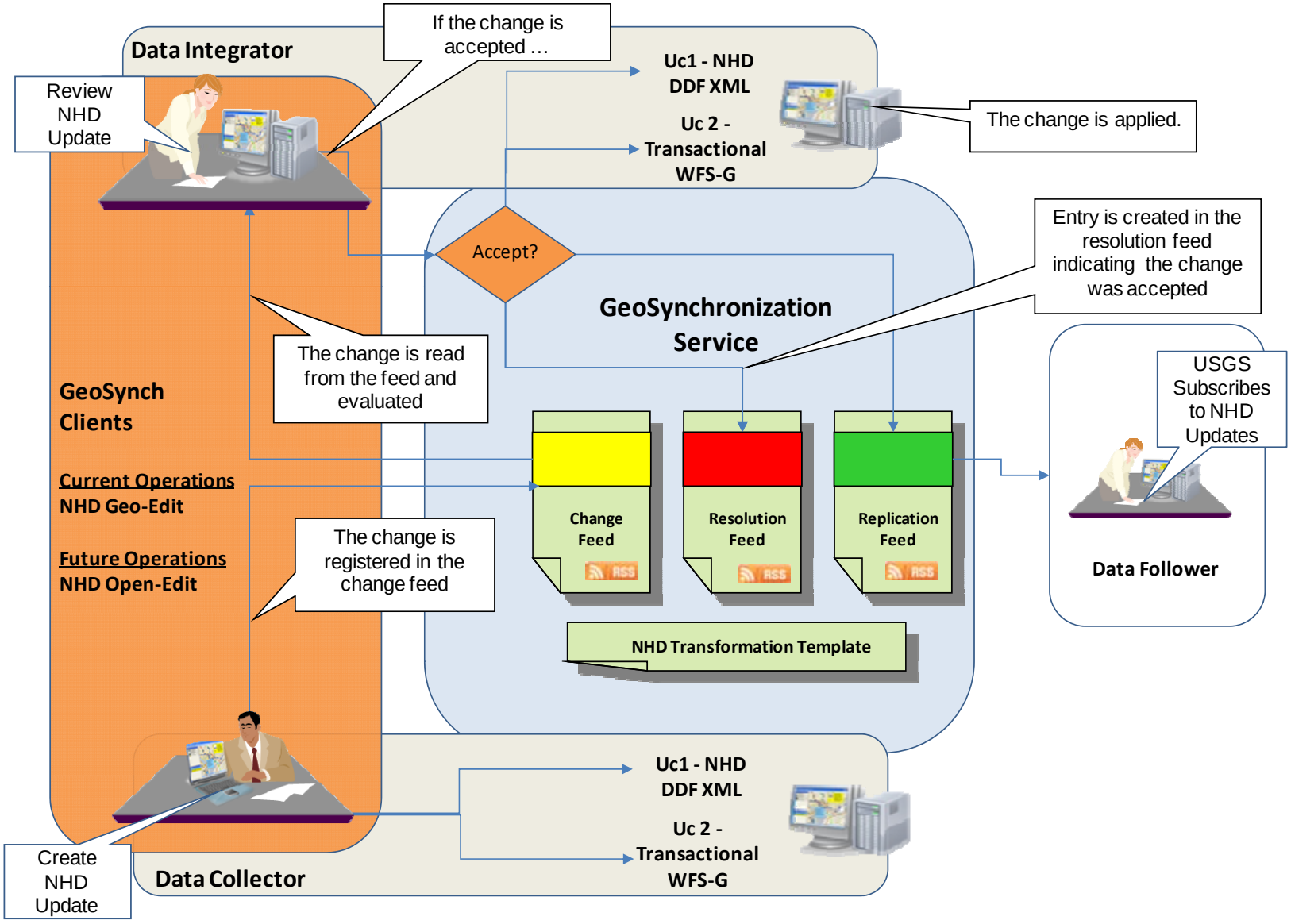
- Approach includes an Identity Management Service to provide role-based access control operations

‘DDF’ and ‘GSS’

- Transform NHD Data Delivery Format (DDF) XML from geo-edit tools used now to WFS Transactions used in GSS
- Leverage current NHD processes w/o disruption
- Address “feature-based” methods and “hydrologic basin-based” methods
- Detailed Use Cases



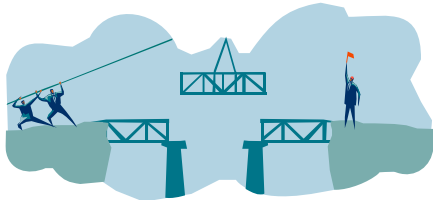
Sample GSS Flow



Building Bridges with ”Transforms”

- Real-world deployment of GeoSynchronization for NHD requires converting DDF XML (see Appendix B) into WFS transactions.
- In our approach, DDF is converted to WFS transactions using XSLT (XSL Transformations) a declarative language that transforms XML documents into other XML documents.
- We use XSLT to provide a bridge from current production operations to future operations using WFS-T

- ✓ FEATURE MANAGEMENT,
- ✓ RELATIONSHIP MANAGEMENT
- ✓ METADATA MANAGEMENT



- ✓ CreateFEATURE…
- ✓ CreateRELATIONSHIP…
- ✓ CreateMETADATA…

Project Tasks

Development, Deployment, Sustainment

Community Engagement

Project Coordination

Thanks!