

Collaborative Asset Management System

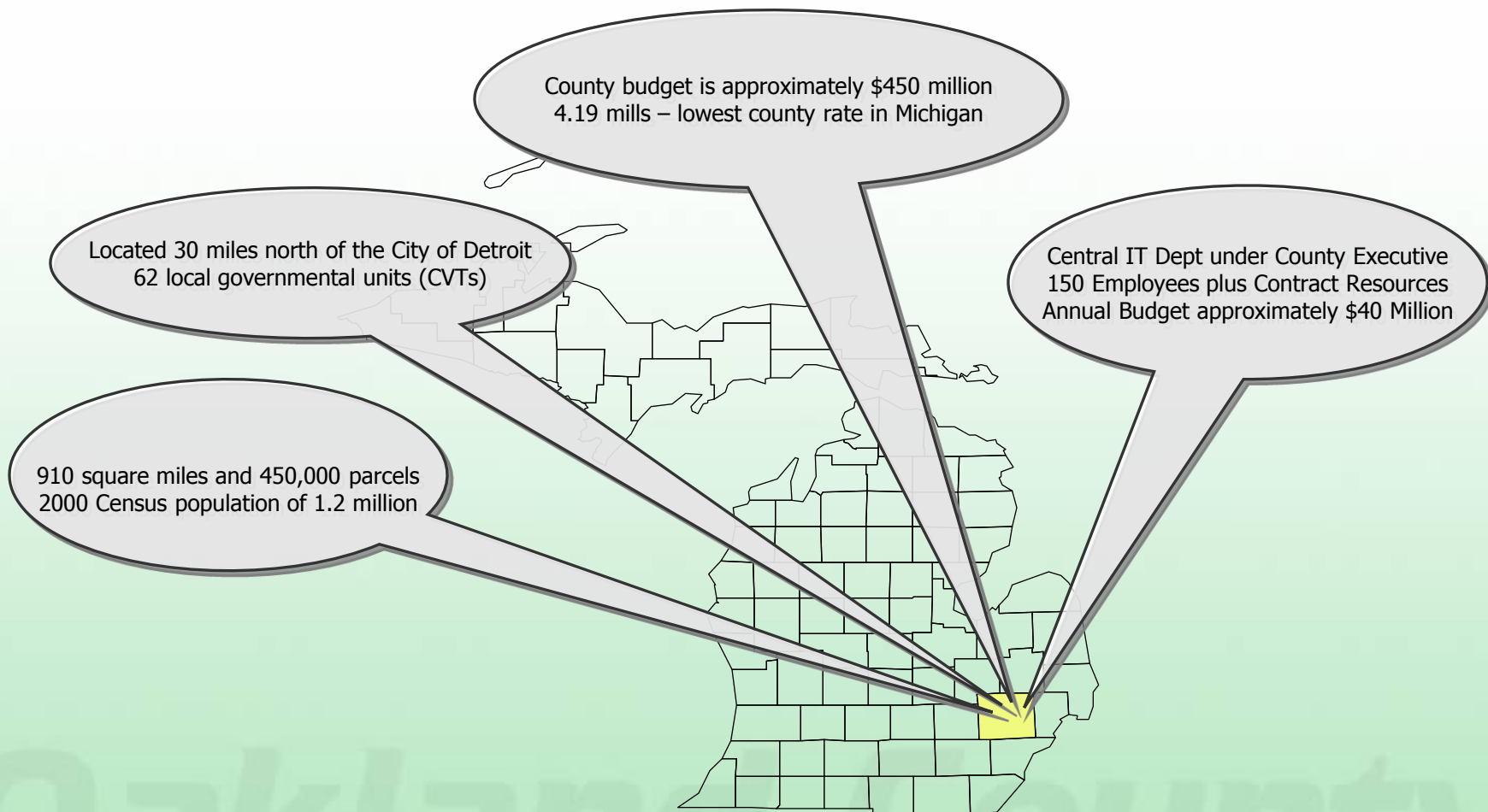
*A new vision for asset management and
customer service in Oakland County*

Oakland County

Agenda

- Introductions
- Project Background
- Building the Framework for Collaboration
 - Organizational Considerations
 - Technology & Architecture Considerations
- Benefits

County Overview



Project Background

- Started with Water Resources Commissioner's Office (WRC) need for Asset Management Solution
- Azteca CityWorks selected with Woolpert as implementation services provider
 - GIS Centric solution for Work Order, Citizen Request & Permit Management built on ArcGIS Server
 - Product can be configured for use by different types of organizations (Utilities, Facilities, Parks)
- Web based, GIS/database centric solution opened door for expanded use of the system
- Gained support for a centrally hosted, managed solution

The Vision

A standardized, **county-wide** infrastructure management system that will allow Oakland County and its local governments to **proactively** manage assets

- Pursued & received funding for capital & implementation costs
 - Initial Hardware & Software purchase
 - Data conversion for interested Cities, Villages & Townships (CVT's)
 - Implementation costs for WRC, committed CVT's, and the Road Commission for specific modules
- Each partner will be responsible for their own ongoing costs
 - Mobile Computers
 - Wireless Connectivity
 - GIS Data Maintenance
 - System Support & Maintenance

CVT Data Conversion

- Received specific funding to convert CVT utility data
- Data is being converted into a single model and will be seeded
 - Started with WRC data models
 - Sources include paper, CAD, and previously converted GIS data
 - Worked through an iterative process with WRC and participating CVT's to make revisions to meet needs of CVT's
 - Participants will be able to see each other's data
- Following conversion, OCIT will work with each CVT to configure CityWorks for their use

Users that will Benefit from Investment

Department or Community	Modules	Number of Users
WRC	All	250
RCOC	CRM	50
City of Oak Park	TBD	8
City of Auburn Hills	TBD	16
Parks & Recreation	CMMS CRM	200
Facilities Maintenance & Operations	CMMS CRM	200 – Internal FMO Staff 300 – County Staff
Total		1000+

Building the Framework for Collaboration

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Defining & Managing the Relationships

- Needed a mechanism to formalize relationships and long term expectations
 - For all participants, OCIT defined the project scope for implementation and Service Level Agreement
 - County departments provided a letter of commitment
 - For 'Non-County' entities an Interlocal Agreement is required
- Scope of Work
 - Defines what services OCIT will provide to get an organization up and running in CityWorks
 - Sets project expectations

Service Level Agreement

- “Specifies in measurable terms” long term expectations of both OCIT & the participating organization
- Participating Organization expectations:
 - What times of day is the application supported?
 - What if there’s an emergency?
 - How long will it take OCIT to respond when we call the help desk?
 - When will maintenance be performed on the system?
 - What steps are you taking to backup my data and application configuration?
 - How much will all this cost?

Service Level Agreement

- OCIT Expectations
 - How do you plan to keep your GIS data up to date?
 - What kind of hardware and what browser will you be using?
 - Can you share another organization's data?
 - What if it's a FOIA request?
 - If a call comes in that needs to be routed to a different community or organization, how long will it be before that call gets sent to the appropriate organization?
 - Who will be the power-user or single point of contact for your organization?

Service Level Agreement

- Other questions:
 - How do we ensure the security of this sensitive data?
 - What about a department or CVT's engineering firms and contractors?
 - How will OCIT ensure that we are both holding up our end of the bargain?
 - How will changes to the data model be facilitated across multiple entities?
 - And more...

Interlocal Agreement

- Legally confirms that both organization agree to the contents of the Scope of Work and the Service Level Agreement
- Agreement executed by both organizations
- Mitigates risk for both agencies

Technology & Architecture Considerations

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System Components

- **Computerized Maintenance Management (CMMS)**
 - Work Orders, Inspections, Inventory, Project Costing, etc.
- **Customer Request Management (CRM)**
 - Complaints, Correction, Feedback, etc.
- **Public Access Portal**
 - Subset of CRM functionality customized for multi-jurisdictional entry of customer requests entered via the web
- **Permitting**
 - Applications, Evaluation, Inspections, Violations, etc.
- **CityWorks Desktop**
 - Administrative & extension functionality of the CityWorks product to be deployed through Citrix
- **Mobile**
 - Full or partial CityWorks functionality deployed for field use

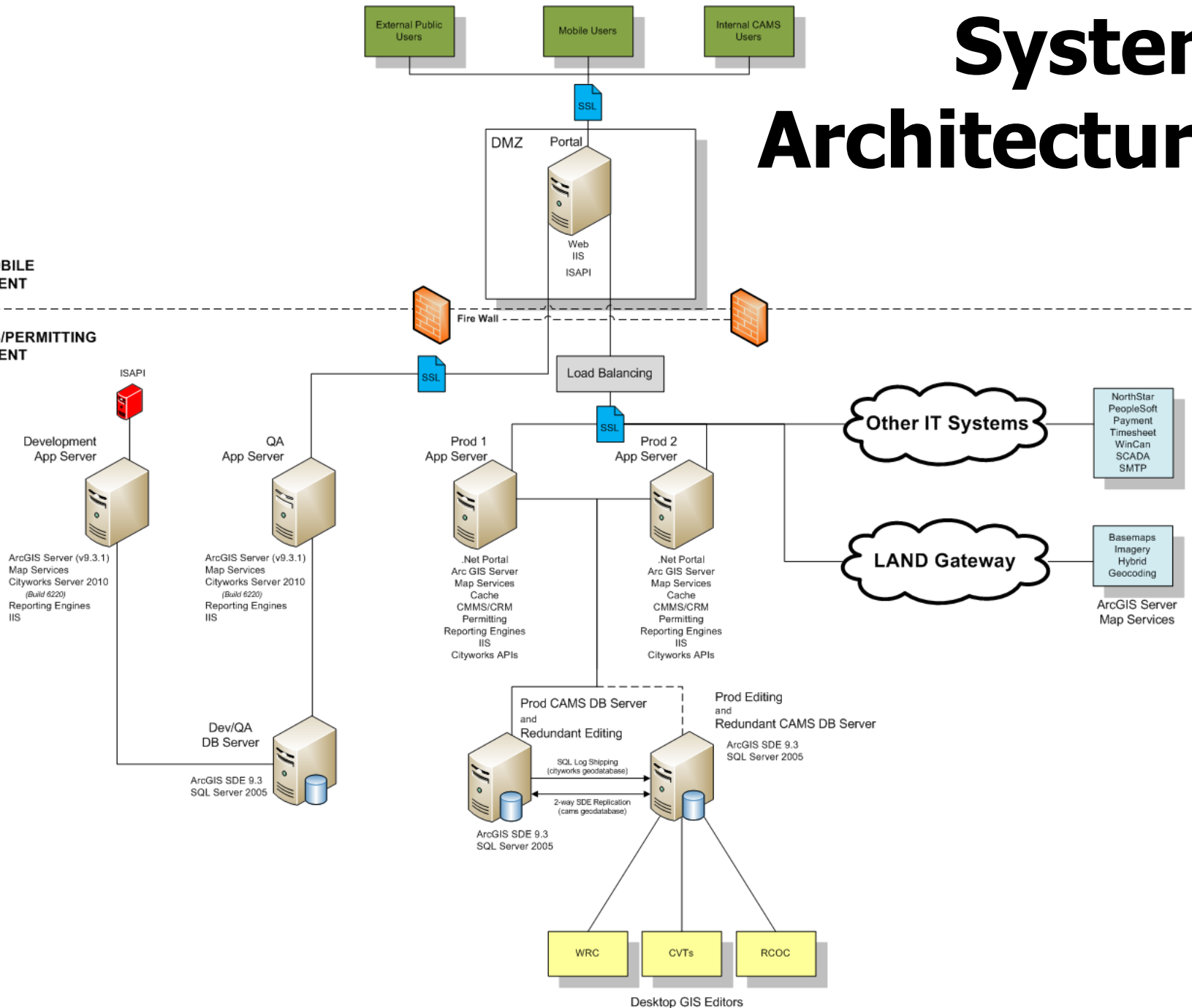
CityWorks Highlights

- Geodatabase is the core of the system (GIS Centric)
 - No need for data republishing, flattening, relating, etc.
 - System reads the live Geodatabase
 - Uses industry standard technology (ESRI, SQL, etc.)
 - Departmental business practices define the Geodatabase model
 - Application allows for workflow to be configured around the Geodatabase model
- Flexible security model
 - Can open or restrict read/write permissions at any level necessary
- Distributable, yet secure administrative features
 - Updating work order templates, granting permissions, etc

System Architecture

PUBLIC/MOBILE ENVIRONMENT

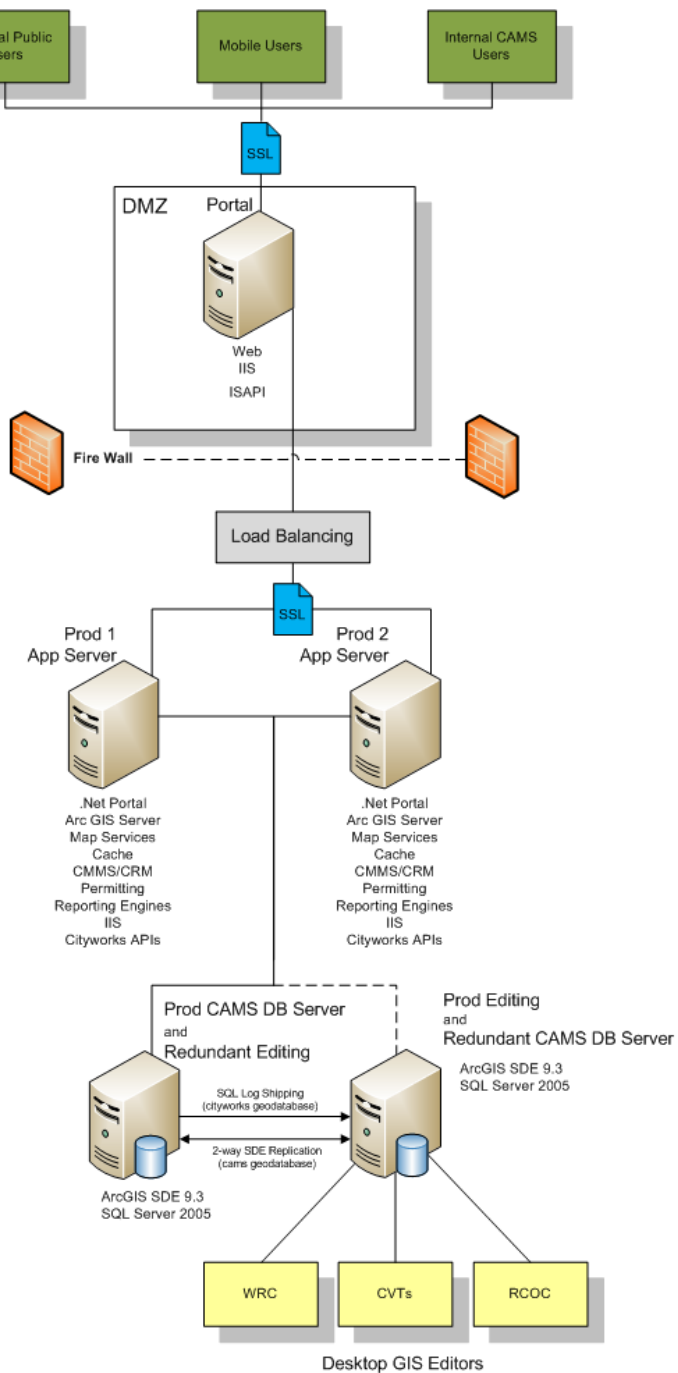
CRM/CMMS/PERMITTING ENVIRONMENT



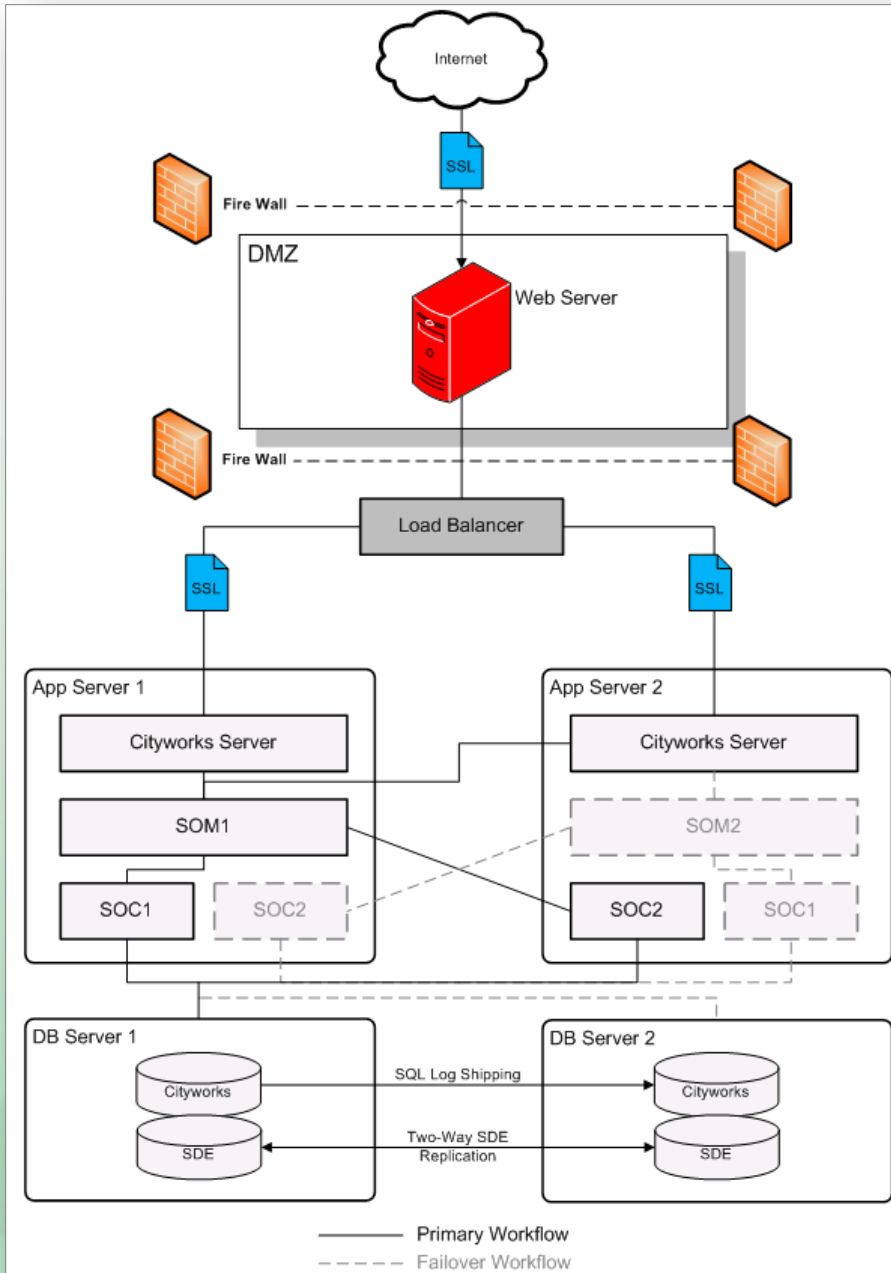
Desktop GIS Editors

System Architecture

- **Key Characteristics**
 - Performance & Reliability
 - Scalability
 - High Availability
 - Data Security



High Availability



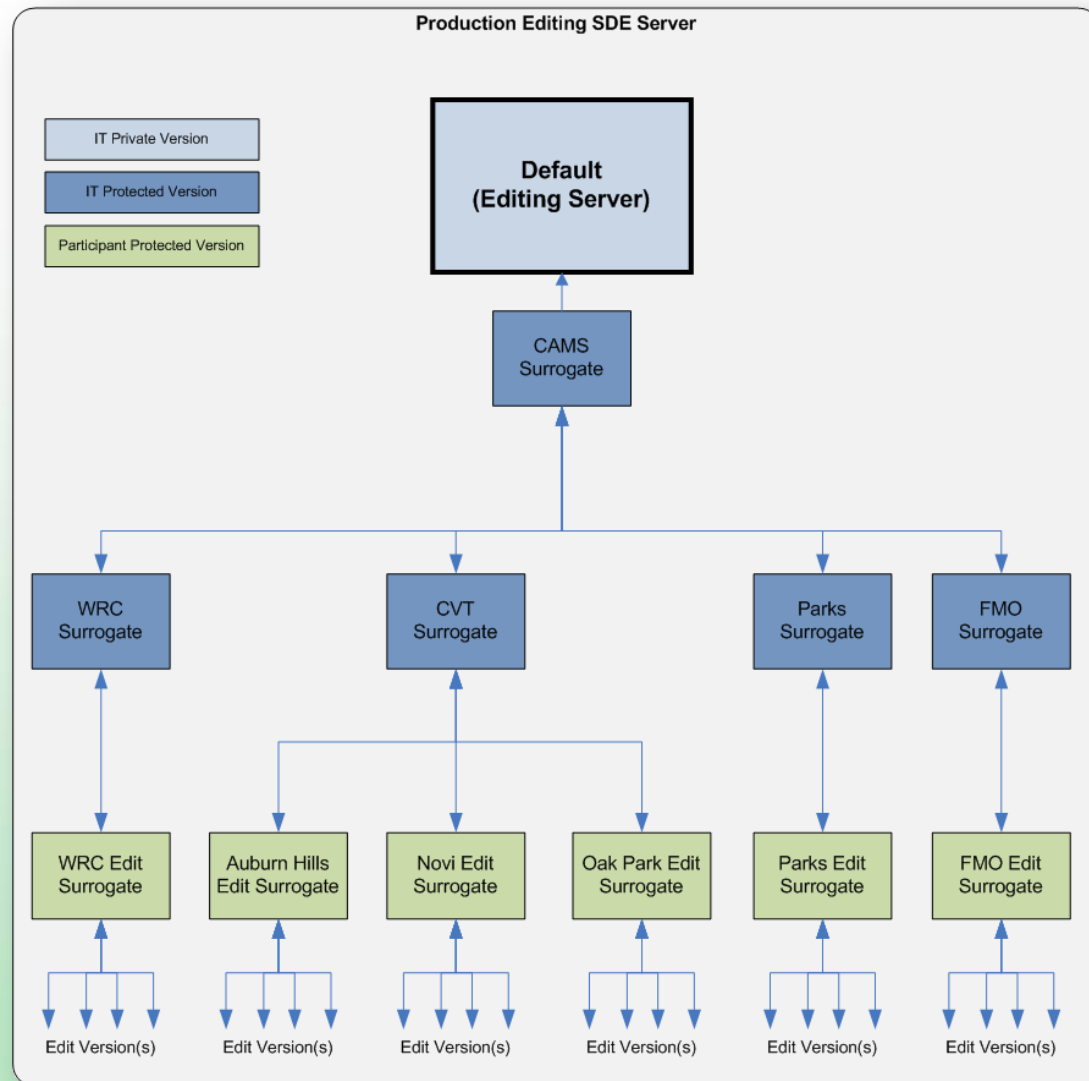
- **Application Tier**

- 2 Load Balanced Application Servers with Cityworks Server and ArcGIS Server
- Multiple SOM/SOC Configuration
- Customized Dynamic Failover Process

- **Database Tier**

- 2 Database Servers
- Separation of Editing Environment and Application Environment
- SQL Log Shipping the Cityworks Database
- Two-Way SDE Replication for the SDE Geodatabase
- Manual Failover Process

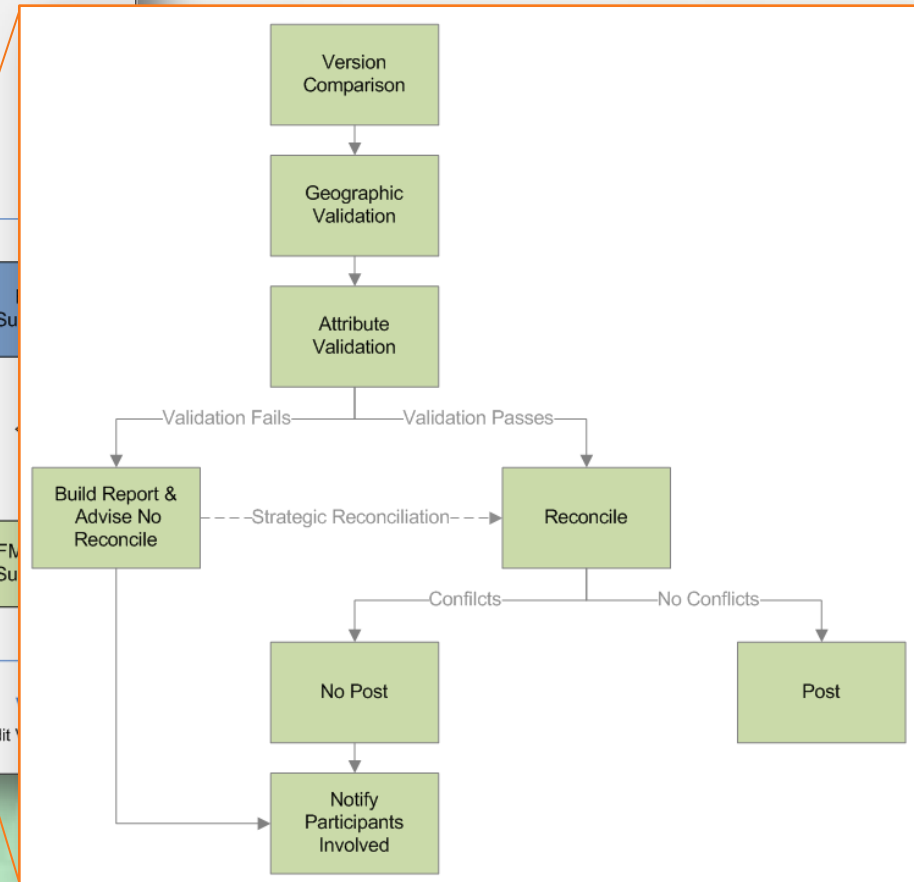
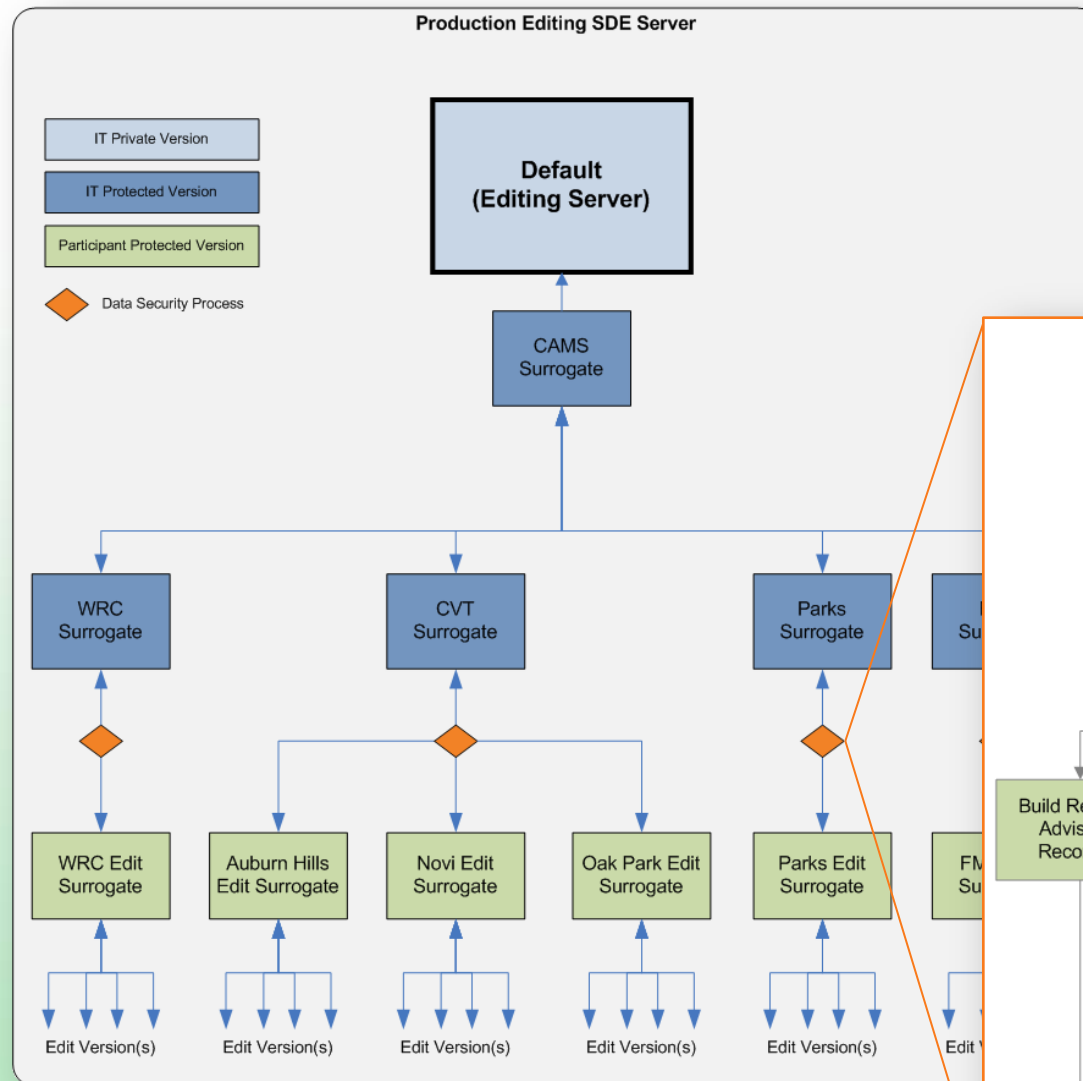
SDE Version Management



- Single Geodatabase Containing Thematically Diverse Data
- Data Owned and Actively Maintained by Multiple Agencies, Departments and Groups
- Deep Version Tree to Accommodate Resolution of Conflicts Between Agencies, Departments or Groups

SDE Data Security

- Shared Feature Classes
- Attribute-Driven, Feature Level Security
- Implemented Prior to Reconcile



Benefits

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Benefits of CityWorks

- GIS Centric!
- Details true cost of ownership of assets, leading to more informed decision making and planning
- Will mitigate long-term costs associated with operations and maintenance of critical infrastructure (water, sewer, storm, roads, grounds and facilities)
- Create metrics specific to Oakland County assets & infrastructure to prevent over/under maintenance of assets

Benefits of Collaboration

- Promotes improved workflows among participants ultimately handling service requests more efficiently and responsively
- Promotes data sharing between internal departments and public works agencies and access to information, anywhere, and at anytime (field or office)
- Supports the Regional Public Works Cooperative and mutual aid efforts in the region

Benefits of Collaboration

- Centrally managed information system that reduces redundancy and allows agencies to focus on their core mission(s)
- Provides a low cost opportunity for CVT public works agencies to begin using system
- Maximizes the capital investment made by Oakland County

Citizen Impact

- Public Access Portal provides “one stop shopping” experience
- Government structure becomes easier to access and more transparent (horizontally and vertically)
 - Reduces jurisdictional and organizational complexity
- Improves government service offerings through accurate, consistent measurement and analysis of service
- Tax dollars spent once

Question / Answer

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