

Asset Management Systems: Build it and they will come... Or will they?

Southeast Minnesota GIS User's Group
Winter 2019 Meeting at Rochester Public Utilities



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Department of Public Works

Overview

- History of Asset Management at RPW
- Selection Process for Work and Asset Management
- ElementsXS by Novotx, Inc.
- Multiple Components Working Together

- Demonstration
- Departmental/Field usage

- Challenges and Successes
- Next Steps

- Questions



History of Asset Management at RPW

- Paper Lists, Paper Forms
- Cartegraph – Sign Maintenance
 - Pre 2000
 - Tabular only
 - 60% signs mapped by 2014
- AS/400
 - Sewer Maintenance
 - Crash Records
- ICON Pavement Mgmt
 - Street Maintenance
- Cues – Granite XP – Sewer CCTV
 - Not tied to GIS initially
 - VHS Tapes, paper books
- Map Books
 - Highlighters and markups



Non-Assessment / City Owner Contract Project Information

Job/Project: 9370 9209-2-96 Desc/Subdivision: GOLFVIEW_EST_2

Project Description: BASIC CONSTRUCTION IN GOLFVIEW ESTATES 2ND SUB.

Date of Council Approval: 7 17 1996

Sections without Surveys

Start Date: 2/2/2011 Number of Years: 2

Name	From	To	Latest Survey Date
77th Street West	Rolling Hills Drive	Black Oak Drive	6/1/1999
77th Street West	Red Pine Court	Safari Court South	
77th Street West	660' W of Coachman Ro	Coachman Road	6/29/2004
Acorn Street	Greenleaf Drive North	Greenleaf Drive South	3/29/2007
Advantage Lane	Highway 149	End of Street	6/1/1999
120th Street West	Gun Club Road	Pine Lane	6/23/2006
120th Street West	Pine Lane	City Limits	3/29/2007
Albany Circle	1027	Cul De Sac	3/29/2007
Albany Circle	Camberwell Drive North	1027	3/29/2007
Alder Lane	Silver Bell Road	284' S of Silver Bell Roa	6/1/2003
Alder Lane	284' S of Silver Bell Roa	Dead End	6/1/2003
Aldrin Drive	Neil Armstrong Boulevar	318' W of Mike Collins D	6/1/1999
Alexander Road	Meadow View Road	United Stationers	6/14/2005
Alexander Road	United Stationers	Highway 13	6/14/2005
Aldrin Drive	318' W of Mike Collins D	Mike Collins Drive	6/1/1999



History of Asset Management at RPW

- Scanned Paper Forms, More Excel,
- Word Documents (word-bases)
- And Folders...

The screenshot shows a file explorer window with a left-hand pane displaying a directory tree. The tree includes folders for the years 2010 through 2018, labeled as '2010 Work Folder', '2015 Projects List', '2015 Work Folder', '2016 Project List', '2016 Work Folder', '2017 Work Folder', and '2018 Work Folder'. Below these are numerous project-specific folders, such as 'BLACK ROCK STORAGE', 'BLONDELL'S PARKING LOT', 'B'NAI ISRAEL SYNAGOGUE', 'BOULDER RIDGE 3RD', 'BOULDER RIDGE 4TH', 'BOULDER RIDGE 5TH', 'BOULDERS APARTMENTS', 'BOWMAN DOOR SOLUTIONS', 'BOWMAN TOOL PARK', 'BOYS AND GIRLS CLUB', 'BROADWAY CORNER', 'BUCKEYE APARTMENT', 'BURGER KING MARIOTT', 'CANADIAN HONKERS', 'CANAL PLACE SE', 'CARDINAL OF MINNESOTA', 'CARIBOU COFFEE (CITY)', 'CARIBOU COFFEE @ F...', 'CARIBOU COFFEE PAF...', 'CARPENTERS TRAINING', 'CARS AND CREDIT 3R...', 'CASCADE APARTMENTS', and 'CASCADE CREEK REDUCED'. To the right of the tree, a list of files with their modification dates is visible, including '5/18/2015 9:15 AM', '1/17/2017 8:20 AM', '12/3/2010 3:08 PM', '10/7/2011 3:01 PM', '12/1/2010 3:51 PM', '4/27/2007 9:42 AM', '1/17/2017 10:32 AM', and '12/13/2017 4:12 PM'.

The main pane shows a folder named 'DAILY WORK LOGS' with a sub-folder 'DAILY WORK LOG'. Inside this sub-folder, there is a table listing files with their names and modification dates:

Name	Date modified
~\$Sept 2018.xlsx	9/17/2018 7:12 AM
Copy of result0.xlsx	8/28/2018 9:19 AM
Daily Work Log Template.xlsx	10/23/2015 8:50 AM
February 2017.xlsx	2/27/2017 3:28 PM
January 2018.xlsx	1/31/2018 8:25 AM
July 2017.xlsx	3/13/2017 2:50 PM
June 2018.xlsx	6/29/2018 7:00 AM
May 2018.xlsx	5/31/2018 7:00 AM
November 2017.xlsx	11/30/2017 7:20 AM
Sept 2018.xlsx	9/28/2018 6:44 AM

- Reporting....?



History – Choosing the appropriate AMS

- Criteria:

- Web Applications
 - No Client Installs
- Any Device, Any OS
 - Users Determine Best Device
- GIS-Centric (Map First)
 - Common Operating Picture
- Single GIS Repository
 - no duplication of data
- Consolidate Silos
 - Retire Access DBs ASAP
 - Enterprise DB (SQL)
- Customizable Workflows
 - Best Practice (or not!!)
 - Standardized processes are built in
- Office And Field Editing
 - Where appropriate
- Unlimited Asset Types
 - Ability to grow as needs change
- Application Program Interface (API)
 - Development for integration
 - Future Proof?



History – Choosing the appropriate AMS



Cartegraph



Cityworks[®]
Empowering GIS



Accela



elements^{xs}



ORACLE[®]

JD EDWARDS
ENTERPRISEONE



Jira Software

- Research and Considerations:
 - Regional Survey of AMS
 - 50+ respondents
 - Survey of our own systems
 - Existing Systems First
 - Best Value Procurement
 - What we Think We Want
 - Resource Limited
 - Financial
 - Staffing
 - Administration and Council support 2013



History – Choosing the appropriate AMS



UNMATCHED FLEXIBILITY.

Elements allows you to create your own workflow processes and tailor the user experience to the unique needs of your organization without custom code.

This means you're not restricted to how we believe you should do business; Elements XS3 is flexible enough to adapt to your unique business requirements via:

- Unlimited custom fields
- Unlimited custom record layouts
- Unlimited custom workflow processes
- Automated user-defined follow up events and triggers
- Data analysis and calculations on user-defined custom data schemas

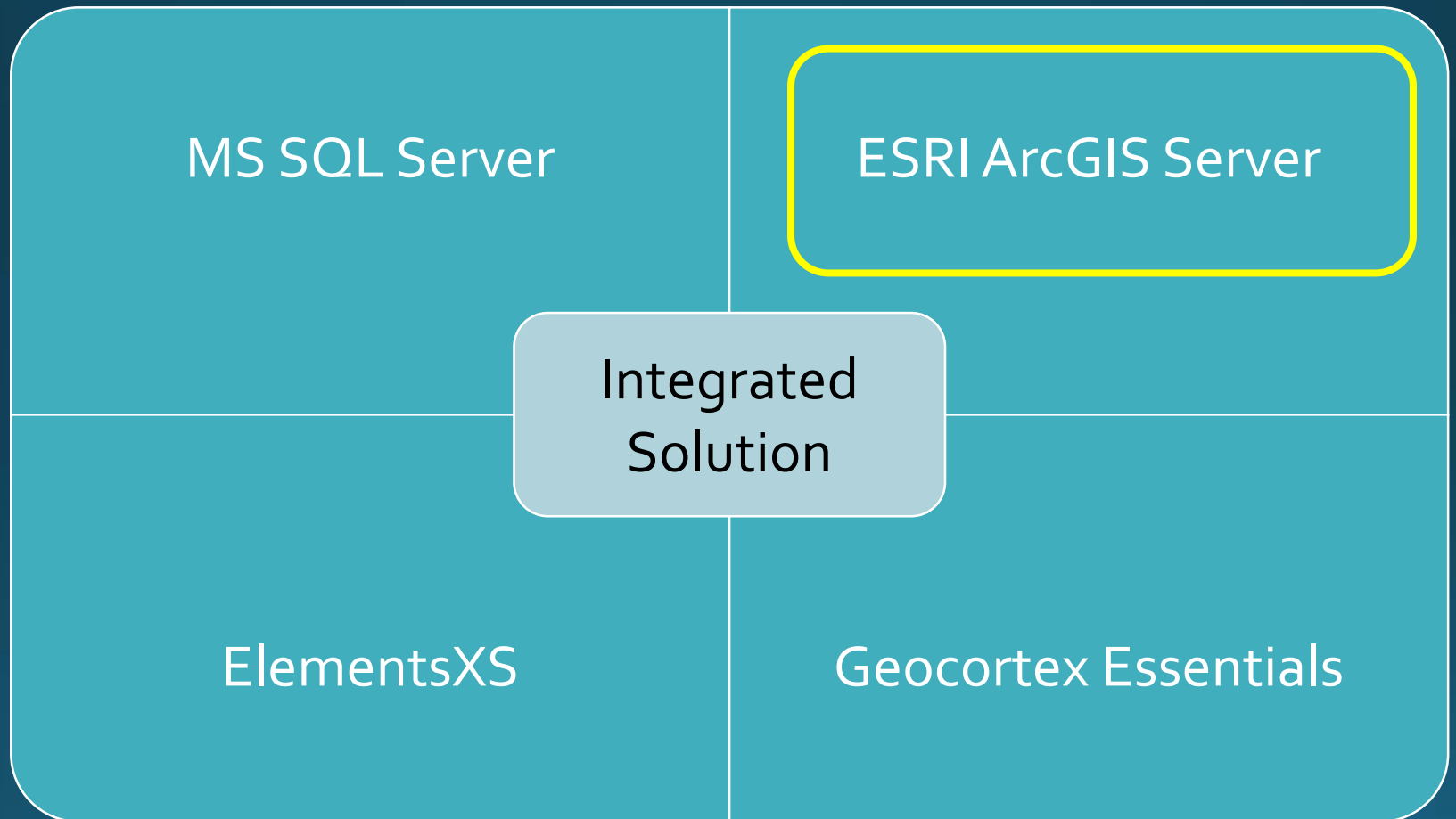
Each of the above is accomplished using Windows Workflow Foundation technology and our Dynamic Data management system, found only in Elements.

Don't worry, all custom data is stored nicely in SQL and can be easily queried for reports and spatial analysis.

History – Choosing the appropriate AMS



Multiple Components Working Together



Multiple Components Working Together

- Enterprise Geodatabase
 - Preparing The Data to Publish Web Services

The screenshot displays the ArcGIS REST Services Directory for the 'elements/BaseBottom (MapServer)' service. The page is organized into several sections:

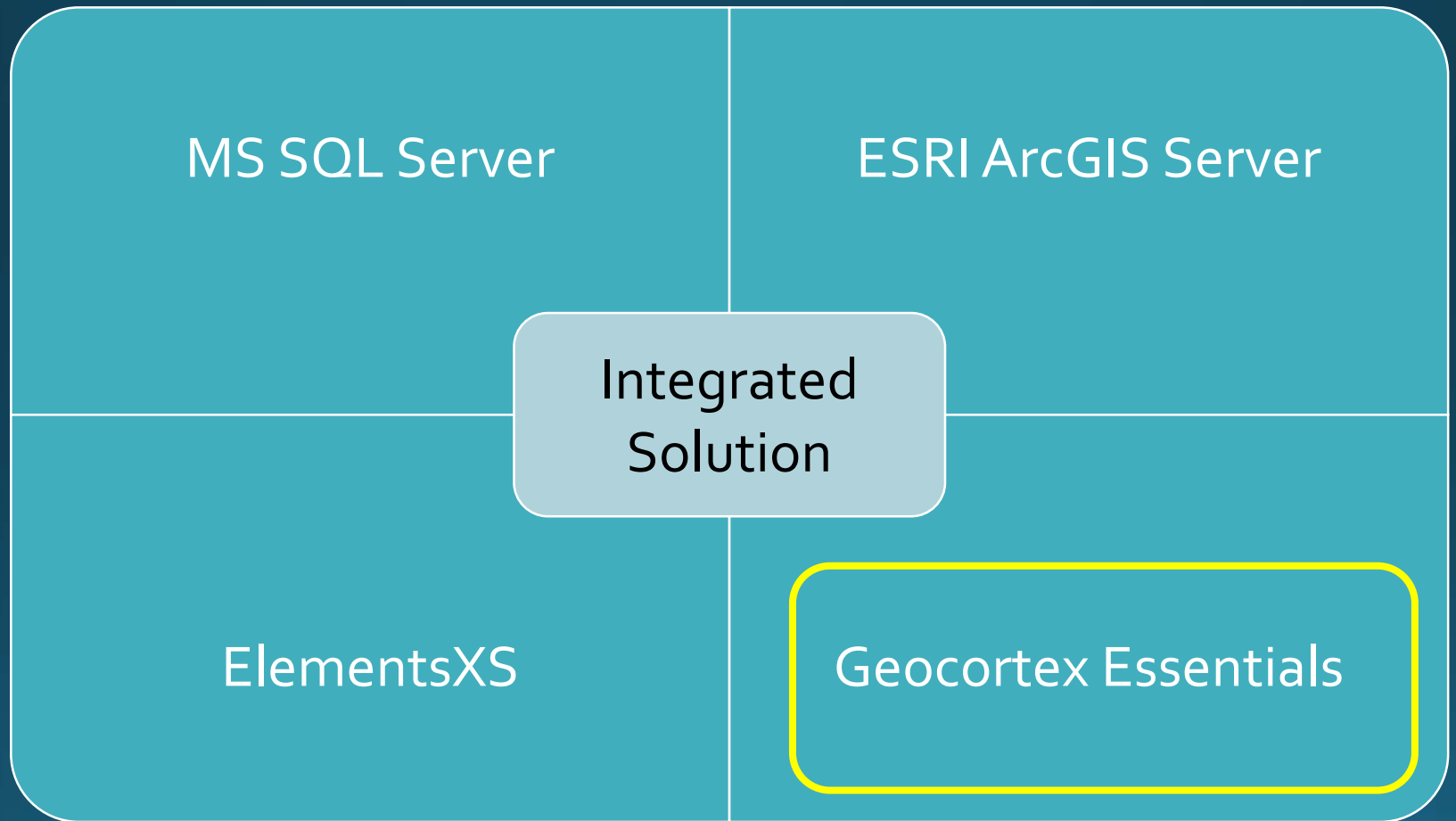
- Home > services > elements > BaseBottom (MapServer)**
- JSON | SOAP**
- elements/BaseBottom (MapServer)**
- View In:** [ArcGIS JavaScript](#), [ArcGIS.com Map](#), [Google Earth](#), [A](#)
- View Footprint In:** [ArcGIS.com Map](#)
- Service Description:** Base Reference Layers Rochester
- Map Name:** Layers
- Legend**
- All Layers and Tables**
- Layers:**
 - [Common Points of Interest](#) (0)
 - [Emergency Services](#) (1)
 - [Rochester Area Schools](#) (2)
 - [Railroad System](#) (3)
 - [Railroad Crossings](#) (4)
 - [Railroad Lines](#) (5)
 - [Building Outlines](#) (6)
 - [Impervious](#) (7)
 - [Water](#) (8)
 - [Parklands](#) (9)
 - [Curb](#) (10)
 - [City Limits](#) (11)
 - [City Quadrants](#) (12)
- Description:**
- Copyright Text:** Base Reference Layers Rochester

The right side of the screenshot shows a scrollable list of services, including:

- elements/batchreeval (MapServer)
- elements/boundaries (MapServer)
- elements/developments (FeatureServer)
- elements/developments (MapServer)
- elements/Downtown_Parking (MapServer)
- elements/elements_forestry_batch_service (MapServer)
- elements/fiber (MapServer)
- elements/FloodControl (MapServer)
- elements/forestry_enf_features (FeatureServer)
- elements/forestry_enf_features (MapServer)
- elements/forestry_trees (FeatureServer)
- elements/forestry_trees (MapServer)
- elements/forestry (FeatureServer)
- elements/forestry (MapServer)
- elements/Intersections (MapServer)
- elements/mutcd (MapServer)
- elements/operational (FeatureServer)
- elements/operational (MapServer)
- elements/parcels (MapServer)
- elements/parkingspaces (MapServer)
- elements/park (MapServer)
- elements/pavementmanagement (MapServer)
- elements/pavementmarking (MapServer)
- elements/PermitConflictLayers (MapServer)
- elements/qAllTasksByCompletion (MapServer)
- elements/qForestry_WorkTasks (MapServer)
- elements/qIntersections (MapServer)
- elements/ql_MyLast (MapServer)
- elements/ql_OpenTasks_Sanitary (MapServer)
- elements/ql_OpenTasksNew (MapServer)
- elements/ql_SanitaryDynamic (MapServer)
- elements/ql_SanitaryDynamicTableJoin (MapServer)
- elements/qSidewalkRepair (MapServer)
- elements/qlSpringFlooding (MapServer)
- elements/qlStormwaterTasks (MapServer)
- elements/qlStreetsAllTasks (MapServer)
- elements/qlStreets (MapServer)
- elements/qProjects (MapServer)
- elements/qRoadRestrictions (MapServer)
- elements/qSanitaryTV (MapServer)
- elements/qSubsetOfTasks (MapServer)
- elements/Query_Layers (MapServer)
- elements/qUserLast (MapServer)
- elements/ResidentialPermitParking (MapServer)
- elements/retired_parcels (MapServer)
- elements/roadbase_rpw (MapServer)
- elements/roadbase (MapServer)
- elements/roads (MapServer)
- elements/ROP125_Loc_Composite (GeocodeServer)
- elements/ROWPermitChecks (MapServer)
- elements/ROWpermitting (FeatureServer)
- elements/ROWpermitting (MapServer)
- elements/rpu_hydrant (MapServer)
- elements/sanitary_EXS_Editable (FeatureServer)
- elements/sanitary_EXS_Editable (MapServer)
- elements/sanitary (MapServer)
- elements/Sidewalk2018 (FeatureServer)
- elements/Sidewalk2018 (MapServer)
- elements/SidewalkMaintenance (FeatureServer)
- elements/SidewalkMaintenance (MapServer)
- elements/signs_test (FeatureServer)
- elements/signs_test (MapServer)
- elements/SnowResponsibility (MapServer)

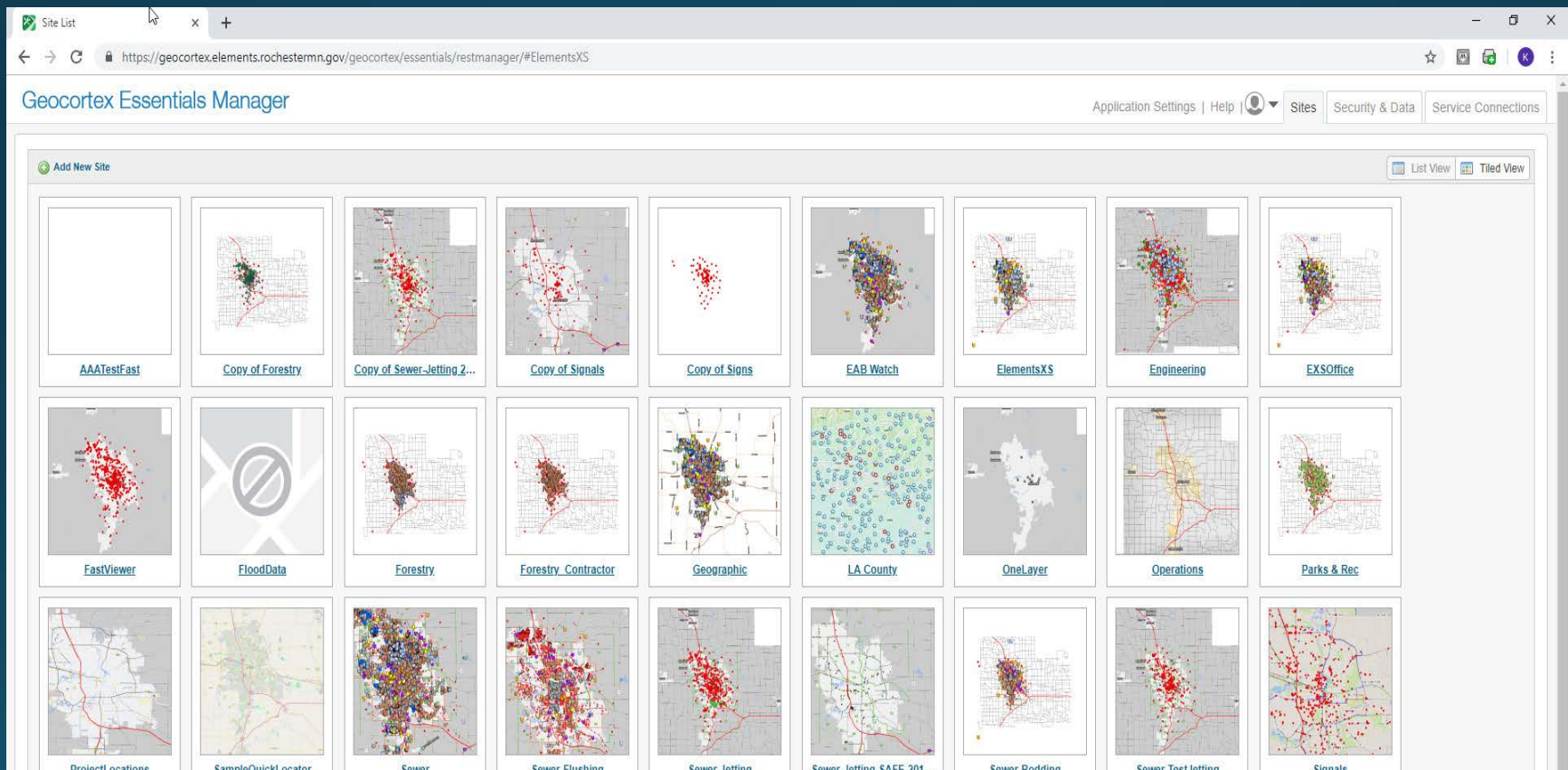


Multiple Components Working Together



Multiple Components Working Together

- Geocortex Essentials
 - Building “Sites” and “Viewers”
 - Similar to AGOL “Maps” and “Apps”



Multiple Components Working Together

- Geocortex Essentials
 - Building “Sites” and “Viewers”



Multiple Components Working Together

- Geocortex Essentials
 - Building “Sites” and “Viewers”

Geocortex Essentials Manager

Configure Site: *ElementsXS*

Map > Layer: All Open Tasks

Apply Changes

Map Service: qOpenTasks

Layer Name: All Open Tasks

Layer ID: 0

Feature Type: Point

Visible:

Display Name: All Open Tasks

Description:

Layer Icon URI:

Feature Label: {TaskType}

Feature Description: Priority: {Priority}
Scheduled End: {ScheduledEndDate}
Status: {Status}
Assigned To: {TaskAssignmentUsers} {TaskAssignmentCrews}
+
href="https://elements.rochestermn.gov/App/WorkOrders/Default_WM_ServiceOrders_Task_EditFI?targeta=">Load Task in Elements

Feature Long Description: Priority: {Priority}
Scheduled End: {ScheduledEndDate}
Status: {Status}
Assigned To: {TaskAssignmentsUserFirstName}
{TaskAssignmentsUserLastName}
+
href="https://elements.rochestermn.gov/App/WorkOrders/Default_WM_ServiceOrders_Task_EditFI?targeta=">Load Task in Elements

Feature Zoom Scale:

Feature Border Color:

Feature Border Width:

Edit Feature Description

Type the value in the text box below. You can insert replacement tokens to dynamically substitute for data at run-time.

Replacement Token: ServiceOrderDetailID

Insert

Feature Description: **B** **I** **U** **A** **X** **X'** **T** **T'** **T₂** **T₃** **T₄** **T₅** **T₆** **T₇** **T₈** **T₉** **T₁₀** **T₁₁** **T₁₂** **T₁₃** **T₁₄** **T₁₅** **T₁₆** **T₁₇** **T₁₈** **T₁₉** **T₂₀** **T₂₁** **T₂₂** **T₂₃** **T₂₄** **T₂₅** **T₂₆** **T₂₇** **T₂₈** **T₂₉** **T₃₀** **T₃₁** **T₃₂** **T₃₃** **T₃₄** **T₃₅** **T₃₆** **T₃₇** **T₃₈** **T₃₉** **T₄₀** **T₄₁** **T₄₂** **T₄₃** **T₄₄** **T₄₅** **T₄₆** **T₄₇** **T₄₈** **T₄₉** **T₅₀** **T₅₁** **T₅₂** **T₅₃** **T₅₄** **T₅₅** **T₅₆** **T₅₇** **T₅₈** **T₅₉** **T₆₀** **T₆₁** **T₆₂** **T₆₃** **T₆₄** **T₆₅** **T₆₆** **T₆₇** **T₆₈** **T₆₉** **T₇₀** **T₇₁** **T₇₂** **T₇₃** **T₇₄** **T₇₅** **T₇₆** **T₇₇** **T₇₈** **T₇₉** **T₈₀** **T₈₁** **T₈₂** **T₈₃** **T₈₄** **T₈₅** **T₈₆** **T₈₇** **T₈₈** **T₈₉** **T₉₀** **T₉₁** **T₉₂** **T₉₃** **T₉₄** **T₉₅** **T₉₆** **T₉₇** **T₉₈** **T₉₉** **T₁₀₀** **T₁₀₁** **T₁₀₂** **T₁₀₃** **T₁₀₄** **T₁₀₅** **T₁₀₆** **T₁₀₇** **T₁₀₈** **T₁₀₉** **T₁₁₀** **T₁₁₁** **T₁₁₂** **T₁₁₃** **T₁₁₄** **T₁₁₅** **T₁₁₆** 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Multiple Components Working Together

- Geocortex Essentials
 - Building “Sites” and “Viewers”

The screenshot displays the Geocortex Essentials Manager web application. The browser address bar shows the URL: <https://geocortex.elements.rochester.nv.gov/Geocortex/Essentials/RestManager/Html5Viewer/Viewer/Edit?siteID=ElementsXS&viewerID=HTML5#view=ToolbarSectionView>. The page title is "Geocortex Essentials Manager".

The interface is divided into several sections:

- Left Sidebar:** A navigation menu for "Configure Site: ElementsXS" with categories like Site, Viewer Info, Application, Accessibility, Look and Feel, I Want To Menu, Context Menus, Measurement, Map, Map Widgets, Offline, Geolocation, Home Panel, Instant Search, Layer List, Pushpins, **Toolbar** (highlighted), Tool Behavior, Optimizer Integration, Analytics Integration, Collaboration, and Workflow 5.
- Header:** Includes "Application Settings | Help" and "Site: ElementsXS | Security & Data | Service Connections".
- Main Content Area:**
 - Viewers > HTML5 > Toolbar:** The current view.
 - Configure Simultaneously:** Tabs for Desktop, Tablet, and Handheld.
 - Active Toolbar:** Radio buttons for "Tabbed Toolbar" (selected) and "Compact Toolbar". A preview shows a toolbar with three tabs: "Tool Tab 1", "Tool Tab 2", and "Tool Tab 3".
 - Open Toolbar by Default:** A checkbox that is currently unchecked.
 - Show tabbed toolbar labels:** A checked checkbox.
 - Buttons:** "Load Preset Toolbar..." and "Remove Toolbar".
 - Available Tools:** A list of tools categorized into Global Tasks (Open, Save, Save as), Basic Tools (Home, Identify, Identify/ToolControlRegion), and Navigation (Pan, Zoom In, Zoom Out, Initial View, Full Extent, Previous Extent).
 - Configured Toolbar:** A list of tools currently in the toolbar, including Navigation (Pan, Zoom In, Zoom Out, Initial View, Full Extent, Previous Extent, Next Extent, Bookmarks, Linked Maps, Query) and Basic Tools (Home).

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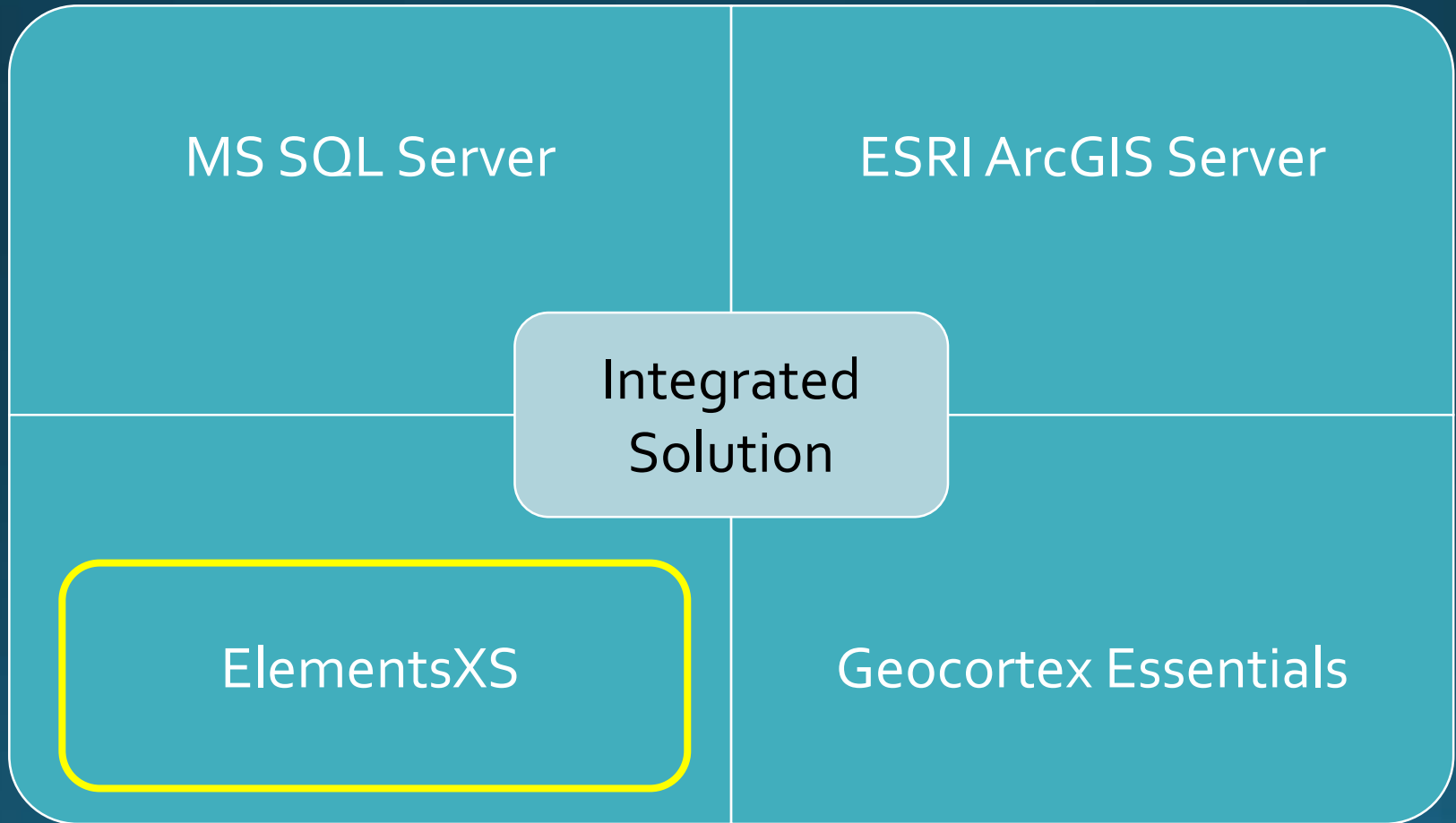
Multiple Components Working Together

- Geocortex Essentials
 - Workflow Designer

The screenshot displays the Geocortex Essentials Workflow Designer interface. The main workspace shows a flowchart starting with a 'Start' node, followed by 'Type and Applicant Collect', a decision diamond, 'Process to varPermitType', another decision diamond, 'Locate Address/Pin', a third decision diamond, 'Obstruction Feature?', and finally 'Obstruction Feature Creati...'. The 'Properties' pane on the right shows the configuration for the 'Locate Address/Pin' activity, including 'Display Name' and 'ValidateUnconnectedNodes'. The 'Document Outline' pane on the right shows the hierarchical structure of the workflow, including 'ActivityBuilder', 'Sequence', 'Flowchart', and 'StartNode'. The 'Activities' pane on the left lists various activities available for use in the workflow.



Multiple Components Working Together



Multiple Components Working Together

- ElementsXS Configuration
 - Admin Tools

The screenshot shows the 'EXS Admin Tools' interface for the City of Rochester. The 'Mapping' tab is selected, displaying a table of layers. Each row includes a layer name, its REST URL, an ID, and a status indicator (a red 'X').

Layer	REST URL	ID	Status
Address Points	https://rpwgis.elements.rochestermn.gov/arcgis/rest/services/elements/addresspoints_rpw/MapServer/0	29	✗
City Park Lands	https://rpwgis.elements.rochestermn.gov/arcgis/rest/services/elements/park/MapServer/6	12	✗
County Parcels	https://gweb01.co.olmsted.mn.us/arcgis/rest/services/AOSeeker/MapServer/10	27	✗
Curb Ramp Defects	https://rpwgis.elements.rochestermn.gov/arcgis/rest/services/elements/SidewalkMaintenance/MapServer/1	37	✗
Defected Sidewalk Locations	https://rpwgis.elements.rochestermn.gov/arcgis/rest/services/elements/Sidewalk2018/MapServer/0	43	✗
Developments	https://rpwgis.elements.rochestermn.gov/arcgis/rest/services/elements/developments/MapServer/0	25	✗
Intersections	https://rpwgis.elements.rochestermn.gov/arcgis/rest/services/elements/qlIntersections/MapServer/0	35	✗
Operational Layer (Points)	https://rpwgis.elements.rochestermn.gov/arcgis/rest/services/elements/operational/MapServer/0	32	✗
Parcels	https://rpwgis.elements.rochestermn.gov/arcgis/rest/services/elements/parcels/MapServer/0	5	✗
Parking Spaces	https://rpwgis.elements.rochestermn.gov/arcgis/rest/services/elements/ROWPermitChecks/MapServer/0	41	✗
Parks	https://rpwgis.elements.rochestermn.gov/arcgis/rest/services/elements/park/MapServer/0	6	✗

Page 1 of 1 (42 items) | Page size: 50



Multiple Components Working Together

- ElementsXS Configuration
 - Admin Tools – Map Layers

The screenshot shows the 'Edit Division' configuration window for the 'Sanitary Sewer' division. The sidebar on the left lists various divisions, with 'Sanitary Sewer (ID: 12)' selected. The main area shows a tree view of configuration options, with 'Service Orders' selected. A table of task types is displayed, with the 'Add Task Type' button highlighted by a red arrow. The table lists various task types and their configurations.

TaskType	Dynamic Form	Document Type	ID	
Adjust Casting	<input type="checkbox"/>		1188	✗
Chemical Root Treatment	<input type="checkbox"/>		1401	✗
City Owner Contract	<input type="checkbox"/>		1292	✗
Clear Roots	<input checked="" type="checkbox"/>	Jet Cleaning Details	1295	✗
Constructed Sewer Inspection	<input type="checkbox"/>		43	✗
Dead End Flushing	<input type="checkbox"/>		1293	✗
Defer Jet Cleaning	<input type="checkbox"/>		1253	✗
Easement Clearing	<input type="checkbox"/>		1215	✗
Flushing	<input type="checkbox"/>		191	✗



Multiple Components Working Together

- ElementsXS Configuration
 - Admin Tools – Service Order Task Types

The screenshot displays the 'Edit Division' window in the ElementsXS Administration Tools. The left sidebar shows the 'City Of Rochester' navigation menu with 'Sanitary Sewer (ID: 12)' selected. The main content area is divided into a tree view on the left and a table on the right. The tree view shows the hierarchy: Division (Sanitary Sewer) > Core Objects > Work Management > Service Orders. The table lists various task types with their dynamic form and document type settings.

TaskType	Dynamic Form	Document Type	ID	
Adjust Casting	<input type="checkbox"/>		1188	✗
Chemical Root Treatment	<input type="checkbox"/>		1401	✗
City Owner Contract	<input type="checkbox"/>		1292	✗
Clear Roots	<input checked="" type="checkbox"/>	Jet Cleaning Details	1295	✗
Constructed Sewer Inspection	<input type="checkbox"/>		43	✗
Dead End Flushing	<input type="checkbox"/>		1293	✗
Defer Jet Cleaning	<input type="checkbox"/>		1253	✗
Easement Clearing	<input type="checkbox"/>		1215	✗
Flushing	<input type="checkbox"/>		191	✗

Page 1 of 1 (47 items) Page size: 100



Multiple Components Working Together

- ElementsXS Configuration
 - Admin Tools – Templates (Setup)

The screenshot displays the 'Edit Division' window in the ElementsXS Administration Tools. The interface is divided into several sections:

- Left Panel (City of Rochester):** A list of departments and divisions. 'Sanitary Sewer (ID: 12)' is selected and highlighted in blue. A red arrow points from this selection to the 'Templates' option in the main menu.
- Main Menu:** A tree view of administrative options. 'Templates' is highlighted in blue, with a red arrow pointing to it from the left panel.
- Type Section:** A list of asset types. 'Location' is highlighted in blue, with a red arrow pointing to it from the 'Specific To Asset or Location' callout box. Other types include Customer, Service, Asset, GIS Asset, and Facility.
- Categories Section:** A list of categories. '1 - Customer Calls' and '2 - Construction Inspection' are visible. A red box highlights this section, and a callout box below it states 'Becomes Service Order Menus'.
- Templates Section:** A list of templates. '1 - Sewer Backup in Business...', '1 - Sewer Backup in Home (46)', '2 - Sewer Overflow (1268)', '3 - Meter Alarm (1267)', '4 - Manhole Cover Off / Nois...', '5 - Sewer Smell (51)', '6 - Sewer Locate (54)', and '7 - Sewer Tap (53)' are listed.

A 'Close' button is located at the bottom right of the window.



Multiple Components Working Together

- ElementsXS Configuration
 - Admin Tools – Templates (User Interface)

The screenshot displays the ElementsXS Administration Tools interface. The browser address bar shows the URL: https://elements.rochestermn.gov/App/LandManagement/Locations/Locations_Details.aspx?id=13199&dep=1. The page title is "elementsXS".

The main content area shows details for a location: "Location 1600 7 AVE NE ROCHESTER, MN 55906". Below this, there are fields for "Location No.: 13199", "Primary Address: 1600 7 AVE NE ROCHESTER, MN 55906", "Parcel No.: 002995", "Status: Active", and "Type: Parent".

The "Customers" section lists two primary customers: "MORRISSEY,ALEXANDRA K (36722)" and "MORRISSEY,KEVIN M (25294)".

The "HISTORY" tab is active, showing a table of service order tasks. A dropdown menu is open under the "Service Order" column, highlighting "1 - Sewer Backup in Home". A callout box points to this menu with the text "Templates Supply Flyout Service Order Menus".

Item	Type	Created	Division	Status	Created By
Tree Inspection (Standard) (T...	Service Order Task	03/30/2019 09:45:23	Forestry	Completed	Kevin Morrissey
tree needs to come down	1 - Customer Calls				
FORESTRY -00037562 (Routin...	2 - Construction Inspection		Forestry	Complete	Kevin Morrissey
Illegal Dumping (Task ID: 219583)	Service Order Task		Stormwater	Completed	Kevin Morrissey
test - and Closed!					



Multiple Components Working Together

- ElementsXS Configuration
 - Admin Tools – GIS Asset (User Interface)

The screenshot shows the ElementsXS Administration Tools interface. The browser address bar indicates the URL: https://elements.rochestermn.gov/App/Assets/GISAssets/GISAssets_Details.aspx?ElementsXS4%2050/0076&lid=4. The page title is "elements XS".

The main content area displays the following information:

GIS Asset Pipe ID : 25/0469 50/0076

Pipe ID : 25/0469 50/0076
Length: 433.4
Material: RCP

Reading From GIS - HTML Format configurable

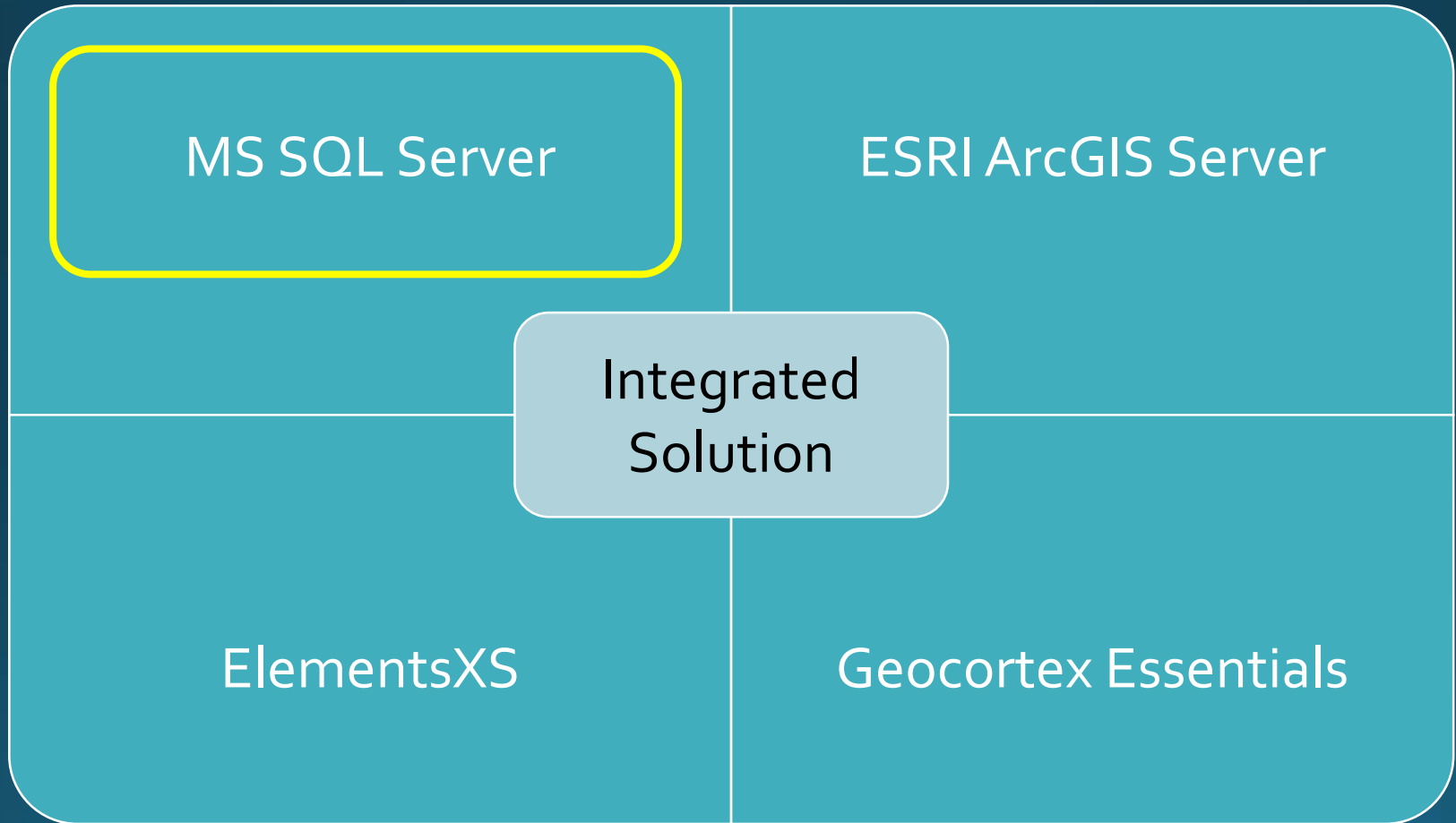
Reading From AMS records

The interface includes tabs for HISTORY, ATTACHMENTS, and EXTERNAL LINKS. Below these tabs, there are filters for "Show Service Order Tasks", "Service Order", "Documents", "Activity", "Phone Call", "Note", and "Email".

Item	Type	Date	Division	Status	Created By
Jet Cleaning (Siphon) (Task ID: 220621)	Service Order Task	03/28/2019 09:54:21	Sanitary Sewer	7 - Completed	Kevin Nelson
Inspection (Monthly) (Task ID: 220620)	Service Order Task	03/28/2019 09:53:36	Sanitary Sewer	7 - Completed	Kevin Nelson
Inspection (Monthly) (Task ID: 219605)	Service Order Task	03/14/2019 09:29:06	Sanitary Sewer	7 - Completed	Derek Ohm
Inspection (Monthly) (Task ID: 218317)	Service Order Task	01/31/2019 03:02:41	Sanitary Sewer	7 - Completed	Derek Ohm
Inspection (Monthly) (Task ID: 213404)	Service Order Task	12/21/2018 08:10:04	Sanitary Sewer	7 - Completed	Kevin Nelson
Inspection (Monthly) (Task ID: 208364)	Service Order Task	11/30/2018 08:05:39	Sanitary Sewer	7 - Completed	Derek Ohm
Inspection (Monthly) (Task ID: 203900)	Service Order Task	10/31/2018 02:52:19	Sanitary Sewer	7 - Completed	System Administrator



Multiple Components Working Together



Multiple Components Working Together

- Publishing AMS Specific Map Services
 - Query Layers – “Open Tasks”

1 Every Elements Task Record Stores the point\centroid, so all Tasks can be mapped via Query Layer (Spatial View) without additional joins

2 Dynamic (Custom Fields) per Task Type

3 Where Clause to Isolate Record Types

4 For Each Asset, Return the most recent Task details (best available Status, Condition, Result, Date, etc.)

```

CREATE VIEW [dbo].[roch_Sanitary RoutineSiphonInspection] AS
SELECT TOP 1 WITH TIES
TaskID
, GISAssetNo
, ScheduledStartDate
, ScheduledEndDate
, ActualStartDate
, ActualEndDate
, Status
, GeoShape
, ServiceOrderDetailTypeID
, E.EntryValuesXML.value('/ArrayOfEntryValue/EntryValue[FieldName='InspectionResults']/StringValue/text())[1]', 'nvarchar(max)')
FROM rpt_WM ServiceOrderTasks WithAssignments_Grouped T
LEFT OUTER JOIN WM DynamicData Entry E ON T.SchemaDocGuid = E.EntryGuid
WHERE GISFileID = 4 AND TaskTypeID = 1297 AND ServiceOrderDetailTypeID=146
ORDER BY
ROW_NUMBER() OVER(PARTITION BY GISAssetNo ORDER BY ScheduledStartDate DESC);
GO
    
```

TaskID	GISAssetNo	ScheduledStartDate	ScheduledEndDate	ActualStartDate	ActualEndDate	Status	GeoShape	ServiceOrderDetailTypeID	InspectionResults
20	220624 50/0013 50/0014	2019-03-28 09:56:24.673	2019-03-31 09:56:24.673	2019-03-28 09:56:52.157	2019-03-28 09:56:53.073	7 - Completed	0x51950100010C000000E014F322410000000D1F30441	146	Clear
21	219608 50/0124 50/0519	2019-03-14 09:31:59.827	2019-03-17 09:31:59.827	2019-03-14 09:32:31.760	2019-03-14 09:32:32.907	7 - Completed	0x51950100010C0000004076032341000000C0C6F10441	146	Clear
22	220627 50/0519 25/0482	2019-03-28 09:57:48.000	2019-03-31 09:57:48.000	2019-03-28 09:58:14.007	2019-03-28 09:58:14.730	7 - Completed	0x51950100010C000000A038032341000000C022F30441	146	Clear
23	220645 55/0028 50/0012	2019-03-28 10:33:56.183	2019-03-31 10:33:56.183	2019-03-28 10:34:43.837	2019-03-28 10:34:45.207	7 - Completed	0x51950100010C000000A054EA2241000000A0A68F0441	146	One Side Plugged
24	220681 55/0275 55/0274	2019-03-28 13:50:26.247	2019-03-31 13:50:26.247	2019-03-28 13:50:58.533	2019-03-28 13:50:59.437	7 - Completed	0x51950100010C0000002058E82241000000E073CF0341	146	Clear



Multiple Components Working Together

- Publishing AMS Specific Map Services
 - Query Layers – “Open Tasks”

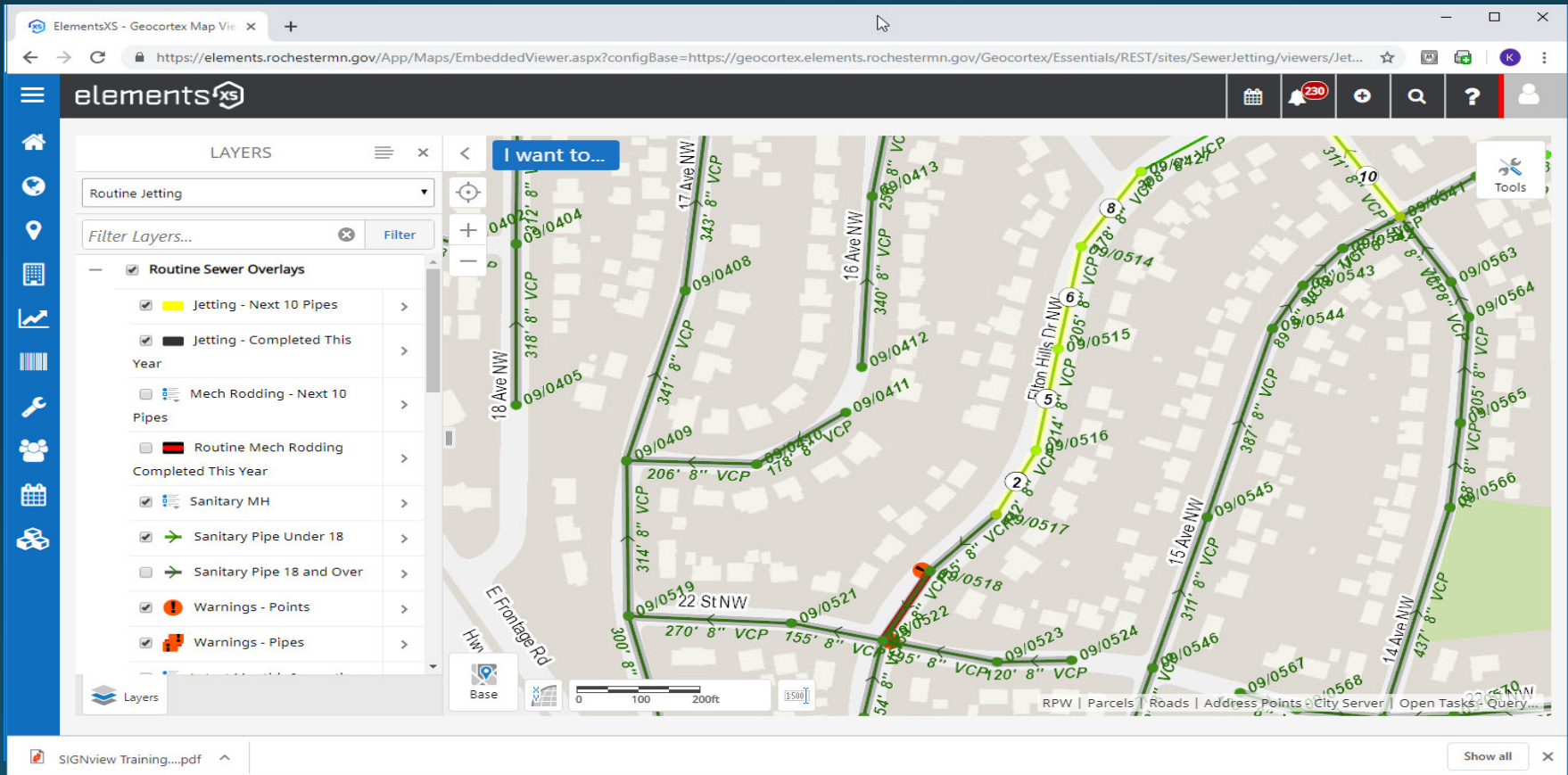
The screenshot displays the ArcMap interface with a map showing inspection points categorized by overall rating: Good (green), Fair (yellow), and Poor (red). The Table of Contents on the left shows the 'Latest Inspection Details' layer. Below the map, a table titled 'Completed Inspections' provides detailed data for each task.

TaskID	ServiceOrderDetailID	CreatedByID	DateCreated	ScheduledStartDate	ScheduledEndDate	ActualStartDate	ActualEndDate	Priority	Status	TaskType	Completed	IsWorkItem Type	ServiceOrderNumber	ServiceOrderID	IsLocation
200381	192818	1	10/22/2018 8:16:51 AM	10/22/2018 8:16:51 AM	11/21/2018 8:16:51 AM	11/6/2018 12:58:21 PM	11/6/2018 12:59:21 PM	Medium	Completed	Inspection	1	1	STORMSWR-00002185	187698	0
200385	192822	1	10/22/2018 8:16:52 AM	10/22/2018 8:16:52 AM	11/21/2018 8:16:52 AM	11/6/2018 10:40:05 AM	11/6/2018 10:41:04 AM	Medium	Completed	Inspection	1	1	STORMSWR-00002189	187702	0
200309	192026	1	10/22/2018 8:16:53 AM	10/22/2018 8:16:53 AM	11/21/2018 8:16:53 AM	11/6/2018 10:29:26 AM	11/6/2018 10:30:14 AM	Medium	Completed	Inspection	1	1	STORMSWR-00002193	187706	0
200393	192830	1	10/22/2018 8:16:55 AM	10/22/2018 8:16:55 AM	11/21/2018 8:16:55 AM	11/6/2018 10:18:40 AM	11/6/2018 10:18:41 AM	Medium	Completed	Inspection	1	1	STORMSWR-00002197	187710	0
200397	192834	1	10/22/2018 8:16:56 AM	10/22/2018 8:16:56 AM	11/21/2018 8:16:56 AM	11/7/2018 10:37:30 AM	11/7/2018 10:38:23 AM	Medium	Completed	Inspection	1	1	STORMSWR-00002201	187714	0
200401	192838	1	10/22/2018 8:16:57 AM	10/22/2018 8:16:57 AM	11/21/2018 8:16:57 AM	11/7/2018 9:15:13 AM	11/7/2018 9:16:59 AM	Medium	Completed	Inspection	1	1	STORMSWR-00002205	187718	0

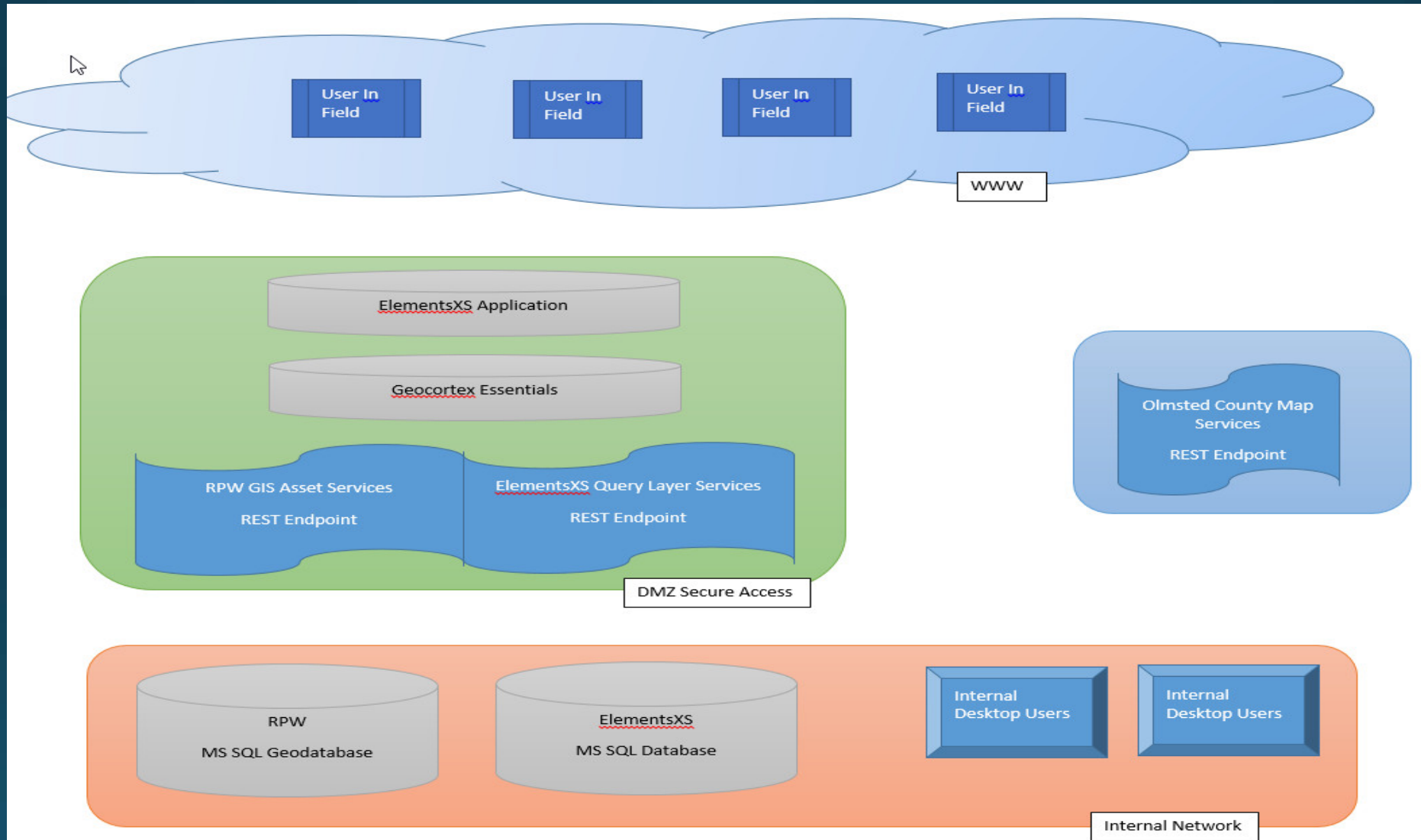


Multiple Components Working Together

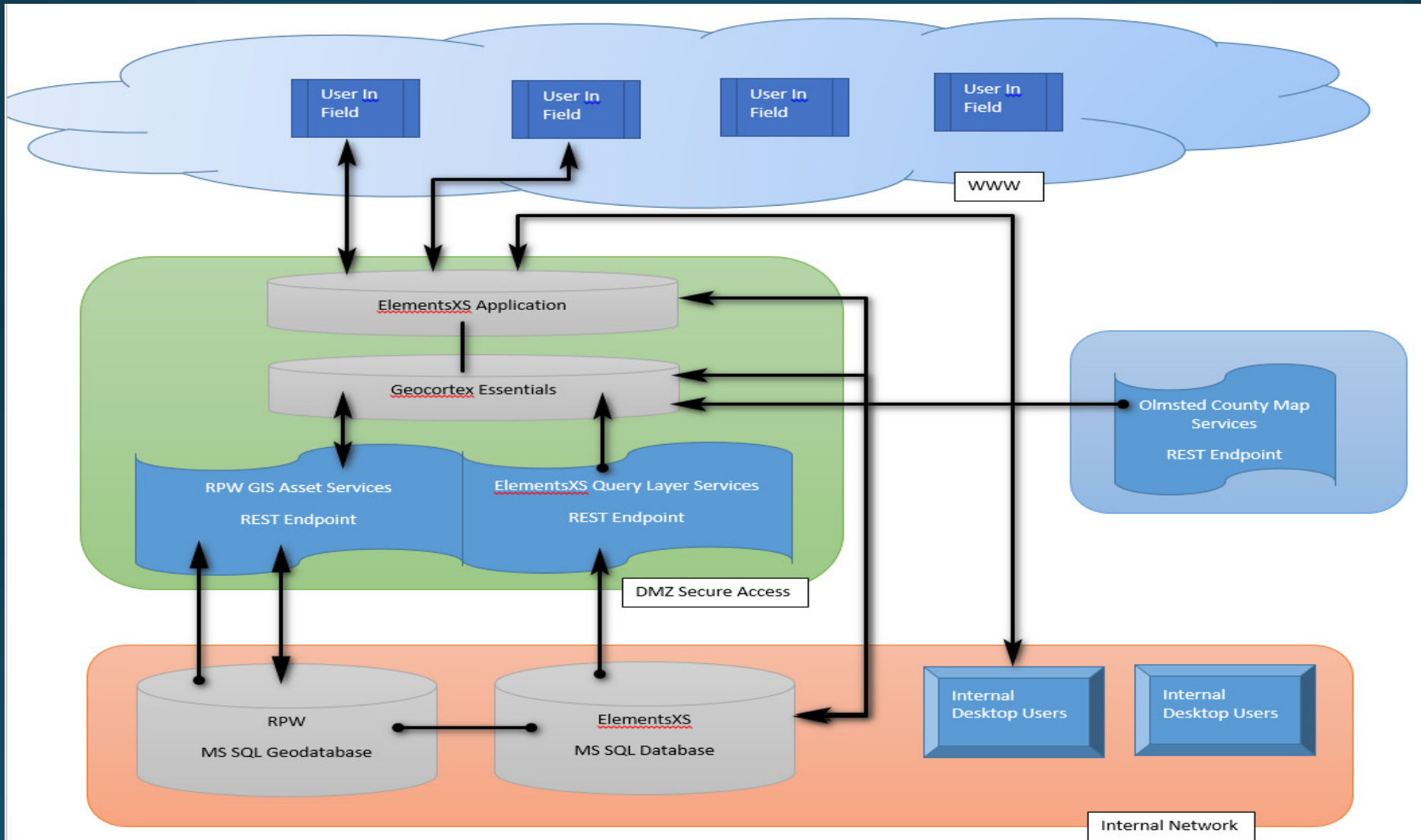
- Publishing AMS Specific Map Services
 - End User Map View



Multiple Components Working Together



Multiple Components Working Together



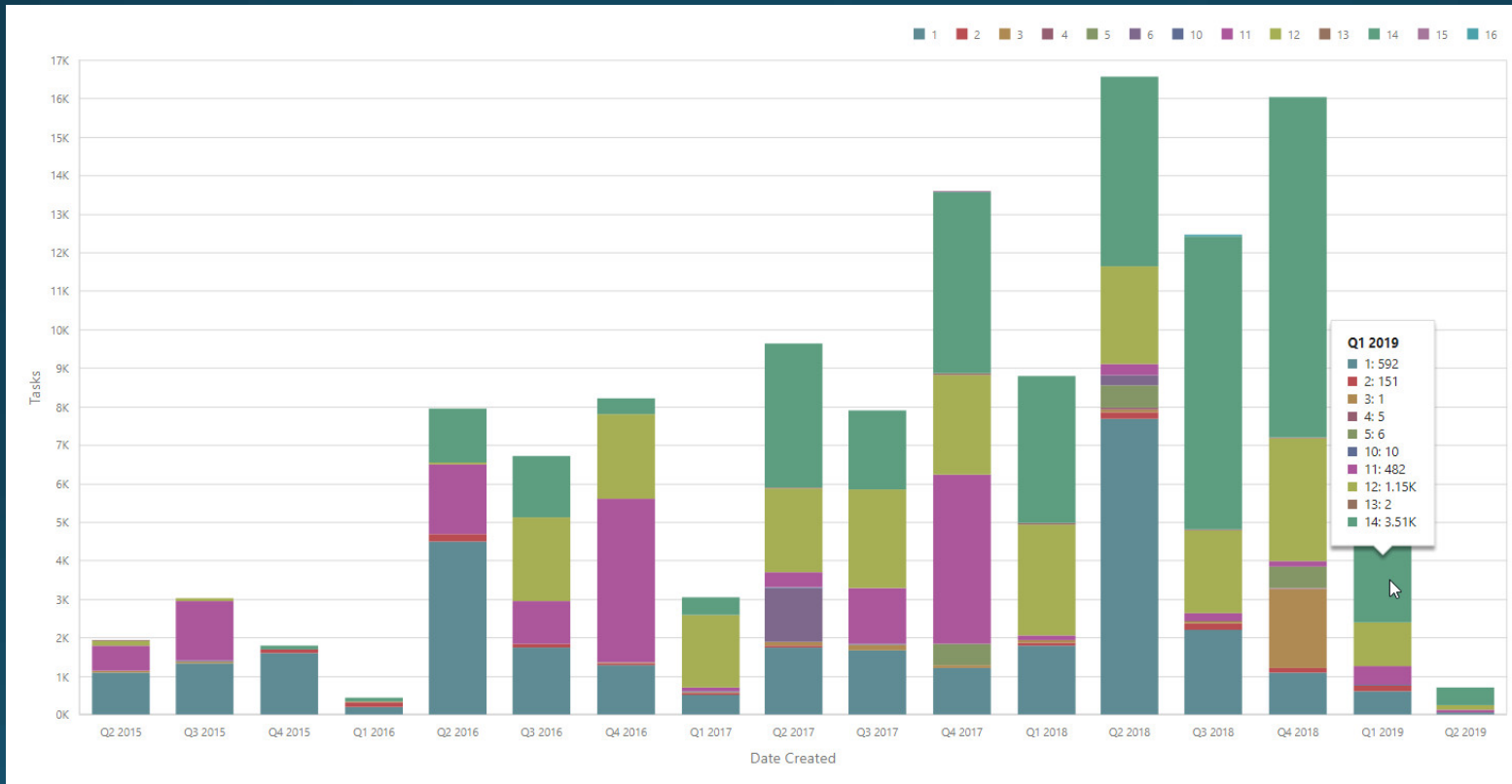
Departments and Usage

- Departments
 - Public Works
 - Parks and Forestry
- Full Adoption
 - Forestry - Call Logging, Inspection, Maintenance, EAB, Enforcement
 - Sanitary Sewer – Routine Maintenance, Inspections
 - Traffic Signals – Maintenance Calls
 - Crash Records - Historical Analysis
 - Signs – All Inventory and Maintenance
 - Street Maintenance – All Calls, Work Dispatch
- Dipping their toes
 - Storm Water – Complaint Tracking
 - Infrastructure – Sidewalk Inspections
 - Engineering - Project Tracking and Acceptance Inspections
 - Parks – Complaint Tracking
- Testing \ Development
 - Pavement Management – Annual Maintenance Planning
 - Right of Way Permitting
 - Gopher Locates
 - Public Service Announcements



Departments and Usage

- Over time, more processes are transitioned into Elements



2015

2016

2017

2018

2019



4/4/2019

Overview

- History of Asset Management at RPW
- Selection Process for Work and Asset Management
- ElementsXS by Novotx, Inc.
- Multiple Components Working Together

- Demonstration
- Departmental/Field usage

- Challenges and Successes
- Next Steps

- Questions



Demo

- Home screen:
- Task assignments
 - Set filters

The screenshot displays the mobile application interface for ElementsXS4. The top navigation bar includes a calendar icon, a notification bell with '0', a plus sign, a search icon, a question mark, and a user profile icon. The main content area features four summary cards: '1 ME' (person icon), '3 MY CREW(S)' (group icon), '5,820 OPEN TASKS' (folder icon), and '179,555 ALL TASKS' (folder icon). Below these are two filter sections: 'SHARED FILTERS' and 'PERSONAL FILTERS'. The 'SHARED FILTERS' section lists several categories with expandable arrows: Sanitary Sewer Division Overview, Storm Sewer Division Overview, Stormwater Division Overview, Parks Division Overview, Signals Division Overview, Stormwater Grading Plans - Under Review, Snow & Ice Control, and Forestry Tasks. The 'PERSONAL FILTERS' section shows a single 'Filter Test' item. At the bottom, a list of task categories is shown with corresponding counts in teal buttons: 'Recently Created in last 7 Days' (116), 'Completed in Past 7 Days' (98), 'Storm Cleanup' (2), 'Violation Follow Ups - Ready To Inspect' (3), 'Violation Follow Ups - Not Ready Yet' (61), and 'Open Tree Maint Tasks' (412).



Demo

All Open Tasks:

- Filter by list
- Query and sort

ElementsXS4

https://elements.rochestermn.gov/App/WorkManagemer

Forestry | Filter Applied: Violation Follow Ups - Not Ready Yet (All Open Tasks)

<input type="checkbox"/>	Service Order	Task Number	Task Type	Location Address	G
<input type="checkbox"/>	FORESTRY -00023987	Task #: 157127	Violation Follow Up - High Risk	160 INTERLACHEN LN NW ROCHESTER	
<input type="checkbox"/>	FORESTRY -00034479	Task #: 213770	Violation Follow Up - Diseased Tree	1500 HWY 52 N ROCHESTER	
<input type="checkbox"/>	FORESTRY -00032665	Task #: 209926	Violation Follow Up - Diseased Tree	2783 SHERBURN LN SW ROCHESTER	
<input type="checkbox"/>	FORESTRY -00031928	Task #: 208662	Violation Follow Up - Diseased Tree	704 SOUTHTOWN HEIGHTS CT SW ROCHESTER	
<input type="checkbox"/>	FORESTRY -00034325	Task #: 213271	Violation Follow Up - Diseased Tree	412 24 ST SW ROCHESTER	
<input type="checkbox"/>	FORESTRY -00032209	Task #: 209132	Violation Follow Up - Diseased Tree	25 WOOD LAKE DR SE ROCHESTER	
<input type="checkbox"/>	FORESTRY -00034487	Task #: 213800	Violation Follow Up - Diseased Tree		Pa 01 {A {S {S {P

Page 1 of 2 (61 items) < 1 2 > Page size: 50



4/4/2019

Demo

Map Viewers:

- Department, division, or task specific

The screenshot shows a mobile web browser displaying the 'ElementsXS4' application. The browser's address bar shows the URL <https://elements.rochestermn.gov/App/Default.aspx#>. The application interface features a dark blue header with a navigation menu on the left and a main content area on the right. The navigation menu lists various categories: Engineering, Signs, Forestry, Geographic, Parks and Rec, Performance Test, Sewer/Jetting Crew, Sewer (Testing), Signals, Stormwater, Streets, Subdrain, Testing, Traffic, Operations, and Sewer Flushing Crew. The main content area includes two task summary cards: '5,820 OPEN TASKS' and '179,555 ALL TASKS'. Below these cards is a 'PERSONAL FILTERS' section with a 'Filter Test' option.



Demo

Map Viewer:

- Layers Panel
- Toolbars
- Map View

Elements XS - Geocortex Viewer

Navigation Work Management Enforcement Tool Labels

LAYERS

Forestry

Filter Layers... Filter

- Enforcement
- Tree Care Insp
- Work Management
 - Open Forestry Tasks
 - Violation Follow Ups
 - Due
 - Jeff Haberman
 - Corey Schulte
 - Assigned
 - Ash Needed
 - Ash By Treatment
 - Open EAB Injection
 - Tasks
 - Completed EAB

Rochester

Basemaps 0 1 2mi 1:500



Demo

Map Viewer:

- Work Mgmt tools

The screenshot displays the Elements XS - Geocortex Viewer application interface. At the top, the browser address bar shows the URL <https://elements.rochestermn.gov/App/Maps/Embedded>. The application header includes a navigation menu on the left and a toolbar with icons for home, search, and user profile. The main interface features a map with several tool tabs: "Navigation", "Work Management", and "Enforcement". The "Work Management" tab is active, showing a toolbar with icons for "Distance", "Query", "Add Diseased Private", "Work On Multiple Trees", "Add Tree", "Routine Maintenance", "Routine Inspections", and "Report a Problem". A green banner at the top of the map area reads "I want to...". The map itself shows a residential neighborhood with numerous green circular markers, each containing a number, representing data points. A scale bar at the bottom indicates 0, 100, and 200 feet. The bottom right corner of the map area shows the text "rochester | Trees | Pavement Management - R...".



Demo

GIS Asset:

- Key attributes
- Service order history
- Create new service orders

Elements XS - Geocortex Vie X ElementsXS4

https://elements.rochestermn.gov/App/Assets/GISAsset

GIS Asset **Tree 32864** [View On Map](#)

Species: **Crabapplespp**
 DBH: **12 in**
 Condition: **Good**
 Status: **Live Tree**
 Last Status Update: **2018-05-21**

Near: **2124 PARKWOOD HILLS DR NE**
 Management Unit: **12**
 Maintained By: **BOULEVARD**
 Planted On:
 Comments: **raised 2012**
 Flags:

HISTORY ATTACHMENTS EXTERNAL LINKS

Show

Service Order Documents
 Activity Phone Call Note
 Email

Item	Type	Date	Division	Status	Created By
Prune Trees (Task ID: 194993)	Service Order Task	09/24/2018 10:42:24	Forestry	Pending	Corey Schulte
Crabapples all have low canopy. Raise canopy. (Alison)					
FORESTRY -00025791 (Forestry)	Service Order	09/24/2018 10:42:24	Forestry	Incomplete	Corey Schulte
Inventory Tree (Task ID: 194993)	Service Order	05/21/2018 00:20:24	Forestry	Completed	System Administrator



Demo

Service Order:

- Choose from a custom pick list

Elements XS - Geocortex Vie X ElementsXS4

https://elements.rochestermn.gov/App/Assets/GISAsset

GIS Asset **Tree 32864** [View On Map](#)

Species: **Crabapplespp**
 DBH: **12 in**
 Condition: **Good**
 Status: **Live Tree**
 Last Status Update: **2018-05-21**

Near: **2124 PARKWOOD HILLS DR NE**
 Management Unit: **12**
 Maintained By: **BOULEVARD**
 Planted On:
 Comments: **raised 2012**
 Flags:

HISTORY ATTACHMENTS EXTERNAL LINKS

Show **Service Order** Documents

Forestry **City Tree Inspections** Adv Tree Inspection
 EAB Inventory Update
 Elm Prune Tree
 Safety Remove Tree
 Storm Remove Tree Stump
 Standard Inspection
 Update Tree Status
 z - Add Tree

Item	Type	Date			
Prune Trees (Task ID: 194993)	Service Order Task	09/24/2018 10:42:24	Forestry	Pend	
Crabapples all have low canopy. Raise canopy. (Alison)					
FORESTRY -00025791 (Forestry)	Service Order	09/24/2018 10:42:24	Forestry	Incomplete	Corey Schulte
Inventory Tree (Task ID: 194993)	Service Order	05/21/2018 00:20:24	Forestry	Completed	System Administrator



Demo

Service Order:

- Service order #
- Task #
- Task Type

Elements XS - Geocortex Vie X ElementsXS4

https://elements.rochestermn.gov/App/Assets/GISAsset

Task 136626 (Inventory Tree)

Work Item Type: Routine Inspections

Service Order #: FORESTRY -00016402

Division: **Forestry**

Scheduled Start: 5/21/2018 9:39 AM

Priority: 3 - Medium

Scheduled End: 5/21/2018 9:39 AM

Status: Completed

Bill To Account:

Task Description (Problem): Full Inventory Inspection

Service Order Notes

- System Administrator on Monday, May 21, 2018 at 9:44 AM
Tree Vitals Updated in GIS (Status,Species,DBH,Condition) at 5/21/2018 9:44:00 AM
- Justin Madsen on Monday, May 21, 2018 at 9:43 AM
Tree is low over driveway and sidewalk.

Relationships

Print or Preview | Email | More

SAVE SAVE AND CLOSE CANCEL



Demo

Service Order:

- Task #
- Task Type
- Enter main attributes + more

Elements XS - Geocortex Vie X ElementsXS4

https://elements.rochestermn.gov/App/Assets/GISAsset

Task 136626 (Inventory Tree)

Standard Tree Inspection

Status Live Tree

Species Crabapplespp

DBH (Inches) 12

Treatment Applied No

Girdling Roots 0

Root Flare Visible

Leaning No

Stem Defects None

Print or Preview | Email | More

SAVE SAVE AND CLOSE CANCEL



Demo

Service Order:

- Attach items to task

Elements XS - Geocortex Vie X ElementsXS4

https://elements.rochestermn.gov/App/Assets/GISAsset

Task 136626 (Inventory Tree)

Attachments

Name	Date modified
No data to display	

Filter by:

Browse

Allowed Extensions: .mp4,.jpg,.jpeg,.gif,.rtf,.doc,.docx,.xls,.xlsx,.ppt,.pptx,.txt,.wmv,.png,.mp3,.pdf,.wav,.msg

Justin M
Tree is lo

Relation

Select an action

- Camera
- Camcorder
- Documents

CANCEL

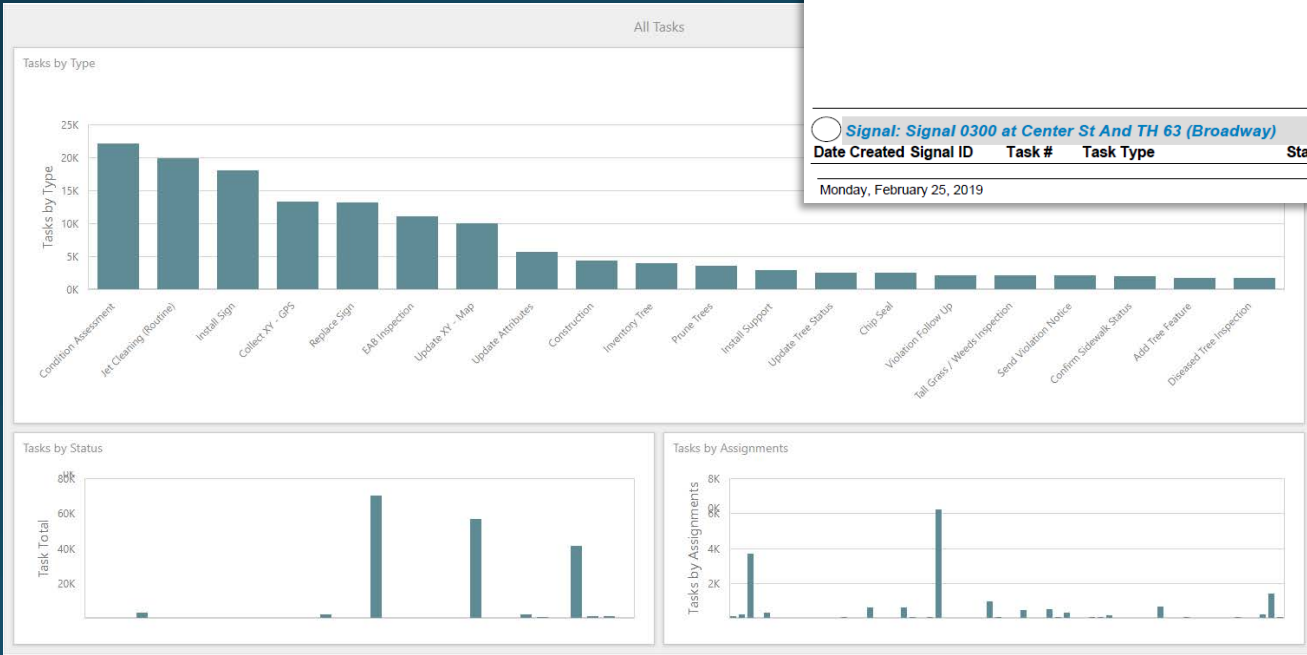


4/4/2019

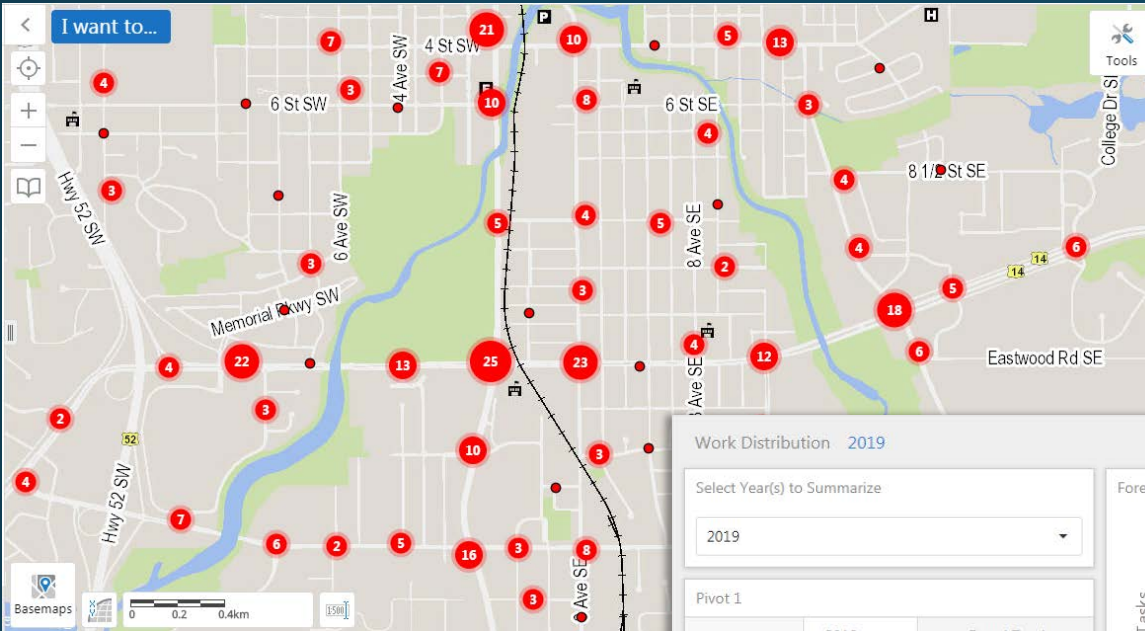
Elements Reports

Service Order Tasks Created Year To Date By Signal							
Division: Signals						Completed: 32	Total: 33
<input type="radio"/> Signal: Signal 0200 at CSAH 22 (37th St NE/E Cir Dr NE) And TH 63 (N Broadway)						Completed: 0	Total: 1
Date Created	Signal ID	Task #	Task Type	Status	Problem	Resolution	
01/23/2019	0200	218023	Luminaire Not Working	Pending	Cover fell off of luminaire in NE corner.		
<input type="radio"/> Signal: Signal 0210 at Rocky Creek Dr NE And TH 63 (N Broadway)						Completed: 1	Total: 1
Date Created	Signal ID	Task #	Task Type	Status	Problem	Resolution	
01/03/2019	0210	214252	Pedestrian Countdown	Completed	Turn ped signal heads so they are pointed directly at the opposite landing. When pushing the buttons, the heads are turned so half the countdown numbers are blocked by the visor.	Moved pedestrian countdown in the NW corner for crossing N. Broadway, NE corner for N. Broadway and Rocky Creek, SE corner for Rocky Creek. Moved 5 section head in SE corner for SB traffic.	
<input type="radio"/> Signal: Signal 0220 at Northern Heights Dr NE And TH 63 (N Broadway)						Completed: 1	Total: 1
Date Created	Signal ID	Task #	Task Type	Status	Problem	Resolution	
01/02/2019	0220	213928	Vehicle Detection	Completed	Had a complaint that the intersection was not running correctly. Found phases 2 and 6 where in fault. Detection wire must have been cut during construction.		
<input type="radio"/> Signal: Signal 0300 at Center St And TH 63 (Broadway)						Completed: 4	Total: 4
Date Created	Signal ID	Task #	Task Type	Status	Problem	Resolution	

Monday, February 25, 2019



Elements Reports



Work Distribution 2019

Select Year(s) to Summarize: 2019

Pivot 1

	2019	Grand Total
City Tree Inspection Requests	6	6
City Tree Maintenance Tasks	16	16
City Wide Check	1	1
EAB Efforts	1.57K	1.57K
Encroachment	31	31
Private Property Inspection Requests	473	473
Routine Inspections	778	778

Forestry Work Tasks Breakdown

	City Tree Inspection Requests	City Tree Maintenance Tasks	City Wide Check	EAB Efforts	Encroachment	Private Property Inspection Requests	Routine Inspections
January	3	8		1.57K	14	344	287
February				1	1	77	200
March	3	6	1	1	15	46	168
Grand Total	6	14	1	1.57K	30	467	655



Overview

- History of Asset Management at RPW
 - Selection Process for Work and Asset Management
 - ElementsXS by Novotx, Inc.
 - Multiple Components Working Together

 - Demonstration
 - Departmental/Field usage
- Challenges and Successes
 - Next Steps
- Questions



Challenges (Technical)

- No mobile device management policies in place (technical needs ahead of our policies).
 - Managing each device – naming convention, inventory control, OS updates.
- Initial restrictions by IT: had to use Microsoft devices, no Android or iOS
 - A lot of time and \$ spent trying to get Elements to work smoothly on Dell Venue and Microsoft Surface devices.
 - Eliminated users from being able to use phones.
 - Moving to DMZ finally allowed for the use of any device type.
- Connectivity in the field varies.
- Battery depletion by end of full day.
 - Charge during breaks with car chargers.
- Winter – devices difficult to use when cold.
 - Use a stylus to keep fingers functional.



Challenges



- Misconception that Elements would do everything (including microwave your cup of coffee).
 - Hard for some to understand what the system should and should not be used for.
 - Not a “one size fits all” and some work flows are best suited for other systems.
 - Why recreate the wheel is systems already exist that are transparent, efficient, and cost-effective?
 - Disaster Management, Stormwater/MS4 Activity Tracking.
- Challenges with culture/behavior
 - Not going to give up my clip board
 - The drop down says “pink” but I prefer “rose”
 - Disconnect between some groups in the field and those in the office using the data and realizing the gains.
 - Preference for older/existing systems due to comfort.
 - Reluctance by many to provide critical/essential feedback.



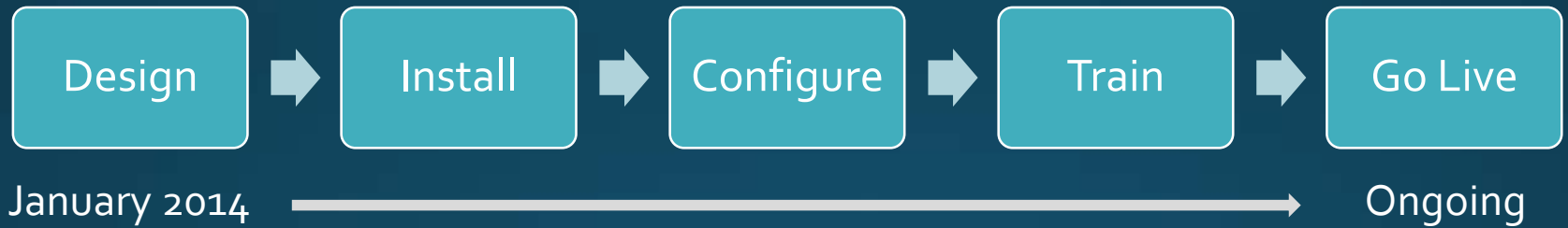
Challenges

- Funded and approved as a project and not a program.
- Project team turnover without replacing roles.
 - No acknowledgment that the scope, cost and/or timeline needed to adjust.



Challenges

- Adjust timeline and scope to match resources.



Challenges

- Lack of a strong champion within the Department.
- Turnover in the Organization resulted in initial champion leaving.
- Major organizational changes have resulted in many diverging areas of focus.
 - Need focus.
 - Need support and resources.
 - Vision/capabilities need to be understood.
 - Need buy-in.
 - Need help buffering requests.



Successes

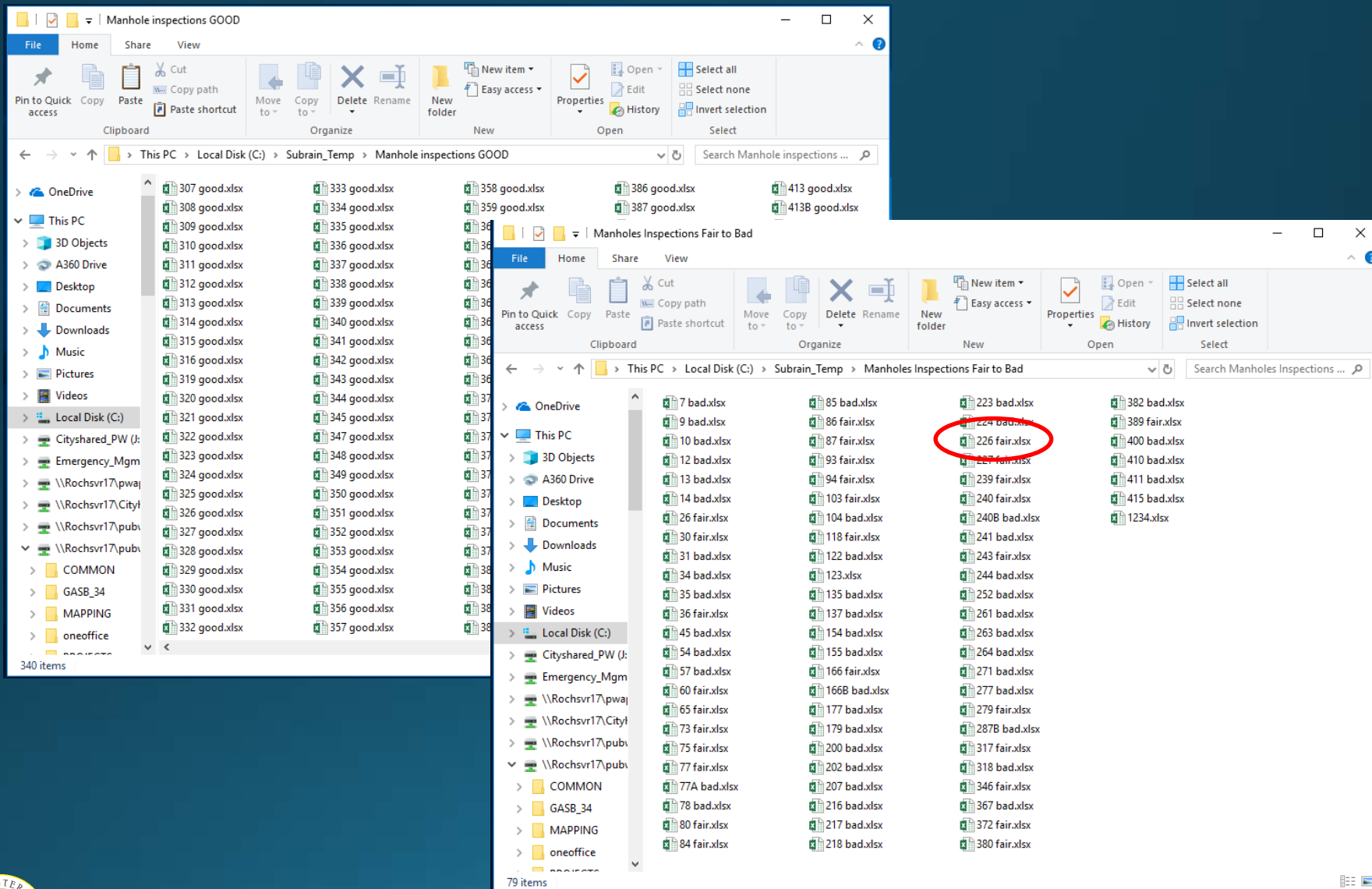
- Biggest success with groups with no existing systems in place (i.e. Forestry)
 - Able to start from scratch, no comparisons to past systems/tools, open-minded and enthusiastic partners.
- Consistent, replicable, reportable information
 - Can perform analysis (i.e. subdrain inspection data, crashes, etc.).
 - Can pass data onto consultants (or other entities).
 - Contractors able to access (i.e. Rochester Plumbing & Heating).

SUB-DRAIN MANHOLE INSPECTIONS	
Date	11/28/2016
Manhole #	226
Street Location	927 21 st se
Size of Lines	6"
Condition of Invert	None
Flow	Good
Comments and Diagram	Debris in MH
Insert Picture	

Sample "pre-Elements
subdrain inspection
report



400+ separate Excel inspection documents each inspection season...



Successes

- 450+ inspections performed several times/year that can now be tracked spatially, analyzed, reported on, etc.
 - Track real-time progress as inspections are taking place.

Locate Item On Map | XS-3 GIS Map Viewer

Search...

Subdrain Structures (1)

Structure 302

Structure 302
System: Subdrain
Structure Type: MANHOLE
Load Parcel in Elements

Displaying 1 - 1 (Total: 1)

Page 1 of 1

Layers Subdrain Structures...

Basemaps

0 50 100ft

Task Type	GIS Asset Tag	Task Assignm	Inspection Res	Confirm Struc	Invert Rating	Overall Rating	Flow Observat	Maintenance	Debris
Completed Inspection	Subdrain ID 295	Tyler RotoRooter	Successful Inspection	Subdrain Manhole	Unknown	Good	Sitting - No Flow	No	None
Completed Inspection	Subdrain ID 298	Tyler RotoRooter	Successful Inspection	Subdrain Manhole	Unknown	Fair	Running	Jetting	None
Completed Inspection	Subdrain ID 299	Tyler RotoRooter	Successful Inspection	Subdrain Manhole	Unknown	Fair	Running	Jetting	None
Completed Inspection	Subdrain ID 302	Tyler RotoRooter	Successful Inspection	Subdrain Manhole	Unknown	Poor	Slow Flow	Jetting	None
Completed Inspection	Subdrain ID 303	Tyler RotoRooter	Successful Inspection	Subdrain Manhole	Unknown	Good	Running	No	None
Completed Inspection	Subdrain ID 304	Tyler RotoRooter	Successful Inspection	Subdrain Manhole	Unknown	Good	Running	No	None
Completed Inspection	Subdrain ID	Tyler	Successful	Subdrain	Sitting - No

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elements XS

Geocortex Viewer for HTML5

https://elements.rochestermn.gov/App/Maps/EmbeddedViewer.aspx?configBase=https://geocortex.elements.rochestermn.gov/Geocortex/Essex

Your Organization | Application Name

Navigation

Initial View Previous Extent Zoom In Zoom Out Identify Distance Add A Note

LAYERS

Reference Data

Filter Layers... Filter

Tasks

- Latest Inspection Details
- Unknown
- Good
- Fair
- Poor

subdrain

- Subdrain Structures
- Subdrain Lines
- Other Drain Structures
- Other Drain Lines

Imagery

0 200 400ft

Rochester | Parcels | RPW | Roads

Successes

- Systems and workflows guiding new teammates
 - Processes no longer “unwritten” or only in our heads.
- Growth and more reports
 - Users asking for more is a sure sign of success.
 - Some “power users” are building their own reports and customizing filters.
 - Users are participating and contributing, coming up with new ideas.
 - The workflows and reports are flexible.
- Unforeseen benefits
 - Essential information shared amongst departments regarding intersecting workflows and prioritization. Example: sidewalks and forestry.
- Added capacity to the internal COR team.
 - Creation/addition of a new GIS team member has provided a terrific boost.
- Skills learned/developed within the Organization are invaluable.
 - Due to the “lean” team the PM had to learn/grow skills in programming, customization, report building, trouble-shooting, etc.



Next Steps

- Continuing updates and improvements
- Continuing to build out reporting
- Incorporate Labor, Equipment, Materials
- Contractor Interface
- Citizen Interface \ Integration
- Two Tiered Environment (Dev / Production)



Questions?

