

Operational Support through ERP Integrations

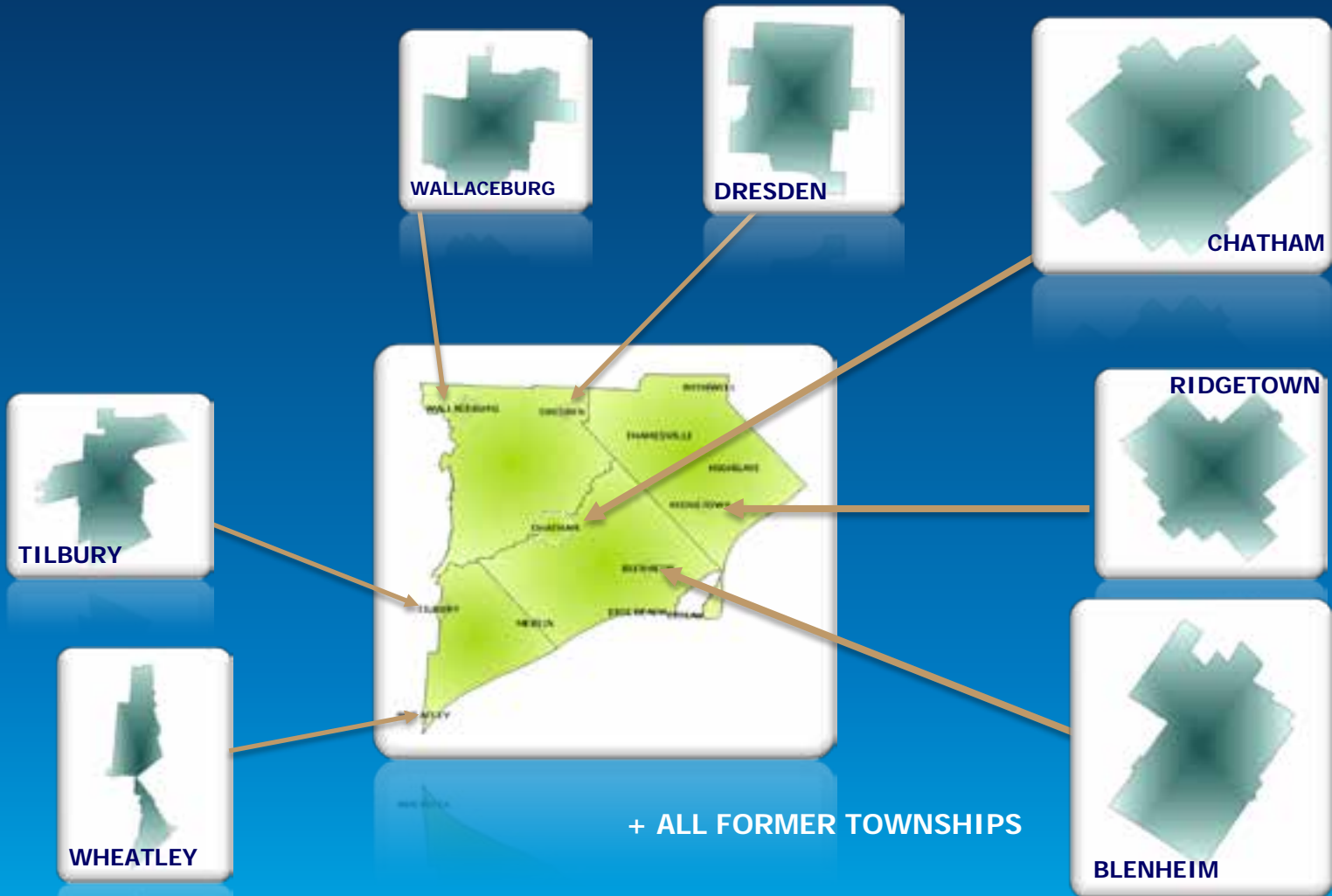
Catherine Fitzgerald, Manager, Information Services
Municipality of Chatham-Kent, Ontario, Canada



Where is Chatham-Kent?



Chatham-Kent: A Community of Communities



Chatham-Kent: Key Statistics

- Total Population of 104,000
- 2,500 square km (965 sq mi)
- 45,000 Address Points
- 53,000 Parcels
- 3,400 km of Roads (2112 miles)
- 4,000 km Municipal Drains (2485 miles)

GIS in Chatham-Kent

- **Partnership of Municipal, Hydro and Water/Wastewater utilities**
- **Support a workforce of over 2000 employees (includes Police, Fire, Utilities, Long Term Care Facilities, PUC...)**
- **Esri users since 2001**
- **4 Full Time GIS Staff in IT Department.**
- **7 Subject Matter Experts with GIS Competency in Departments (Planning, Engineering, PUC, Hydro)**

Consolidation of Information

- **Non-standard formats**
- **Not organized**
- **Access was difficult**
- **Records Unavailable**
- **Maintenance was backlogged**



Original Objective of GIS in Chatham-Kent

- Provide the same standardized information to field workers as is available to our office staff

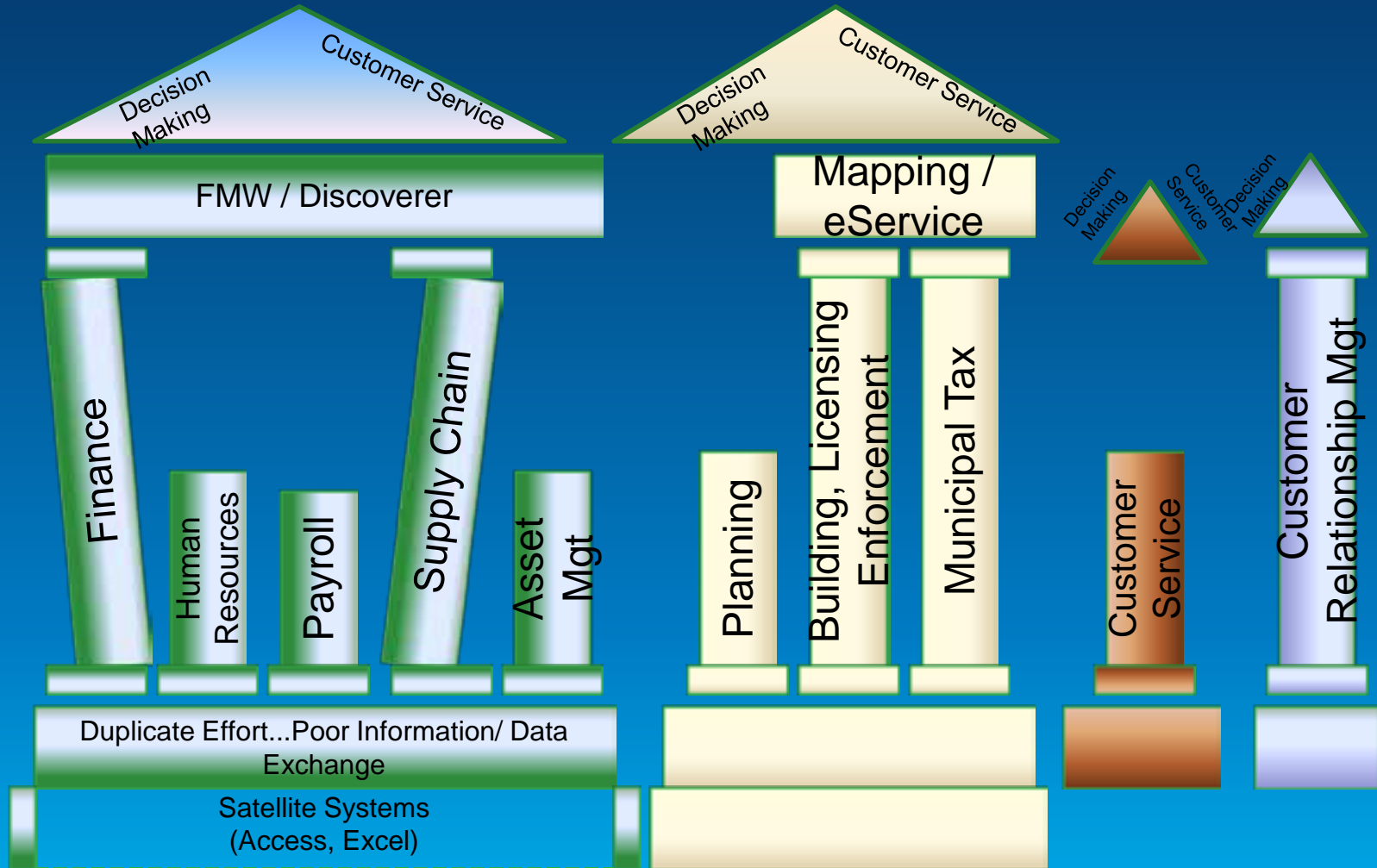


GIS Implementation focused on Records Management

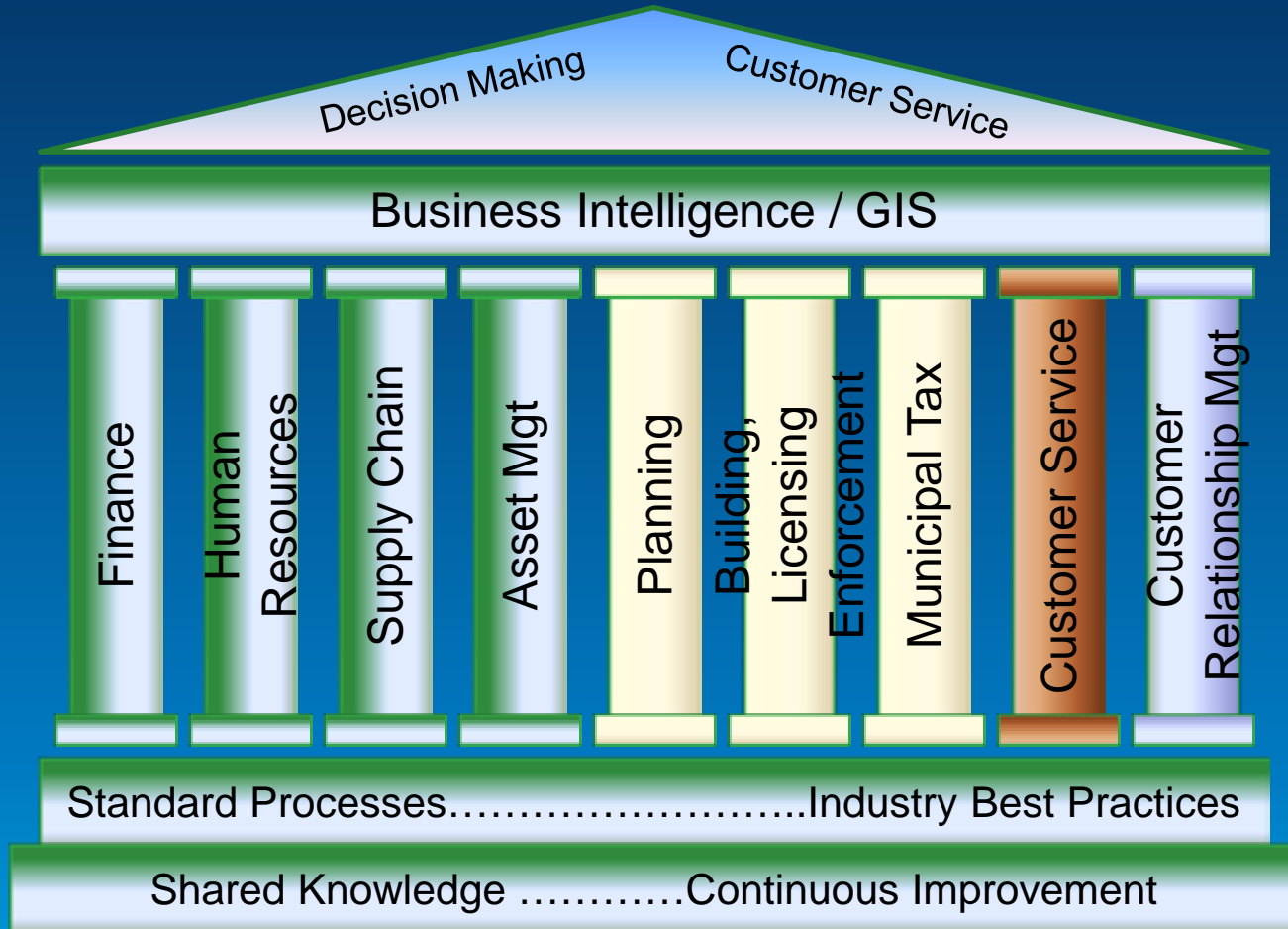


In 2012, Chatham-Kent was at a turning point!

Our Systems were Aging and Unintegrated



Where we Wanted to Be



“Survival through Simplification, Stability and Sustainability”

Project Delta Implementation Team

- **JD Edwards**
 - **Human Resources and Payroll**
 - **Capital Asset Management**
 - **Financial Management**
 - **Purchasing and Inventory Management**
- **RAC Software Inc. Financial Managers Workbench**
 - **Budgeting Software**
- **DevNet Property Tax**
- **SharePoint Document Management**
- **Class Point of Sale Solution**

Project Delta Implementation Team

- **CityView**
 - **Business Licensing**
 - **Cemetery Management**
 - **Building Permitting**
 - **Planning Services**
 - **Service Requests**
 - **Animal Licensing**
 - **By-Law Enforcement**
 - **Public Works Permits (moving, curb cutting, etc.)**

Asset Management,
Work Order Management and
Inventory Management
have Fundamentally Changed
how GIS is leveraged in
Chatham-Kent

Field Asset Management is driving data maintenance in the GIS System.

GIS is no longer simply design, accounting and recording....it is an essential infrastructure supporting daily operations.

Supporting Operations is creating new Opportunities

- New datasets being added to GIS in response to operational needs
- Improved quality of data as more people are actively looking at the information
- Field Change Requests to be turned around quickly to support daily Work Order requests
- Push to ensure data is spatially accurate to support GPS in the field
- Changing edit procedures to support asset lifecycle

Shift in Focus



Records
Management

The diagram consists of two green chevron-shaped arrows pointing to the right, connected by a double-lined white arrowhead. The first arrow contains the text 'Records Management' and the second arrow contains the text 'Operational Support'.

Operational
Support



Office
Workforce

The diagram consists of two green chevron-shaped arrows pointing to the right, connected by a double-lined white arrowhead. The first arrow contains the text 'Office Workforce' and the second arrow contains the text 'Mobile Workforce'.

Mobile
Workforce

Shift in Scope



Making the Transition



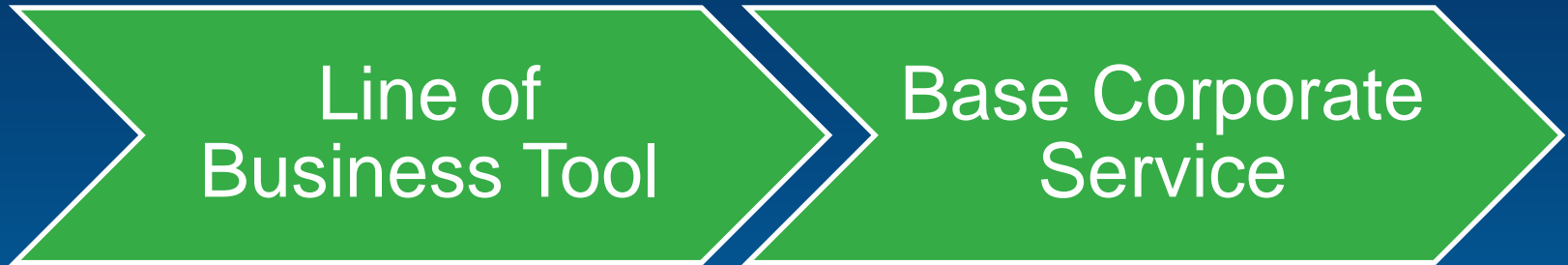
- **Incorporating dashboards of information for users – allowing a “real time” look at their business data**
- **Increase accuracy of the data provided – to transform our infrastructure data from schematic to a WYSIWYG environment**
- **Collect additional data to help complete our “infrastructure snapshot”**
- **Incorporate GIS in our work order “work flow” to help close the gap on updates to our data**

Making the Transition



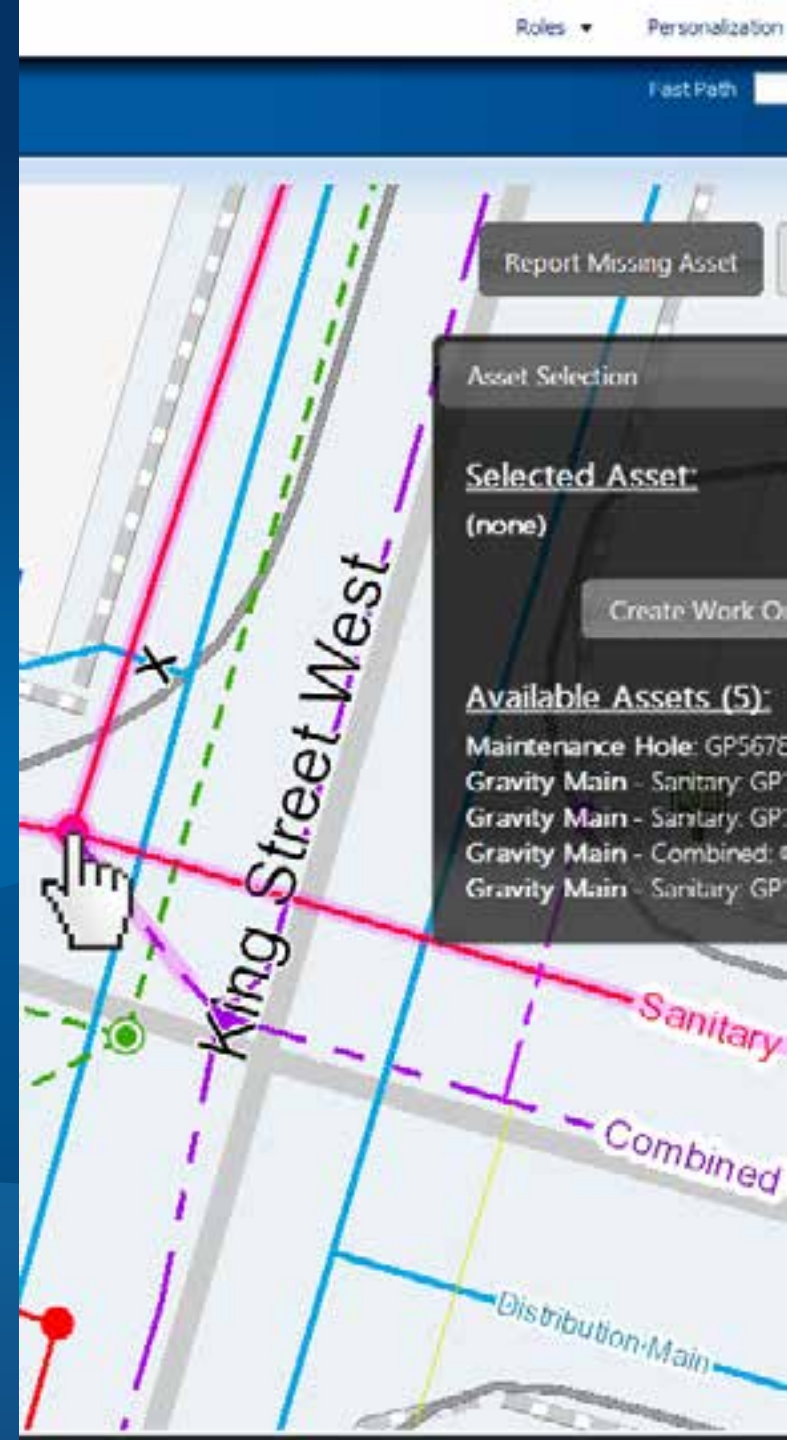
- **Use of Esri technology is allowing us to move the workforce outside – ArcGIS Mobile, ArcGIS.com and ArcPad**
- **Currently investigating a standardized tablet solution – to allow for easier cross training/troubleshooting**
- **Other solutions to incorporate GIS into our workflows – for Public Works, Inspectors and other onsite crew members**

Making the Transition



- Our previous model allowed us to store records and make them available to the business units who provided them
- We look to provide any and all information to the variety of business units that need it
 - Only some business units are the caretakers, but many business units are consumers of the information

JD Edwards Integration: GIS Asset Selector



GIS Asset Selector




- **FindTask used via API for asset number searching – used for quickly locating an asset when asset number is known**
- **Passes unique asset ID to JD Edwards work order creation program via parameterized URL**
- **Customization required on JD Edwards side to convert incoming asset number (unit number in JDE) to asset number from incoming query string parameter**
- **Nightly SQL running to add/remove/modify assets in JD Edwards from GIS database**

JD Edwards Enterprise One

ORACLE JD Edwards EnterpriseOne Roles Personalization Help Sign Out

Home Navigate Open Applications Recent Reports Favorites Fast Path

Please Select a Map Theme:

-  Everything
-  Road Maintenance
-  Water/Wastewater

Legend

What's New?

- Jun-23-2014**
Added "Sampling Stations" to mapping interface.
- Apr-7-2014**
Changed address search to display township while searching to assist with rural locations.
Search box width has been increased to accommodate this change.
Moved "Report Missing" button to top-right area.
- Mar-21-2014**
Added ability to report missing assets.
- Feb-19-2014**

Selecting 'Everything' Layer

The screenshot shows the Oracle JD Edwards EnterpriseOne web interface. At the top, the header includes the Oracle logo and 'JD Edwards EnterpriseOne' on the left, and 'Roles', 'Personalization', 'Help', and 'Sign Out' on the right. Below the header is a navigation bar with 'Home', 'Navigate', 'Open Applications', 'Recent Reports', and 'Favorites'. A 'Fact Path' search box is also visible.

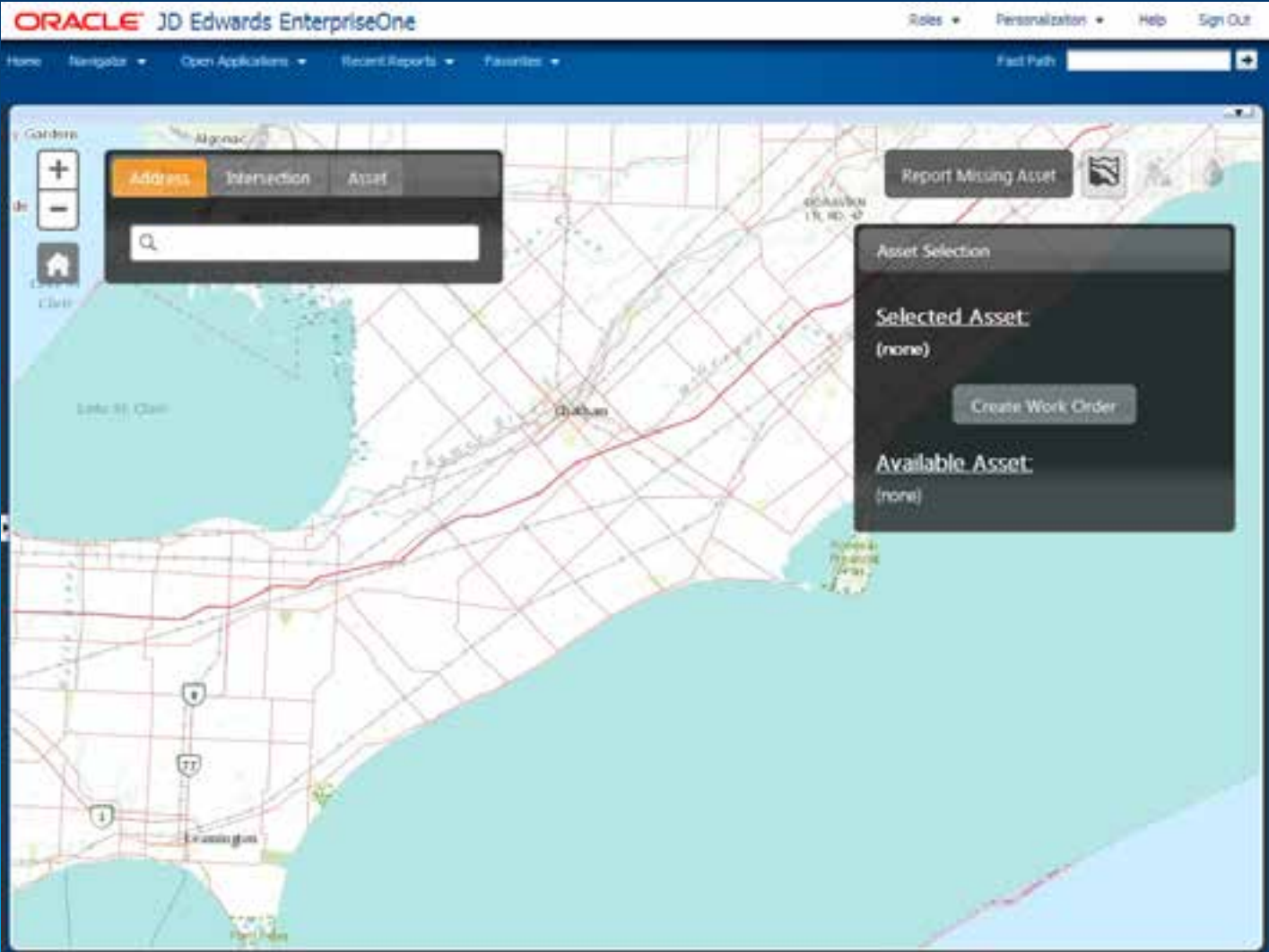
The main content area displays a 'Please Select a Map Theme:' prompt. Three map themes are presented as icons with labels below them:

- Everything**: Represented by a map icon with a hand cursor pointing to it.
- Road Maintenance**: Represented by an icon of a person using a shovel.
- Water/Wastewater**: Represented by a water drop icon.

Below the theme selection area is a 'What's New?' section with the following updates:

- Jun-23-2014**: Added "Sampling Stations" to mapping interface.
- Apr-7-2014**: Changed address search to display township while searching to assist with rural locations. Search box width has been increased to accommodate this change. Moved "Report Missing" button to top-right area.
- Mar-21-2014**: Added ability to report missing assets.
- Feb-19-2014**: (No description provided)

Map Interface



Address Search

The screenshot displays the Oracle JD Edwards EnterpriseOne interface for address search. The top navigation bar includes the Oracle logo, "JD Edwards EnterpriseOne", and user options like "Roles", "Personalization", "Help", and "Sign Out". Below this is a secondary navigation bar with "Home", "Navigate", "Open Applications", "Recent Reports", and "Favorites".

The main content area features a map of a coastal region. A search panel is overlaid on the map with the following elements:

- Buttons for "Address", "Intersection", and "Asset", with "Address" selected.
- A search input field containing "315 King, Chatham".
- An auto-complete dropdown menu showing two suggestions: "315 KING ST W, CHATHAM CITY" and "315 KING ST, WALLACEBURG TOWN".
- A "Report Missing Asset" button.

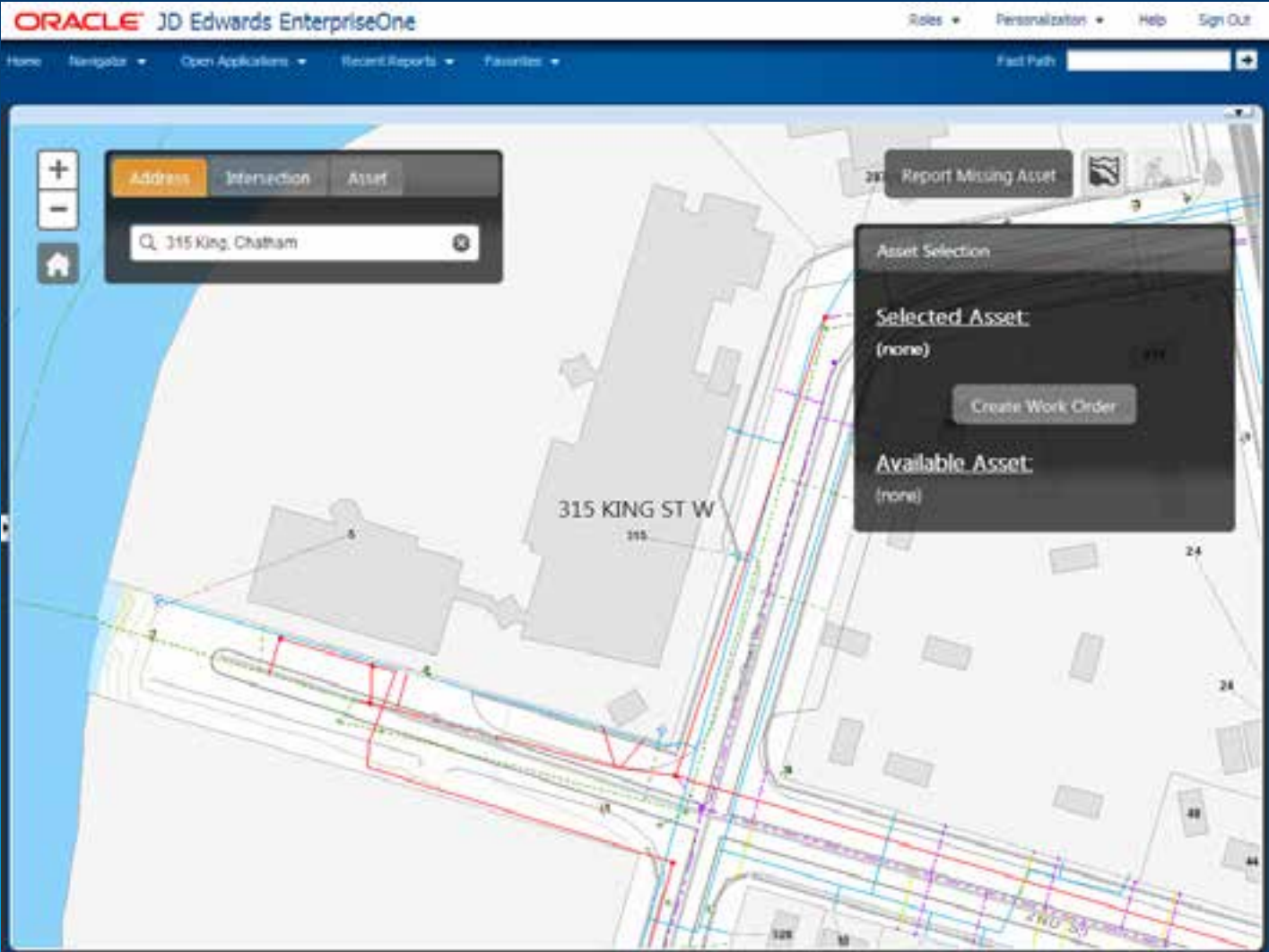
A central instruction box provides the following text:

Enter your address search followed by the enter key.
Type the address number and street name, then use the auto-complete dropdown to pick between similar addresses.
You can narrow your search by adding the community name to the end of your street separated by a comma. Eg: "315 King St, Chatham"

On the right side, an "Asset Selection" panel is visible, containing:

- A "Selected Asset:" field with the value "(none)".
- A "Create Work Order" button.
- An "Available Asset:" field with the value "(none)".

Address Search



Address Search

The screenshot displays the Oracle JD Edwards EnterpriseOne interface for address search. The top navigation bar includes the Oracle logo, the text "JD Edwards EnterpriseOne", and user options: Roles, Personalization, Help, and Sign Out. Below this is a secondary navigation bar with Home, Navigate, Open Applications, Recent Reports, and Favorites. A Fact Path field is visible on the right.

The main content area features a map of an urban intersection. The map shows several utility assets: Distribution Main (blue lines), Storm (green dashed lines), Sanitary (red lines), and Combined (purple dashed lines). A search box in the top left of the map area contains the text "315 King, Chatham". A red 'X' marks the intersection of King Street West and Second Street. A "Report Missing Asset" button is located in the top right of the map area.

An "Asset Selection" dialog box is open on the right side of the map. It contains the following text:
Asset Selection
Selected Asset:
(none)
Create Work Order
Available Asset:
(none)

Asset Selection

The screenshot displays the Oracle JD Edwards EnterpriseOne interface. At the top, the header includes the Oracle logo, the text "JD Edwards EnterpriseOne", and navigation links for "Roles", "Personalization", "Help", and "Sign Out". Below the header, there are tabs for "Home", "Navigate", "Open Applications", "Recent Reports", and "Favorites". A search bar on the right contains the text "Fact Path".

The main content area features a map of an urban area with streets labeled "Second Street" and "King Street West". Overlaid on the map are various utility lines: a blue line for "Distribution Main", a green dashed line for "Storm", a red line for "Sanitary", and a purple dashed line for "Combined". A search box in the top left of the map area has "315 King, Chatham" entered. A hand cursor is positioned over the intersection of Second Street and King Street West.

An "Asset Selection" dialog box is open on the right side of the map. It contains the following information:

- Report Missing Asset (with a flag icon)
- Asset Selection
- Selected Asset: (none)
- Create Work Order (button)
- Available Assets (5):
 - Maintenance Hole: GP56784
 - Gravity Main - Sanitary: GP143302
 - Gravity Main - Sanitary: GP158708
 - Gravity Main - Combined: GP158710
 - Gravity Main - Sanitary: GP181798

Looking for Storm Data

The screenshot displays the Oracle JD Edwards EnterpriseOne interface. At the top, the header includes the Oracle logo, the text "JD Edwards EnterpriseOne", and navigation links for "Roles", "Personalization", "Help", and "Sign Out". Below the header, there are tabs for "Home", "Navigate", "Open Applications", "Recent Reports", and "Favorites". A search bar on the right contains the text "Fact Path".

The main content area features a map of an urban intersection. The map shows "Second Street" and "King Street West". Utility lines are overlaid on the map, including "Distribution Main" (blue), "Storm" (purple dashed), "Sanitary" (red), and "Combined" (green dashed). A search box in the top left of the map area has the text "315 King, Chatham" and a search icon. A hand cursor is pointing at a red dot on the map, which is connected to a "Storm" line.

On the right side of the map, there is a "Report Missing Asset" button. Below it is an "Asset Selection" panel. The panel shows "Selected Asset: (none)" and a "Create Work Order" button. Underneath, it lists "Available Assets (4)":

- Maintenance Hole: GP42554
- Gravity Main - Storm: GP143306
- Gravity Main - Storm: GP150968
- Gravity Main - Storm: GP166400

Picking from a list of Potential Assets

The screenshot displays the Oracle JD Edwards EnterpriseOne interface. At the top, the header includes the Oracle logo, 'JD Edwards EnterpriseOne', and navigation links for Roles, Personalization, Help, and Sign Out. Below the header, there are tabs for Home, Navigate, Open Applications, Recent Reports, and Favorites, along with a Fact Path field.

The main area shows a map of an urban intersection. A search bar at the top left contains the text '315 King, Chatham'. The map features several colored lines representing utility assets: a blue line for 'Distribution Main', a yellow dashed line for 'Storm', a red line for 'Sanitary', a purple dashed line for 'Combined', and another blue line for 'Distribution Main'. The streets 'Second Street' and 'King Street West' are clearly labeled. A red 'X' marks a specific location on the map.

An 'Asset Selection' popup window is open on the right side of the map. It contains the following information:

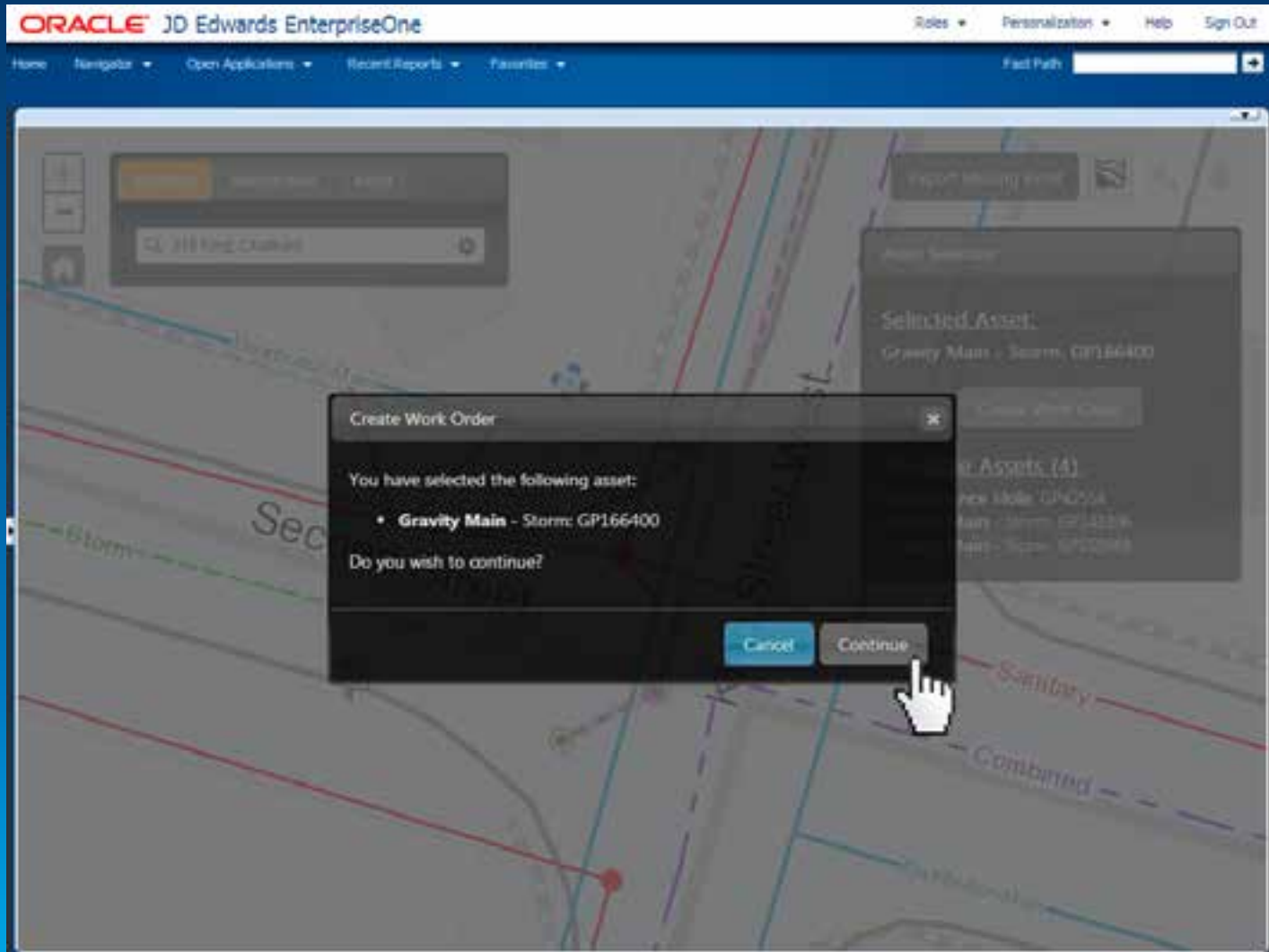
- Report Missing Asset (with a flag icon)
- Asset Selection
- Selected Asset: (none)
- Create Work Order (button)
- Available Assets (4):
 - Maintenance Hole: GP42554
 - Gravity Main - Storm: GP143306
 - Gravity Main - Storm: GP150968
 - Gravity Main - Storm: GP166400

A hand cursor is positioned over the 'Available Assets' list, indicating the user is about to select one of the items.

Creating a Work Order

The screenshot displays the Oracle JD Edwards EnterpriseOne interface. At the top, the header includes the Oracle logo, 'JD Edwards EnterpriseOne', and navigation links for Roles, Personalization, Help, and Sign Out. Below the header, there are tabs for Home, Navigate, Open Applications, Recent Reports, and Favorites. A search bar on the right contains the text 'Fact Path'. The main area features a map of an urban intersection. A search box in the top left of the map area is set to '315 King, Chatham'. The map shows several utility lines: a blue line for 'Distribution Main', a green dashed line for 'Storm', a red line for 'Sanitary', and a purple dashed line for 'Combined'. A red dot on the map indicates a selected asset. A 'Report Missing Asset' button is visible in the top right of the map area. An 'Asset Selection' popup window is open on the right side of the map, showing the 'Selected Asset' as 'Gravity Main - Storm: GP166400' and a 'Create Work Order' button. Below this, it lists 'Available Assets (4)': 'Maintenance Hole: GP42554', 'Gravity Main - Storm: GP143306', and 'Gravity Main - Storm: GP150968'. A hand cursor is pointing at the 'Create Work Order' button.

Creating a Work Order



JD Edwards Generated Work Order

ORACLE JD Edwards EnterpriseOne Roles Personalization Help Sign Out

Home Navigation Open Applications Recent Reports Favorites Fact Path

ORACLE JD Edwards EnterpriseOne Add Work Order

Save and Exit Save and Add New Save and Cancel Close Service Contracts

Order Number	WW	Type	1 REACTIVE MAINTENANCE
Equipment Number	22582	GRAVITYMAIN COLLECTOR	
Product Model	PW	Case Number	
Product Family	PW	Customer Number	16511
Description		Site Number	16511
Failure Description			

Planning Order Detail Classification Accounting Attachments

Status

Status		Actual Hours	
Est. Hours		Actual Downtime Hours	
Estimated Downtime Hours		Guaranteed Response Time	
Requested Finish Date		Percent Complete	
Planned Start Date		Parent W.O. No	
Planned Finish Date		Priority	1
Actual Finish Date			
Status Comment			

Responsible Persons

Crew	
Lead Craft	
Supervisor	

GIS Asset Selector: Technical Specifications

- Esri ArcGIS API version 3.7
- JavaScript frameworks: jQuery, jQuery UI, Dojo
- Esri “topo” base map for initial Municipality-wide zoom level, then switches to Chatham-Kent’s base map when zoomed to the community level
- Layer “sets” specified in configuration file based on layer service IDs
- Additional properties configurable to display additional attributes for specific layers (e.g.: Sign name, street name, etc.)
- Geocoder services used for address and intersection searches

Next Steps

- **Develop Mobile device interfaces for Asset Selector and Work Order generation**
- **Modify Work Order process to include requests to update data based on field work**
- **Create Management map views to illustrate daily, weekly, monthly work order activity**
- **Integrate reporting functionality with SharePoint**
- **....and much more**

Thank You

