

Roadside Features Inventory Program

2010 Annual Data Collection Performance Measures Report

Roadside Features Inventory Program:

The Roadside Feature Inventory Program (RFIP) is a statewide agency program of limited scope for collecting, storing and reporting locations of roadside assets for the main purpose of highway safety analysis and strategic decision making. RFIP data is also available for preliminary design analysis. This program was designed to collect a limited set of fixed objects at mapping level accuracy (+/-5ft). If more detailed and accurate design quality data is desired, a survey crew should be used. Some features stored within the RFIP database are common to the Stormwater Feature Inventory Database (SFID), the Highway Activities Tracking System (HATS) and Highway Features (HF) Database. The culvert inspection program is also an integral part of RFIP.

The RFIP Vision:

A statewide program that helps the agency more efficiently manage assets, to achieve a significant reduction in traffic fatalities and serious injuries on the highway system, and deliver projects by using the latest technology to locate, inventory and report roadside fixed object features.

Goals and Purpose:

- To meet a stewardship commitment with the Federal Highway Administration (FHWA) to collect and inventory fixed objects within the clear zone of all highways to produce a program of projects or strategies to reduce identified safety problems.
- To provide information on the number, types, and locations of fixed object roadside features so the data can be used to make informed decisions while developing the highway safety strategic plans and programs.
- Focus on collecting complete network-level data within the appropriate accuracy to support the decision requirements.
- A detailed inventory of the location of culverts and their condition to identify suspect culverts before they fail.
- Utilization of RFIP information for a variety of management purposes.

Realized Benefits:

- Established consistent data definitions and formats throughout the department.
- Established best management practices for collection, storage methods and procedures.
- Provided Capital Program Development & Management (CPDM) with essential data required to build future highway safety strategic plans, programs, and program priorities.
- Minimized the cost of collection and maintenance of roadside feature data by eliminating redundant data collection efforts.
- RFIP data, combined with other data bases (HATS, SFID), is also stored in a data warehouse called Highway Features with agency specific information about roadside features.
- RFIP data will provide network-level information on all state routes, critical for project development.

RFIP Changes:

- In March of 2010 the Chief Engineer, Assistant Secretary of Engineering and Regional Operations assigned the executive oversight of RFIP to the Highway Safety Executive Committee, (HSEC) working in conjunction with the Environmental Services Office Director.
- The HSEC then instructed GIS & Roadway Data Office (GRDO) to restructure the RFIP Advisory Committee into a smaller group with the primary focus on highway safety elements. A new Advisory Committee Chairman from Capital Program Development and Management (CPDM) was assigned to act as the liaison between the HSEC and the RFIP Advisory Committee.
- The Advisory Committee is now made up of nine committee members with representatives from key business areas within WSDOT and a representative from FHWA. GRDO Roadway Branch Manager continues to manage the program and work with the region RFIP supervisors and crews. A detailed table of organization can be found on page 9 of this document.
- HSEC asked for a review of the 58 RFIP features and their associated attributes to ensure that the program was collecting the optimal list of fixed objects that pose the greatest potential risk for fatal and serious injury collisions. WSDOT has adopted a new approach to reducing the potential risk for collisions on Washington's highway system. This is reflected by the WSDOT adoption of the AASHTO Highway Safety Manual and the supporting SafetyAnalyst software. The identification of potential risks for collisions and development of highway safety countermeasures for program and project development will use a strategic approach based on network-level collision analysis and system assessment rather than the standards-based approach used in the past. As a result, RFIP has modified its approach to collecting data, focusing on network-level data collection in a prioritized order and at an accelerated rate to meet the WSDOT highway safety decision needs.

Prioritization of Data Collection Locations:

- Through 2010, highways in rural areas were selected for RFIP data collection to reduce the risk to the data collection crews and regions were allowed to collect data at the locations of their choice.
- Beginning in 2011, it was determined that the RFIP collection needed to be accelerated; the information is required for the entire network to build the 13-15 Highway Safety Program. The list of highway features and their associated attributes were assessed and optimized, and the order in which the state highways were to be addressed were prioritized so that the highest risk highways were addressed first.
- Additional methods of collection will also be utilized for RFIP collection.
 - Utilizing SR View in conjunction with a GIS web based application to locate features relative to the edge line. Such as guardrail, concrete barrier, glare screen, cable barrier.
 - Conduct a windshield survey utilizing the mobile RFIP application to collect GPS points for slopes and ditches.

Data Gathered to Date:

- From June 2006 through December 2010 over 430,094 features were collected and 3049 state route miles have been completed, representing 43% of the state route system of 7059 total miles.
- Of the 188 total state routes 46 or 24.5% have complete RFIP data collection as of December 31, 2010.
- Approximately 81,000 supplemental still images have been collected.
- Through December 2010, 430 culvert video inspections have been completed.

All statistics in this report reflect GPS collection of the full list of features and attributes which is included in this document on page 10. All changes and full details of the changes to accelerate the RFIP program collection began after January 1, 2011 and will be reflected in the 2011 Annual Data Collection Performance Measures Report. This report is for collection data and methods through December 31, 2010. The full breakdown of the data collected through December 2010 can be found in the following tables and graphs.

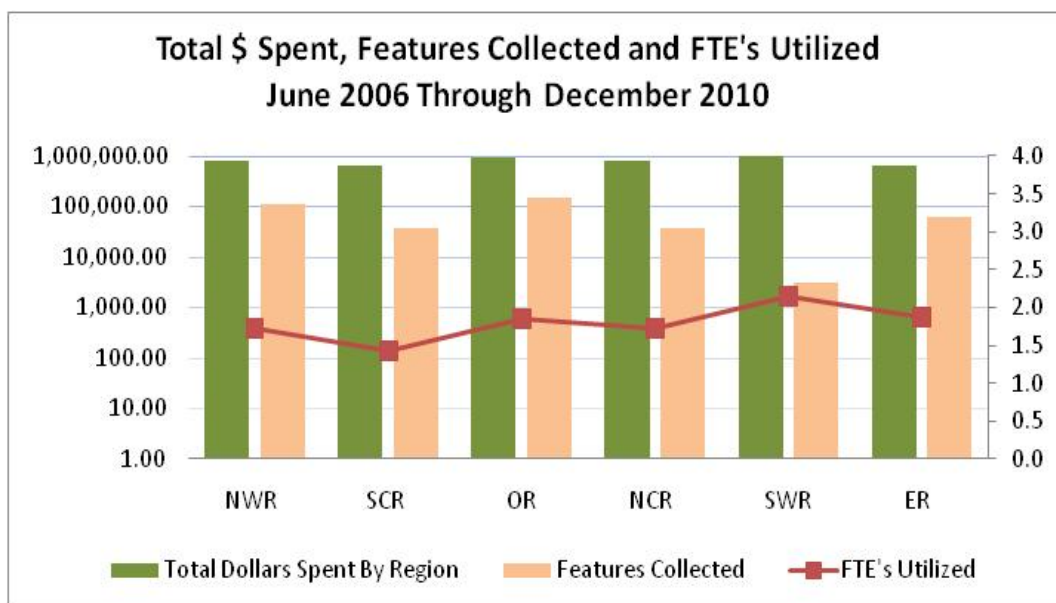
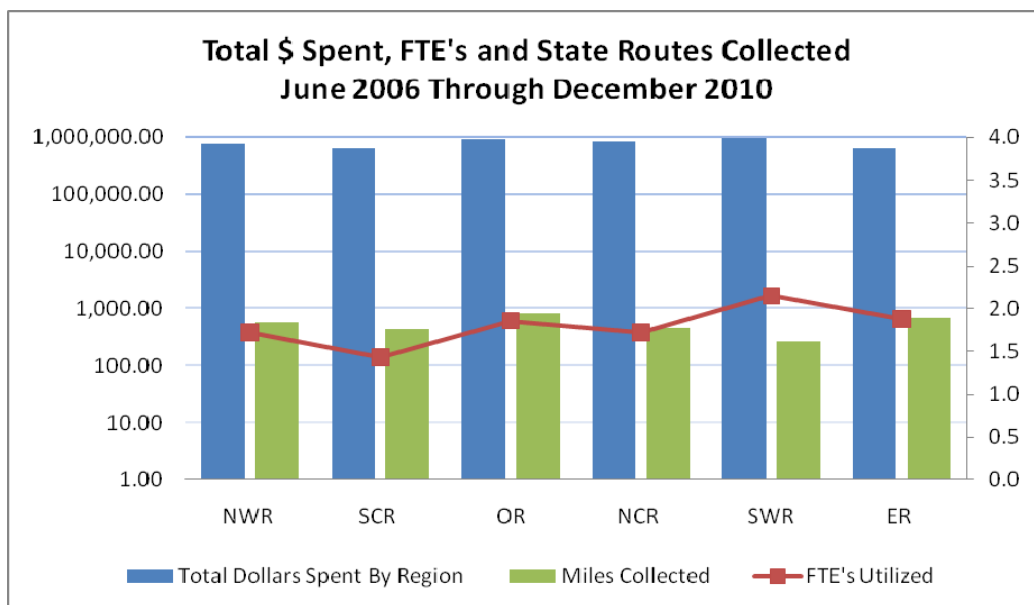
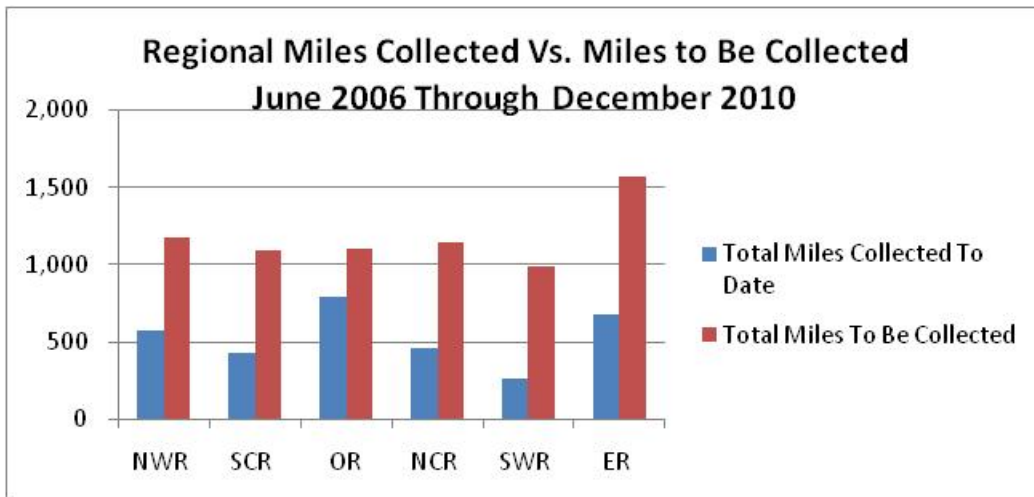
State Route Miles Completed				
June 2006 through December 2010				
	Total Route Miles	Route Miles Completed	% Complete	% Remaining
Northwest	1175	519	44%	56%
South Central	1084	399	37%	63%
Olympic	1105	711	64%	36%
North Central	1141	526	46%	54%
Southwest	984	253	26%	74%
Eastern	1570	641	41%	59%
Statewide	7060	3049	43%	57%

Variables That Affect Collection Rates:

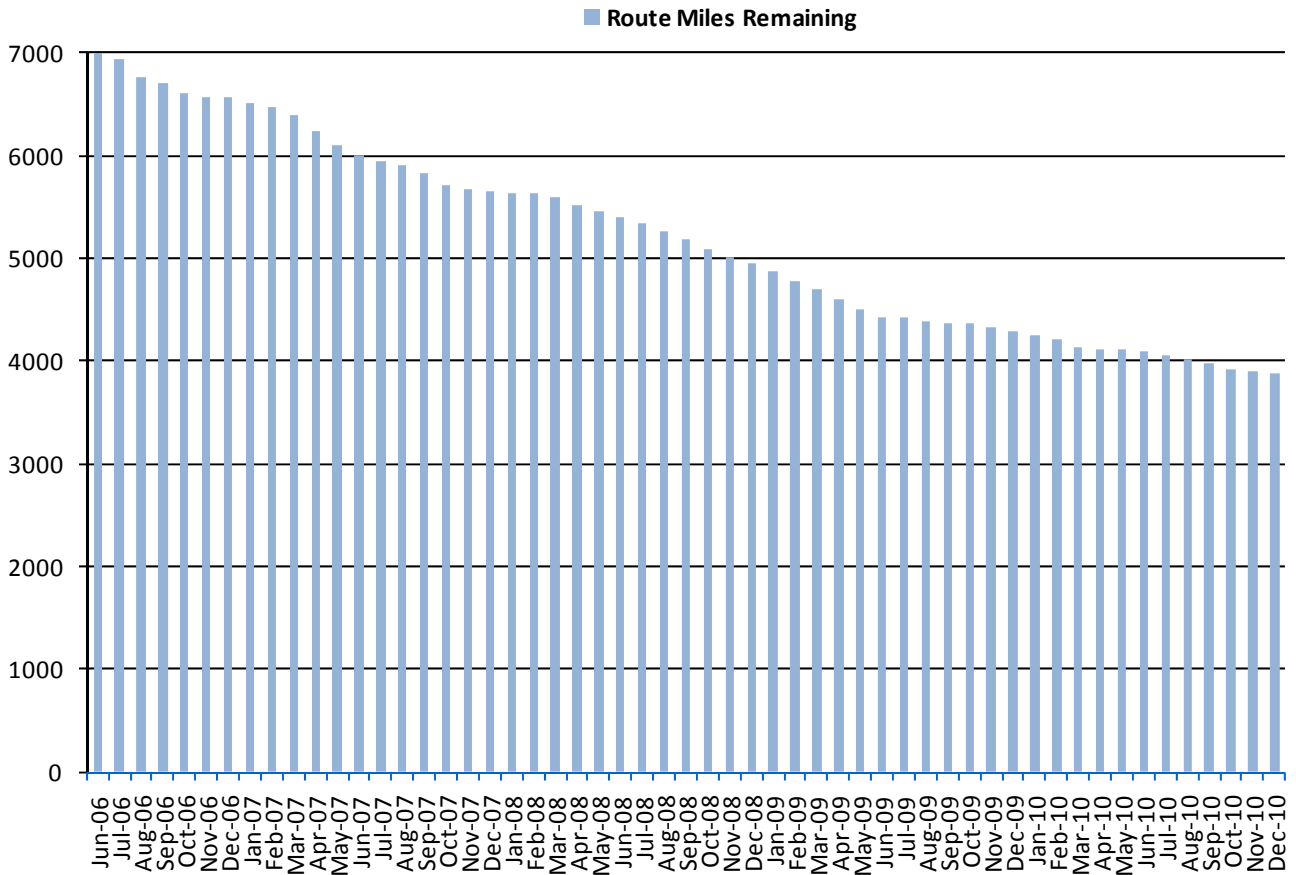
There are many factors that can impact the amount of data being collected by a region. During peak construction periods, some regions have temporarily redirected their RFIP crews to help out on construction projects. Regional crews have also been temporarily assigned to help out on other programs such as Storm Water Information Management System (SWIM) and Americans with Disabilities Act (ADA).

Also, each region has diverse collection areas, some have more rural areas with less dense features, and some are mostly urban areas, with more dense features, while others have winter weather issues to deal with.

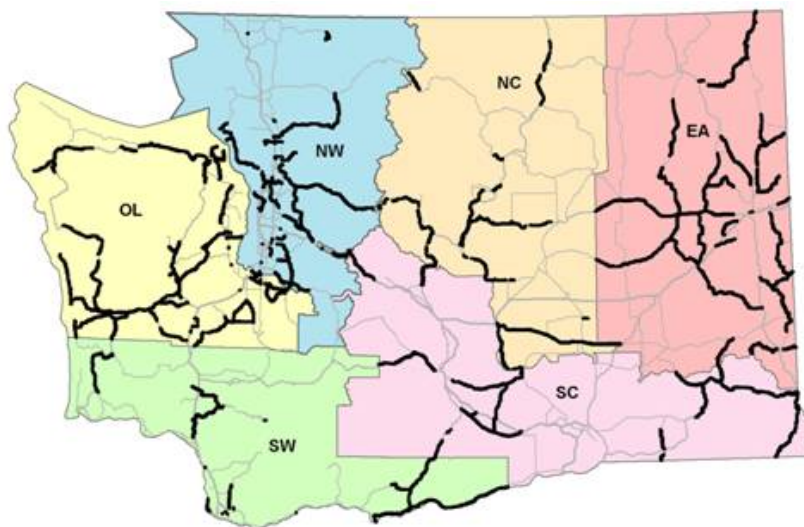
The recent roll-out of and training for the RFIP mobile mapping application has accelerated data collection. With this new application, the RFIP crews will no longer have to make multiple passes along a roadway while collecting features. This new program enhancement, combined with the accelerated collection efforts currently underway, will finalize the initial statewide collection program by June 30, 2012.



Statewide - State Route Miles Remaining



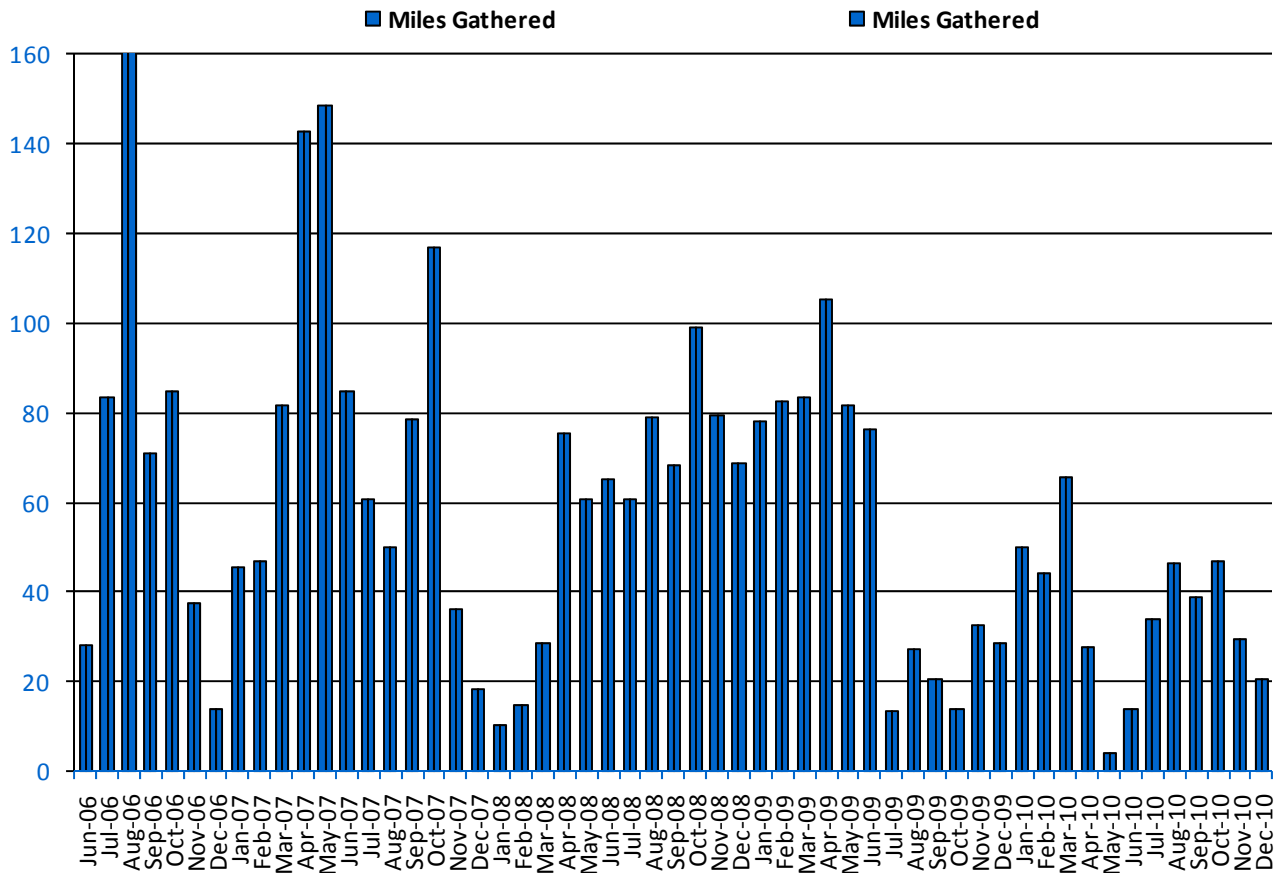
Map of RFIP Data June 2006 Through December 2010



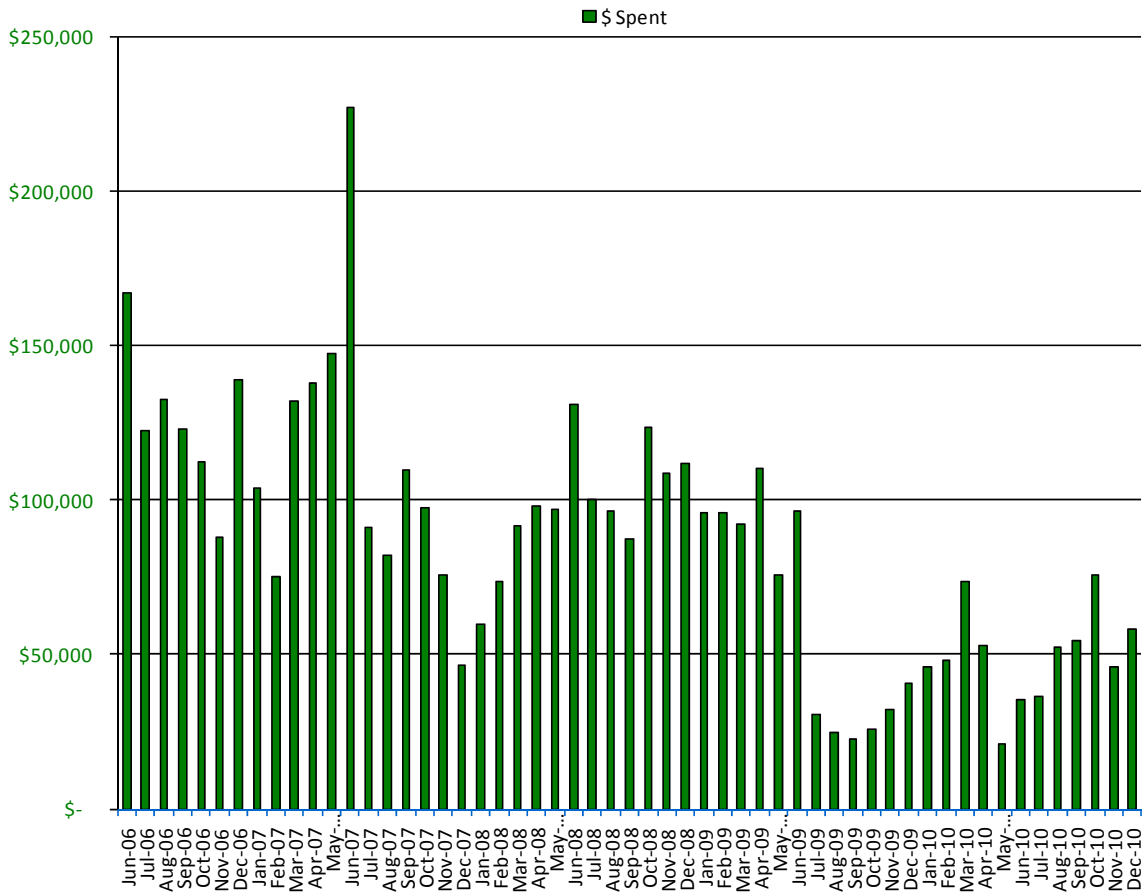
Time For Completion Estimate					
June 2006 through December 2010					
	Total Route Miles	Route Miles Completed	Months Since Collection Started	Route Miles Per Month Average	Estimated Months to Completion
Northwest	1175	519	31	17	39
South Central	1084	399	54	7	92
Olympic	1105	711	55	13	31
North Central	1141	526	54	10	63
Southwest	984	253	55	5	159
Eastern	1570	641	55	12	80
Statewide	7060	3049	51	60	67

The above "Time For Completion Estimate" is based on full feature and attribute list using GPS points. This does not reflect the accelerated RFIP collection methods. Northwest Region started RFIP data collection in June 2008

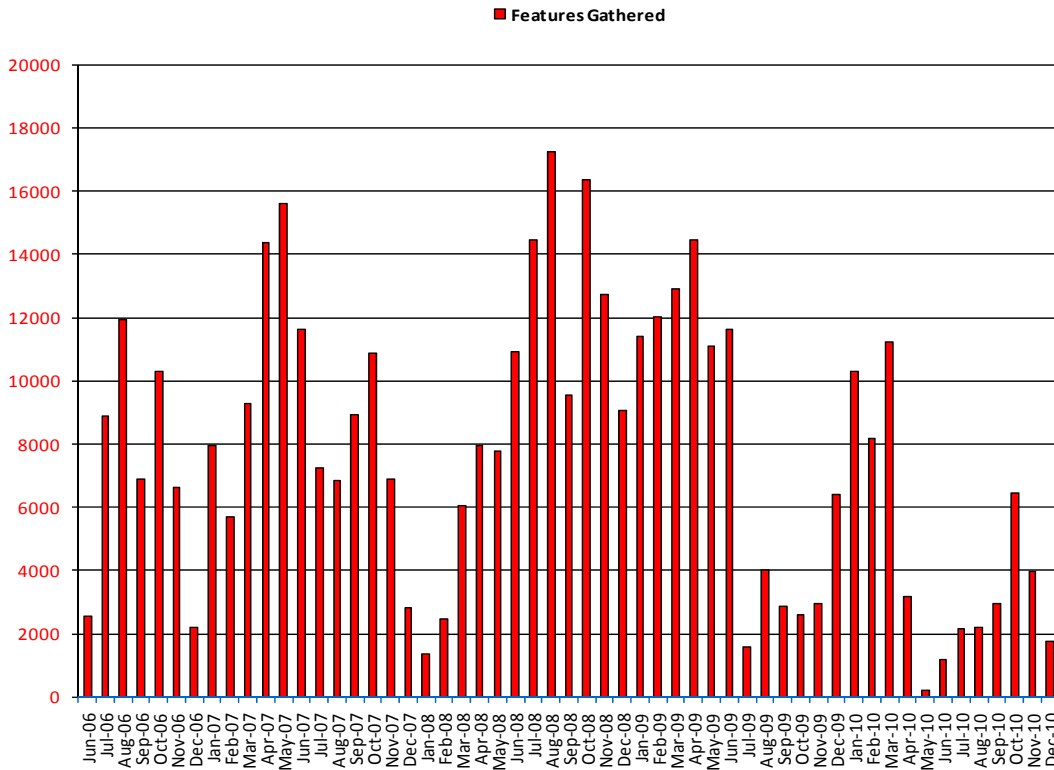
Statewide - State Route Miles Gathered



Statewide - \$ Spent

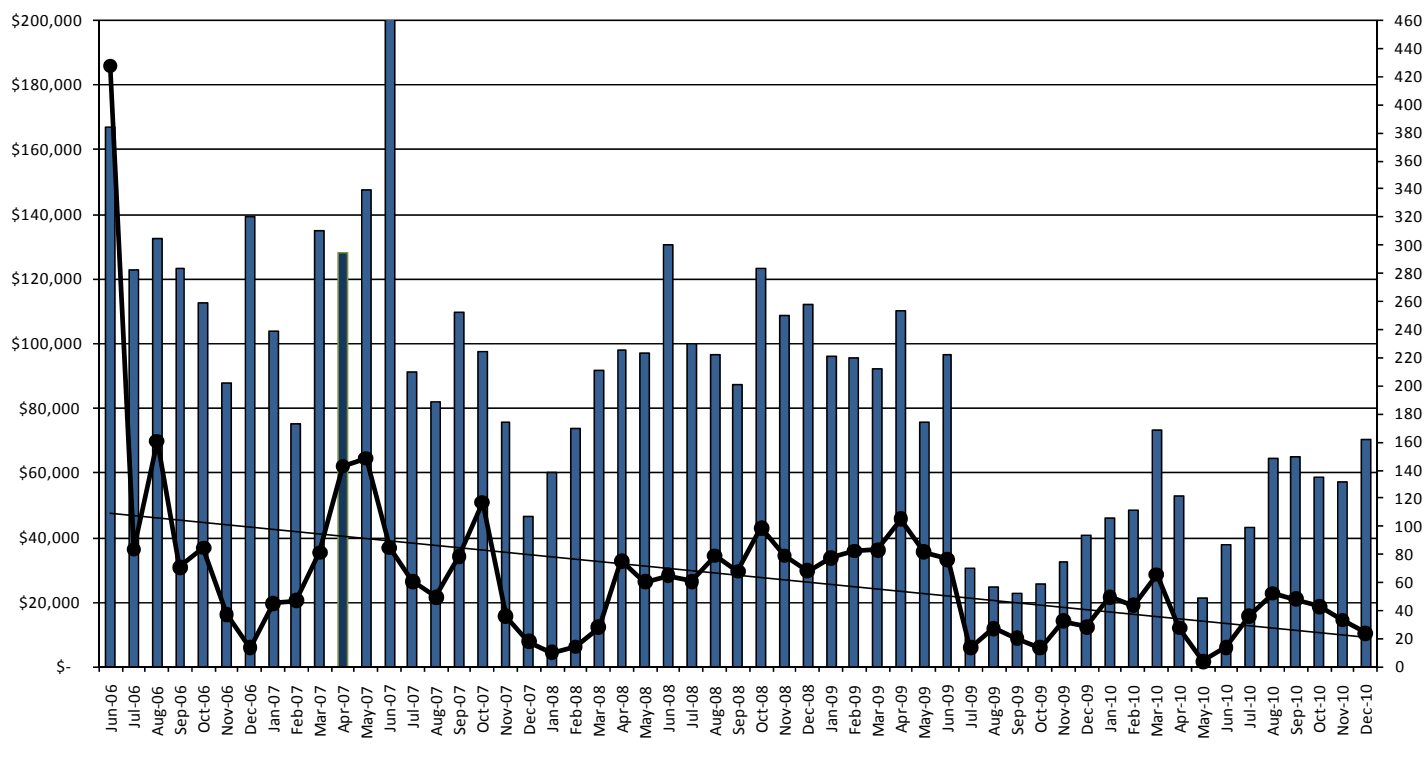


Statewide - Features Gathered



Statewide Route Miles Gathered vs. \$ Spent June 2006 Through December 2010

■ Statewide \$ Monthly Totals
 ● Statewide Miles Monthly Totals
 — Linear (Statewide Miles Monthly Totals)



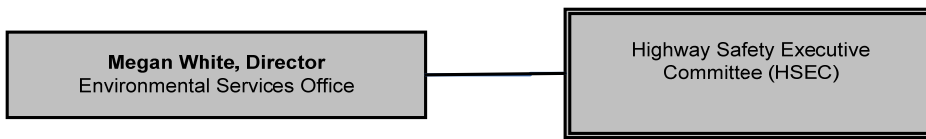
Detailed Regional data collection information

Regional RFIP information can be found beginning on page 11. Tables representing Total Route Miles vs. Route Miles Completed, Route Miles Gathered vs. FTE's, Features Gathered vs. FTE's, Features Gathered vs. \$ Spent, and Route Miles Gathered vs. \$ Spent are included.

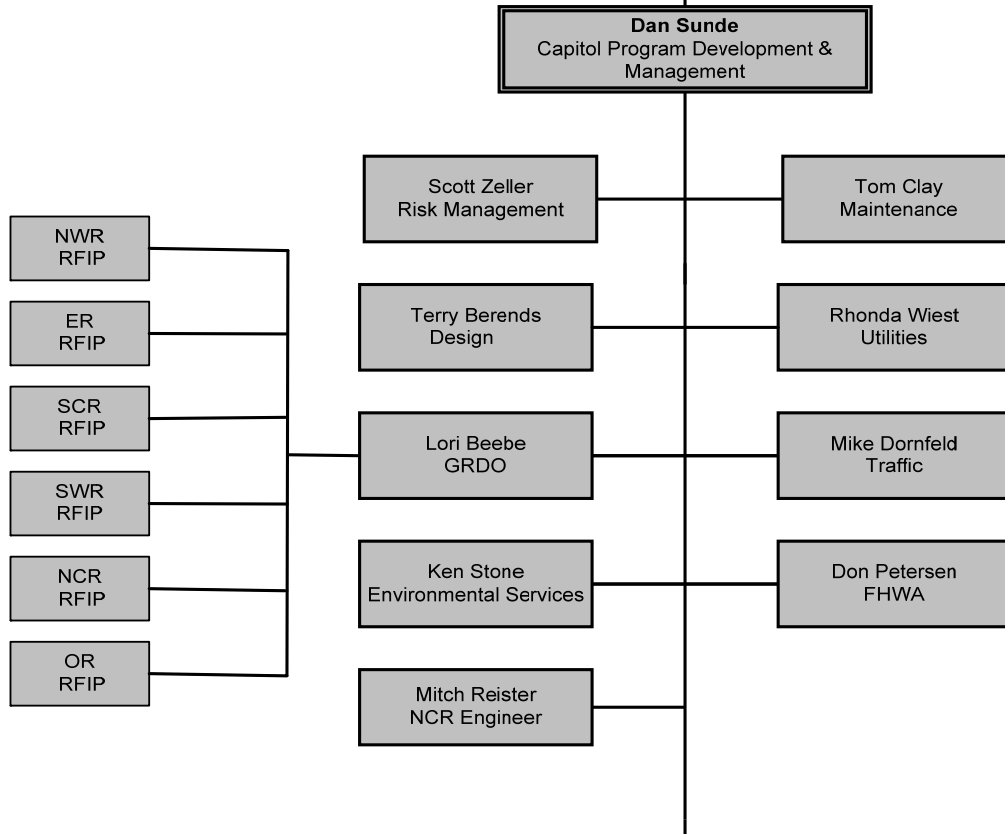
If you have any questions about this report or any suggestions on improvements and or content please contact Lori Beebe, Roadway Data Branch Manager at 360-570-2430 or beebe@wsdot.wa.gov.

Roadside Features Inventory Program-Table of Organization

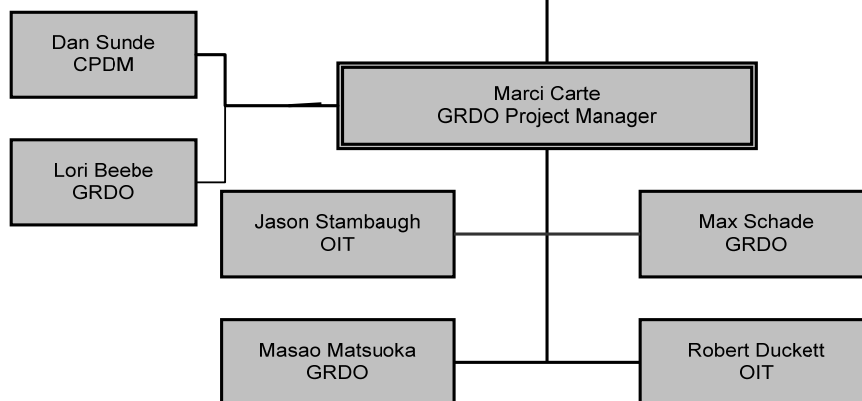
Executive Oversight Committee



Business Advisory Committee



IT Technical Team

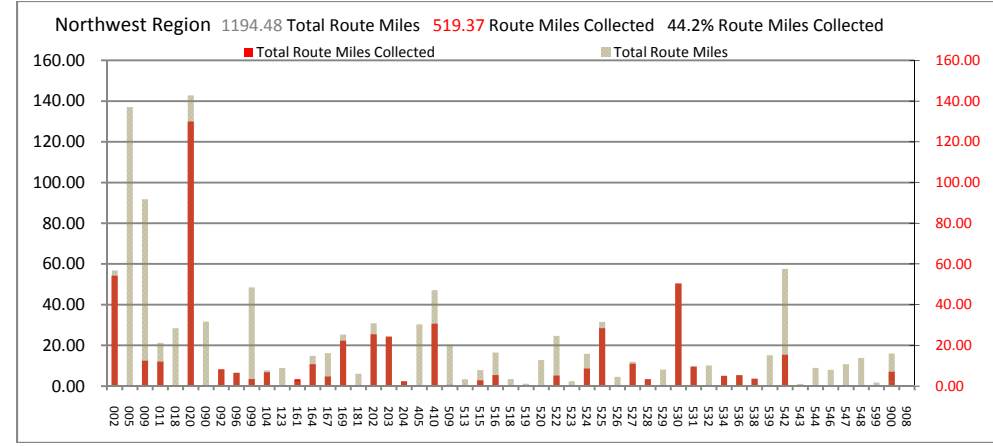
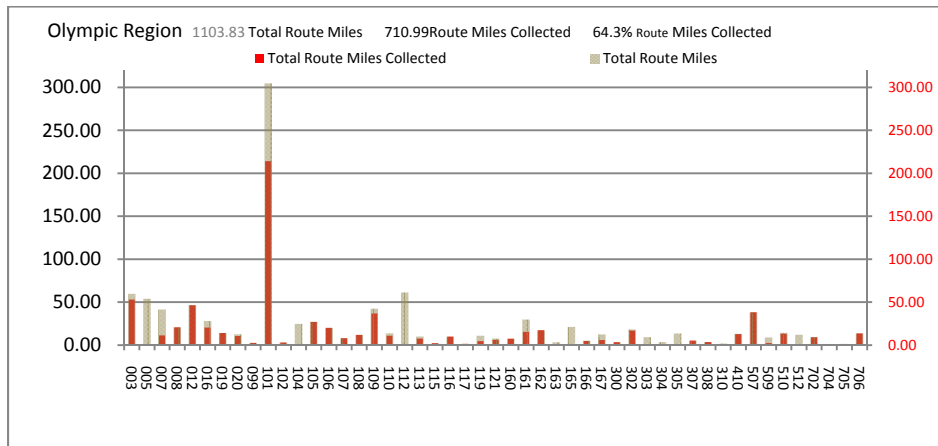
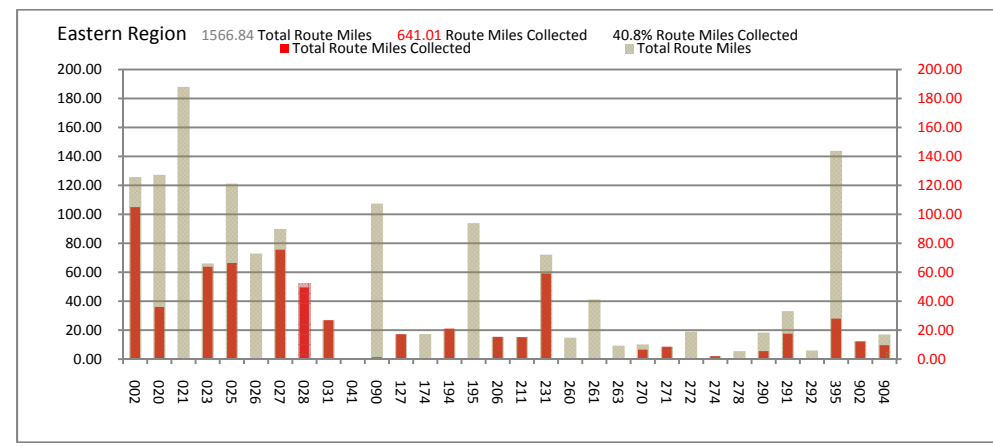
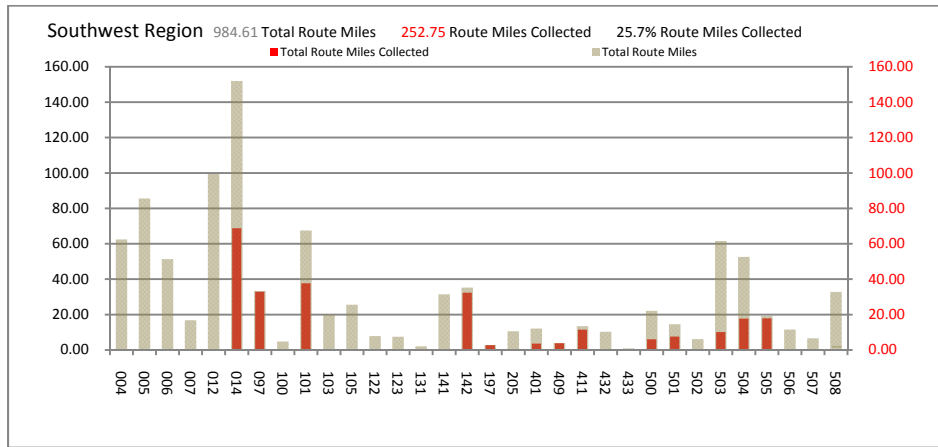
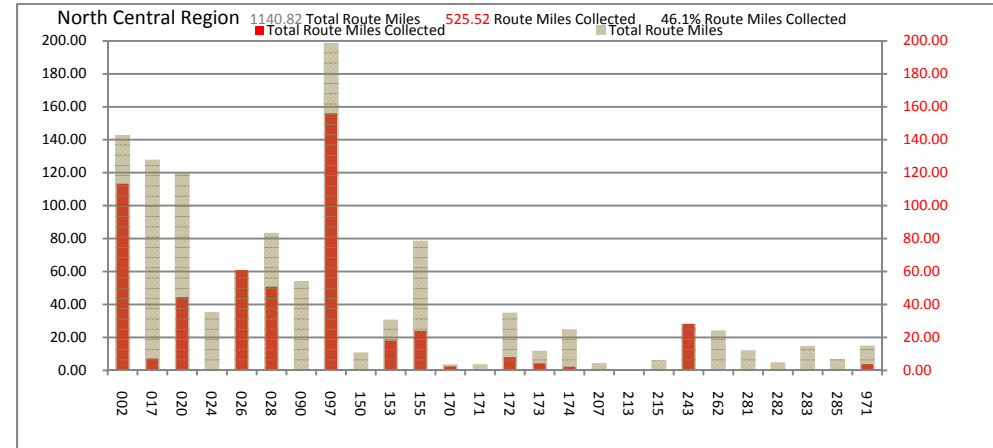
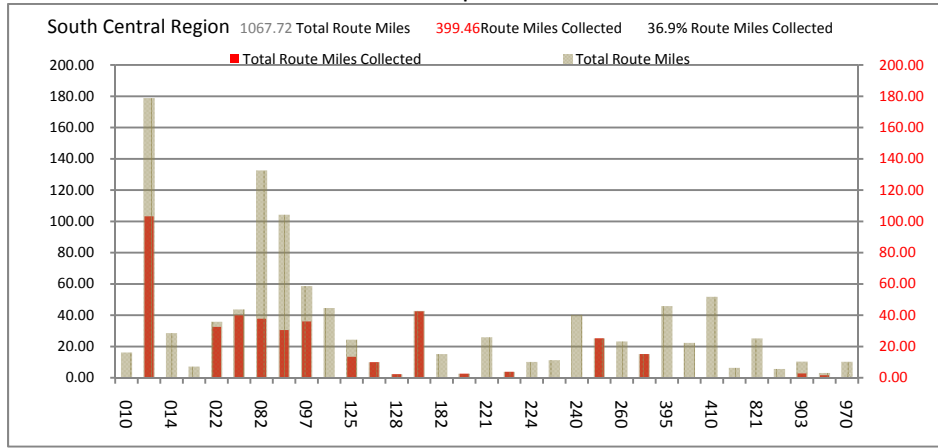


Other Business and Technical Experts as Needed

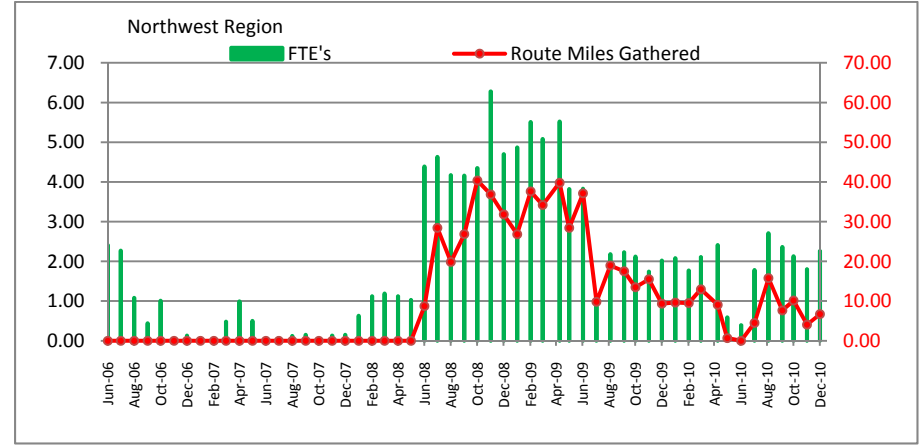
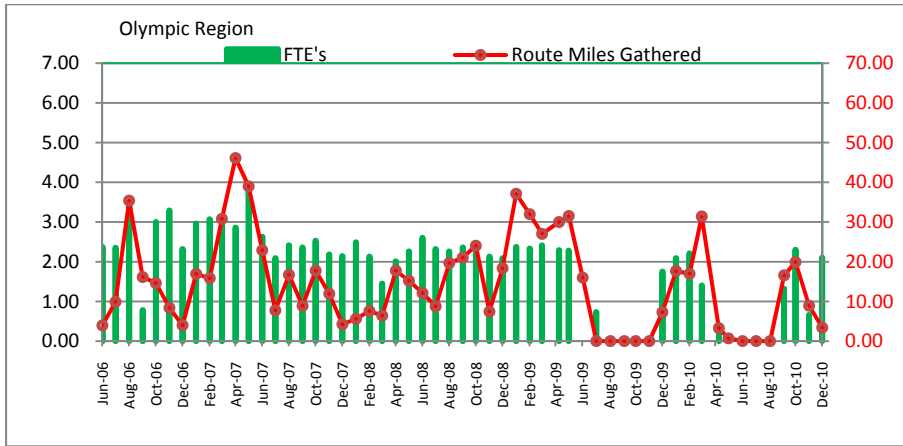
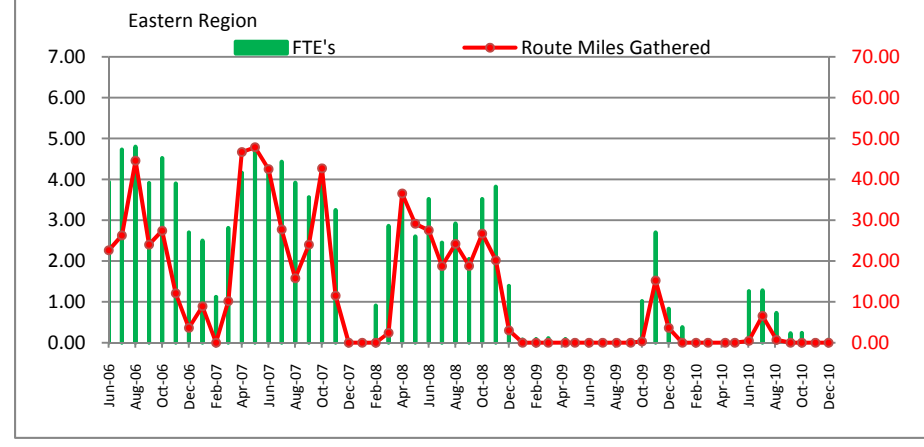
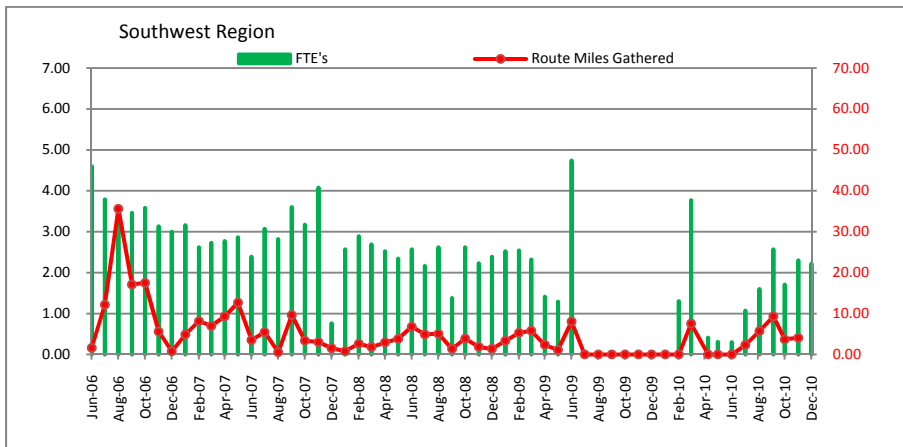
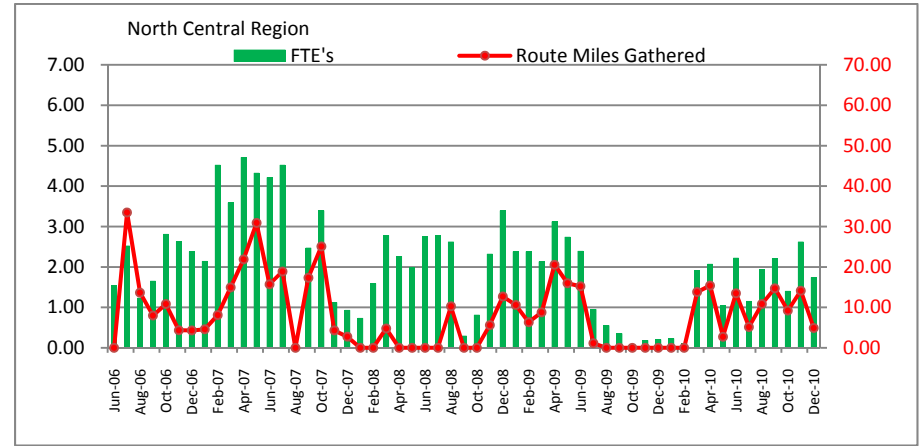
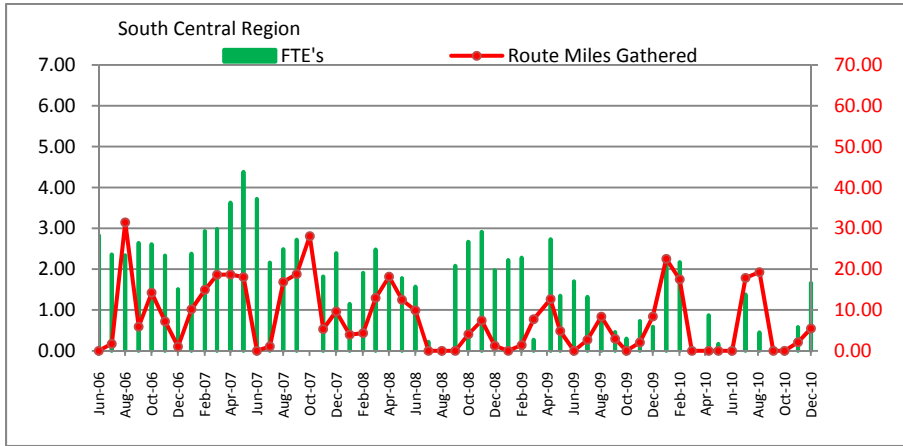
June 2006 Through December 2010 RFIP Features Collected

Bridge Rail	Hydrant
Bridge Structure	Guardrail
Cabinet Feature Class	Guardrail –Double Sided Event
Cable Barrier	Guardrail – Height Event
Curb	Guardrail – Post Material Event
Concrete Barrier	Guardrail – Post Spacing Event
Concrete Barrier – Face Treatment Event	Guardrail – Type Event
Concrete Barrier – Section Length Even	Glare Screen
Concrete Barrier – Type Event	Glare Screen – Height Event
Culvert	Down Guy
Culvert End	Guy Wire
Ditch	Impact Attenuator
Ditch – Back Slope Event	Intersection
Ditch – Depth Event	Mailbox
Ditch – Fore Slope Event	Miscellaneous Fixed Object
Ditch – Width Event	Pedestal
Drainage Inlet	Road Approach
Pipe End	Re-Directional Land Form
Dry Well	Regulatory Outfall
Fence	Rock Outcropping
Fence – Height Event	Roadside Slope
Fence – Type Event	Roadside Slope – Height Event
Roadside Slope – Slope Event	Wall
Wall – Height Event	Wall – Material Type Event
Wall – Type Event	Support
Special Use Barrier	Special Use Barrier – Height Event
Stormwater Pond	Stormwater Vault
Tree Groupings	Tree
Water Hazard	

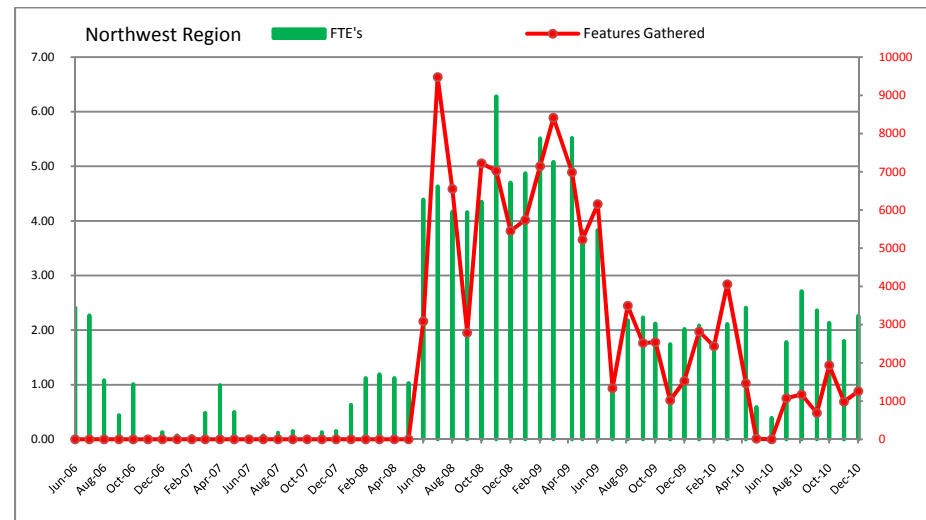
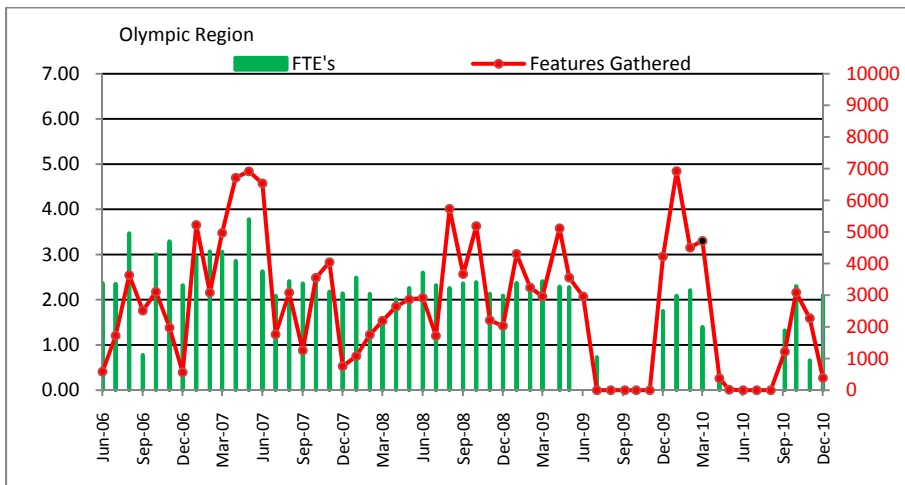
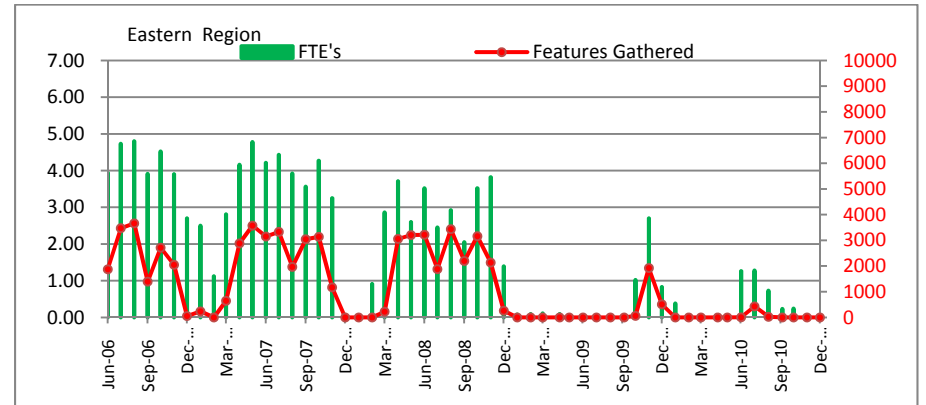
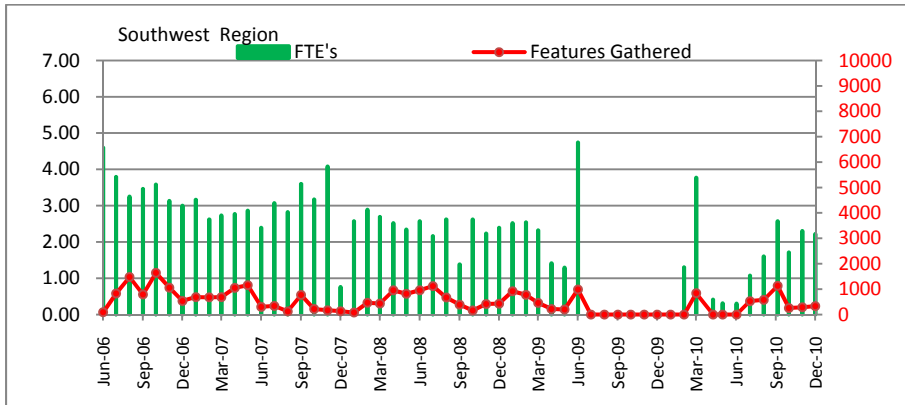
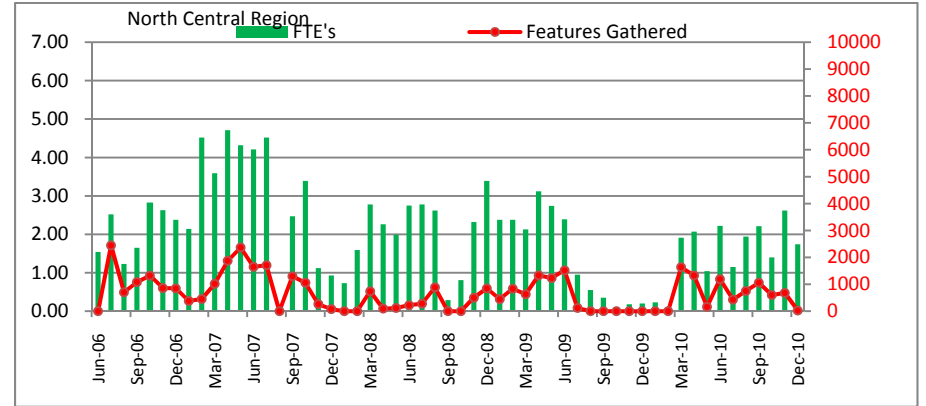
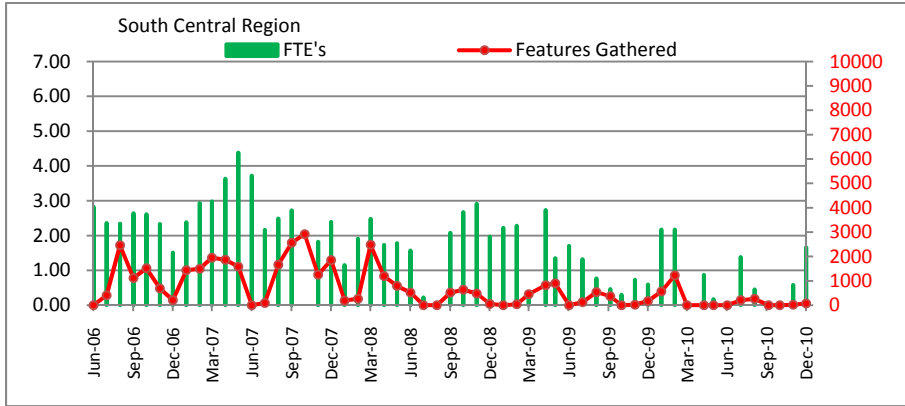
Total Route Miles vs. Route Miles Completed



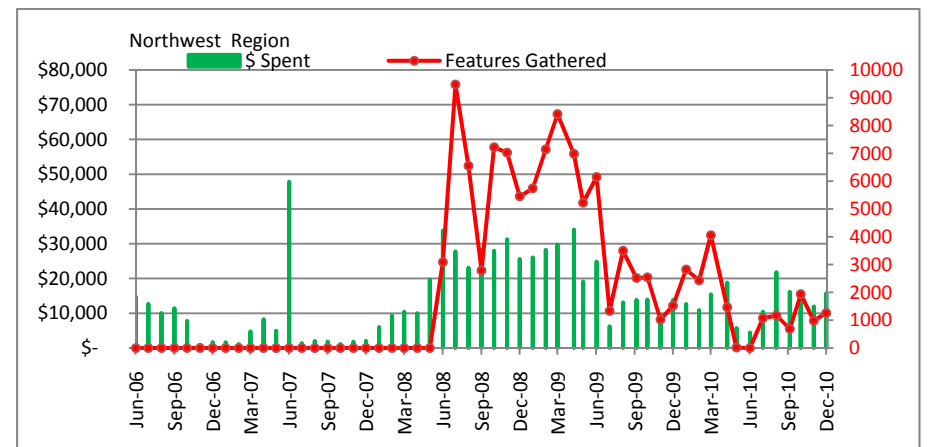
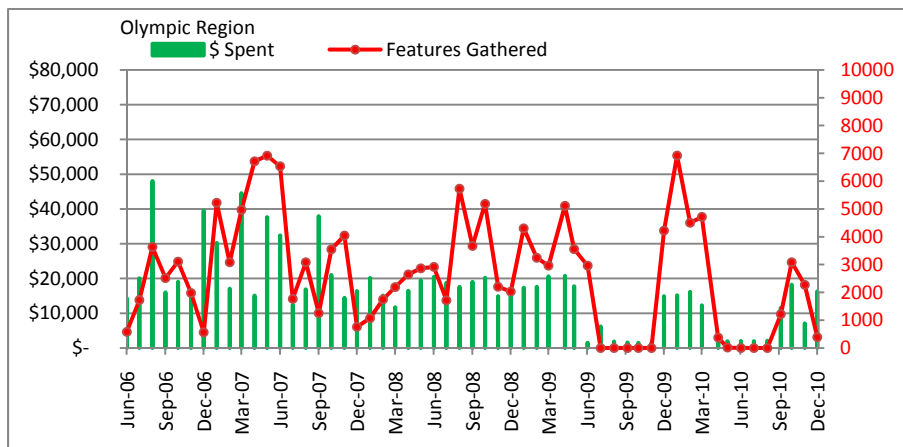
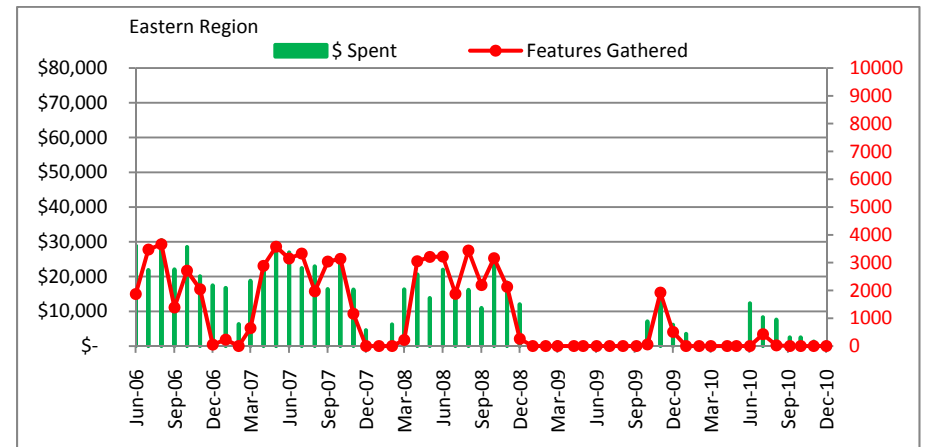
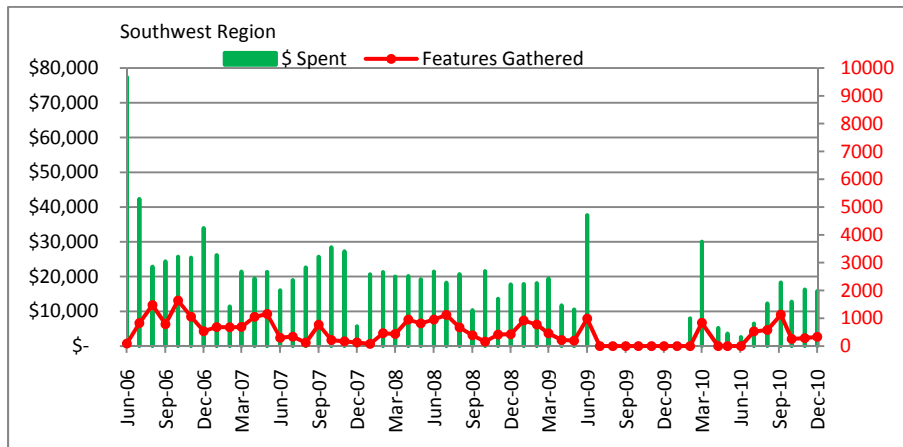
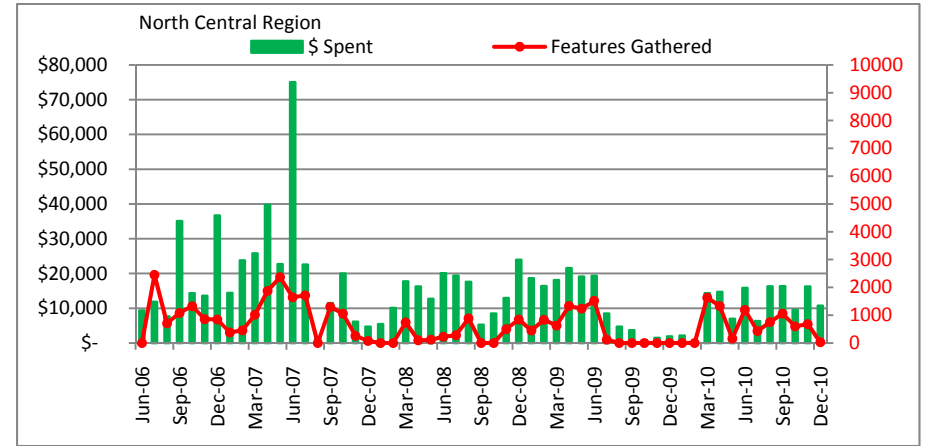
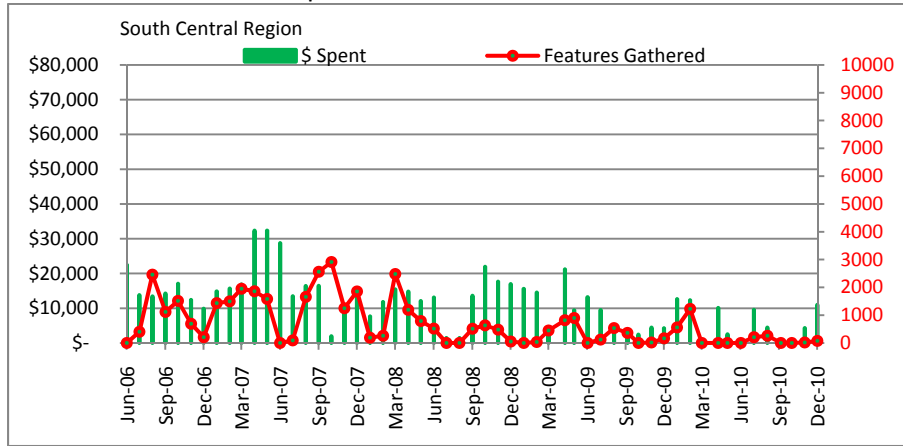
Route Miles Gathered vs. FTE's



Features Gathered vs. FTE's



Features Gathered vs. \$ Spent



Route Miles Gathered vs. \$ Spent

