

Highways GIS Web Portal

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Goals/Purpose

The Highways GIS Web Portal has been designed to provide easy access to highways and related information through an intelligent map interface. The initial information contained on the website is useful primarily for network level analysis or planning purposes; however, the intention is to maintain and upgrade the website to incorporate new features such as ROW videolog imagery, CADD drawings, aerial photography, queries, and reports, as they become available and/or needed.

The website was designed to be accessible to everyone who has a PC connected to the internal DOTNET network. No specialized software is required to view the website. Users can view any area in the state, and quickly access highways information such as traffic, road inventory items, bridges, county highways, pavement ranking or project information.

Framework

The website applications build on the Coordinated Data System (CDS), the data repository for the Roadway Information System (RIS). The web-based intelligent map environment expands upon the original CDS capabilities and exhibits the following features:

- **Integration of any internal electronic information (Highways)** –Sources of data include: HWY-P, HWY-DB, HWY-DD, HWY-L, HWY-R (see below).
- **Integration of external information** (i.e. environmental, land boundaries, other transportation facilities) – Sources of data include: DBEDT, City and County of Honolulu, USGS, Census, Bureau of Transportation Statistics, GDSI parcels, SPOT satellite imagery.
- **Use of multiple formats** – Many different vendor and product formats can be used as is without the need for translation (translation on-the-fly is built into the web application). Formats accommodated include: Microstation, Oracle Spatial, ArcInfo, ArcView, MS Access, MS Excel, GeoMedia and MGE.
- **Temporal comparisons** – A substantial amount of information contains date and time data. The website allows for simultaneous comparison of this information. For example, the website allows comparison of the annual average daily traffic on facilities across a span of several years.



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- **Spatial statistics** – The software includes capabilities to summarize or aggregate information by various areas or land boundaries. For example, the mileage of roads in a Census Tract, Legislative District or within an individually defined boundary (i.e. circle or polygon).

Background

This section describes how the Highways GIS Portal displays various data on the highway network. The fundamental concept behind the portal is the use of Linear Referencing. Linear Referencing is simply the tracking and analysis of data that is associated with locations along a linear network. Examples at Highways include tracking the location of and type of guardrails, the condition of pavement, and the location and identity of call boxes. Detailed information is available in the document: [Working with GeoMedia Transportation Manager](#). The biggest uses of linear referencing are Asset Tracking and Asset Analysis.

Asset Tracking primarily encompasses the following four items:

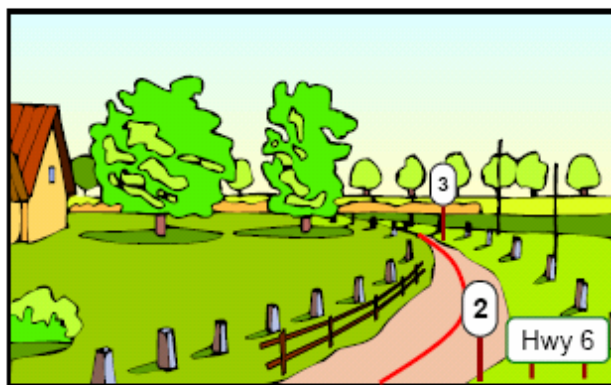
- What, where, and when of the assets (for example, a pothole at milepoint 41.7 along Route 11, reported June 6th, 2002)
- Asset conditions (for example, a stretch of pavement with rutting and cracking)
- Incidents along the network (for example, a maintenance activity)
- Activities along the network (for example, construction projects)

Asset Analysis includes such activities as “hot-spotting” (finding areas with an unusual density of a given type of problem) and cross-discipline analysis (for example, cross analyzing areas that have both increasing traffic and deteriorating pavement). This type of analysis can be important for any number of areas, including the following:

- Optimizing usage of the assets (for example, locating areas with both high volume and low number of lanes in order to identify areas of congestion)
- Optimizing budget usage (for example, locating the areas with the most traffic and the worst pavement conditions to be first priority for resurfacing)

Linear Referencing and GeoSpatial Technology

The main impetus to merge linear referencing with geospatial technology can be summed up simply: it's often desirable to view location data on a map. It also opens up a lot of other analysis capabilities, such as summing up data within an area feature (for example, the miles of road that require maintenance within a given jurisdiction) or finding data within a proximity of linearly referenced data (for example, finding residences near a construction project). One goal is to increase the value of your data by turning it into business-critical, decision-support information.



The preceding diagram shows a portion of road on the left and its geospatial representation on the right. The road has mile posts that indicate cumulative linear measures along the road. It also has a road name, Highway 6 in this example. A section of fencing along the road is also shown in both the left and right views. Based on the mile posts, it can be determined in the field that this stretch of fence runs along Highway 6 from mile measure 2.0 to 2.6.

On the geospatial side we have three linear features, known as LRS Linear Features, that will all have a road name and begin and end measure attribution. These LRS Linear Features are the backbone of the LRS and are used in automating the mapping of linearly referenced data, such as this stretch of fencing, onto our map view.

The methodology used by the Highways GIS Portal is to do this bulk mapping of linearly referenced tabular data is called Dynamic Segmentation (or linear geocoding). This methodology interpolates the location of linearly referenced data along the LRS Linear Features by making use of the road name and measurement attributes stored on those features.

Linear Referencing Methods

Most every DOT that captures and analyzes transportation information uses more than one Linear Referencing Method (LRM). This is the technique used to identify a specific point or segment of a roadway (or other linear network) using a combination of a linear naming convention (e.g. H-1) and a linear measurement convention (Mile 16.44). Examples of LRMs commonly used at other agencies are County Milepost, Engineering Stationing, and Street Addresses. Highways uses the CDS, HPMS, Project and a couple of other LRMs. Additional information on the definition and uses of the LRS, LRMs and the entire data model is available in another document called: [GeoTrans Transportation Data Model](#).



New Ways to reference routes

The Highways GIS Portal has new functionality! The website has extensions which support routes changes over time and also supports alternate route names.

User benefits:

- You can display data in any alternate route name. Thus, if you are working with HPMS data you can see H-1 displayed as 00000001 so that it matches the data. The current naming schemes are: CDS, HPMS, Project (more can be added)
- Routes can be turned on/off in the legend by ownership or jurisdiction (State, County, Federal, etc.)
- Routes can be turned on/off in the legend by facility type (Route, road, ramp, frontage, IMC, etc.)
- A new project may create a new alignment for one or more highways. If this occurs then the data captured and located by route/mile will appear to change location. The Highways GIS Portal has been enhanced to prevent this problem. Data is always presented on the current route network in its true location
- The support for route changes over time eliminates the need to perform route rippling, i.e. changing highway inventory data after route realignments
- The user has the ability to perform route and mile readouts in any of the alternate route names (CDS, HPMS, PROJ). These are called the Output LRM on the Highways GIS Portal. Note that CDS is split into two subgroups. CDS (State Routes) is comprised of state routes only and is the default since most information requests are only on state routes. If information is needed on a county route, ramp, frontage road, intermodal connector or other road then CDS (All Routes, Ramps, etc.) should be used.

Output LRM:

CDS (State Routes)
CDS (All Routes, Ramps, etc.)
CDS (State Routes)
HPMS
PROJ

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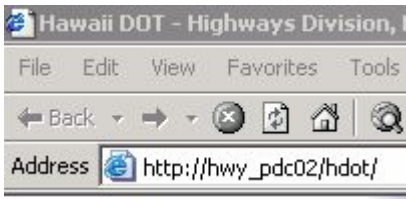
Available Data

The partial list below itemizes Highways information currently available through the website:

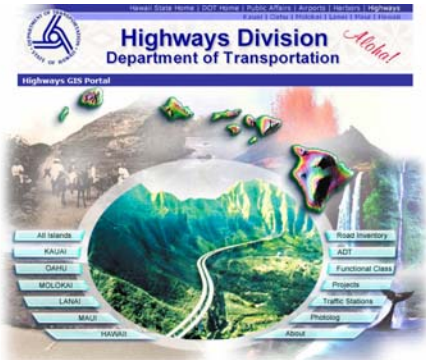
- **Bridge (NBI)** – Structure Number, Location, Feature
- **Highway Performance Monitoring System (HPMS)** – Functional Class, National Highway System (NHS), Ownership, STRAHNET, Avg Daily Traffic, Through Lanes, International Roughness Index (IRI), Sample, HOV Operations, Peak Parking, Speed Limit, K Factor, DIR Factor, Peak Lanes, Peak Capacity, Volume/Service Flow Ratio, Future Avg Daily Traffic, Truck Avg Daily Traffic, etc.
- **Pavement (PMS)** – Ranking of combined pavement distress information
- **Project (runDBA)** – Project ID, Project Number, Project Title, Project Type, etc.
- **Road Inventory (CDS)** – Mileposts, Road Diagram Features, Road Names, Access Control, Call Boxes, Development Areas, DOD Sections, Guard Rails, Jurisdictions, Lane Count, Median Types and Widths, Shoulder Types and Widths, Sidewalks, Terrain, Lane Types and Widths
- **Traffic** – Station Name, Type, Method, Leg Number, Location, Year collected, annual traffic survey data CD
- **Parcels** – parcels (TMK-Tax Map Key) information including: TMK, Owner, Island, Street Address, Property Value

Accessing the Website

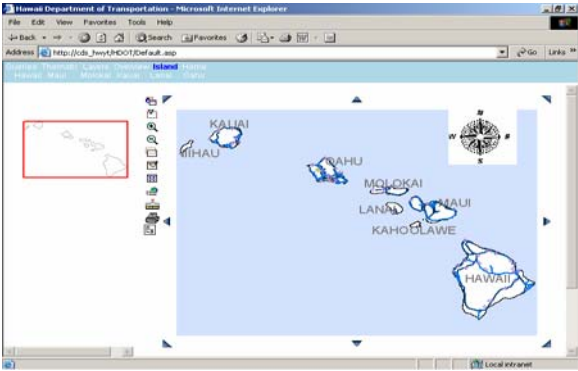
Enter the website location into the address window of your browser:



The website's Home Page is displayed. You may save this address in your "Favorites" list. Use any of the individual islands or the buttons below to enter the portal. The left buttons allow for general analyses by map locations; whereas the right buttons let users go directly to specific routes for pre-determined data queries.



For example, by selecting the All Islands button (top-left side above), yields the Map page with all islands in the map window and the Overview red box displayed on the left below.



If map does not appear, go back to previous Home page and select Help to view System Requirements.

All data queries are accessed via the blue banner menu in the top-left corner of the Map page.



Using the mouse to highlight *Queries*, *Thematic*,

and *Island* in the upper part of the banner will provide different clickable menus beneath them. A brief description of the sub-menu is provided below (more detailed information on some items appears later in this Guide).

Queries:

- HPMS** – Federal-Aid network level information; some information appears only on sample sections
- Mileage** – Calculates combined lengths of state and/or county routes in an area chosen
- Milepoint** – Locate a point or segment of a state route by milepoint(s)
- Parcels** – Obtain parcel (TMK) information
- Project** – RunDBA project information
- Road Inventory** – Access data items gathered from the Straight Line Diagrams and photologs
- Traffic** – Traffic Station & annual traffic survey data documents
- Photolog** – View digital images collected every 100 ft for state highways and major county highways.

Thematic:

- NHS Map** – Shows NHS and STRAHNET routes
- Bridges** – Shows Map of bridges, with tooltip data
- Pavement Rank** – Ranking of combined pavement distress information is shown on the map.
- Imagery** – Select from three types of imagery (low and high resolution satellite, digital USGS maps).

Layers: Displays interactive legend of map data layers and features being displayed. These are organized into categories of Transportation, Land Boundaries, Environmental and Schools. Turn selected (i.e. highlighted in red) data features on/off (i.e. click to turn off County Routes, and they will disappear from the map).



Overview: Red box indicates extent of interactive map (i.e. click on an island to change location)












Island: Select the desired Island from the list

Home: Return to the Home Page

Navigating the Map

Use the navigation buttons (vertical list of icons at top-left edge of map) to perform the described actions on the map window.

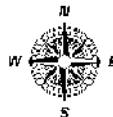
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-  Display Last View
-  Zoom By Area
-  Zoom In
-  Zoom Out
-  Center Map to Point
-  Refresh from Server
-  Fit Map
-  Get Latitude/Longitude Coordinates
-  Measure Distance in Feet and Miles
-  Print Preview
-  Export Features

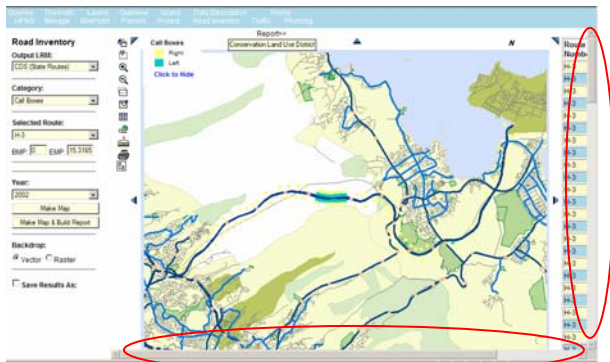
For instance, click the *Zoom By Area* button and draw a rectangle on the map for a zoom-in view by left clicking and holding that mouse button until the entire extent of interest is captured:



Click on the compass to hide it.



Some screens may require scrolling down the page to see the map scale bar (in miles).

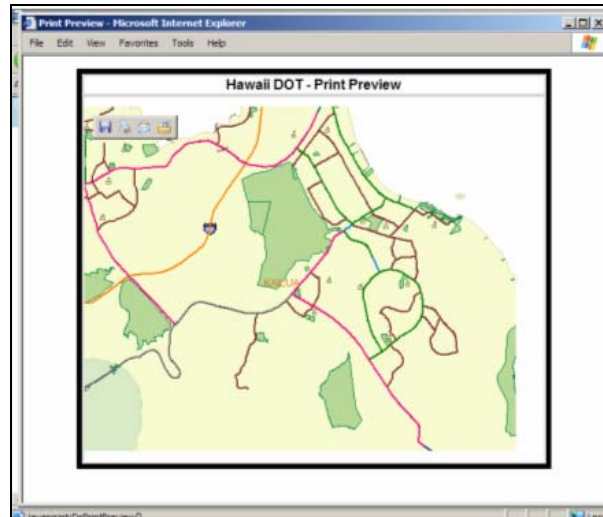


Outputting Maps & Data

To copy or print maps, a couple of options exist:

1. Use the *Print Screen* button on the keyboard to obtain an exact copy of the entire screen (map, legend, query menu, etc.). The user may then paste the image into an office document (Word, Excel, PowerPoint, etc.).

2. Select the *Printer* icon in the navigation tools and then select either *Print* or *Save* (save to a file). A print-preview will be displayed as in the view below (with the print/save icons shown in the upper left part of the map):



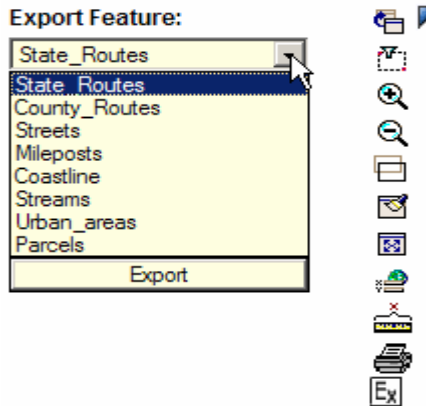
When *Print* is selected the user can then select the printer to send the map to.

Additionally, the *Export Features* button allows the user to create customized maps or data sets for further analyses or manipulation in other software packages, which offer different capabilities or other data than the website currently offers (This feature exports the BaseMap features that are shown in the “Export Features” dropdown box; dynseg features are exported as described later in this section). The website currently allows export into an ArcView shape file or Microstation design file.

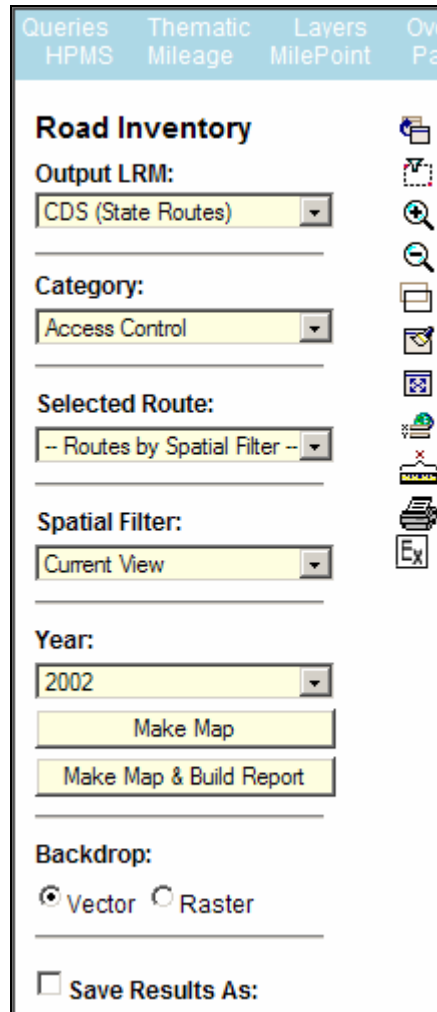
Please note that the information available through the website should be used for internal purposes only and should not be provided externally without checking on any licensing agreements or restrictions. Some data such as a large portion of the TMK parcels dataset have explicit sharing restrictions.

The user can select one map feature or data item at a time from the *Export Feature* list, then selects the *Export* button. A list of up to three files is generated and hyperlinked. Select each link to download the file to your computer. Use the appropriate software to view each of the files. The following example shows “State_Routes” selected as a map feature for export, using the *Shape file* format. After the *Export* button is selected, the file selections will appear below the

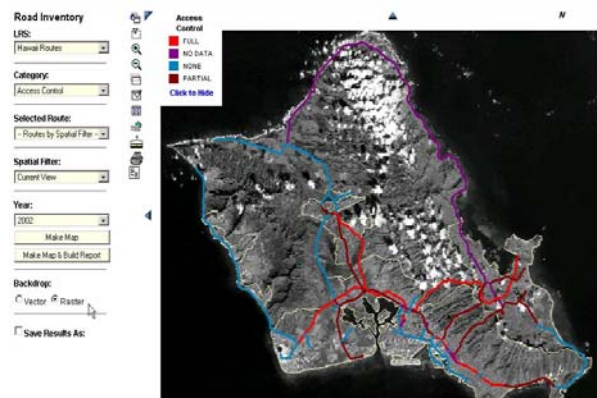
Export button for downloading, as shown in the following screen.



To export dynseg features from a query in the Road Inventory, HPMS, Project or Traffic menus, the "Save Results As" box at the bottom of the left side menu must be checked before running the query:



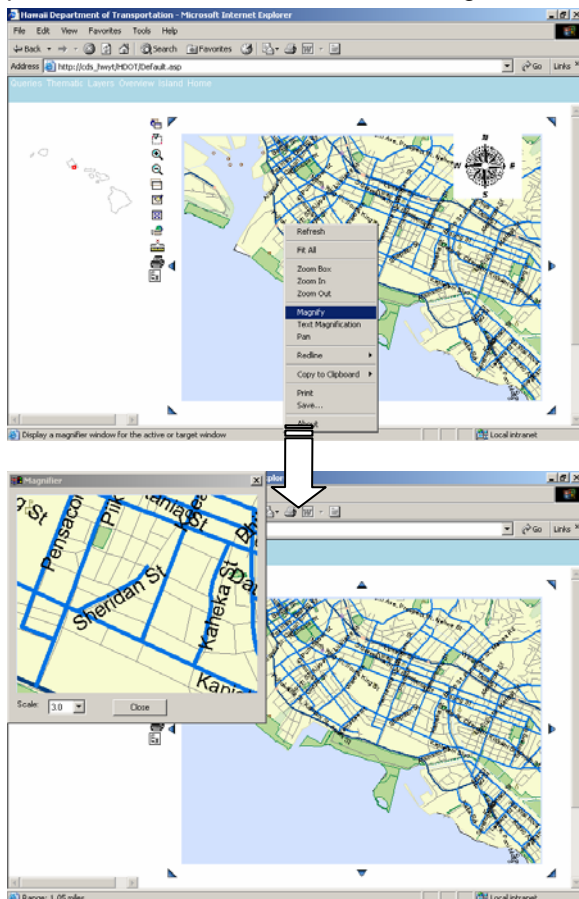
An example of a typical custom data export would be, after a spatial query, users may want to overlay a median type layer within Microstation. The user would check the "Save Results As" box, run the Query, choose DGN file for Microstation, and then click Make Map, as shown below (though the Raster features are not a part of the export).



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Magnifying Text and Map Features

The current website, given resources, offers only limited labeling. To help improve the legibility of some of the labels, as well as other features, there is a magnification tool available. The user needs to right click the mouse and select magnify. Then a separate magnification window will appear. The user can set the level of magnification.



HPMS Query Sub-Menu

A wealth of information is available in maps and reports through the various functions contained in the menu selections referenced above. In particular, the selection of *HPMS*, *Project*, *Road Inventory* or *Traffic* produces a menu with many alternative criteria that enables the creation of a variety of maps and reports. These criteria can be mixed & matched in ways to meet the needs of the user. Since the features of the HPMS menu are similar to those found in the other menus, this description can be applied for the most part to all of them.

HPMS: (menu shown at right)

1. Output **LRM**: Select the desired LRM to display from the picklist:

Output LRM:

- CDS (State Routes)
- CDS (All Routes, Ramps, etc.)
- CDS (State Routes)
- HPMS
- PROJ

2. **Segment Type**: The *Universe* data spans from the beginning to the end of each route and the *Sample* data is for selected portions of each route. (NOTE: the entries in the *Category*: picklist will vary based on whether the Segment Type "Universe" or "Sample" is selected).

HPMS

Output LRM:

- CDS (State Routes)

Select Segment Type:

Universe Sample

Category:

- Functional Class

Selected Route:

- Routes by Spatial Filter --

Spatial Filter:

- Current View

Reference Year:

- 2005

Make Map

Make Map & Build Report

Comparative Year:

- 1993
- 1994
- 1995
- 1996
- 1997

Do Comparison

Backdrop:

Vector Raster

Save Results As:

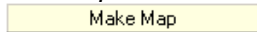
3. **Category:** The categories are data items reported annually to the FHWA in the HPMS Report. Nine Category selections are available in *Universe* segment type, including functional class, NHS, AADT, IRI, etc; in *Sample* segment type there are additional items like peak parking and capacity & future AADT, etc. The user selects one of the categories from the list to display on a map and report.

4. **Route:** All state routes and major county routes (functionally classed minor collector and above) are listed in the drop down box, and any single route may be selected for the map/report. If a particular route is selected, a box will appear for the input of the beginning (*BMP*) and ending mile-points (*EMP*) for the map/report.

5. **Spatial Filter:** This filter defines a particular area for building the map/report. *Current View* will make the map/report using whichever map may be currently visible at the right of the menu; additional filters include maps of *Island*, *Census Tracts*, political *House & Senate* districts (state), and a *Custom* filter, enabling the drawing of a circle or polygon around a desired area for the map/report. Selection of the *Spatial Filter* option will produce an *Area* drop-down box which contains available Island names, district numbers, etc. depending upon the filter that was selected.

6. **Reference Year:** Select the year (1995 or later) on which to query.

7. **Make Map:** After the preceding criteria have been selected (or using the default selections) a color-coded map of the features will be produced when the *Make Map* button is selected.

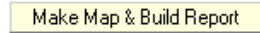


Once the map is presented, detailed information may be viewed in the tool tips when the mouse is moved over the data items on the map.



8. **Make Map & Build Report:** A comprehensive report of available data for the selected features can be created with the map by selecting this

function; see the “HPMS Query Example” below for more information on Reports.



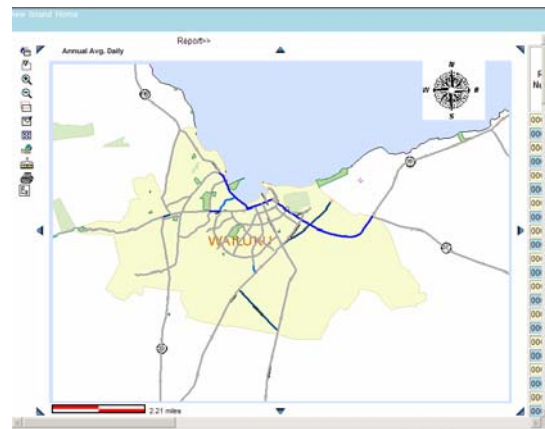
9. **Comparative Year:** The *Reference Year* data may be compared to the data of other years by highlighting one or more years in the list and clicking on *Do Comparison*. Use the “Ctrl” key and the left mouse button to select multiple years.

10. **Backdrop:** Selecting *Raster* will display a low-resolution satellite image under the map. Select *Vector* returns the map to the normal view.

HPMS Query Example: Map & Report

This example shows how to use HPMS data to examine the average annual daily traffic counts around the Wailuku area, in both Map & Report form:

1. Select *Island/Maui* from the banner menu to display a map of Maui
2. Select *Queries/HPMS*
3. Draw a box around the Wailuku area with the *Zoom by Area* tool to create a map like the one shown below
4. Set the *Segment Type:* to *Universe*.
5. Under *Category*, select *Ann. Avg. Daily Traffic*
6. Use the *Spatial Filter:* set to *Current View Ref Year: 2002* (date the data was collected)
7. Select *Make Map & Build Report* (waving palm trees are visible while the new map and report are being generated): the Map reappears as follows.

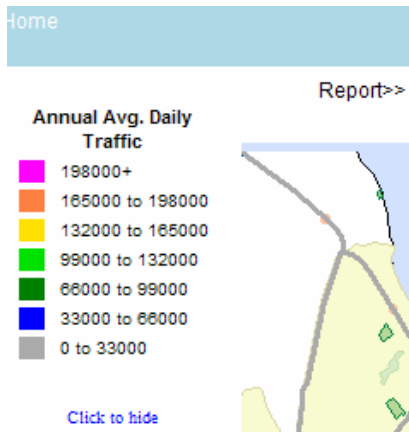


Two new visuals are visible in the map:

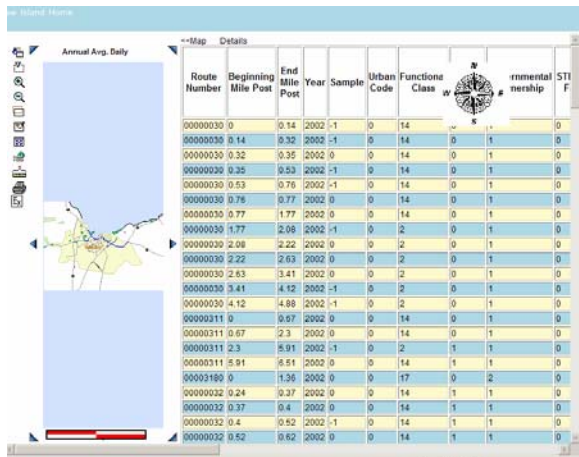
1. Above the map, on the left side, is the name of the legend for Map features, *Annual Avg. Daily*, which provides a link to the legend for this map.
2. To the right of the legend name is the link to the Report, shown as *Report>>*.

Click on the legend link and the following legend drops down, color-coded to the map features:

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Click on *Report>>* to see the Report: a small view of the map remains on the left while the scrollable details of the report appear on the right.



Above the Report, on the left side, is the link *<<Map*, enabling a return to the full-sized map. To the right of the *<<Map* link is the *Details* link (note that this *Details* report is available only in the HPMS sub-menu): A click on this link will produce a pop-up box containing all the report data plus some additional data columns.

Outputting Reports

Reports can be copied and saved into any Microsoft-compatible desktop office product. This example uses a Microsoft Excel worksheet. All of the standard manipulations may be performed on the report (sorting, totals, saved, printed, etc.). The following views show the Report with cells highlighted for copy (right-click and *copy*), and the Excel data sheet into which the cells have been pasted (right-click & *paste*).

Report:

Route Number	Beginning Mile Post	End Mile Post	Year	Functional Class	NHS Facility	Governmental Ownership	STRAHNET Facility
00000030	0	0.14	2002	14	0	1	0
00000030	0.14	0.32	2002	-1	0	1	0
00000030	0.32	0.35	2002	0	0	14	0
00000030	0.35	0.53	2002	-1	0	14	0
00000030	0.53	0.76	2002	-1	0	14	0
00000030	0.76	0.77	2002	0	0	14	0
00000030	0.77	1.77	2002	0	0	14	0
00000030	1.77	2.08	2002	-1	0	2	0
00000030	2.08	2.22	2002	0	0	2	0
00000030	2.22	2.63	2002	0	0	2	0
00000030	2.63	3.41	2002	0	0	2	0
00000030	3.41	4.12	2002	-1	0	2	0
00000030	4.12	4.88	2002	-1	0	2	0
00000311	0	0.67	2002	0	0	14	0

Excel data sheet:

Route Number	Beginning Mile Post	End Mile Post	Year	Sample	Urban Code	Function Class	NHS Facility	Governmental Ownership	STRAHNET Facility	
1	00000030	0	0.14	2002	-1	0	14	0	1	0
2	00000030	0.14	0.32	2002	-1	0	14	0	1	0
3	00000030	0.32	0.35	2002	-1	0	14	0	1	0
4	00000030	0.35	0.53	2002	-1	0	14	0	1	0
5	00000030	0.53	0.76	2002	-1	0	14	0	1	0
6	00000030	0.76	0.77	2002	0	0	14	0	1	0
7	00000030	0.77	1.77	2002	0	0	14	0	1	0
8	00000030	1.77	2.08	2002	-1	0	2	0	1	0
9	00000030	2.08	2.22	2002	0	0	2	0	1	0
10	00000030	2.22	2.63	2002	0	0	2	0	1	0
11	00000030	2.63	3.41	2002	0	0	2	0	1	0
12	00000030	3.41	4.12	2002	-1	0	2	0	1	0
13	00000030	4.12	4.88	2002	-1	0	2	0	1	0
14	00000311	0	0.67	2002	0	0	14	0	1	0

Traffic Station Query Example

The *Traffic Stations* menu is shown below. The *Attribute Filter*, which allows selection of a *route number* and the beginning and end *milepoints*, was not used in this example.



The box *Traffic Stations* by Name was selected (but not the “checkbox” beside it) to produce the pop-up menu. In the picklist “332” was selected for mapping. Click the *Return To Traffic Stations* button to close the popup and the menu returns to

the main query menu as shown below. The box next to the button will then be checked to indicate that a selection has been made on the menu. Also, in this example, the *Comparative Year 2000* has been selected. Selecting *Make Map* results in the following map.

Traffic Stations

Output LRM:

Selected Route:

Spatial Filter:

Traffic Sta.(s) by Name
 Traffic Sta.(s) by Criteria

Reference Year:

Comparative Year:

Backdrop:
 Vector Raster

Save Results As:

Traffic Stations By Criteria

Y N DC Select type of Data

Traffic stations type

Permanent Station PER
 Seasonal Station SEA
 Coverage Station COV
 Partial Station PAR
 Obsolete Station OBS

Traffic Station Survey Methods

Manual MAN
 Tubes TUB
 Loops LOO
 Piezos PIE
 Weigh In Motion WIM
 Other OTH

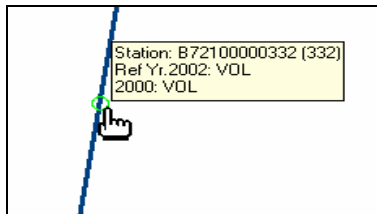
Traffic Station Survey Methods

Metered Traffic Volume Survey VOL
 12 HR Vehicle-Type Classification Survey CT2
 24 HR Vehicle-Type Classification Survey VTC
 Turn Movement Survey TMS
 Truck Weight Survey TWS
 Speed Study Survey SSS
 Vehicle Occupancy Survey VOS
 Derived Survey (d)
 Proposed Survey Lower case letters

A Traffic Station Survey Report can be viewed from the website. After creating a map of the desired station(s), click on the station symbol and select a report from the available listing

The screenshot shows a web browser window with a map of traffic stations. A tooltip is visible over a station, showing: Station: B72100000332 (332), Ref Yr: 2002: VOL, 2000: VOL. To the right of the map is a list of image names for traffic station data, categorized by year: 2002 (Comparative Year) and 2001 (Reference Year).

Note that the *Comparative Year* information appears in the tooltip when the cursor is moved over the station.



A view of the survey will then appear:

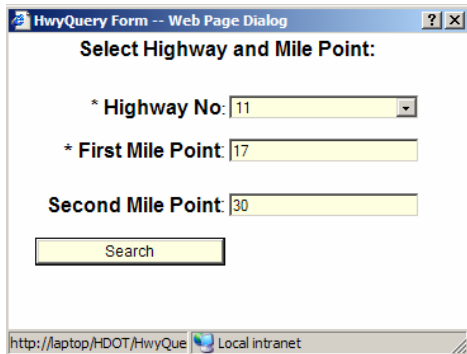
VEHICLE TYPE CLASSIFICATION (IRD - 13 CATEGORIES)
MISSOURI DEPARTMENT OF TRANSPORTATION

VEHICLE TYPE	A.M. PEAK (6:30 - 7:15)		P.M. PEAK (4:30 - 5:00)		24-HOUR VOLUME (8:00 AM - 8:00 PM)		TOTAL	VERTICAL %		
	DIRECTION		DIRECTION		DIRECTION					
	MOV 2	MOV 4	MOV 2	MOV 4	MOV 2	MOV 4				
PASSENGER CARS										
1) 1-2	11	14	25	27	58	344	450	794	1.14	
2) 3-4	2914	981	3895	2652	2818	4841	2778	2188	5696	88.00
3) 5-6	382	170	552	271	346	519	416	2879	654	11.66
Sub-Total	3317	1165	4482	2321	3004	5415	3357	31187	6444	92.73
TRUCKS & BUSES										
4) 7-8	10	8	18	8	8	132	54	186	0.27	
5) 9-10	20	20	51	31	12	43	60	202	89	1.26
6) 11-12	24	40	74	16	16	35	198	241	83	1.21
7) 13-14	1	1	2	1	1	1	34	50	0.07	
8) 15-16	46	19	105	47	59	100	741	464	1022	1.56
9) 17-18	20	17	42	20	15	30	646	284	930	1.34
10) 19-20	8	8	16	3	5	8	43	61	114	0.16
11) 21-22	3	2	5	3	3	6	32	40	72	0.10
12) 23-24	8	6	14	6	6	12	36	26	67	0.10
13) 25-26	22	12	34	13	20	30	345	331	676	0.97
Sub-Total	228	138	393	146	135	287	1610	1830	3554	7.27
TOTAL	3527	1306	4835	2467	3225	3642	35287	33020	69498	100%
Distribution (%)	73.2	26.8	100%	43.3	86.7	100%	82.5	47.5	100%	
Thru (%)	6.2	12.2	7.2	5.5	4.2	4.9	6.8	5.6	7.2	
A %			7.0			8.2			100%	

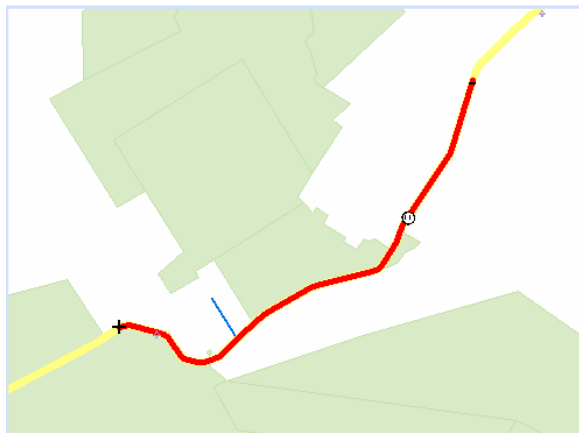
STATION NO: 202

Locating a Highway Segment

The location of a particular segment of a roadway can be located on the map by using the *QueryMile Point* submenu. In the following example, the segment from milepoint 17 to 30 on route 11 on the Island of Hawaii has been selected (there is a picklist of Highway no's):



The following map will appear, with the selected segment centered in the screen and colored red; the beginning point at milepoint 17 has a “-“ sign on it, and the end point at milepoint 30 has a “+” sign on it.

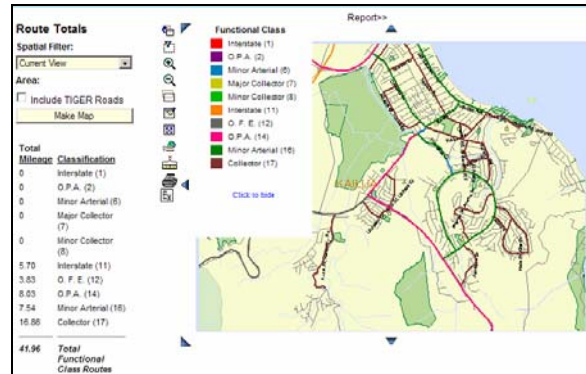


Mileage Analysis

The *QueryMileage* submenu (shown in the top left corner of the screen below) provides the capability to calculate the total miles of all roads in a selected region; TIGER roads (minor county roads) may be included or excluded.

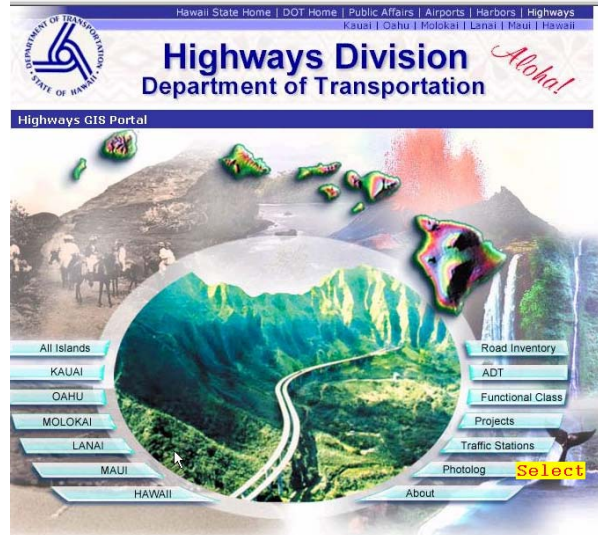
In this example, a region in the Kailua area of Oahu was selected with the *Zoom by Rectangle* navigation feature; TIGER Roads were not selected on the menu; selecting *Make Map* produced the following map and information. The resulting map is color coded with the functional

classes as shown in the legend, and a summary of road mileage is shown below the menu.

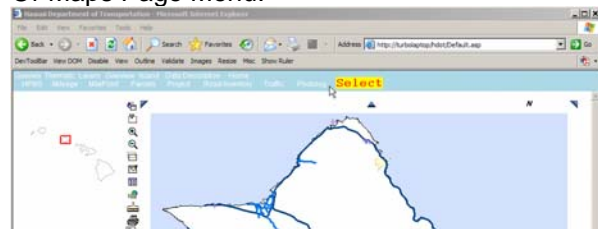


PhotoLog/VideoLog

Periodically, Hawaii Routes are surveyed and the digital photographs and are available for viewing from the website. This provides a visual representation of each route from start to finish via two views (forward and right-of-way). Using this feature a route and milepoint can be selected for viewing, along with the GPS coordinates. This feature is accessible from the website's opening splash page and also from the Maps page menu.



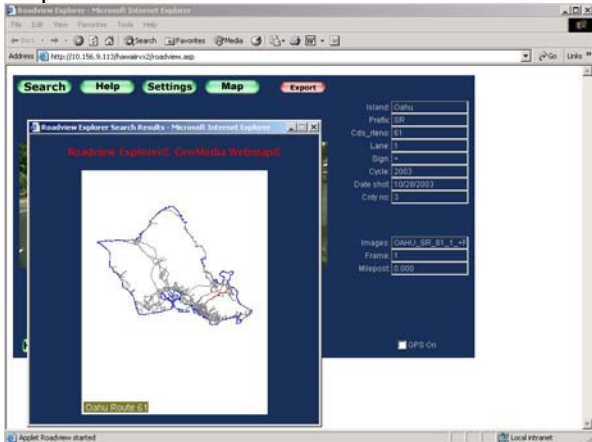
Or Maps Page Menu:



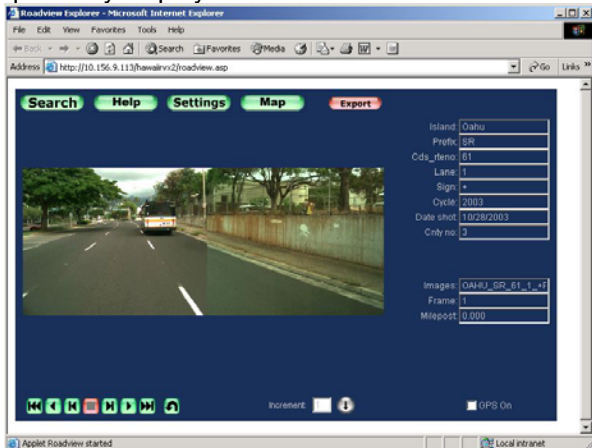
The following screen appears and when "Search" is selected, the details of a Route to view can be selected:



The Island and Route will then be presented in a map as shown next.

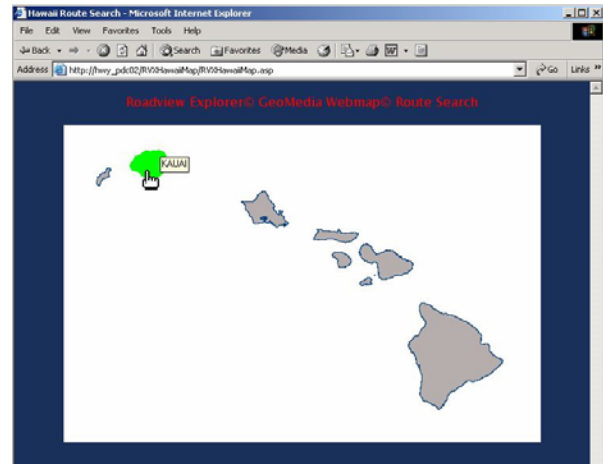


Upon dismissing the Island/Route Map, the videolog can be started: by clicking the ">" button; a frame-by-frame view of the route will be sequentially displayed.

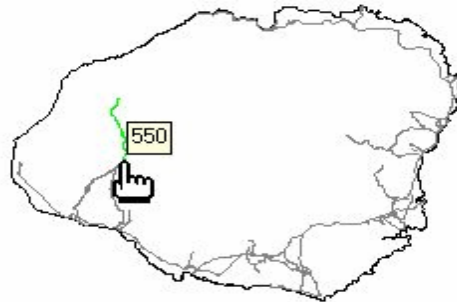


The GPS coordinates can be displayed by checking the box.

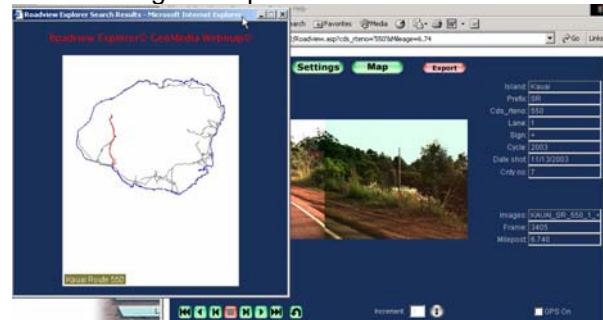
Another method of selecting a Route is to click on "Map" instead of "Search". This will produce a map of all the Islands from which one Island can be selected:



Then a route can be selected, and the videolog will commence at the beginning of the route:

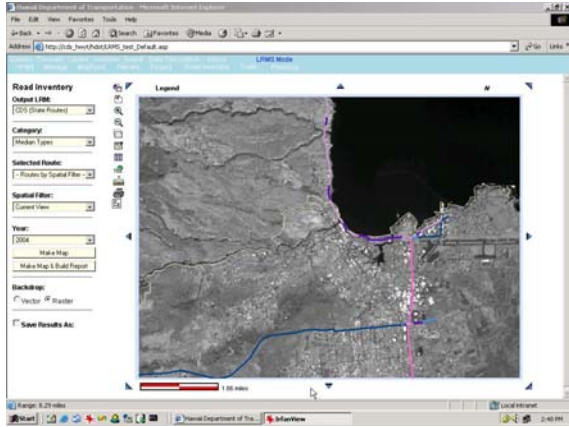


The videolog then opens:



Imagery

There are several types of imagery available for viewing on the website. Data queries may be displayed on each of the imagery types. This fea-



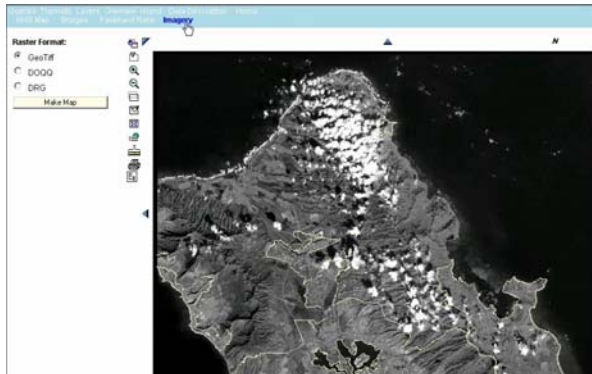
The last image type is the Digital Raster Graphics (DRG) which are digitized USGS quad maps:



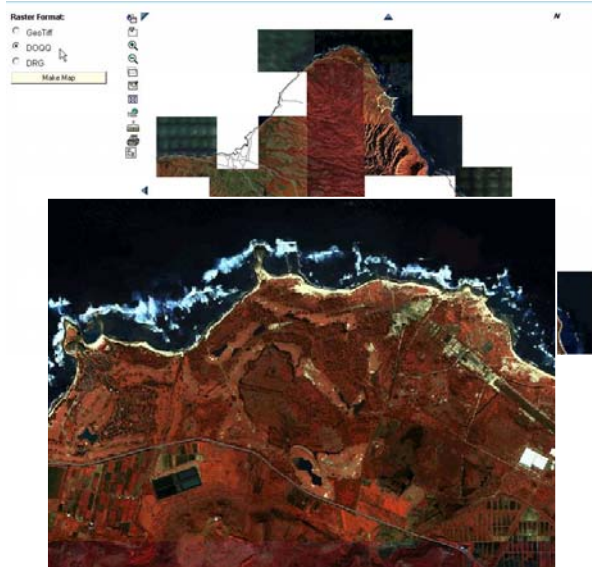
Also, by selecting "Imagery" under the "Thematic" menu there are three options available for various renderings of a geographic area: First there is "GeoTiff", which displays low resolution images obtained from the SPOT satellite:

Interchange Maps

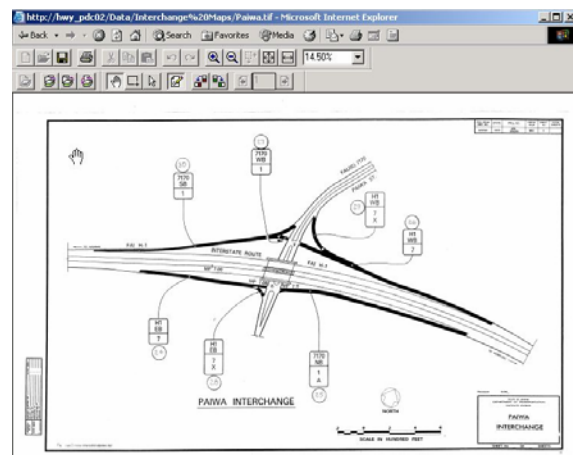
Detailed maps of interchanges can be obtained from the website by locating the dashed line surrounding an interchange and clicking on it when it turns yellow.



Then, DOQQ; the high resolution Digital Ortho Quarter Quad imagery is incomplete. Two views shown:

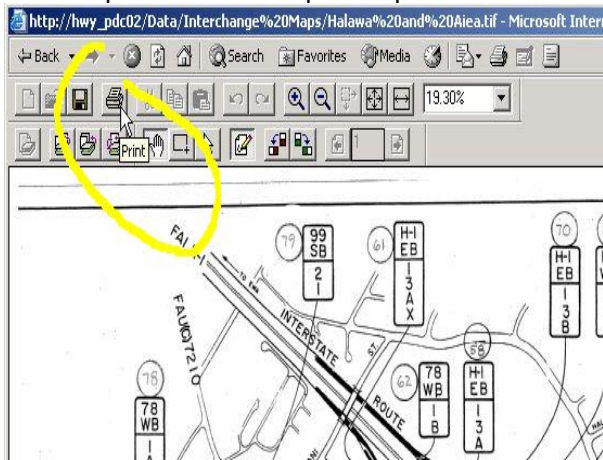


The Map will then appear as shown below:

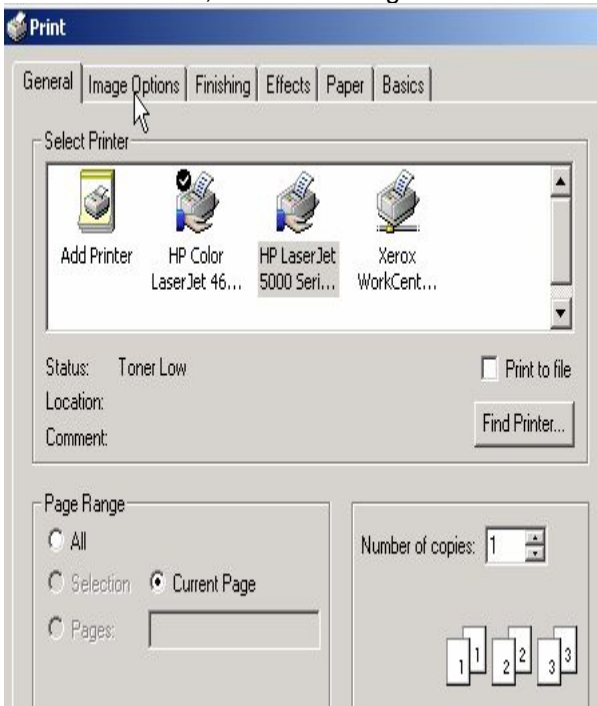


Highways GIS Portal – Quick Start Guide

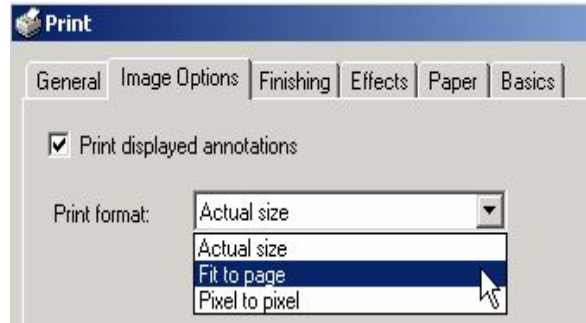
1. To Print the Map on one page: Click on the “printer” icon at top of map:



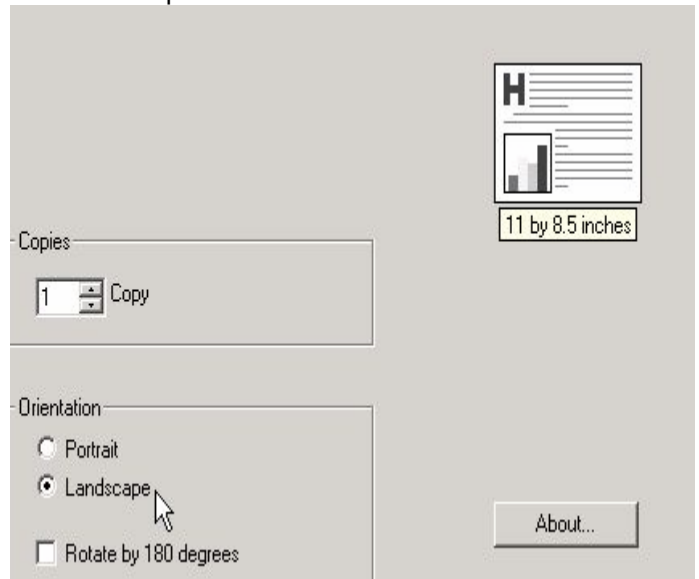
2. Select the 'Image Options' tab in the resulting dialogue box “Paper Range” can be either 'All', or 'Current Page':



3. Adjust the 'Image Options' to “Fit to page” as shown below:



4. Then select the “Basics” tab and adjust to 'Landscape' as shown:



7. The resulting printed page will show the entire Interchange Map.

Parcels

The *Query/Parcels* submenu (shown below) provides the capability to query on parcel related information (i.e. Owner, location, assessed value, TMK number, etc.).

Parcel Query

Island:

Tax Map Key:

Owner (Last, First):

Street Number:

Street Name:

Property Value:

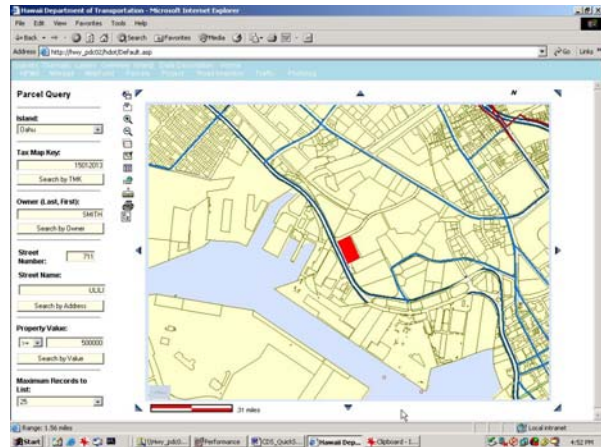
Maximum Records to List:

Each section of the query form operates independently of the other sections. Sections are divided by the horizontal gray bar...

Thus a user may enter a Tax Map Key value and click "Search by TMK" or alternatively an Owner name may be entered and the "Search by Owner" button clicked. The result of a query in any section is a report summary.

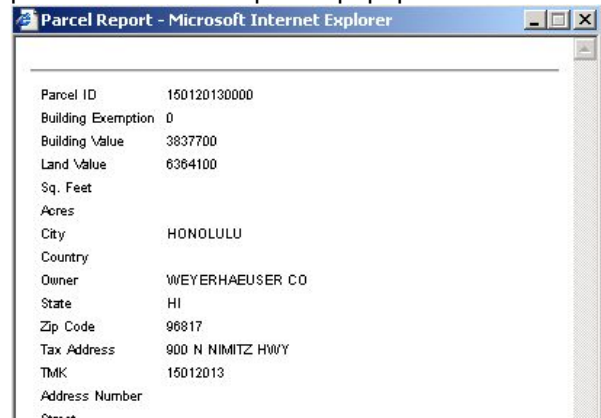
Tax Map Key	Suffix	Owner
15012016	0000	WEYERHAEUSER COMPANY Map Report

Select the "Map" hyperlink to locate the parcel that meets the query criteria. The subject parcel will be centered in the map and highlighted red.



Moving the mouse over adjacent parcels allows the user to retrieve information about neighboring properties. Note that some parcels are quite small so a zoom operation may be required to see the parcel in detail.

Select the "Report" hyperlink to display a report of the parcel that meets the query criteria. The report is shown in a separate popup window.



A query operation uses all of the values in the section. Thus, to see all parcels that have "ULILI" in the Street Name, the default Street Number (circled in red) should be cleared.

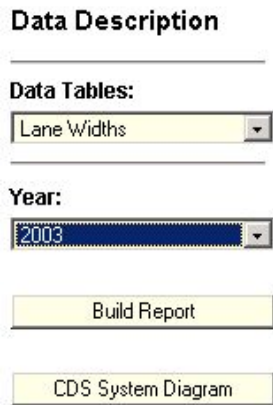
Parcel Query	Tax Map Key	Suffix	Address	
Island: <input type="text" value="Oahu"/>	99040052	0015	22 ULILI ST	Map Report
	47053020	0000	47 701 HUI ULILI ST	Map Report
	47056027	0000	47-0602 HUI ULILI ST	Map Report
	41018013	0000	47-591 HUI ULILI ST	Map Report
Tax Map Key: <input type="text" value="15012013"/> <input type="button" value="Search by TMK"/>	47056040	0000	47-591 HUI ULILI ST	Map Report
	26024014	0036	47-591 HUI ULILI STREET	Map Report
	47056023	0000	47-594 HUI ULILI ST	Map Report
	47056024	0000	47-596 HUI ULILI ST	Map Report
Owner (Last, First): <input type="text" value="SMITH"/> <input type="button" value="Search by Owner"/>	47056039	0000	47-597 HUI ULILI ST	Map Report
	47056025	0000	47-598 HUI ULILI ST	Map Report
	47056026	0000	47-600 HUI ULILI ST	Map Report
	47056037	0000	47-603 HUI ULILI ST	Map Report
	47056028	0000	47-606 HUI ULILI ST	Map Report
Street Number: <input type="text" value=""/>	37022032	0000	47-607 HUI ULILI ST	Map Report
	47056036	0000	47-607 HUI ULILI ST	Map Report
Street Name: <input type="text" value="ULILI"/> <input type="button" value="Search by Address"/>	47056029	0001	47-608 HUI ULILI ST #A	Map Report
	47056107	0002	47-608/D HUI ULILI ST	Map Report
	47056029	0002	47-608B HUI ULILI ST	Map Report
	47056107	0001	47-608C HUI ULILI ST	Map Report

Data Description (Metadata)

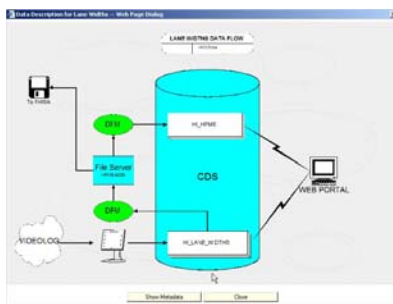
The Data Description selection allows the user to see the metadata for each data item. Metadata is the background information about the data, i.e. who collected the data, when was it collected, what is the accuracy of the data, etc. This allows the user to understand the data and make accurate decisions when using the data.



The *Data Description* menu (shown below) provides access to both Data Flow diagrams and the metadata description for each data item.



Select the data and the year of interest followed by *Build Report*. The Data Flow diagram is displayed. This diagram shows the typical steps used to acquire and display this data item.



Select Show Metadata to see the textual meta-data report.