

BIOGRAPHICAL INFORMATION

Barney Yoshioka
IT Program Manager – EFMS
Hawaiian Electric Co., Inc.

Specific Responsibilities

Joined Hawaiian Electric in 1971. Responsible for managing the Electric Facilities Management System (EFMS) Program. The EFMS Program is comprised of IT programs and applications that support CADD and AMFM systems at Hawaiian Electric. Responsibilities include strategic planning and visioning, application development budgeting, project management, and managing the ongoing support and maintenance of CADD and AMFM systems.

Past Experience

Customer Installations Department from 1971 – 1985

- Mapping and Customer Planning

System Operations Department 1985 – 1993

- Mapping Supervisor
- Dispatch Center – Computer and Trouble Dispatcher Support
- Corporate Communications Liaison for Outage Information
- Maui Electric Co. – CADD Mapping Implementation Project Manager

Information Technology & Services Department 1993 – Present

- AMFM Conversion Project Manager
- EFMS Group Supervisor – CADD & AMFM System Support
- IT Business Consultant for Energy Delivery (Engineering, System Operation, Customer Installations, Construction & Maintenance, Project Management, and Support Services)
- IT Program Manager – Electric Facilities Management Systems
CADD & AMFM Support Staff Team Lead

Educational Information

University of Hawaii

Professional Memberships

GITA

Data Sharing, Benefits and Technology – The Hawaiian Way

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Introduction



Hawaiian Electric Co., Inc. (HECo) is an investor owned, regulated public utility in the state of Hawaii. Located on the island of Oahu with a little over 1 million residents, HECo serves approximately 260,000 electric customers.

HECo was incorporated over one hundred years ago and the company was inspired by the vision of a Hawaiian king. Following a meeting with Thomas Edison prior to 1881, King Kalakaua developed an “electric vision” for his kingdom.

Kalakaua had electric lights and indoor plumbing installed in his newly built royal palace. This was even before the installation of electric lights in the White House. Ten years later, in 1891, Hawaiian Electric Company was incorporated.



Data Sharing

HECo has had a long history of data sharing. For many, many years ... the business community in Hawaii openly shared information between agencies and organizations.

Sharing in the 1970s ...

As far back as the early 1970s, there existed a rather “open” data sharing environment amongst some municipal organizations and a number of utility companies.

- The City and County of Honolulu provided land base information to HECo. The data was in manual drafted form that consisted of linen and/or mylar land base

originals. HECO maintained a hard copy library of documents / maps that were available at the City and County. Referencing these hard copies, HECO was able to request permission to “copy” the land base documents. These original linen / mylar maps were made accessible to local bonded photo reproduction companies who photographically reproduced the land base images as specified by HECO. From the City & County images, HECO created and maintained a mylar land base system based on a 2000’ x 3000’ rectangular grid that was registered on the Old Hawaiian, Hawaii State Plane Coordinate system. The result was a gridded land base made up of about 1600 maps. HECO then proceeded to build its electric facilities data as an overlay on the land base grid files.

- Subsequently, the local telephone company started to build it’s own facilities maps. It too, “adopted” the “grid” land base system solution defined by HECO. HECO willingly shared the newly created “gridded” land base maps with the telephone company.
- These data sharing relationships were maintained without any formal data sharing agreements. People made it happen.
 - People with the vision of maintaining their facilities’ information on a “common” land base.

Sharing in the 1980s ...

In the 1980s the open data sharing strategy continued and grew. The data being shared between agencies and organizations was basically still limited to land base information. However, the data exchange participants now include one of the larger local cable companies and the local gas company also began building their facilities management strategy.

- The City & County continued to share land base information with HECO.
- The local cable company also “adopted” the Mylar gridded land base solution approach to map their facilities data. HECO now made available all the gridded land base Mylar originals for reproduction to create land base maps for both GTE Hawaiian Tel and Oceanic Cable.
- Late in the 1980s, the digital age arrived in the islands. Government agencies and local utilities all began to migrate their facilities data systems to CADD format or early AMFM systems.
- Data sharing continued but now the exchange was “facilitated” by the new digital formats. However, as one would expect and for different reasons, government agencies and corporate organizations selected different digital data solutions.
 - The City & County opted for an ESRI solution.
 - HECO and GTE Hawaiian Tel selected an Intergraph solution that was based on MicroStation.
 - Oceanic Cable started with MicroStation but eventually migrated to a proprietary telecommunications system.
 - The local gas company also began a MicroStation based facilities data system.

Sharing in the 1990s ...

The digital age had really arrived in the islands. Most agencies and organizations began the AMFM / GIS journey. One would think that this made data sharing easier ... unfortunately that was not the case. Along with the technology came a new issues and problems.

- Different data formats
 - ESRI ArcView
 - Intergraph FRAMME
 - MicroStation
 - Oceanic Cable has it's own proprietary format system
- Different projections
 - NAD 27
 - NAD 83
 - Old Hawaiian, State Plane Coordinates
- Different drawing and accuracy standards
- De-regulation of the telephone industry

Land base sharing continued and participants even began sharing some facilities information.

- In 1992, HECo began designing and building it's own AMFM system. It was at this time, HECo made a conscious decision that it should not be in the land base maintenance business. HECo's AMFM system architects envisioned that this strategy would create many future opportunities to that would be beneficial to both HECo and the City & County. Subsequently, HECo "adopted" the City & County of Honolulu's ESRI ArcView land base as it's own parcel fabric. Both organizations signed a formal data sharing contract agreement. Contract terms included:
 - The City & County would provide HECo - land base graphics and tabular data.
 - HECo would provide the City & County - a "cleansed" transmission and sub-transmission facilities data extract.
 - The data refresh cycle would be initially once every 6 months with the ultimate goal of a monthly data exchange.
 - Both parties agreed to co-fund the design and development of a bi-directional data translator.
 - Term of the contract was to be for ten (10) years unless both parties mutually agree upon termination.
 - Finally, both parties agreed that the data sharing agreement was to be a NO COST data sharing agreement.
- Also 1992, HECO approached GTE Hawaiian Tel to discuss the feasibility of acquiring GTE's utility pole facilities data. GTE readily agreed to share their utility pole facilities information with HECo. GTE Hawaiian Tel's pole information was maintained in an Intergraph TFIDS based system. This made for an easy

data import into HECo's new AMFM system because the data was compatible with HECo's FRAMME based AMFM system. This information exchange was also accomplished again without a formal data sharing agreement. Essentially, the GTE provided the pole data to HECo as a "returned favor" because earlier HECo had shared with GTE the source Mylar land base data for the island of Oahu. GTE converted it into digital format and used in their TFIDS based facilities data system.

However, it should be noted that soon after this "free" data exchange, the business atmosphere changed dramatically for the telecommunications industry. De-regulation of the telecommunications industry created a more "proprietary" environment. Following this change, GTE (now Verizon) has been very careful about ... what data they share and whom they share the data with.

Data Sharing Today ...

Data sharing in Honolulu continues to grow and involve more and more agencies and organizations. At the heart of this data sharing still is the City & County land base and parcel database. Although a variety of GIS system solutions exist in Honolulu, key organizations noted below have "adopted" the City's parcel land base and now uses same as their source land base.

- The State of Hawaii – ESRI based GIS system used by various departments and agencies.
- Verizon Hawaii – Verizon currently utilizes a proprietary GIS system. This telecom utility was recently purchased from Verizon by an investment group and is undergoing reorganization. Future participation in data sharing efforts will depend on the new corporate direction soon to be established.
- Oceanic Time Warner Cable – Oceanic maintains their cable facilities information in a Cadtel system.
- The Gas Company – Currently maintains their gas facilities information in a GE Smallworld system.
- Hawaiian Electric Co., Inc. – HECo recently upgraded it's Intergraph FRAMME based AMFM system to Intergraph's G Technology / G Electric system.

In November 2002, Honolulu Mayor Jeremy Harris sponsored and successfully passed through the Honolulu City Council, a statute declaring the Honolulu GIS ESRI data as "Public Domain" information. This declaration formally made so much more information available for sharing. Additionally, the State of Hawaii also has made their ESRI ArcView GIS information "public" information. Their data can be downloaded from their Hawaii State Planning and Geographic Information System website.

These two (2) government organizations publish the following data on their respective website.

Geo-referenced information through the City & County Honolulu Land Information System (HoLIS) includes:

- Subdivision/Cadastral Base Maps
- Tax Assessment Designations & Values
- Land Ownership Master Planning Designations
- Regulatory Land Use Designations
- Existing Land Use & Activities
- Socio-Economic & Demographic Data
- Infrastructure & Utilities Public
- Recreational Facilities
- Health and Human Service Facilities
- Topographic contours
- Surface terrain models
- Transportation Corridors/Address Ranges
- Flood and Natural Hazards
- Natural and Environmental Resources

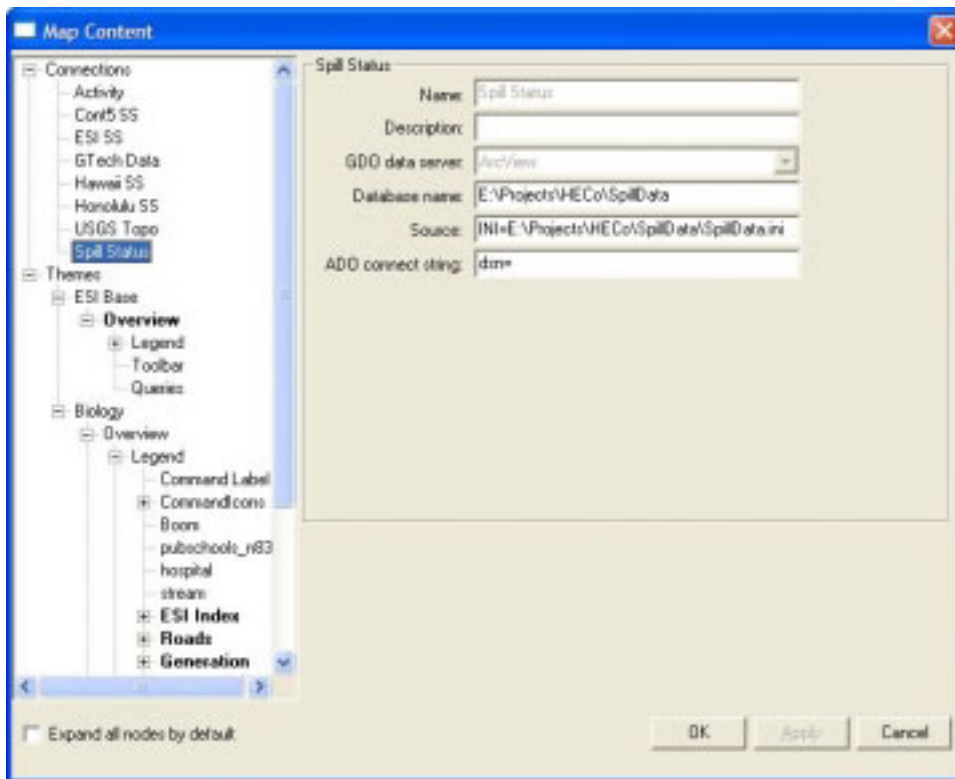
State of Hawaii data includes:

- PHYSICAL FEATURE LAYERS
 - Coastal & geographic features, elevation contours, hydrographic features, roads, streams, harbors, USGS boundaries and elevation features.
- POLITICAL LAYERS
 - Census data and divisions, congressional districts, development plans, judicial districts, government land ownership areas, state election boundaries, zip code boundaries
 - Special management areas, DLG admin boundaries,
 - Fire response zones, public school locations and districts
 - Fisheries management areas, conservation districts, hunting areas, parks
- NATURAL RESOURCE / ENVIRONMENTAL LAYERS
 - Agricultural lands and land use
 - Aquifers, rain gauges, solar radiation, stream gauges
 - Bird habitat, critical habitat, vegetation
 - Water features and wetlands
- HAZARD LAYERS
 - Flood zones, lava flow boundaries, tsunami evacuation zones
- COASTAL / MARINE LAYERS
 - Navigation aids, anchorage areas, bathymetric contours, coral reefs, three mile nautical boundaries
 - Marine life conservation districts, marine & fish features, whale sanctuary
 - Water quality, explosive dumping areas, wrecks, unexploded ordnance

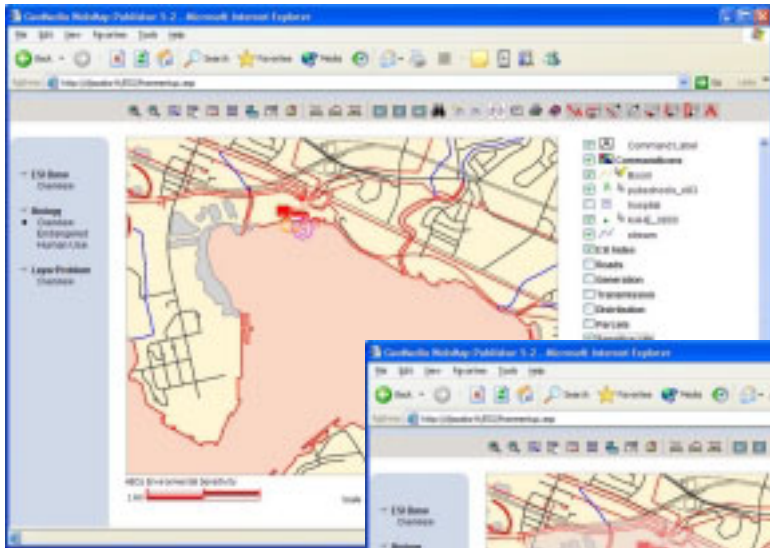
HECo data sharing initiatives:

- HECO is partnering with the Department of Defense on electric infrastructure management initiatives and these efforts include sharing electric facilities information in areas that surround military bases on the island Oahu.
- HECO currently teams with the City and State Civil Defense agencies in emergency response efforts.
- HECO has opened discussions with the City & County GIS Administrator on terms for a new data exchange refresh cycle and process. Discussions may include possible bi-directional data update agreements.
- HECO and the City & County of Honolulu Street Lighting Division are discussing a joint venture to design and develop a Street Light Inspection application. One main objective envisioned is to create a web based environment where inspection results can be analyzed and shared by both organizations through their respective GIS systems.
- HECO is currently developing web-based solutions to facilitate viewing a variety of data from disparate data sources concurrently with HECO facilities information.

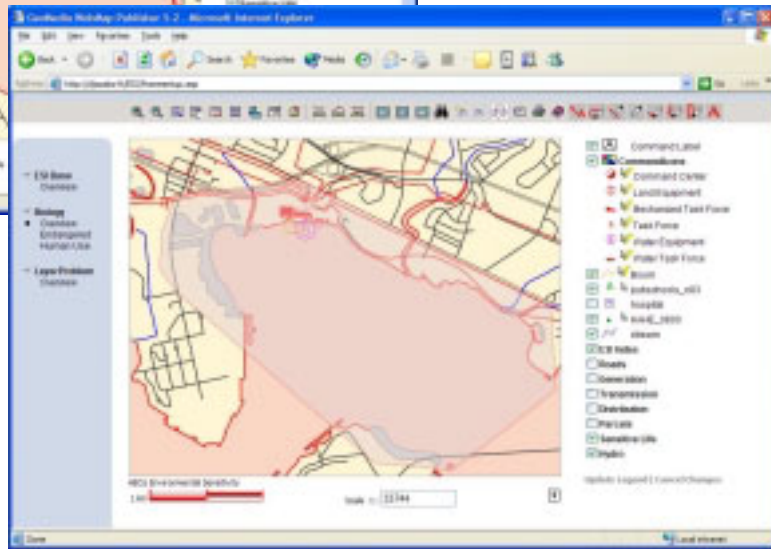
An example of this is the current ongoing development to enable HECO's Environmental Department to analyze oil spill information in a GIS environment. The web solution developed can display concurrently, any published City & County data, any published State of Hawaii data, the HECO electric infrastructure model, and NOAA oil spill projection analysis files.



This flexible web environment allows for multiple data source connections. Data can be accessed if stored in an Access data warehouse or accessed directly to native format files (e.g., ESRI shape files).



Part of the oil spill analysis requirements includes an impact assessment to endangered species for an area defined by a geographically placed polygon. Display includes HECO facilities infrastructure



Data Window - Microsoft Internet Explorer

Zoom: Minimum map width: 250 in

Download all data to spreadsheet

Birds (1)

AREA	PERIMETER	RARNUM1
0	0.015	65000052
NAME	S_FT_ECONC	JFMAMJJASOND BREED1 BREED2BREED3BREED4BREED5
Hawaiian stilt	S/P E/E - XXXX XXXX	MAR-AUG - - - N/A
Long-billed dowitcher	- XXXX XXXXXX	- - - - N/A
Pacific golden plover	- XXXX XXXXXX	- - - - N/A
Ruddy turnstone	- XXXX XXXXXX	- - - - N/A
Sanderling	- XXXX XXXXXX	- - - - N/A
Shorebirds	- XXXX XXXXXX	- - - - N/A
Wandering tattler	- XXXX XXXXXX	- - - - N/A

Endangered species reports are generated from the data base extract defined by the polygon that represents the probable oil spill impact area.

Data Sharing Benefits ...

More effective use of labor resources

- Less time spent on data research to perform conflict analysis
- More time available to perform better design solution analysis

Cost Savings

- Infrastructure research tasks completed in a more effective manner.
- Savings in labor time equates to savings in O&M costs.

Improved community relations

- Knowledge that infrastructure owners use a common landbase indicates to the general public that these organizations are putting real efforts into realizing bottom line cost savings for public benefit.
- Consistent presentations at public hearings with all types of shared information displayed concurrently.

Data Sharing ... the future

What will Honolulu realize in the future? What we have experienced is only the beginning of a journey ... a journey that can make Honolulu a world-class leader in achieving a rich data sharing environment. We look forward to continued data sharing with...

- The City & County of Honolulu agencies
- The State of Hawaii agencies
- Verizon of Hawaii
- The Gas Company
- Federal Government agencies
- Emergency Response agencies

Also on the horizon is the formulation of a team of local agency leaders to build an organization to prepare for and plan for Critical Infrastructure Protection (CIP) needs. GITA has assisted in establishing the initial efforts to pursue this strategy for Honolulu by facilitating a CIP workshop for the Honolulu Pilot in June of 2004.

Technology has indeed facilitated data sharing amongst all these organizations and it has opened many data sharing opportunities that have benefited Honolulu. Opportunities that will undoubtedly continue to surface that will certainly benefit the citizens of Honolulu. Probably just as important as how technology has facilitated data sharing in Hawaii is the "Ohana" atmosphere in Hawaii. In Hawaiian, "Ohana" means family ... and family in Hawaii translates to a kinship or brotherhood beyond bloodlines. It has been a long tradition amongst the people of Hawaii that "Ohana" members always help one another ... a tradition that will surely continue for Honolulu.