

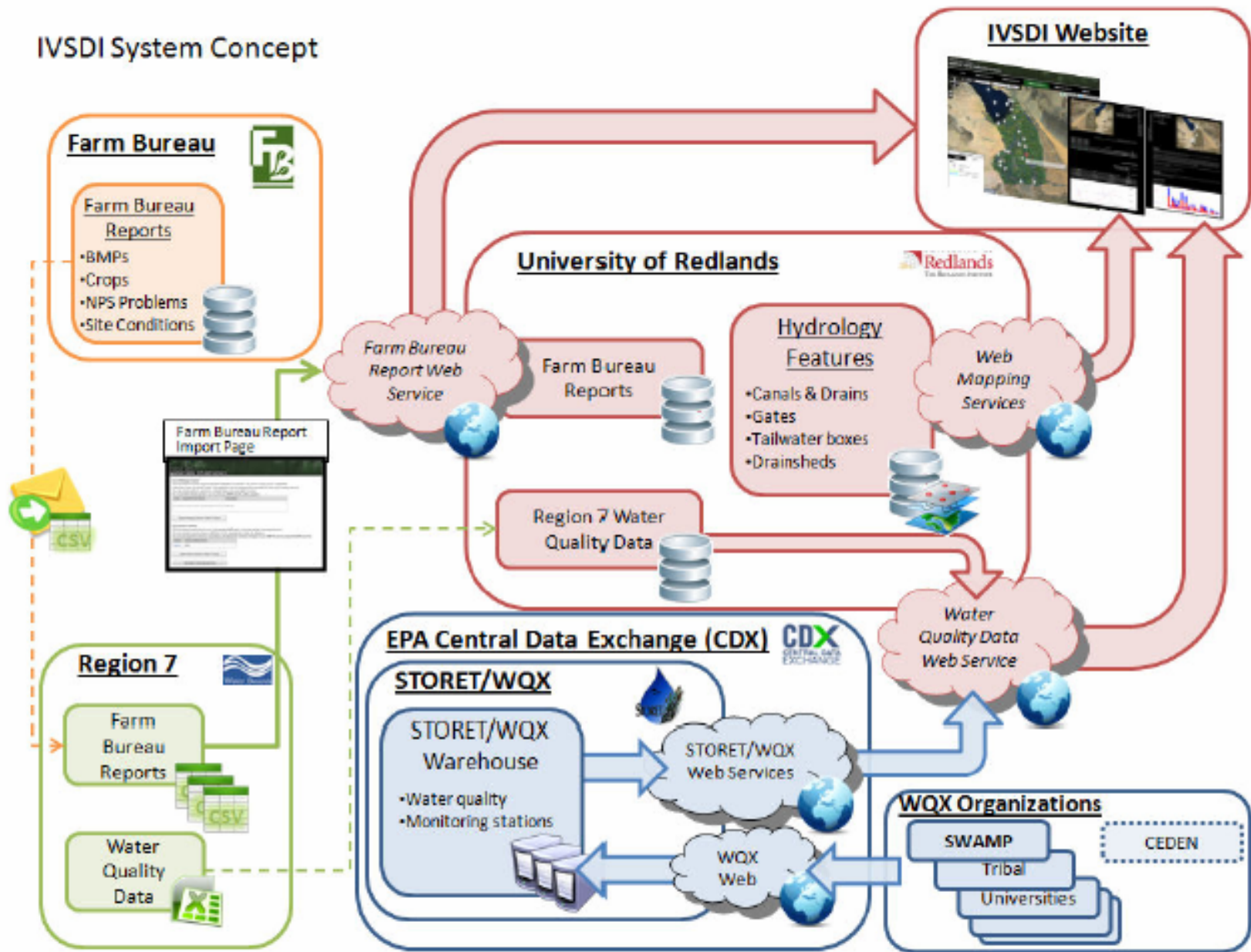
Imperial Valley Spatial Data Infrastructure Site

*A partnership among Federal,
State, and Local Entities, and the
Redlands Institute*

Database Design Objectives

- Incorporate data from various agencies (State Agencies, Federal and Local sources, including USGS NHD, EPA STORET)
- Comply with the State Water Resources Control Board (SWRCB) Surface Water Ambient Monitoring Program (SWAMP) standards
- Support analysis and reporting requirements

IVSDI System Concept



Database Development Process

<http://www.spatial.redlands.edu/ivsdi>

Stakeholder
Survey

Data Inventory
and
Assessment

Data
Compilation/
Conversion

Database
Design/
Development

Analysis and
Visualization
Products

Website &
Web-based
GIS

The image displays a collage of five overlapping screenshots of the 'imperial valley spatial data infrastructure' website. The screenshots show various pages including 'About the Valley', 'Water Quality', and 'Project Partners'. A blue arrow points from the 'Website & Web-based GIS' box to the screenshots.

imperial valley spatial data infrastructure

About the Valley

The Imperial Valley is a diverse and richly developed region. The climate is hot and dry, ranging from temperatures low (55.0) to high (88.6), with low humidity. Imperial County extends over 4,597 square miles, from the Colorado Desert to the Salton Sea to 4,548 feet at Blue Angels. For information on the history of the Imperial Valley, visit www.imperialvalley.com.

Water Quality in the Imperial Valley

Water Quality in the Imperial Valley is a critical issue. As much as 3.0 million acre-feet of Colorado River water flows through the Imperial and Coachella Valleys since agriculture in Imperial and Coachella Valleys from the Mexican Valley. The salinity of the Colorado River water is more than 1.7% of the delivered irrigation water. The salinity of the Colorado River water is more than 1.7% of the delivered irrigation water. The salinity of the Colorado River water is more than 1.7% of the delivered irrigation water.

Project Partners

State Water Resources Control Board (SWRCB)

The SWRCB is the California state government agency responsible for water allocation and water quality protection. "The State Water Resources Control Board's mission is to preserve, enhance and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations." The SWRCB controls the Integrated Lands Water Program that requires monitoring, assessment, and control of the impact of discharges from irrigated agricultural lands to waters of the State. This program monitors irrigation impacts in the Imperial Valley. The State Water Resources Control Board also monitors statewide monitoring efforts through its collaborative Surface Water Ambient Monitoring Program (SWAMP). SWAMP participants monitor water quality in the Salton Sea and surrounding areas. The SWRCB reviews and approves any TMDLs adopted into Basin Plans of Regional Water Quality Control Boards, including the Colorado River Basin Regional Water Quality Control Board (Region 7).

Website: www.swrcb.ca.gov

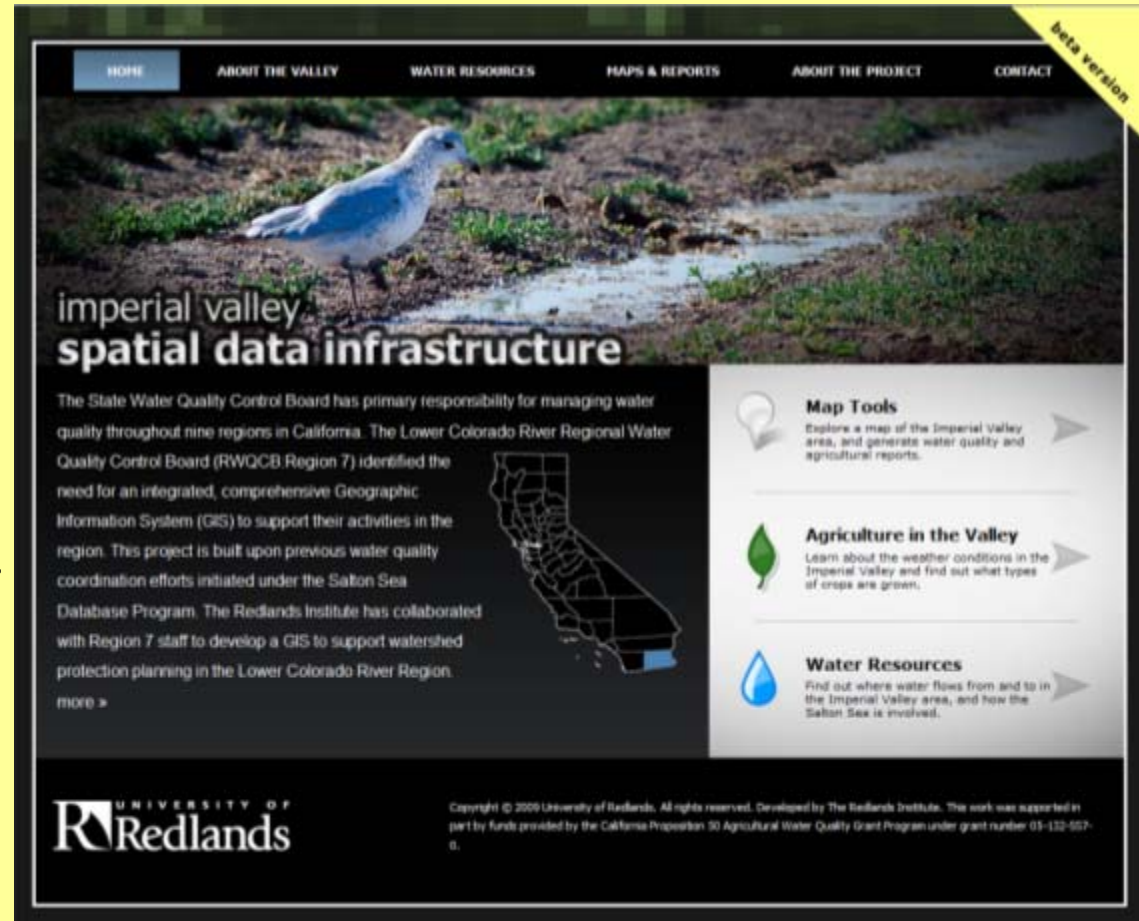
Regional Water Quality Control Board (RWQCB)

The RWQCB is responsible for developing and enforcing water quality protection in southwest California, including all of Imperial County and parts of San Bernardino, Riverside, and San Diego Counties. The Salton Sea and the New and Warner Rivers are under the regulatory authority of the Colorado River Basin Regional Board (Region 7). The Regional Board maintains a "basin plan" for the area, determines and enforces water discharge regulations, and monitors water quality. Part of developing the Basin Plan includes adopting a Total Maximum Daily Load program for any water not meeting the water quality objectives of the Clean Water Act. Determining a TMDL requires involvement of stakeholders, assessment of water flow and quality, definition of the total load of a clean waterbody is acceptable, and development of an implementation plan to maintain water quality. The Board also enforces TMDLs.

IVSDI Website

Technical Details:

- Application developed using ArcGIS Server.NET Web ADF 9.2
- Data stored in ArcSDE 9.2 on SQL Server 2005



<http://www.spatial.redlands.edu/ivsdI>

Web-based GIS and reporting tools

IVSDI web map with WQ Monitoring point locations, drains, canals, gates and tailwater boxes



Water Quality Reports

Select one or more WQ stations and a time range and run report

The screenshot displays the 'imperial valley spatial data infrastructure' web application. The interface includes a navigation menu with 'HOME', 'ABOUT THE VALLEY', 'WATER RESOURCES', 'MAPS & REPORTS', 'ABOUT THE PROJECT', and 'CONTACT'. A search bar is present with the text 'Find Address or Date #' and a 'Search' button. A 'Go to Drained' dropdown menu is also visible. The main map area shows a satellite view of a river system with several white location markers. A 'Legend & Layers' panel is located in the bottom-left corner, showing a legend for 'Network' with symbols for 'Tailwater Boxes', 'Gates', 'Drains from Field (< 100,000)', and 'Canals to Field (< 100,000)'. The 'Layers' section is currently empty. A 'Generate Water Quality Report' dialog box is open in the center, featuring three steps: 1. 'Select Testing Stations' with a list of stations including '723ARDP08 - Alamo River at Drop 8', '723ARDP10 - Alamo River at Drop 10', '723ARDP6A - Alamo River at Drop 6A', '723ARGRB1 - Alamo River Outlet', '723ARINTL - Alamo River at International Boundary', '723AREORY - New River at Boundary', and '723AREP02 - New River at Drop 2'; 2. 'Select Report Dates' with 'Start Date' (2/1/2000) and 'End Date' (2/1/2010) input fields; and 3. 'Generate Report' with an 'Ok' button. The dialog box also includes a 'Disclaimer' link in the top right corner.

Water Quality Reports


Report shows which constituents were being sampled at the chosen Locations. The report includes an overview map, station Identification, and time frame.

imperial valley spatial data infrastructure

Water Quality Report

Data Span: 2/12/2008 — 2/12/2010

Station(s): 1: 723ARDP08 — Alamo River at Drop II
2: 723ARGRB1 — Alamo River Outlet
3: 723RRDP02 — New River at Drop 2




For a direct link to the report use the following URL:
<http://www.spatialedlands.edu/isdj/map/reports/waterquality/?key=ebe04bea-a16a-4f45-ad5f-2ac9c610840b>

Show	Constituents	723ARDP08	723ARGRB1	723RRDP02
<input type="checkbox"/>	Total Suspended Solids (TSS)	✓	✓	✓
<input type="checkbox"/>	LABTORR_H	✓	✓	✓

Check a box next to a constituent, and a graph and summary table will appear below. Graphing TSS (Total Suspended Solids), you will see the average for the station and time period you selected, and the State target level.

Water Quality Report
 Date Span: 2/12/2008 — 2/12/2010

Station(s): 1: 723ARDP08 - Alamo River at Drop 8
 2: 723ARGRB1 - Alamo River Outlet
 3: 723HRDP02 - New River at Drop 2



For a direct link to the report use the following URL:
<http://www.apata.redlands.edu/vsd/map/reports/waterquality/?key=a6ed4be-a16a-4f85-a88f-2a9c610840b>

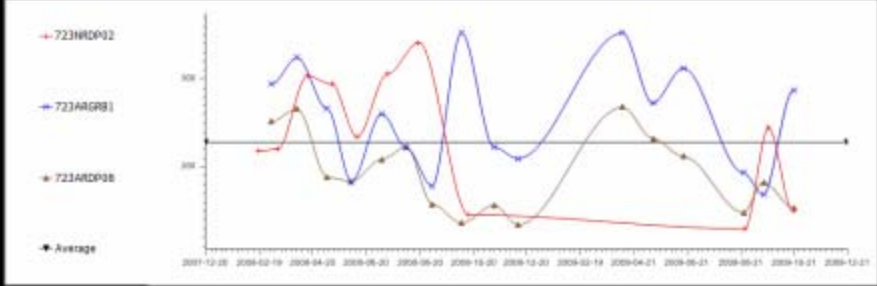
Show	Constituents	723ARDP08	723ARGRB1	723HRDP02
<input checked="" type="checkbox"/>	Total Suspended Solids (TSS)	✓	✓	✓
<input type="checkbox"/>	LABTURB_H	✓	✓	✓

Total Suspended Solids (TSS)

Matching Station: 723ARDP08 - Alamo River at Drop 8
 723ARGRB1 - Alamo River Outlet
 723HRDP02 - New River at Drop 2

Method: Region 7 Data

Station	Minimum	Average	Maximum
723HRDP02	129.000 mg/l	235.182 mg/l	342.000 mg/l
723ARGRB1	168.000 mg/l	256.019 mg/l	352.000 mg/l
723ARDP08	134.000 mg/l	193.794 mg/l	268.000 mg/l



Potential Statewide Water Quality Sites

Since the program can use data from national, state, regional and local data sources, you can see and report on any water quality monitoring station in the state.

Potential State Watershed site

The screenshot displays the 'California Watersheds' web application. The main map area is filled with numerous white location pins, indicating potential watershed sites across the state. The interface includes a navigation bar at the top with the title 'California Watersheds', a search bar, and links for 'Agriculture Practice Report' and 'Water Quality Report'. A legend and layers panel is visible at the bottom left, and the University of Redlands logo is at the bottom center. The map is powered by ESRI.

California Watersheds

Map Satellite Go to Drainshed Find Address or Gate # Search

Agriculture Practice Report Water Quality Report

Legend & Layers

POWERED BY ESRI

UNIVERSITY OF Redlands

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque elit leo, sodales eget elementum et, portitor ac, metus. Suspendisse potenti. Nullam lorem nulla, lobortis blandit porta eu, cursus ac sem. Cras posuere neque ac arcu consectetur dignissim. Morbi ante ante, aliquam sed cursus a, molestie egestas elit. In idam velit, faucibus non viverra a. Incididunt et libero. Integer pretium neque eget nisi pellentesque tristique.

Future Possibilities

- Develop a web based link among CEDEN and other sources of monitoring data
- Allow both a spatial and topical display of information
- Provide custom graphing and reporting capabilities to users (spatial and topical)
- Enable a central point to access WQ data, without requiring a central repository