Managing Recycled Water Planning, Implementation and Use with GIS

Eastern Municipal Water District

BDA/IE

1-26-10

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EASTERN MUNICIPAL WATER DISTRICT

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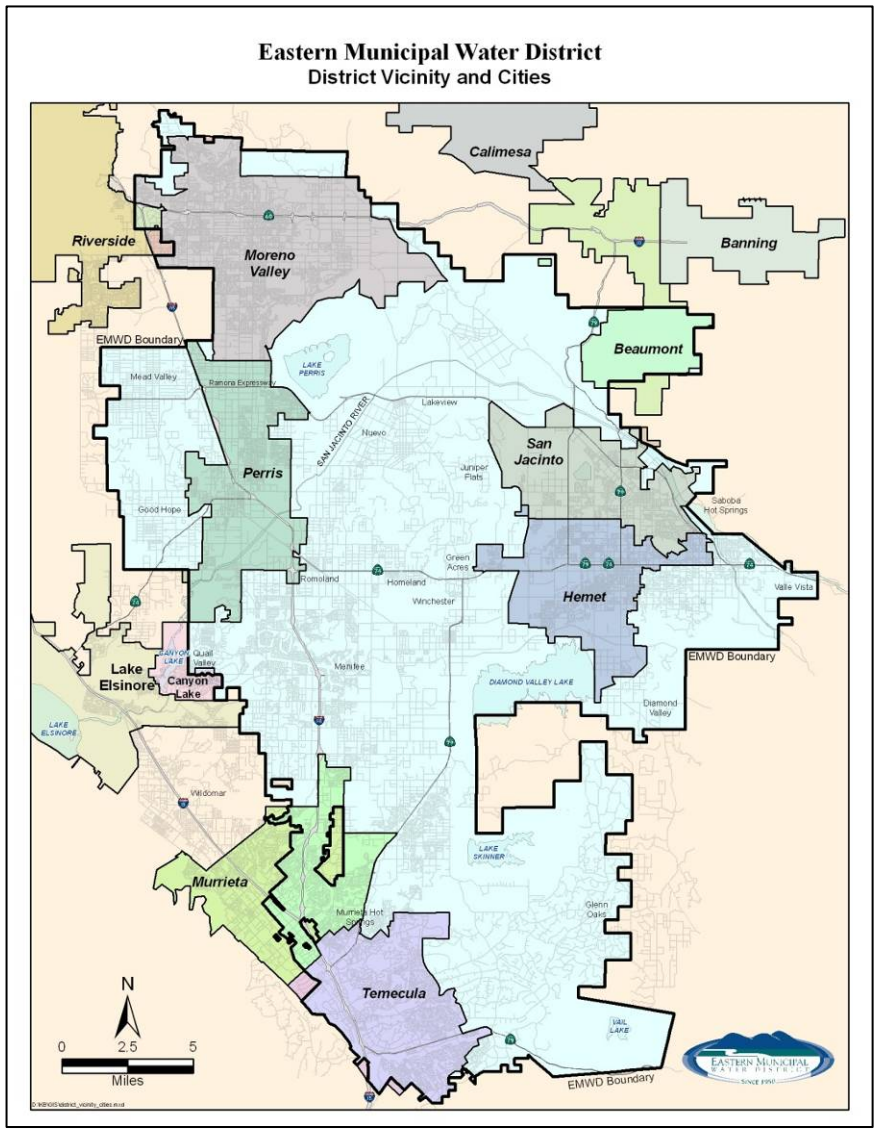
Agenda

- Eastern Municipal Water District (EMWD) Overview
- Recycled Water's Role to Meet Water Supply Challenge
- Associated Regulatory Requirements and EMWD Program Challenges
- EMWD's Approach to Implement Recycled Water Landscape Program
- Summary
- Future Needs
- Questions

EMWD Overview

- 555 square miles in southwest Riverside County
- Population of 675,000 / 45% ultimate build-out
- Provides water, wastewater and recycled water services within the boundaries of over 20 land-use agencies / districts
- Four reclamation facilities that treat 46 million gallons per day (MGD) of recycled water
- By the year 2030, EMWD plans on increasing recycled water landscape demand from current levels by 980%



Recycled Water's Role to Meet Water Supply Challenges

- "Alternative" source of water supply
- Safe, reliable & efficient
- Low carbon footprint
- Provides direct offset of potable water for non-domestic uses i.e. landscape

<u>However, recycled water is highly regulated</u>

Regulatory Agencies and Requirements

- Water Quality Control Board
  - Water quality reporting
  - Manage basin objectives / salinity management
- California Department of Public Health
  - Plan check
  - Initial construction inspection
  - **Ongoing** compliance inspections
  - Cross-connection shut down

EMWD Recycled Water Landscape Program Challenges

- Existing business processes did not adequately address recycled water landscape / infrastructure design, construction & acceptance
- Managing vast amounts of data for regulatory compliance / reporting and enterprise use
- Lack of industry standards / resources for data development, collection and publishing

EMWD's Approach for Implementation of the Recycled Water Landscape Program

Integrated Business Process Flow

- Integrate, align and formalize processes to support business needs
- Collaborate with external stakeholders for regional alignment

GIS solution

- Data Collection Standards
- Enterprise GIS (continuous process)
- End-user education

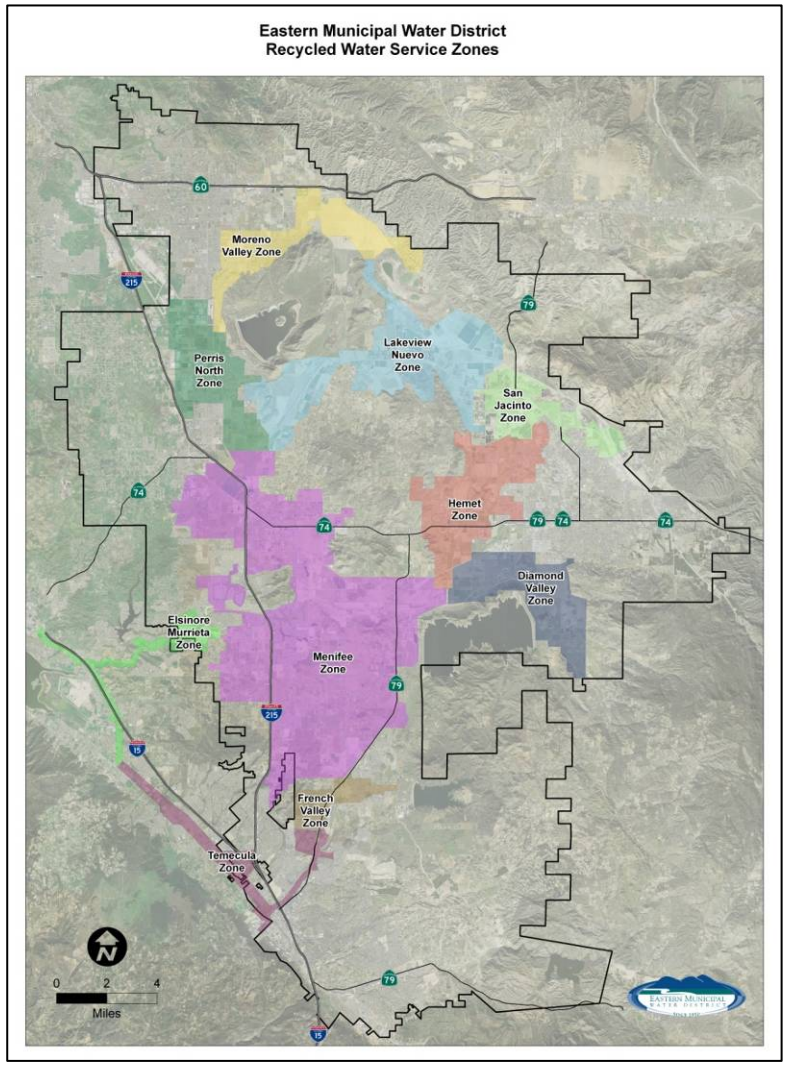
Integrated Business Process Flow

- Planning
- Conditioning
- Preliminary Design
- Final Design
- Construction
- On-Going User management

Planning / Conditioning

Collaboration and communication is key

- Planned recycled water service areas
- Early communication of recycled water landscape requirements between developer / land use agency / EMWD



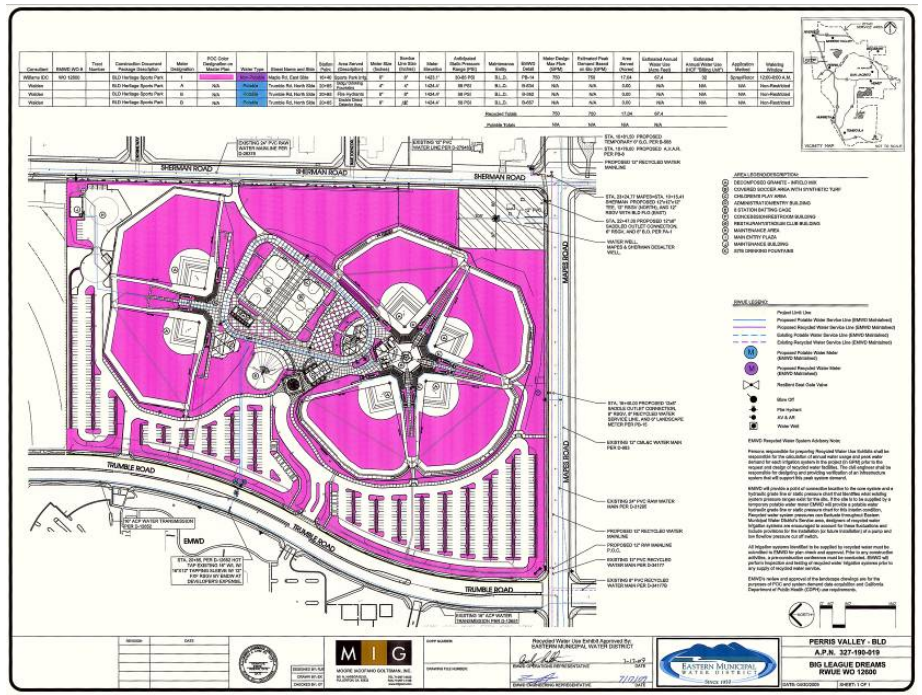
Design & Initial Data Acquisition

Preliminary

- Conditions of approval
- Recycled Water Use Exhibit (RWUE)

Final

- Landscape irrigation plan check; “design by function” for Title 22 compliance
- Coordinated plan check between public facilities and landscape irrigation plans



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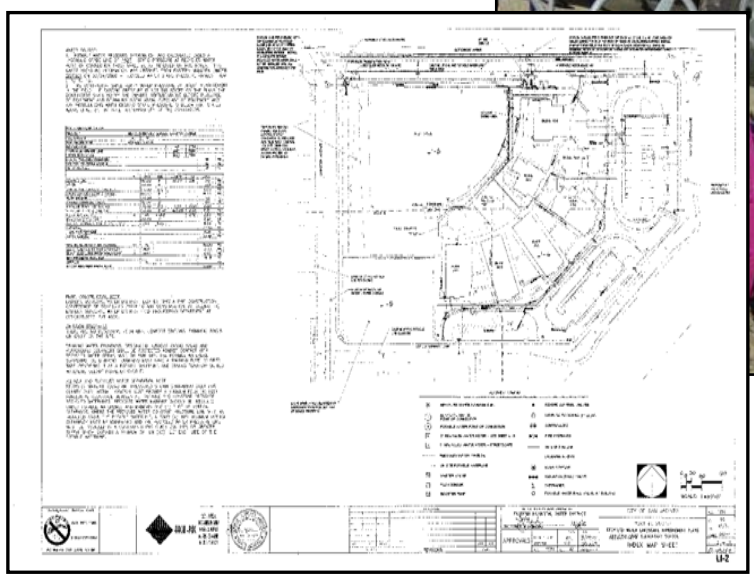
Construction / Ongoing User Management

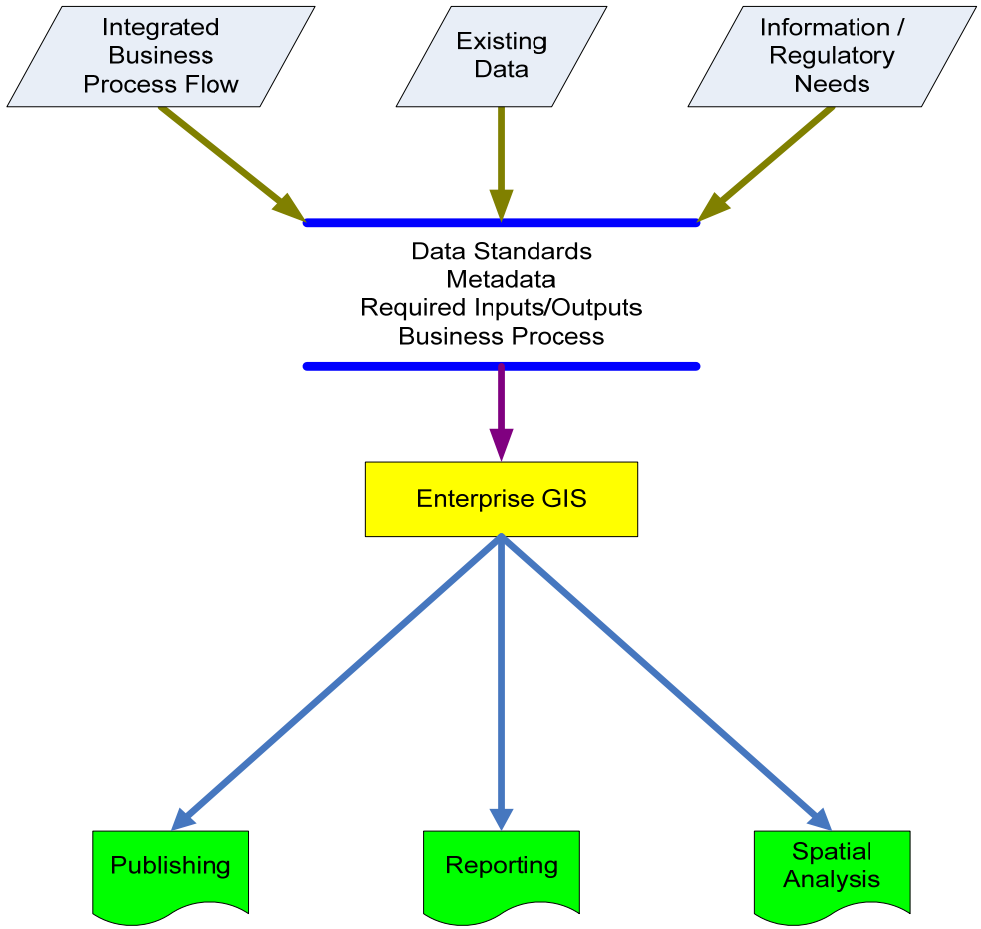
- Initial inspection
- Request for information (RFI) process
- Coordinated inspection with maintaining agency
- As-built Documentation
- Testing / Reporting CDPH submittal
- Ongoing compliance inspections
- Documentation of site changes



So how do we manage all the data?

Enterprise GIS Development

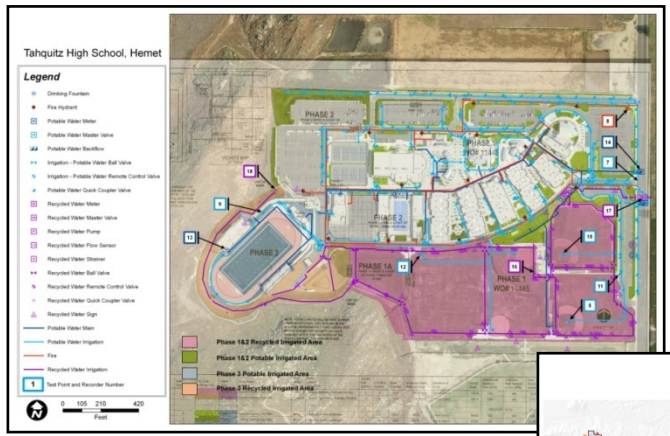
- **Define**
  - What GIS layers are required
  - Attributes required
- **Develop**
  - Data standards
  - Business processes
- **Manage**
  - Owner of the data / processes and update frequency



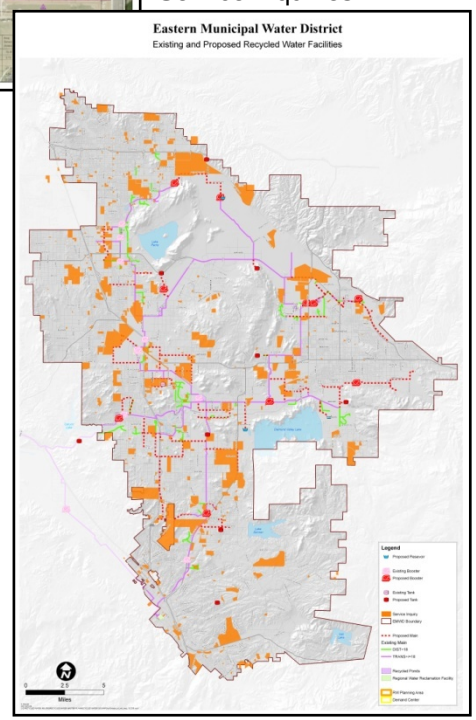
End-User Education

- Provides exposure
  - Demonstration of GIS potential
- Realization of positive benefits
  - Time savings
  - Potential for simplifying other business processes
- Paradigm shift in the use of GIS
  - Automation of routine tasks
  - Moving away from paper methods

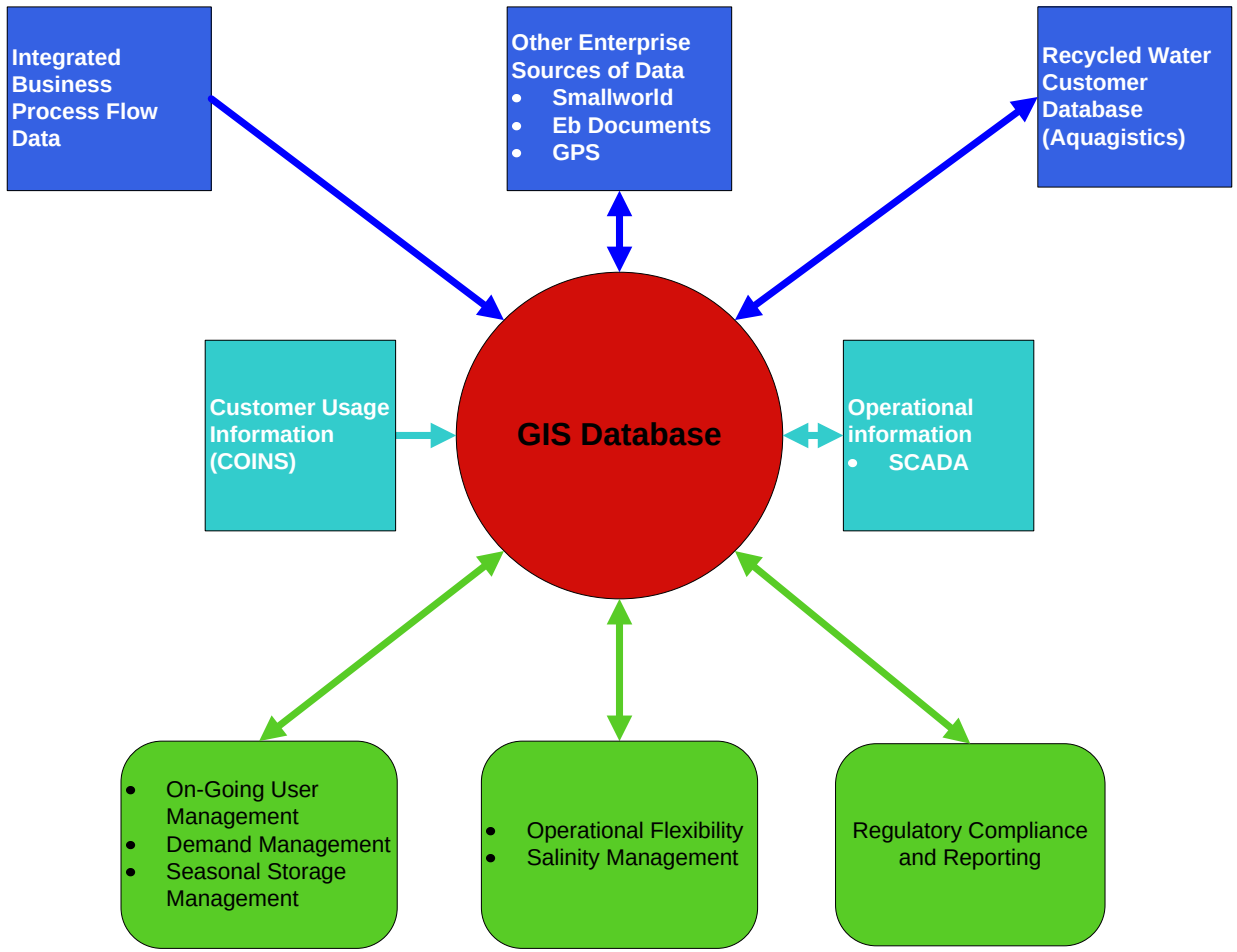
CDPH Submittal



Service Inquiries



EMWD Enterprise GIS Vision



CAD Data Standards

Recycled Water Guidelines Update will include CAD Standards & Toolbox

- Recycled Water Use Exhibit
- Landscape Irrigation Plans

Benefits:

- Improve Customer Service
- Streamline GIS integration
- Enhances regulatory reporting

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Summary

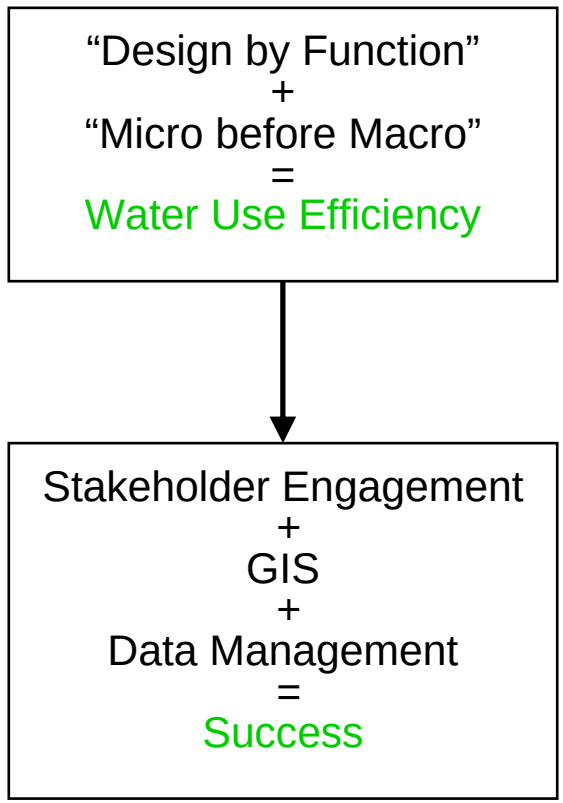
- Recycled water is part of regional water supply solution but requires special consideration due to regulations
- Impacts on the way we do business today:
  - “micro before macro” and “design by function”; landscape conditions and design must be in the forefront of projects and not an afterthought
  - Business process / stakeholder alignment is key
  - Move from paper to data
- Approach- Business Process Alignment / Enterprise GIS
- Ongoing needs- Data consistency, stakeholder alignment and process integration

Future Needs

Facts

- Water supply challenges will continue
- Legislation will require changes in the way we do business
  - AB 1881
  - 20% by 2020
- How do we support conservation?

Formula for Success



Questions?

"All the water that will ever be, is right now."

National Geographic

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