Considerations and Opportunities for Developing Data Management System and Best Practices for SGMA Compliance

Matt Zidar, Principal Consultant

GRA 2016 Annual

Session 2A: SGMA Planning Considerations

Presentation Objectives

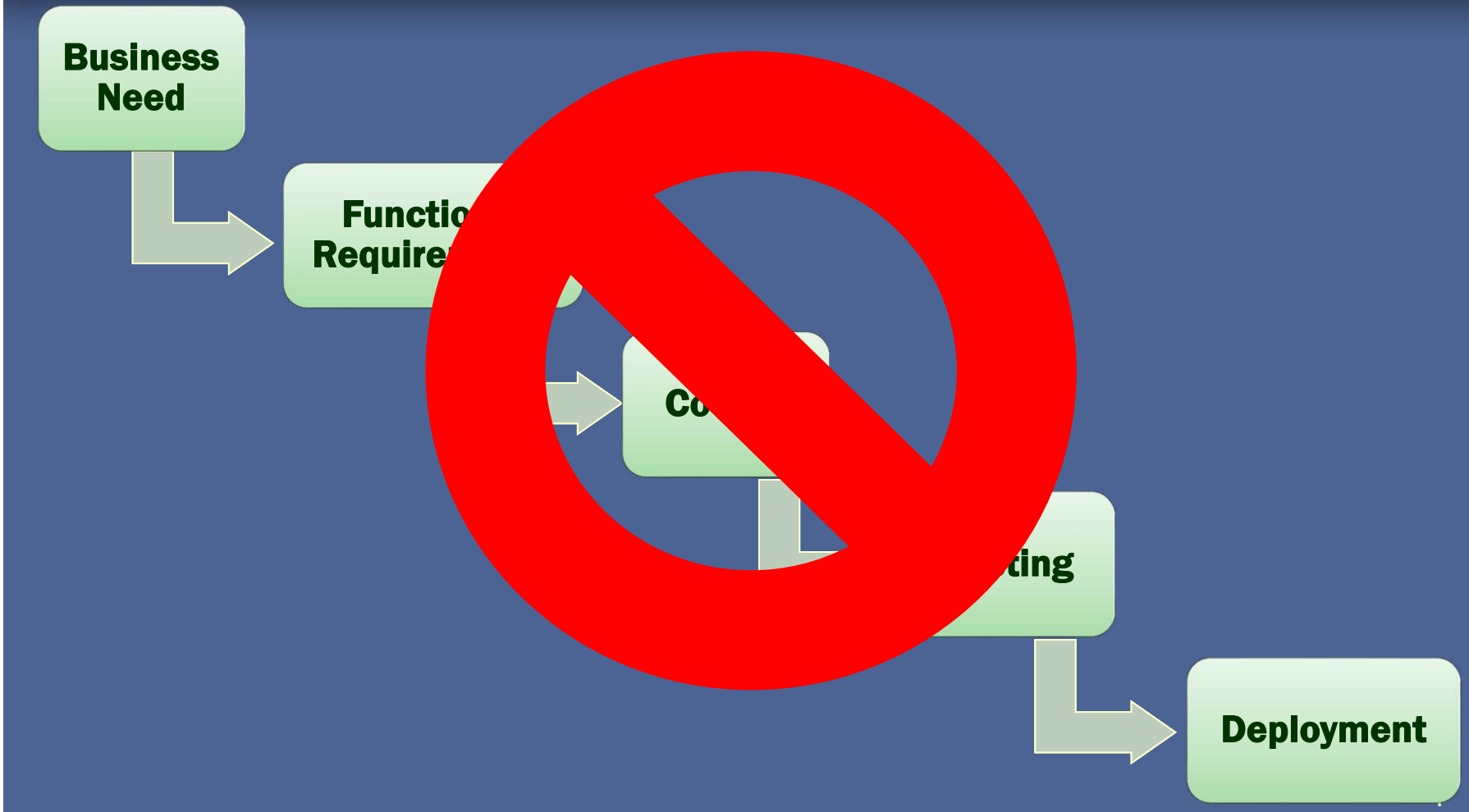
- GSA/GSP DMS business needs, functional requirements and considerations
- Alternative approaches
- Use of industry standards to facilitate data sharing and use the Internet
- Opportunities

Considerations

(This gets philosophical.....)

- Data is not information. Analysis creates information.
- Information is "infrastructure".
  - Think long term utility to get a return on investment
  - Information needed to build knowledge and understanding
  - Visualization makes information accessible and understandable
- Knowledge is critical for effective decisions
- Sharing, access and transparency are inevitable
- Leverage the public investments in data and models

Systems Evaluation



GSA Business Needs will Change

Phases and Priorities

- **Near Term- Produce the GSP**
  - Mobilize
  - Analyze
  - Produce
- **Long Term- Implement the GSP**
  - Monitor & reporting
  - Manage workflow
  - Ongoing decision support
  - Adaptive management

Business Needs Under SGMA

That information infrastructure thing

- Application of best available information and best available science
- Use of data available from the state
- Development of a coordinated DMS
- Common methods, data and assumptions
- Preparation of a water budget
- Reporting to the State
- Groundwater and surface water models in the public domain & open source
- Monitoring
- Interbasin and intrabasin exchange

GSA Business Needs

Produce Legally Defensible Results

- SGMA- measurable objectives, significant and unreasonable effects, minimum thresholds
- CEQA- significant impacts, thresholds of significance; substantial evidence in light of the whole record, administrative record
- Proposition 218 Engineers Report - public affairs and support
- Evidentiary record – litigation or adjudicatory support

User Needs- Who are the Users?

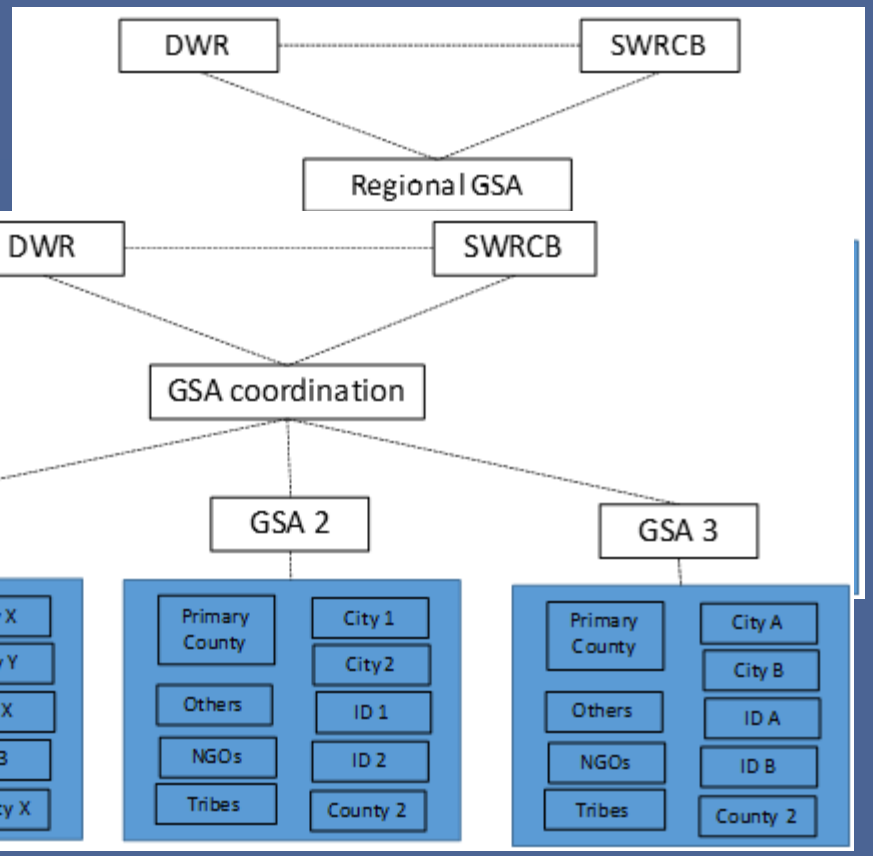
- Field staff – data capture
- Analysts in the decision support role
- Decision makers – GSA, land use agencies, individual water districts
- IT staff to administer and maintain the systems
- Water Users
- Public
- Consultants
- Attorneys

Challenges – Both Technical and Management

- Regulatory - the clock is ticking
- Lack of local capacity: technical, management, funding
- No state specification or standards
- Authority and control
- Security
- Deciding on business model
- Broadening your boards vision
- Institutionalizing the systems or model for maximum utility

Alternative Approaches - Deciding on Business Model

- Organization and location of DMS and related resources
- Commercial off the shelf (COTS) vs custom development
- Individual development vs. development
- Proprietary vs public doma
- Software as Service (SAS)
- Web expectations and ena
- Standards



Access to Services, Tools, and Reliable, Translatable Data

- **Open Geospatial Consortium (OGC)**
- **Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI)**
- **National Environmental Information Exchange Network**
- **Integrated Water Resources Systems and Services**

Contemporary Standards

- Basic Internet - XML, GML
- Hydrology/Groundwater
  - WaterML
  - GroundwaterML
  - GeoScienceML
- Standards enable exchange via Internet Nodes and Portals
- Web enabled DMS/GIS

DWR DMS BMP

- GSA needs are different than state needs
- Need input from ACWA, GRA and GSAs
- Encourage use of standards
- Advocate Web enabled, node and portal concepts
- Case studies - mature legacy systems
- Pilot Project
- Consider support roles and business models
- Document opportunities for groundwater and environmental information exchange (e.g.; GIN)

Vision/Goals for a Groundwater IMS and Shared Development

- **Reduce costs - efficient and effective use of limited local and state resources**
  - **Development**
  - **Compliance**
- **Consortium - local GSAs have a lot in common**
- **Standards - Ensure web enabling, support access and exchange**
- **Open source, public domain**
- **Build a dedicated analysis tool box**

Vision (cont.)

- Data Exchange Templates (DET) and Transfer Partner Agreements (TPA)
- Focus on Improved sharing, access and data quality
- Long term support model