NatWeb, NWISWeb & NWIS(RT)

ITAC presentation, Carson City, January 2002

- Water Resources Goal
- Teams
- Conceptual Overview
- Status

USGS

January 17, 2002

Water Resources Goal

ITAC/CPAC charged the NatWeb team to develop and document a design for a system of National servers that will serve *real-time* and historic NWIS data to the public in a consistent and *reliable* manner. This design shall include the mechanism for load sharing and mirroring among the 3 National Web servers and for mirroring the district NWIS servers.

Teams – 3 teams working together

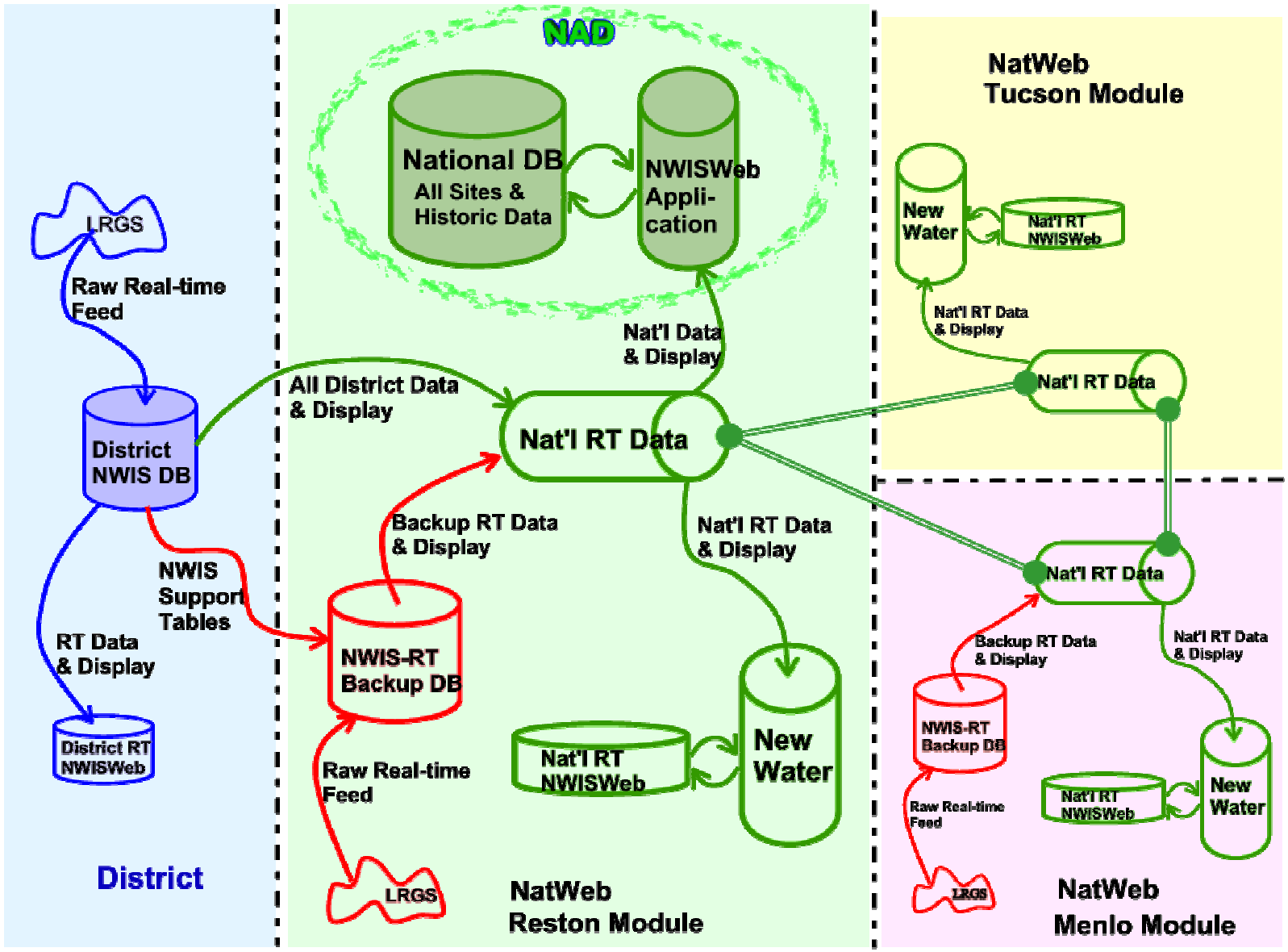
- NatWeb core
  - Lorna Schmid, Dan Winkless, Pat Steffensen (contractor), David Boldt
- NWISWeb core
  - Susan Trapanese, Joe Kalfsbeek, Dave Briar, Candice Bostwick, David Coyle, Ashwani Gahlot (contractor)
- NWIS-RT core
  - Susan Trapanese, Colleen Babcock, Greg Shank, Gail Kalen, Ernest Dryer

Team Status

- First “integrated” design meeting January 2001
  - Built on previous investigations and prototyping
  - Design strategies defined
  - Analysis of hardware and software for NWISWeb full-release
- Second design meeting October 2001
  - Revisit/check previous strategies
  - Revise strategies & document designs

- http://water.usgs.gov/usgs/natweb/diagrams/natweb_modules.html

NatWeb/NWISWeb/NWIS-RT Target



Status: NatWeb WWW Servers

- Remote administration systems are configured
- WWW servers are configured
- AFS servers are configured and replicating files/web pages, i.e., wwwqvarsa
- AFS will have limited use for NWISWeb
  - Best for files that don't need immediate & constant updating across modules
  - Limit impacts of AFS management/setup for districts

Status: NWIS-RT concepts

- NWIS-RT is based on one way replication from local NWIS
- NWIS-RT will continually receive and process data from LRGS
- During emergencies NWIS_RT will allow selected local individuals to work records and control web display to feed data to NWISWeb

Status: NWISWeb

- Releasing district-only NWISWeb for real-time data and retiring rt_www
- Working with NWIS-RT to configure it for NWISWeb (nw_edit and data-pushes)
- Working with NatWeb to make delivery of data for web-display at NatWeb modules reliable
- Working with NWIS for modifications for NWIS 4_2

Status: NWIS-RT

- Prototype established at NWIS3_2 for MS, TX, PA, Miami, CA, AZ, CO
- PA data section verified that computed data values were the same as district
- Prototype has been reset for NWIS4_1 & will feed data to NWISWeb test server (waterdev)
  - Alaska currently using prototype to feed data
- Number of servers and configuration required to serve the nation
  - Menlo and Reston modules will have 3 NWIS-RT servers each
  - Eastern half of US will replicate to Menlo module and Western half of US will replicate to Reston module

Slides to be deleted from presentation follow

Real-time Data Reliability - Components

Real-time water data reliability will be provided by a set of geographically distributed modules that will house:

- NatWeb: mirrored WWW servers
- NWIS-RT: NWIS processors for emergency back-up & LRGSs
- NWISWeb: National version for real-time data (Historic data at Reston Only)

Basic components

Real-time water data:

- **NatWeb: mirrored WWW servers**
- **NWISWeb: National *[??and District—confusing—delete within brackets]* version for real-time data**
- **NWIS-RT: NWIS and LRGS processors for emergency back-up**

"Historic" water data:

- ***Located in Reston on the NAD system***
- ***Contains over 11GB of "published" streamflow, water levels and water quality analyses***

Basic components-*revised*

Real-time water data – located at a NatWeb Module:

- NatWeb: mirrored WWW servers
- National NWISWeb: Real-time data for all sites in the US
- NWIS-RT: NWIS and LRGS processors for emergency back-up

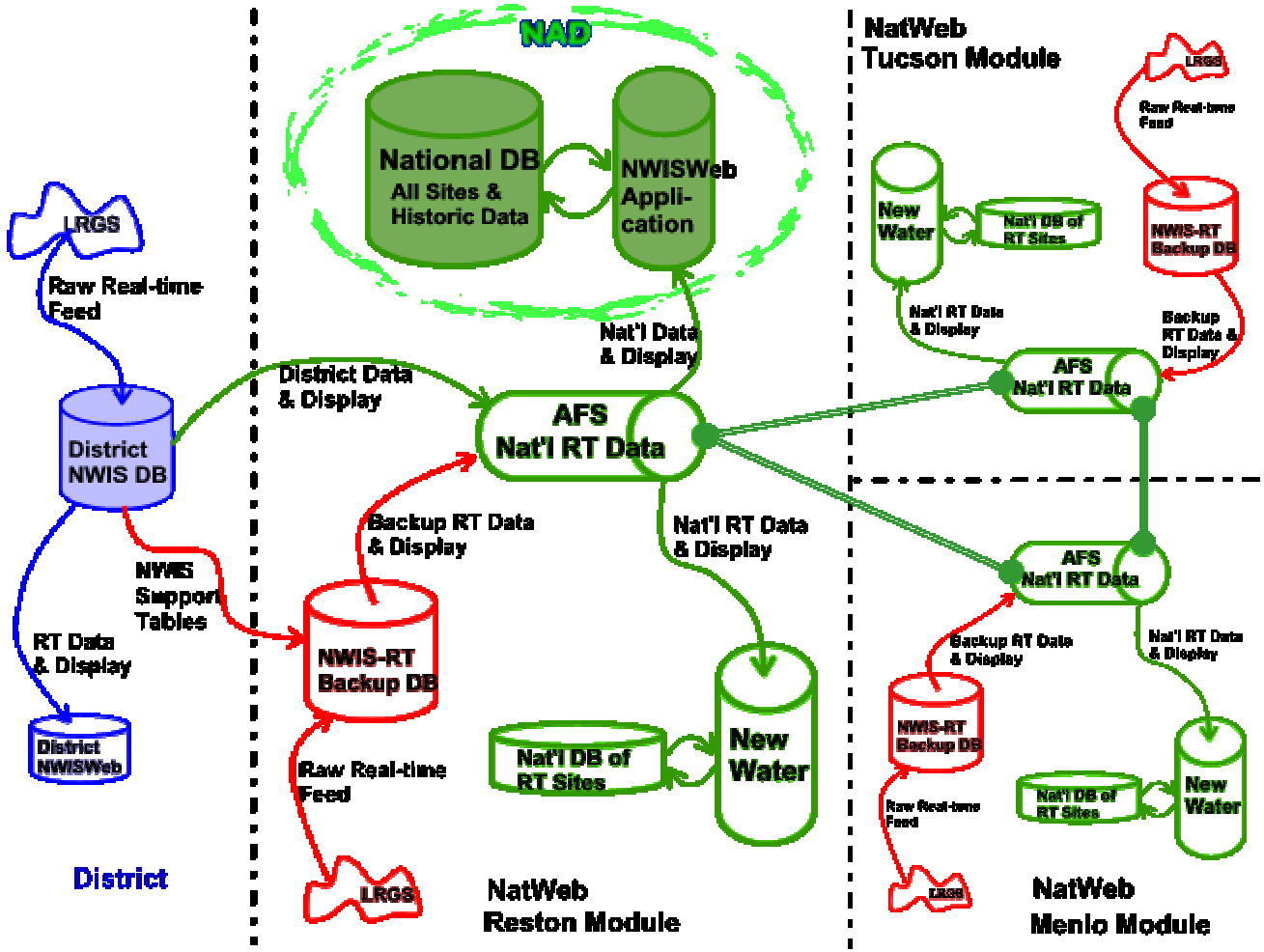
Real-time water data – located at a District:

- District NWISWeb: Real-time data for district sites
- Ingres Replicator Services installed on NWIS server

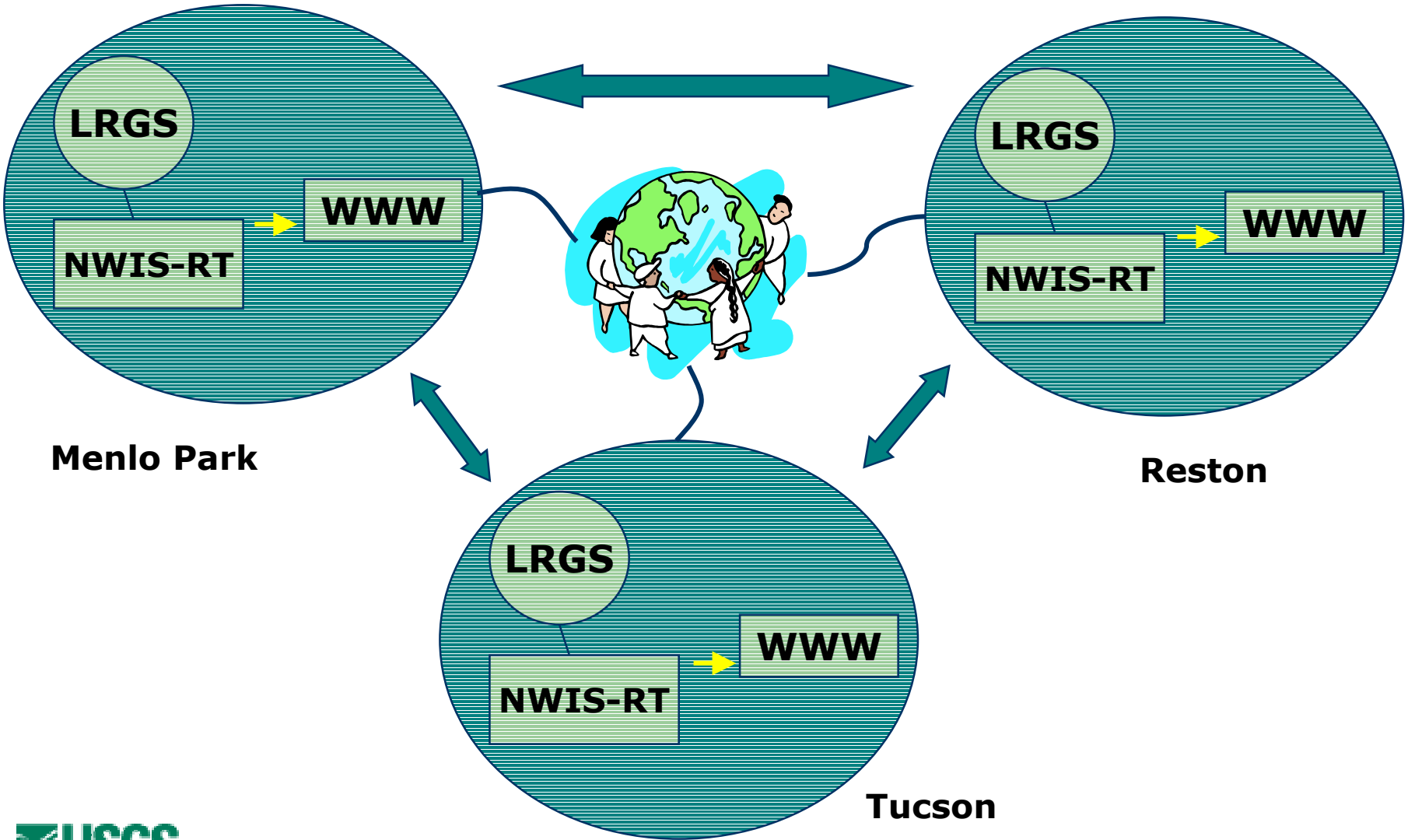
"Historic" water data:

- Located in Reston on the NAD system
- Contains over 11GB of "published" streamflow, water levels and water quality analyses

NatWeb/NWISWeb/NWIS-RT Conceptual Diagram



Public Access Based on Replication



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NWISWeb Today