

U.S. Bureau of Reclamation
Central Yavapai Highlands Water
Resource Management Study
[BOR Appraisal Study]

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BOR Appraisal Study Expected Results

- Find the best long-term sustainable water management strategy for all stakeholders in the Upper & Middle Verde basins
- The Big Chino pipeline is a short-term solution that is unlikely to be a suitable long-term choice
- A prudent strategy would be to wait for the Appraisal Study results before going ahead with the Big Chino pipeline

Role of the BOR

- Manage allocation and distribution of surface water in the Western US
- Manage distribution of the Colorado River to the 7 “Colorado Compact” states
- Partner with water users to develop and implement long-term water plans

BOR Project Steps

1. Appraisal Study- Is there a need and solution?
2. Feasibility Study- What to build and what is cost?
3. Implementation- Design and build solution
4. Operation- Partner with users to manage system

Recent BOR Appraisal Projects in Az.

- Payson - Mogollon Rim
- Grand Canyon National Park
- Sierra Vista - San Pedro
- Coconino County + Navajo and Hopi Tribes

Coconino 2006 Appraisal Study Results

Option 1:
Pipeline from
Lee Ferry to
Flagstaff &
Williams

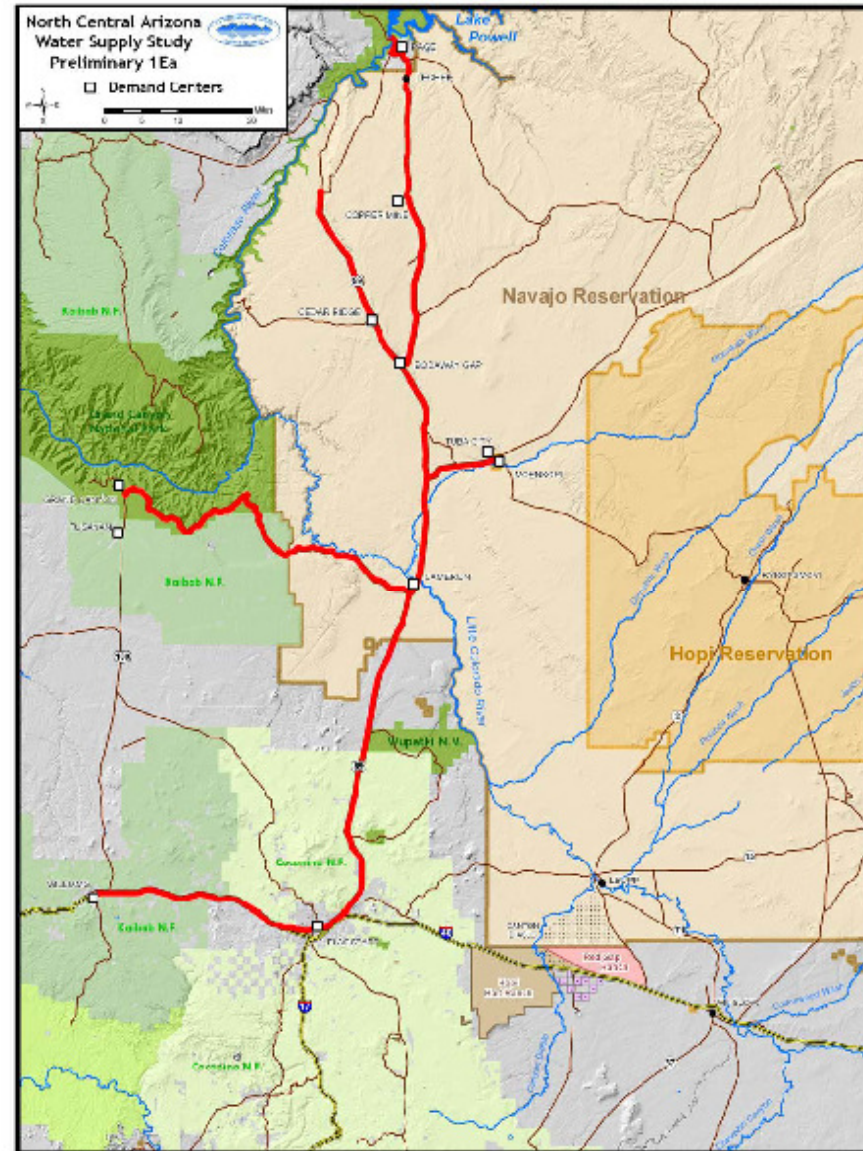


Figure IV.1-5. Lake Powell pipeline to Grand Canyon via spur from Cameron and to Williams via spur through Flagstaff.

Coconino 2006 Appraisal Study Results

Option 2: Pipeline from Lake Mead to Williams & Flagstaff

Chapter IV—Plan Formulation

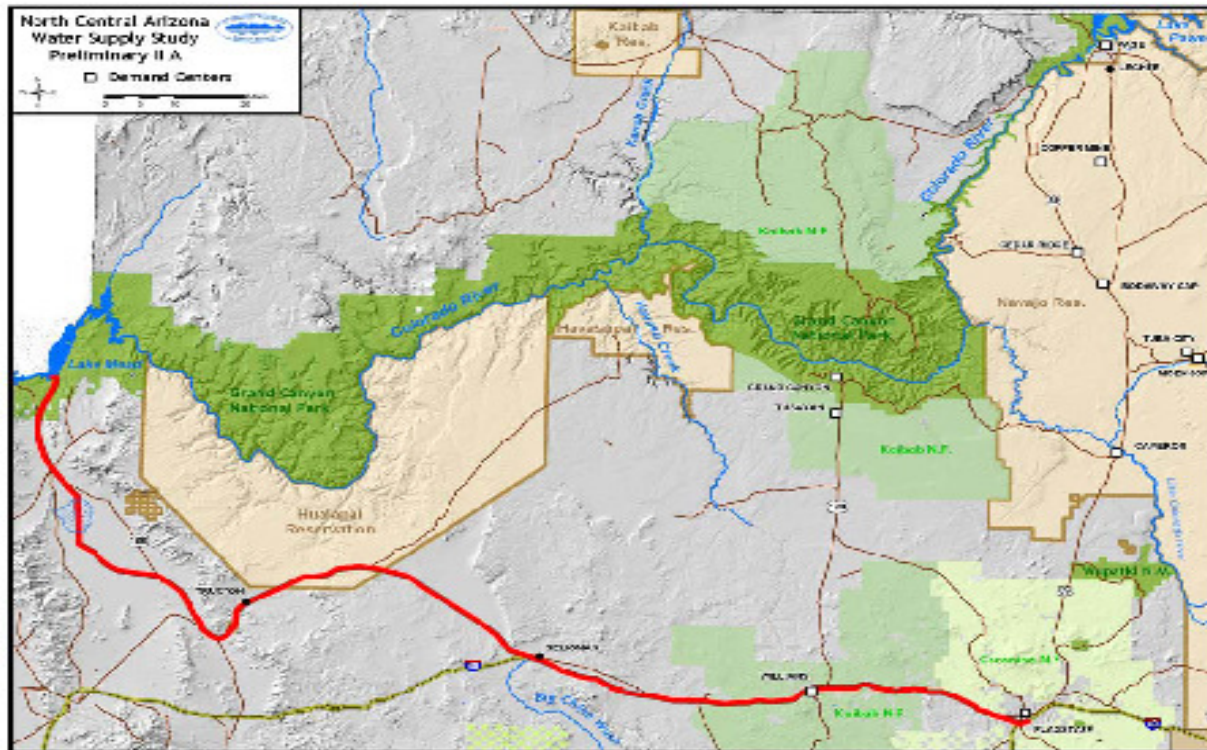
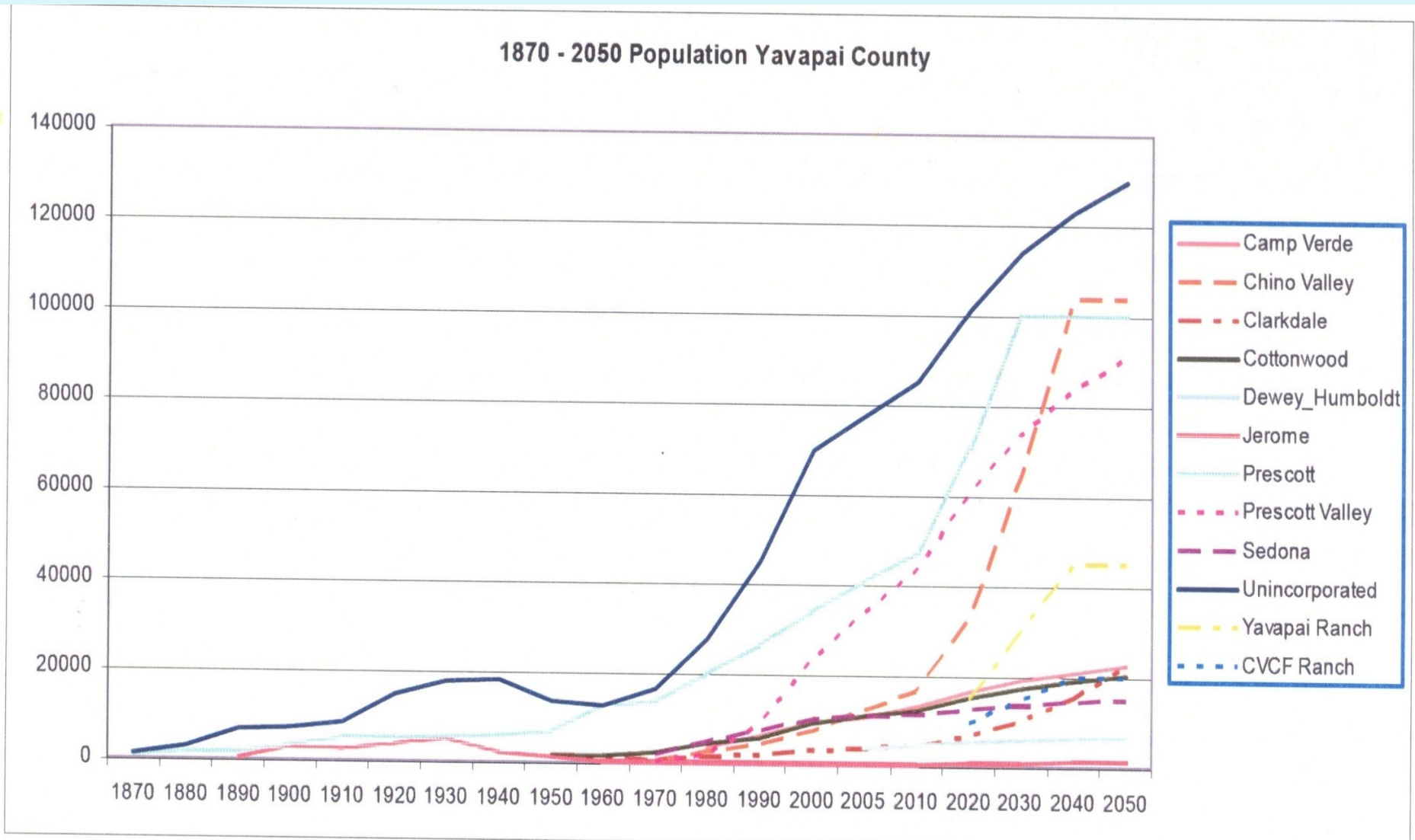
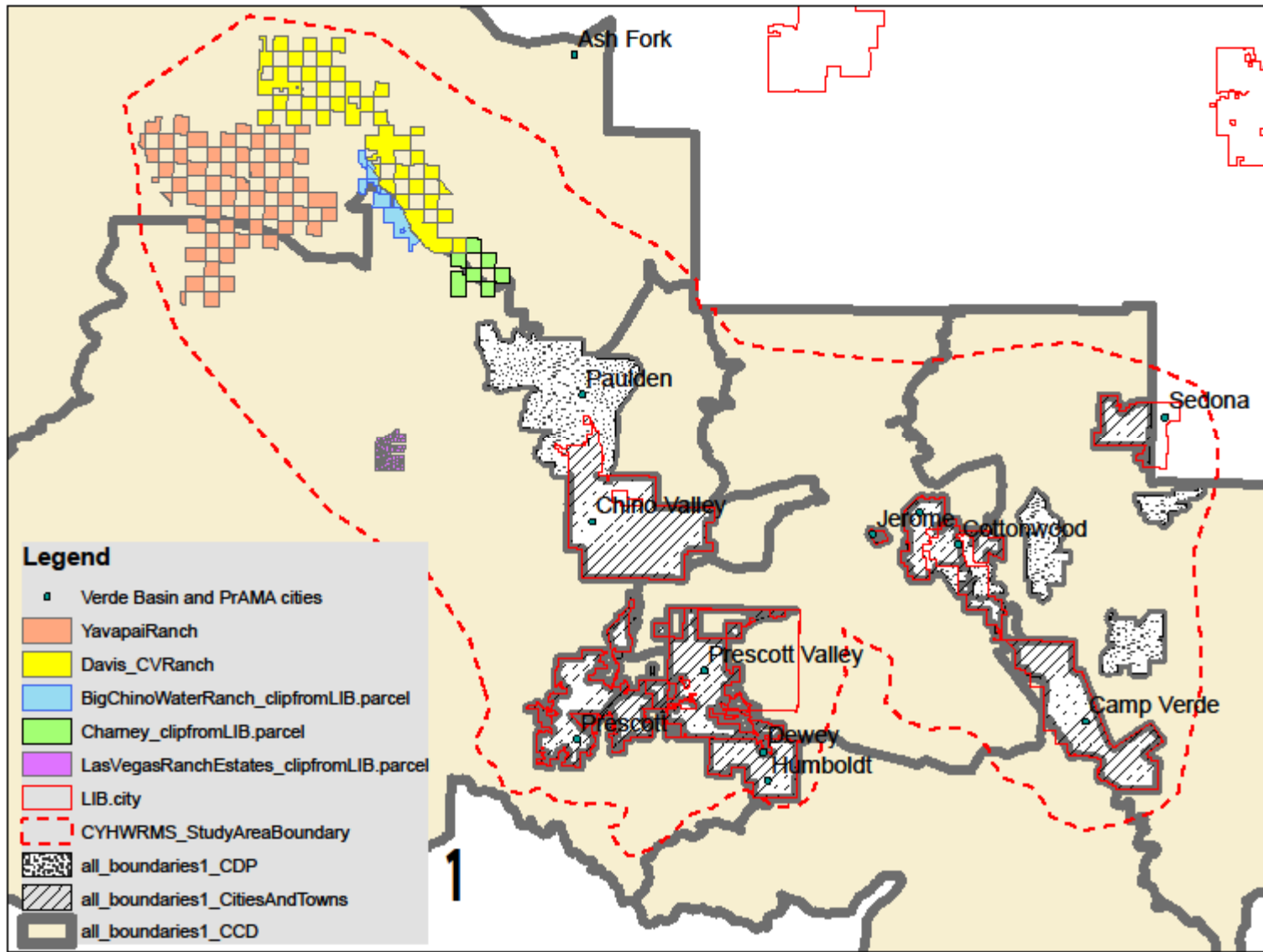


Figure IV.1-6. Lake Mead pipeline to Williams and Flagstaff.

H3J 2008 WAC Growth Projection For BOR Appraisal Study Area



BOR Appraisal Study Area



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BOR Appraisal Study Contract

- Project cost estimate= \$600,000 over 3 years
 - BOR share is 50%
 - ADWR & WAC share is 50%
- Recommendations will be a consensus of the 100+ stakeholders
- Project will not do extensive new science research unless knowledge gaps are too big

BOR Appraisal Study Phase 1

Is there an unmet water demand by 2050?

- Population projections from all stakeholders
- Current and 2050 demand from 200 providers
- Current and 2050 capacity from 200 providers
- Initial Phase 1 work suggests a large unmet demand will be a consensus conclusion

BOR Appraisal Study Phase 2

Is there at least 1 solution to unmet demand?

Define realistic strategies for meeting demand:

- Surface water- Colorado, Verde, Granite Creek, etc.
- Ground water- Big and Little Chino, Verde Valley
- Water Reuse- Effluent recharge
- Water Conservation- Regulation, education, rates
- Growth limits- Regulations and water authorities
- Augmentation- Roof + pavement drain recharge
- Combinations of the above
- Other new ideas from stakeholders

BOR Appraisal Study Phase 3

Evaluate possible solutions. Is there a federal interest?

- Develop criteria for comparing alternatives
 - Environmental
 - Economic
 - Legal and institutional
- Compare alternatives
 - Completeness
 - Effectiveness and sustainability
 - Efficiency
 - Acceptability by all stakeholders

BOR Appraisal Study Phase 4

Report Preparation

- Develop report draft
- Review and develop consensus on report
- Publish report

One Possible Appraisal Study Result: A pipeline to the Colorado River

Partner with Coconino County for one pipeline:

- Resolving long-term water demand for 2 counties will help to get Federal Government approval
- Sharing cost = less \$ for each county
- Resolves Federal obligation to supply water to Navajo and Hopi Tribes
- Follows the very successful model of C.A.P.

Challenges for a Colorado River Pipeline

Securing Water Rights

- Lower Colorado River is already 100% allocated
 - 85% is used for agriculture
 - Buy water rights from least efficient farms
- Climate change will reduce Colorado river flows
 - Buy high priority water rights that will be supplied even if all C.A.P. water is cut off
- Az. growth will raise price for buying water rights
 - Buy water rights as soon as possible

Conclusions from the BOR Appraisal Study

- The 100+ stakeholders in the study area will likely complete a plan by 2012 that could meet water needs to 2050
- Current plans for the Big Chino pipeline will not satisfy PAMA demand to 2050
- A prudent plan for these economic times would be to delay the Big Chino pipeline until the BOR Appraisal Study is finished