

**CITY OF TUCSON, WATER DEPARTMENT
DESIGN STANDARD NO. 8-04
DESIGN APPROVAL REQUIREMENTS, CAPITAL IMPROVEMENT PROGRAM PROJECTS**

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8-04.0.0 **DESIGN APPROVAL REQUIREMENTS, Capital Improvement Program Projects**

8-04.1.0 **General**

1.1 Purpose

This section describes the requirements to obtain approval from Tucson Water for the design of CIP public water projects of Tucson Water.

1.2 Definitions

Section 8-18 contains a list of definitions, abbreviations, and acronyms.

1.3 Applicability

The water project design approval requirements listed herein apply to most water projects.

Additional requirements may be contained in other project design standards, defined by their function, i.e., pipeline, storage, pumping.

Tucson Water projects governed by this standard consist of:

- distribution and transmission pipeline projects
- water storage facilities,
- water pumping stations,
- water pressure reducing stations
- other water facilities as may be required by Tucson Water to ensure compliance with the objectives stated in this Manual, and
- modifications to existing water infrastructure

A. Tucson Water Approval

All projects require Tucson Water approval. Any change made to the Tucson Water system must be documented and on file with the Tucson Water Mapping/GIS Section.

B. Approval to Construct Requirements of ADEQ

All public water projects must meet the Approval to Construct requirements of ADEQ before the initiation of construction. Refer to ARS 49-353(A)(2) and AAC R18-5-505, Approval to Construct, for current requirements.

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- C. Exemptions from Plan Review Requirements of ADEQ
Exemptions from the plan review requirements of ADEQ, including the requirements for the Approval to Construct and the Approval of Construction, pursuant to ARS 49-353 (A)(2)(e), are based on the drinking water project cost including design cost.
1. Project Cost of \$12,500 or less
Pursuant to AAC R18-5-505, a project is exempt from the plan review requirements of ADEQ if the project cost is \$12,500 or less and
 - a. if the water line is not for a subdivision requiring plat approval by a city, town, or county, and
 - b. if the design is prepared by a professional engineer registered in Arizona, and
 - c. if the construction is reviewed for conformance with the design by a professional engineer registered in Arizona.
 2. Water Line Cost Between \$12,500 and \$50,000
Pursuant to AAC R18-5-505(B)(3)(b), a project is exempt from the plan review requirements of ADEQ if the project cost is between \$12,500 and \$50,000 and
 - a. if the water line is not for a subdivision requiring plat approval by a city, town, or county, and
 - b. if the design is sealed and signed by a professional engineer registered in Arizona, and
 - c. if the construction is reviewed for conformance with the design by a professional engineer registered in Arizona.
 3. Notice of Compliance
Pursuant to AAC R18-5-505(B)(4), upon completion of a project exempt from the plan review requirements of ADEQ, Tucson Water must provide to ADEQ a “notice of compliance” which contains:
 - fair market value cost estimate for the project,
 - the name of the design engineer,
 - the name of the review engineer,
 - the project completion date, and
 - the total construction time.
 4. Reclaimed Water Projects
At this time no reclaimed water conveyance (including pumping stations and storage facilities) or treatment facilities (including recharge basins and filtration plants) are submitted to ADEQ for review and/or approval.

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8-04.2.0 Submittal Requirements

2.1 General

The following subsections contain the names of the various documents to be submitted. The requirements for the specific content of each document are contained in other sections. Where applicable, the section number of the Design Standard has been provided for the content requirements.

2.2 Documents to be Submitted

A. Basic Documents

The following list of basic documents are to be submitted to Tucson Water for review of all projects:

- Project/Construction Plans (original), Section 8-07
- Special Specifications, Section 8-13
- Engineer's Estimate of Probable Construction Cost, Section 8-15
- Project Bid Schedule, Section 8-15

B. Additional Documents

The following list of additional documents will be required, if applicable, depending on the specific needs of the project:

- Easement description, with current title report or recorded deed, Section 8-15
- Design report, Section 8-15
- Native Plant Preservation Plan, to City of Tucson Landscape Review Section, Development Services
- Cultural Resources Survey/Archeology Report
- Pygmy Owl Survey, to U.S. Fish & Wildlife
- Endangered Species Survey/Pima Pineapple cactus

This list is not intended to be inclusive of all documents, which might be required for the approval of a specific project. The designer should consult with the approval agency for a comprehensive list of documents required for approval.

8-04.3.0 Review Requirements

3.1 Tucson Water Review

A. Primary Reviewer

The Tucson Water design section that normally has the responsibility for a particular type of project design shall be the primary reviewer of the project documents submitted from the designer. For example, the Plant Design Section has the responsibility to review storage facility projects, and the Distribution Design Section has the responsibility to review pipeline projects.

The primary reviewer shall be responsible for coordinating the review by others as described below.

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B. Reviews by Tucson Water

All Tucson Water sections affected by the project shall review the project documents periodically during the design period. Review signatures are required only on preliminary plans.

1. Mandatory Review

A mandatory review of the project documents is required of the following Tucson Water divisions, sections and units:

- Construction Section (for constructability and survey data),
- System Planning Section (to determine or verify pipeline sizes and the general location and route),
- Modifications Unit (potential roadway project conflicts),
- Operation and Maintenance Division, and
- Public Information Office (cover sheet only).

2. Selective Review

All project plans for new pipe, or a connection to existing pipe, shall be reviewed, by the Corrosion Control Unit, for corrosion prevention and monitoring requirements, if the pipe meets the following requirements of material and size, or location:

- a. Any metallic pipelines sixteen inches or greater in diameter including steel pipe, concrete cylinder pipe, prestressed concrete cylinder pipe, or ductile iron pipe, and
- b. located in an area known for potential corrosion problems.

3.2 Reviews Outside of Tucson Water

Review by outside agencies shall be documented with the initials of the reviewer on the plans, by memo, or by email.

A. Mandatory Review

1. Fiber Optics

The City of Tucson General Services Department requires a mandatory review of the preliminary (30%) design plans for all water main projects to determine if fiber optic conduit shall be included.

2. Right-of-Way

Review of the preliminary design for all water projects in the right-of-way is required by the applicable right-of-way jurisdiction.

B. Selective Review

1. Preliminary Design Review by Utilities

Besides the agencies listed in subsection 8-04.4 below, review of the preliminary design shall be requested of the appropriate utilities such as natural gas, electric, petroleum products, wastewater, telephone, cable communications, military installations, transportation utilities and irrigation lines.

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2. Final Design Review by Fire Suppression Authority
Review of the final design for all water main projects shall be requested of the appropriate fire suppression authority if the project includes the addition or deletion of fire hydrants.

3.3 Final Review

All project documents will be reviewed in a timely manner and returned to the designer with comments for re-submittal. Re-submittals will continue until accepted pursuant to subsection 8-04.4.

8-04.4.0 Approval Requirements

4.1 Approval Requirements by Tucson Water

At a minimum, approval signatures are required from the Engineering Division Administrator and the Deputy Director before the project can proceed to construction.

4.2 Additional Approval Requirements

Additionally, other project related approvals might be required by other governing agencies such as (but not limited to):

- Pima County or City of Tucson Development Services,
- Pima County Wastewater Management Department,
- The Arizona Department of Transportation,
- City of Tucson or Pima County Department of Transportation.

Approvals by the property owners or other jurisdictions (Marana, Oro Valley, etc.) may also be required.

4.3 Approval by Fire Suppression Authority

If applicable to this project, approval must be obtained from the fire suppression authority.

A. Preliminary Plans

Preliminary plans shall be submitted to the fire suppression authority to determine fire flow requirements.

B. Final Plans

Final plans shall be submitted to the fire suppression authority for approval signatures before Tucson Water approval.

4.4 Approval by ADEQ

A. Project Approval

- Pipeline projects require submittal to the PDEQ office, as provided in ARS 49-107, local delegation of state authority. Projects for wells, storage and other appurtenances will be submitted to ADEQ. Any reference to ADEQ may also mean PDEQ.
- A fee is charged by ADEQ to Tucson Water.

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- The designer should consult with ADEQ for their latest “Plan Review Submittal Checklist” for current submittal requirements.
- Generally, the project review and approval requirements of ADEQ are described in AAC R18-5-505, Approval to Construct. This rule is required by ARS 49-353.

B. Project Completion

Pursuant to AAC R18-5-505(E), the Approval to Construct may become void unless an extension of time has been granted by ADEQ within 90 days after the passage of one of the following:

- Construction has not commenced within one year after the date of issue of the Approval to Construct,
- There is a halt in construction of more than one year, or
- Construction is not completed within three years after it begins.

8-04.5.0 Design Changes to Approved Projects

5.1 Tucson Water Approval of Design Changes

All design changes to a previously approved project design must comply with Section 8-07 of this Manual and will require Tucson Water approval. This includes:

- design changes before going to bid, after design approval,
- invitation for bid amendments, during the bidding process, and
- supplemental agreements/change orders during construction.

A. Cover Sheet Revisions

Make revisions to revision block on cover sheet (or sheet index map) as follows:

1. Revision number
2. Revision date
3. Person designing revision
4. Revised sheets in “revision” column
5. Person checking revision
6. Seal and sign cover sheet

B. Revising Affected Sheets

Make revisions to the affected sheets as follows:

1. Retrieve original plan sheets from Mapping/GIS Section
2. “X” out deleted items
3. Draw a “cloud” around revised or added items
4. Put the revision number in triangle adjacent to each revisions
5. Fill in the revision block on each revised sheet
6. Seal and sign revision on each revised sheet

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5.2 ADEQ Approval of Design Changes

A. Material Design Change Determination

Pursuant to AAC R18-5-506, Compliance with Approved Plans, any material change in the approved design will require approval by ADEQ if the change will affect:

- water quality,
- capacity,
- flow,
- sanitary features, or
- performance.

Revisions not affecting water quality, capacity, flow, sanitary features, or performance, may be permitted during construction without further ADEQ approval if record drawings document these changes, prepared by a professional engineer registered in Arizona.

B. Submittal and Review of Material Design Change

When there is a material change in the approved design, the revised plans and specifications and a written statement of the reasons for such change shall be submitted to ADEQ for review:

C. Approval of Material Design Change

Approval shall be obtained in writing from ADEQ before the work affected by the change is undertaken.