

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-05  
DESIGN ACCEPTANCE REQUIREMENTS, SYSTEM MODIFICATIONS PROJECTS**

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**8-05.0.0      DESIGN ACCEPTANCE REQUIREMENTS, System Modifications Projects**

**8-05.1.0      General**

1.1      Purpose

This section describes the requirements to obtain acceptance from Tucson Water for the design of public water system modification projects, under the CIP of Tucson Water.

1.2      Definitions

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

1.3      Applicability

The water project acceptance requirements listed herein are unique to Public Agency public water projects.

Additional requirements are contained in other sections of the water project design standards manual that are associated with each type of water project. Depending on the developer-financed water facilities required for the Public Agency's project, additional water project design standards shall be applicable.

Typical water projects that are governed by this standard include ratepayer water projects for onsite and off-site water system improvements. These typically consist of water line extensions, but may also include the construction of the following water projects:

- water storage facilities,
- water pumping stations,
- water pressure reducing stations, and
- 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 recorded and on file with the Tucson Water Mapping/GIS Section.

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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.

C. Exemptions from the 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.

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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.

**8-05.2.0 Submittal Requirements, Water System Modifications**

2.1 General

The specific document content requirements are contained in the supplemental documents provided by the Tucson Water, Distribution Design Section, Modifications Unit. All submittal documents from the Agency includes, but are not limited to, road, drainage, sewer, sidewalk, lighting, other utilities, and floodplain.

2.2 Documents to be Submitted

A. Basic Documents

The following documents must be submitted for review of projects:

- Agency Project Construction Plans
- Water System Modification Construction Plans
- Special Provisions to Pima County/City of Tucson Standard Specifications for water work
- Engineer's Project Cost Estimate.

B. Additional Documents

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

- Road/Drainage Survey Control Sheets,
- Road Geotechnical Soils Report
- Corrosion Pre-Design Report
- Road Design Report;
- Bid Sheet,
- Easement description for water,

This list is not intended to be inclusive of all documents that might be required for the acceptance of a specific Water System Modification project. The designer should consult with Tucson Water and the particular Public Agency constructing the water system modifications.

**8-05.3.0 Review Requirements, Water System Modifications**

3.1 Tucson Water Review

A. Primary Reviewer

The Modifications Unit shall review a water system modification project in a timely manner and return it to the Agency's designated

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contact. Revisions will continue until accepted by Tucson Water. All plan reviews shall be documented by marking a set of the plan submittal documents and preparing a project correspondence letter.

**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. The Modifications Unit shall coordinate distribution of project documents to the other Tucson Water Sections as specified below.

**1. Mandatory Section Review**

Mandatory review of the project documents is required of the following Tucson Water Sections:

- a. Water System Modification Plans
  - Construction Section (constructability review);
  - Corrosion Control Unit
  - Operations and Maintenance
- b. Modifications Unit Memorandum with attachments
  - New Development
  - Distribution Design
  - Plant Design
  - Control Systems
  - System Planning

**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 pipe including steel pipe, concrete cylinder pipe, prestressed concrete cylinder pipe, or ductile iron pipe, and
- b. pipelines 16-inch in diameter and larger, or
- c. located in an area known for potential corrosion problems.

**3.2 Reviews Outside Tucson Water**

Review by outside agencies shall be documented in a letter from the Agency with any appropriate attachments.

- A. Tucson Water shall review any comments from outside agencies on the design for all water works projects.
- B. Review of the final design for all water main projects shall be requested of appropriate fire district if the project includes the addition or deletion of fire hydrants.

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**8-05.4.0 Acceptance Requirements, Water System Modifications**

4.1 Minimum Acceptance Requirements

At a minimum, signatures of acceptance are required from the Modification Unit Supervisor and Distribution Design Section Manager before the project can proceed to construction:

4.2 Additional Approval Requirements

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

- Pima County or City of Tucson
- The Arizona Department of Transportation,
- Other jurisdictions such as Town of Marana, South Tucson, etc.

Approvals by property owners or other jurisdictions 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 appurtenances will be submitted to ADEQ. Any reference to ADEQ may also mean PDEQ.
- A fee is charged by ADEQ to Tucson Water.
- 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:

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- 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.

**8-05.5.0 Design Changes to Approved Projects**

Unless otherwise specifically required, plan revisions do not have to be submitted to ADEQ for approval.

**5.1 Plan Revisions**

All design changes to a previously approved project design must comply with Section 8-07 of this Manual and will require Tucson Water acceptance. 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 if the person designing the revision is someone other than the original designer or other than someone working under the original designer.
- 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 if the person designing the revision is someone other than the original designer or other than someone working under the original designer.

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5.2 ADEQ Approval

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.