

WATERS OF THE UNITED STATES

USACE administers Section 404 of the CWA, which regulates the discharge of dredged or fill material into waters of the United States (jurisdictional waters; see sidebar on page 4-110), including wetlands. USACE regulates jurisdictional waters through permitting, using nationwide and individual permits. Types of waters of

the United States that are regulated include ephemeral washes, intermittent and perennial streams, springs, riverbeds, wetlands, and other special aquatic sites. The physical attributes of a water body are a key component of the waters of the United States determination. The types of activities that may affect jurisdictional waters are fundamental to the associated permitting requirements and development of appropriate mitigation measures.

revisited with USACE. This process will occur prior to the FEIS.

Western Section

Approximately 9 linear miles of the Salt River channel are within the Study Area. The Salt River channel is considered a water of the United States. The channel functions as a surface water conveyance system and offers some attenuation of flood flows (Arizona Floodplain Management Association 2000). The channel may trap suspended sediment and retain nutrients from discharge flows, thus serving a water quality function. The Salt River is oriented from east to west across the Western Section of the Study Area from 39th to 111th avenues. The Salt River channel is surrounded by cultivated fields and various forms of development (residential, commercial, and industrial). These areas are relatively flat, with drainage patterns having been altered by land use practices. Numerous irrigation supply, feeder, and return channels have been constructed in the upland agricultural areas. Figure 4-39 illustrates waters of the United States in the Western Section of the Study Area.

Several locations in the Salt River channel have been mined for aggregate material, and, as a result, there are several abandoned or active aggregate extraction pits. The pits may intercept groundwater and may have varying depths of water, depending on time of year and fluctuating annual hydrologic cycles. Consultation with the USACE Arizona office regarding these mined areas, however, resulted in a determination that the former gravel mining pits are not jurisdictional wetlands.³⁴

The Tres Rios Constructed Wetlands Demonstration Project includes three separate facilities near the 91st Avenue WWTP (USACE 2000). These constructed wetlands do not exhibit the three wetland criteria (hydrophytic vegetation, hydric soils, or wetland hydrology) and are not considered to be jurisdictional.

Eastern Section

The Eastern Section of the Study Area contains numerous ephemeral washes that drain the southern

AFFECTED ENVIRONMENT

Jurisdictional waters in the Study Area include ephemeral washes and the Salt and Gila rivers. No springs, wetlands, or other special aquatic sites have been identified in the Study Area. The guidance for identifying existing conditions for jurisdictional waters was:

- ▶ USACE regulatory guidance letter (No. 08-02) for jurisdictional delineations, dated June 26, 2008 (USACE 2008a)
- ▶ discussions with USACE regarding the method of identifying waters of the United States in Arizona, including ephemeral washes and the Salt River channel
- ▶ field investigation of waters of the United States to determine jurisdictional limits
- ▶ CWA jurisdictional memorandum and guidance to EPA regions and USACE districts regarding the Supreme Court decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (December 2, 2008)

Field delineation of ephemeral washes in the Eastern Section was conducted in 2003. All delineations were conducted in accordance with *USACE Wetland Delineation Manual* (USACE 1987), *Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest* (USACE 2001), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid Region of the Western United States* (USACE 2008b).

No field verifications have occurred since 2003. At that time, USACE concurred that the ephemeral washes identified are jurisdictional. Guidance from EPA and USACE (2008) calls for these determinations to be

Figure 4-39 Waters of the United States, Western Section



Note: Widths of canals, washes, and laterals are not to scale.

Waters of the United States are associated with ephemeral washes, canal laterals, and the Salt and Gila rivers.

side of the South Mountains and their associated foothills. These ephemeral washes, which are potentially jurisdictional waters, trend to the south or slightly southwest and discharge to either the Gila River (south of the E1 Alternative) or to the inactive agricultural fields along the border of Community land. Residential development along the foothills of the South Mountains has altered some drainages and washes. The delineated washes are shown in Figure 4-40.

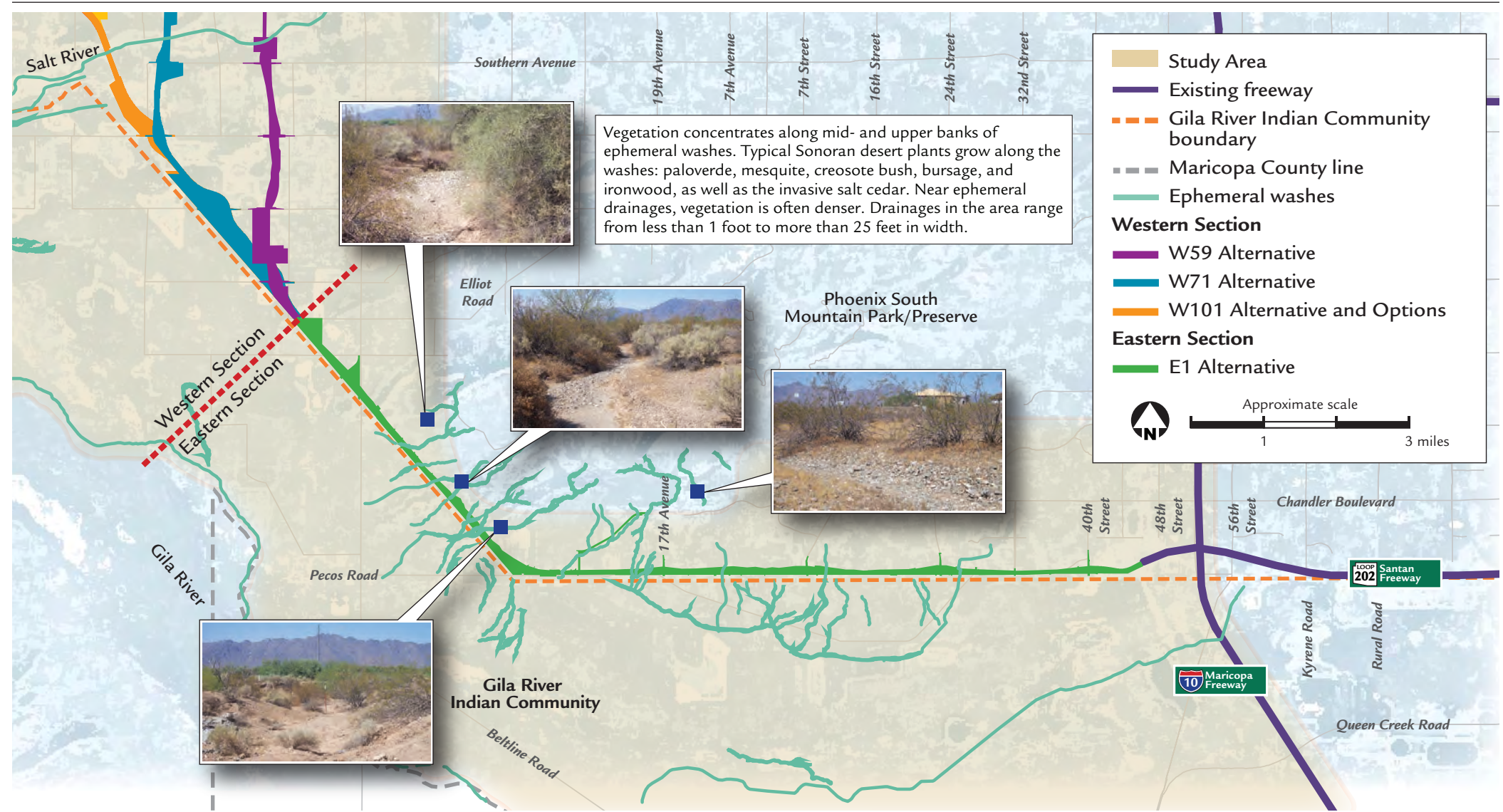
These channels and drainages vary from less than 1 foot to more than 25 feet in width. The channel substrate also varies, but is generally bedrock, gravel/cobble, or coarse sand. Many of the channels are relatively shallow, with marginal bank definition. In addition, many of the channels have braided subchannels within the main channel. This is most evident in the channels along the southernmost portion of the South Mountains' drainage. Most of the channel bottoms are devoid of vegetation, with the upland vegetation adjacent to the drainages consisting of typical Sonoran Desert plants such as paloverde, mesquite, ironwood, creosote bush, and various species of cacti, including saguaros. Northwest of the South Mountains foothills, the channel banks of these ephemeral washes become less defined. Many of the washes near 51st Avenue and the boundary with Community land comprise shallow, multibraided subchannels. These subchannels are subject to movement and realignment during storms and along existing road alignments or other areas of disturbance.

ENVIRONMENTAL CONSEQUENCES

Action Alternatives, Western Section

All action alternatives in the Western Section would cross the Salt River channel, a water of the United States. The roadway bridge associated with each action alternative would affect jurisdictional waters (the Salt River) through construction of piers in the channel. The preliminary bridge design was used to calculate the area of potential impact for each action alternative. The acreage associated with bridge construction was determined based on the estimated dimensions of the bridge. Bridge width would be approximately 145 feet without auxiliary lanes and 160 feet with auxiliary lanes. The actual impact of the bridge within the bed

Figure 4-40 Typical Ephemeral Washes, Eastern Section



Note: Widths of washes are not to scale.

The Eastern Section of the Study Area is heavily dissected, with washes throughout, particularly along the southern flanks of the South Mountains.

of the Salt River would be substantially less because the structure would be designed so that only fill associated with the bridge piers would be placed in the riverbed. Table 4-43 shows jurisdictional waters impacts that may occur as a result of the Western Section action alternatives. As shown in Table 4-43, the W101 Alternative would affect the least amount of jurisdictional waters, while the W59 (Preferred) Alternative would affect the greatest amount. For the W101 Alternative, the impacts on jurisdictional waters would be the same regardless of option.

Table 4-43 Area of Impact to Jurisdictional Waters, Western Section, Action Alternatives

| Western Section Action Alternative | Area (acres) |
|------------------------------------|--------------|
| W59 | 26 |
| W71 | 19 |
| W101 Western Option | 17 |
| W101 Central Option | 17 |
| W101 Eastern Option | 17 |

What are “waters of the United States”?

Section 404 of the CWA defines waters of the United States to mean the interstate “navigable waters” of the United States, including the territorial seas, that are currently, have been used in the past, or may be used in the future for foreign or interstate commerce. Specifically, such waters may be interstate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, whose use, degradation, or destruction could affect interstate or foreign commerce activities.

USACE determines whether a feature is eligible for protection under the CWA. Its court-upheld interpretations of waters of the United States have historically been far-reaching, including features such as wetlands isolated from other waters of the United States, ephemeral desert washes, and agricultural irrigation ditches. On June 19, 2006, the U.S. Supreme Court found that the USACE definition of waters of the United States had exceeded Congressional intent in the original CWA. In remanding several cases to lower courts for reevaluation, the Supreme Court ordered the lower courts to bear in mind that waters of the United States require relatively continuous flows and that wetlands are considered waters of the United States only if they maintain a continuous surface connection with recognized waters.

Action Alternative, Eastern Section

The Eastern Section of the Study Area contains numerous washes that drain the southern side of the South Mountains and their associated foothills (Figure 4-40). Ephemeral washes potentially constitute waters of the United States in the Eastern Section of the Study Area. Field inspections were conducted in August 2003, and 51 ephemeral washes were identified. Figure 4-40 provides photographs of typical ephemeral washes in the Eastern Section of the Study Area. The findings from the field investigation were presented and discussed with USACE in October 2003, and USACE has concurred that the ephemeral washes identified are waters of the United States (see the sidebar on this page). However, recent guidance from EPA and USACE (2008) has brought into question USACE’s concurrence that the washes are waters of the United States. These issues would be determined prior to the FEIS.

The E1 (Preferred) Alternative would cross most of the washes identified in the Study Area. Roadway structures associated with the E1 Alternative would affect jurisdictional waters by placing fill in some of the channels. The drainage system anticipated for this section of the project would channel minor washes to major washes. Transverse crossings for major washes would be constructed using culverts to convey stormwater runoff beneath the roadway. The acreage impacts associated with roadway construction were determined using the following assumptions:

- ▶ Average ephemeral wash width is 5 feet, based on field observations.
- ▶ Proposed roadway R/W width varies between 300 and 1,000 feet. However, near the washes, it would be closer to 300 feet.
- ▶ The proposed roadway would affect all ephemeral washes crossed (51 ephemeral washes estimated to be crossed).

The E1 Alternative would permanently affect approximately 4 acres of jurisdictional waters (ephemeral washes). Temporary construction zones may result in additional impacts on jurisdictional waters. Once these zones have been identified, a determination would

be made by USACE, ADOT, and FHWA regarding whether additional mitigation would be warranted. Because the impact acreage is based on R/W limits, it is anticipated that design refinement and construction sequencing would result in a reduction of impacts on jurisdictional waters.

No-Action Alternative

The No-Action Alternative would not result in direct impacts on waters of the United States.

MITIGATION

It is anticipated that an Individual Permit under Section 404 of the CWA would be required for the proposed project if any action alternative were chosen. On February 8, 2005, FHWA, ADOT, and USACE entered into an Operating Agreement (Appendix 4-3, beginning on page A555), which applies to transportation projects that are both FHWA actions under NEPA and that require a USACE individual permit under Section 404 of the CWA (USACE 2005). The Operating Agreement commits FHWA, USACE, and ADOT to integrating NEPA and Section 404 of the CWA in the transportation planning, alternatives screening, and implementation processes. In accordance with the Operating Agreement and with Section 404(b)(1) of the CWA, USACE participated in identification of the Preferred Alternative. Under Section 404(b)(1), USACE is obligated to select the least environmentally damaging practicable alternative after considering cost, existing technology, and logistics, in light of overall project purposes (40 C.F.R. § 230).

None of the action alternatives would provide the opportunity for complete avoidance of jurisdictional waters because any freeway in the southwestern Phoenix metropolitan area connecting I-10 (Maricopa Freeway) to I-10 (Papago Freeway) would cross the Salt River and ephemeral washes. Crossing jurisdictional waters of the United States was, however, one of the screening criteria used during the alternatives analysis (see the section, *Alternatives Development and Screening*, beginning on page 3-1). The Project Owners Team, which included

ADOT, FHWA, and USACE, sought to avoid waters of the United States, where practicable.

According to the Operating Agreement, when avoidance of waters of the United States would not be practicable, minimization of impacts would be achieved and unavoidable impacts would be mitigated to the extent reasonable and practicable.

The following steps have been or would be taken by ADOT as part of the Section 404 Individual Permit requirements in addressing Section 404(b)(1) guidelines:

- ▶ minimize impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts
- ▶ rectify impacts by repairing, rehabilitating, or restoring the affected environment
- ▶ reduce impacts over time by preservation and maintenance operations during the life of the action
- ▶ compensate for impacts by replacing, enhancing, or providing substitute resources or environments

The general and special conditions of the Section 404 Individual Permit would minimize impacts on waters of the United States to the extent practicable. The proposed project would require water quality certification under Section 401 of the CWA. The following is a summary of potential minimization measures outlined to satisfy conditions of the Sections 404/401 permits.

ADOT Design Responsibilities

- ▶ ADOT would prepare and submit an application to USACE for a CWA Section 404 permit for the entire project. The permit conditions would be developed according to the current Operating Agreement. No work would occur within jurisdictional waters until the appropriate CWA Sections 401 and 404 permits were obtained.
- ▶ If more time were to be required to complete the proposed action than authorized by the permit, ADOT would submit a request for a time extension

to USACE at least 1 month prior to reaching the authorized date.

- ▶ If previously unidentified cultural resources were to be encountered in or adjacent to waters of the United States during the proposed undertaking, ADOT would notify FHWA and USACE immediately to make arrangements for the proper treatment of those resources.

ADOT Right-of-Way Group Responsibility

- ▶ If ADOT were to sell the freeway, ADOT would obtain the signature of the new owner in the applicable space provided in the permit and forward a copy of the permit to USACE to validate the transfer of the authorization.

ADOT District Responsibilities

- ▶ The CWA Section 401 water quality certification would certify only the activities and construction of the Selected Alternative and would be valid for the same period as the CWA Section 404 Individual Permit. If project construction were not started by the USACE deadline, the applicant would notify ADEQ.
- ▶ ADOT would provide a copy of the Section 401 water quality certification conditions to all appropriate contractors and subcontractors. ADOT would post a copy of these conditions in a water-resistant location at the construction site where it may be seen by workers.
- ▶ ADOT would maintain the project authorized by the permit in good condition and in conformance with the terms and conditions of the permit. ADOT would not be relieved of this condition even if ADOT were to abandon the project. Should ADOT cease to maintain the freeway or abandon the freeway without a good faith transfer, ADOT would obtain a modification of the permit from USACE.
- ▶ If a substantive change/modification to the project were necessary, ADOT would provide notice and supporting information to ADEQ for review. ADEQ would then modify the certification to include the change/modifications, provided that water quality standards for surface waters (18 A.A.C. § 11, Article 1) would be achieved.
- ▶ When construction were to begin, ADOT would notify ADEQ within 7 days of the start date. When notification were made, ADOT would provide the start date and the name and phone number of the primary contractor and a contact person. ADEQ may conduct inspections to determine compliance with surface water quality standards. When the activities were completed, ADOT would notify ADEQ within 30 days after project completion.
- ▶ Water used for dust suppression would not contain contaminants that could violate ADEQ water quality standards for surface waters or aquifers. ADOT would obtain the necessary permits for such activities.
- ▶ If a dewatering operation were needed, ADOT would not discharge into waters of the United States unless the quality were to meet the appropriate water quality criteria for the receiving water body and ADOT were to obtain the necessary permits.
- ▶ ADOT would comply with all conditions set forth in the Section 401 water quality certification made as part of the project.
- ▶ ADOT would allow USACE representatives to inspect the project at any time as determined to be necessary to ensure that it was being accomplished in accordance with the terms and conditions of the permit.
- ▶ ADOT would prepare written instruction for all supervisory construction personnel on the protection of cultural and ecological resources, including all agreed-to environmental stipulations for the project and all conditions required by the permit. The instructions would address federal and State laws regarding antiquities, plants, and wildlife, including collection, removal, and the importance of these resources and the purpose and necessity of their protection.
- ▶ Prior to initiating construction activities under the permit, ADOT would ensure that the contractor(s) would have been provided with a copy

of the Section 404 authorization. This would be intended to confirm that the contractor(s) would comply with the terms and conditions of the Section 404 authorization.

Contractor Responsibilities

- ▶ Debris (such as soil, silt, sand, rubbish, cement, asphalt, oil or petroleum products, organic materials, tires, or batteries) derived from construction or demolition activities would not be deposited at any site where it may be washed into waters of the United States. After completion of the proposed project, the washes would be left in an environmentally acceptable condition, with all temporary construction and nonnative materials removed from the watercourse.
- ▶ Pollution from the operation of equipment in the floodplain would be cleaned up and removed before it could be washed into a watercourse. Spills would be promptly cleaned and properly disposed.
- ▶ Temporary erosion and sediment control measures would be installed, at a minimum, according to ADOT's *Standard Specifications for Road and Bridge Construction* (2008) and *Erosion and Pollution Control Manual* (2005c), prior to construction and would be maintained as necessary during construction.
- ▶ If permanent erosion and sediment control measures were required, they would be installed as soon as practicable, preferably prior to construction activities, and would be maintained throughout the life of the project. Permanent erosion and sediment control measures would be located to protect downstream entities from construction impacts when there would be a flow in watercourses within the project boundary.
- ▶ Access roadways and staging areas would be designed to allow normal storm flows to pass unimpeded. There would be no significant change to the hydraulic conditions of the upstream waters as a result of the temporary constructed features.
- ▶ No petroleum products would be stored within the 25-year flood boundary of the Salt River, the

Gila River, or unnamed tributary washes. Any soil contaminated as a result of contractors' operations would be disposed of in an appropriate, approved disposal facility.

- ▶ No excavation, fill, or leveling would be permitted in the watercourses outside the boundaries of the permitted work area.
- ▶ No fill would be taken from any watercourse outside the boundaries of the permitted work area. Fill would come from an area outside the OHWM of any watercourses and would be free of any contaminants or pollutants.
- ▶ Heavy equipment traffic would be restricted from entering the watercourses outside the boundaries of the permitted work area. Appropriate barricades would be installed to preclude this activity.
- ▶ During construction, the work sites would be maintained such that no construction debris or material spillover would be allowed in the watercourses. Upon completion of the work, all construction debris and excess material would be removed from the job sites and disposed of appropriately outside the USACE jurisdictional areas.
- ▶ During construction, appropriate measures would be taken to accommodate flows within the watercourses, such that waters would not be diverted outside the OHWM.

- ▶ Prior to construction, the contractor would review *Environmental Protection on Arizona Department of Transportation Projects: Instructions to Contractors* and review and sign the *Checklist for Environmental Compliance*. ADOT would also sign the checklist and return it to the EPG 7 calendar days prior to construction.
- ▶ The contractor should comply with all terms, general conditions, and special conditions of the Section 404 permit, as established by USACE.
- ▶ No work would occur within jurisdictional waters until the appropriate CWA Sections 401 and 404 permits were obtained.

CONCLUSIONS

Each Western Section action alternative would cross between 17 and 26 acres of jurisdictional waters (the Salt River). Actual, permanent disturbance in the river channel would result from bridge pier placement and is anticipated to be substantially less than the acreages reported in this section. While the W59 (Preferred) Alternative would have a greater impact on jurisdictional water acreage than would either the W71 or W101 Alternative, the impact on jurisdictional waters in the region would be negligible.

In the Eastern Section, the E1 (Preferred) Alternative would cross several washes that are potential jurisdictional waters. These washes receive runoff from the South Mountains that passes under Pecos Road

through a series of culverts following natural drainages/washes. The design of the E1 Alternative would alter the drainage pattern through use of a series of drainage detention basins that would direct runoff to specific locations to discharge under the freeway and onto Community land (see the section, *Drainage*, beginning on page 3-58).

Under the No-Action Alternative, no project-related impacts on jurisdictional waters would occur; however, continuing urban development associated with projected growth in the region and Study Area would continue to exert pressure to alter jurisdictional waters.

With any action alternative, permits would be required under Sections 404/401 of the CWA. ADOT has followed Section 404 Individual Permit requirements in addressing Section 404(b)(1) guidelines (see page 3-27). In accordance with the Operating Agreement, USACE participated with FHWA and ADOT in the identification of the Preferred Alternative. Under Section 404(b)(1), USACE is obligated to select the least environmentally damaging practicable alternative after considering cost, existing technology, and logistics, in light of overall project purposes.

The general and special conditions of the Section 404 Individual Permit would minimize impacts on jurisdictional waters to the extent practicable. ADEQ would issue Section 401 Individual certification for compliance with water quality prior to Section 404 permit issuance.