DICK PERREAULT
2/27/92

EAST PAPAGO FREEWAY PROJECT

ANALYSIS OF ALTERNATIVES

ARIZONA DEPARTMENT
OF TRANSPORTATION

404 PERMIT
APPLICATION NUMBER 90-495-CL

FEBRUARY 1992

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letter of transmittal

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Document No. 31825

Date: 2/26/92	Project No. 5091.01
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Signed: Judy Lyles
For Thomas M. Monchak
Project Manager

85-04 (9/86)

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ANALYSIS OF ALTERNATIVES
APPLICATION NUMBER 90-495-CL

Introduction

The Arizona Department of Transportation (ADOT) has made application (number 90-495-CL) to the Department of the Army, Corps of Engineers March 18, 1991 for a permit to construct portions of two freeways in the Phoenix metropolitan area of eastern Maricopa County, Arizona. The application encompasses two sites in the same geographical area consisting of: (1) an area within the ordinary high water mark of the Salt River channel located approximately between Indian Bend Wash and Dobson Road; and (2) a ten-acre tailwater pond located within the Pima Freeway right-of-way between McDowell Road and McKellips Road. The public notice comment period extended from April 24, 1991 through May 24, 1991. Comments received by the Corps of Engineers were transmitted to ADOT June 18, 1991.

This report was originally prepared as a summary document in September 1991 in response to those comments and addresses the analyses of alternatives associated with the areas addressed in the application. It is divided into two sections in order to address the two geographical areas encompassed by the application. Previously produced reports cited in the permit application public notice are listed at the end of this document for reference.

In February 1992 this report was amended to reflect conditions ADOT agreed to meet following numerous meetings and extensive negotiations with the Maricopa County Flood Control District, City of Tempe, Arizona Department of Environmental Quality, Arizona Game and Fish Department, U.S. Fish and Wildlife Service and Corps of Engineers. The key condition necessary to satisfy the agency concerns as requested by the Maricopa County Flood Control District is that Salt River "bank protection" be provided in the project area.

Background

The Phoenix metropolitan area experienced major population increases with resultant expanded growth throughout Maricopa County during the 1970's and early 1980's.

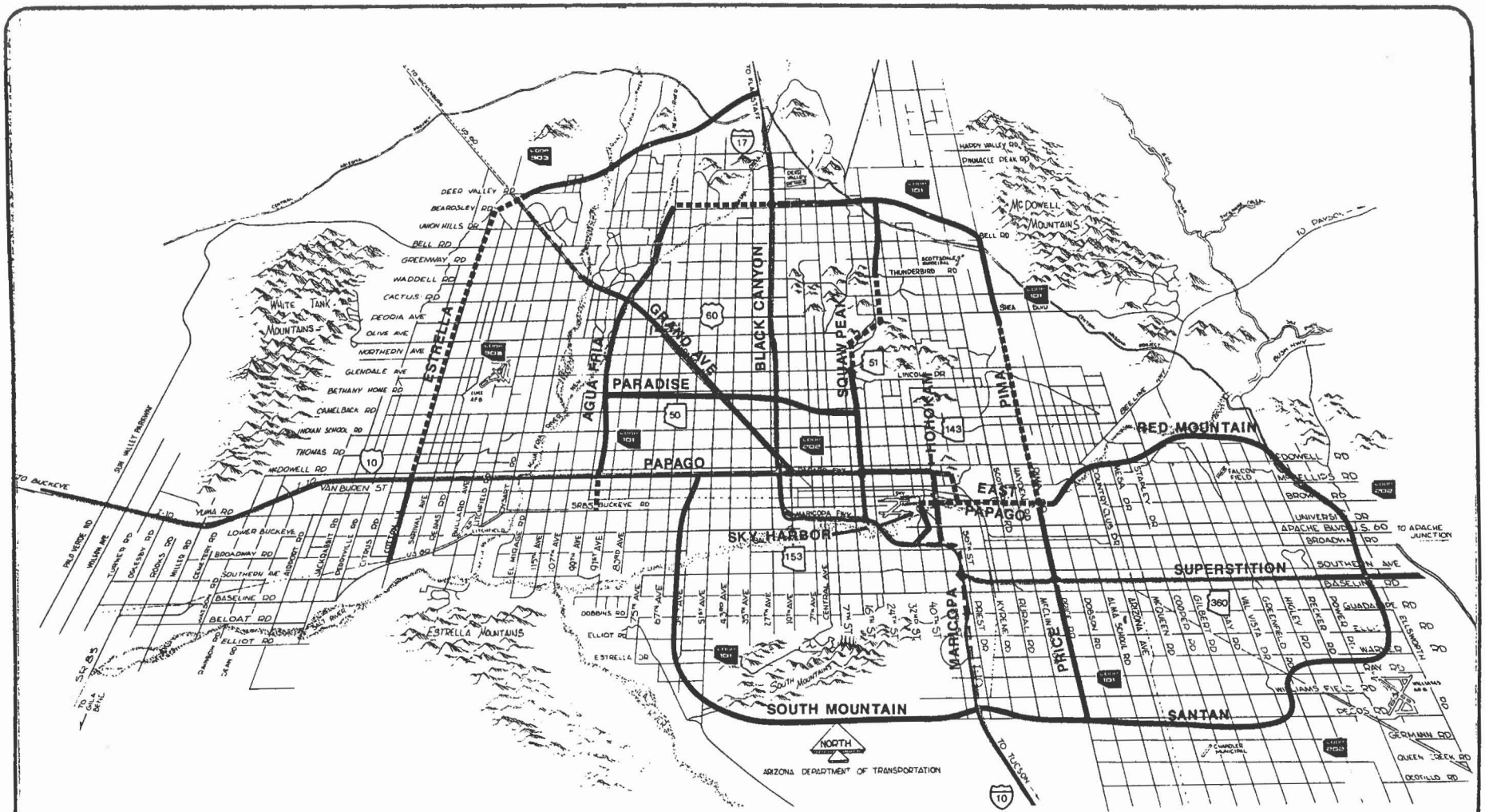
Unfortunately, the existing transportation system, consisting of approximately 70 miles of freeways, proved to be inadequate to meet the increased transportation needs of the public. By the mid 1980's the reality of the increasing traffic congestion led to growing public concern and annoyance with regional transportation problems.

To address these issues, both the public and private sectors cooperatively developed a plan to finance and build new freeways. As a result of their efforts, one of the most aggressive regional highway construction programs in the United States was set into motion in 1985. In Maricopa County a sales tax initiative was developed asking voters to boost the existing sales tax by 1/2 cent to provide funding for a regional freeway system. Overwhelming voter approval followed, and the responsibility for the design, construction and maintenance of 231 miles of new access controlled highways was delegated to ADOT.

Known as the Maricopa Association of Governments (MAG) Freeway Plan, a total of thirteen highway corridors of varying length (see Figure 1) became the focal point of a major construction program to be completed within 20 years.

Three freeway corridors were developed to serve the area traffic needs and provide system continuity for the eastern portion of the Phoenix metropolitan area, the East Papago, Pima and Red Mountain. Various alternative alignments were identified and evaluated for each corridor, and included extensive public participation.

The East Papago Freeway (202L) begins at approximately 24th Street in Phoenix and extends easterly approximately 9 miles to a connection with the Pima Freeway at the Red Mountain Traffic Interchange in Tempe. The Red Mountain Freeway begins at the Red Mountain Traffic Interchange and continues easterly and then southerly for 17 miles to a connection with the Superstition Freeway in east Mesa.



MAG Freeway Plan

figure 1

The Pima Freeway (101L) extends from the Superstition Freeway at its southern terminus in Tempe and proceeds northerly through Tempe and Scottsdale and then westerly to a connection with Interstate 17 in north Phoenix. The Pima Freeway differs from all other urban freeways in that an 8 1/2 mile segment is located on the Salt River Pima-Maricopa Indian Community (SRPMIC).

Following five years of negotiations between ADOT and the SRPMIC, an alignment was agreed upon in 1990. This alignment begins at the southern boundary of the Reservation at the Red Mountain Traffic Interchange in Tempe and proceeds in a general northerly direction, approximately one-eighth to one-quarter of a mile east of Pima Road until it exits the northern portion of the Reservation just south of Via Linda Road in Scottsdale. The freeway then continues north through Scottsdale following the existing Pima Road alignment.

ANALYSIS OF ALTERNATIVES

I. East Papago, Pima and Red Mountain Freeways and Bank Protection of the Salt River

A. Project Purpose

To construct an east-west freeway alignment to carry traffic from Scottsdale Road in Tempe, Arizona to Dobson Road in Mesa, Arizona in the vicinity of the Salt River in a cost effective manner while minimizing social and economic impacts as a critical link in the MAG regional freeway system.

B. Project Need

This section of freeway is needed to alleviate existing and projected traffic congestion and to enhance public safety. It is required as part of the network of freeway facilities approved by Maricopa County voters in 1985.

Salt River bank protection is needed to protect the freeway elements from river flows as well as to protect certain areas of the river bank from induced damages due to the freeway elements constructed in the river.

C. Project Alternatives

1. No Action

If no action is taken, traffic volumes on the Maricopa Freeway, Superstition Freeway, and major arterial streets in this area will continue to increase, making existing congestion much worse. The Phoenix Metropolitan area is rapidly expanding to the east and south through the cities of Tempe, Mesa, Apache Junction, Scottsdale, Chandler, and Gilbert. This growth has already greatly

increased traffic volumes on the existing streets. If new roadways are not built, the increased traffic volumes will exceed the capacity of the existing system; thereby creating unsafe and unmanageable traffic conditions. Additionally, transportation costs in terms of lost time, increased numbers of accidents, and reduced mobility adversely affect both the driving public and the business community.

2. Upgrade Existing Roadways

This alternative is not viable as it does not provide for a freeway alternative. The East Papago Freeway is an integral element of the MAG regional freeway program and is a necessary link connecting Tempe, Mesa, and the east valley to all other geographic areas of Maricopa County. Upgrading existing roads would not provide the traffic capacity necessary to efficiently carry the large volume of traffic projected to use the freeway.

Secondly, there are only two nearby major east/west arterials serving Tempe and Mesa, University Drive and McKellips Road. Upgrading these roadways would require extensive acquisition of right-of-way including some SRPMIC property, and would create significant negative economic impacts upon existing Tempe and Mesa businesses. This option is neither practicable nor viable. Additionally, neither facility is designated as a state highway nor are they eligible for 1/2¢ sales tax funding as they are not access controlled roadways, nor are they part of the MAG Regional Freeway Plan.

In summary, upgrading existing roadways in Tempe and Mesa is not an acceptable alternative due to the following rationale:

- they are not part of the MAG freeway program nor are they part of the State Highway System
- ADOT has no jurisdiction on roadways within the SRPMIC

boundaries

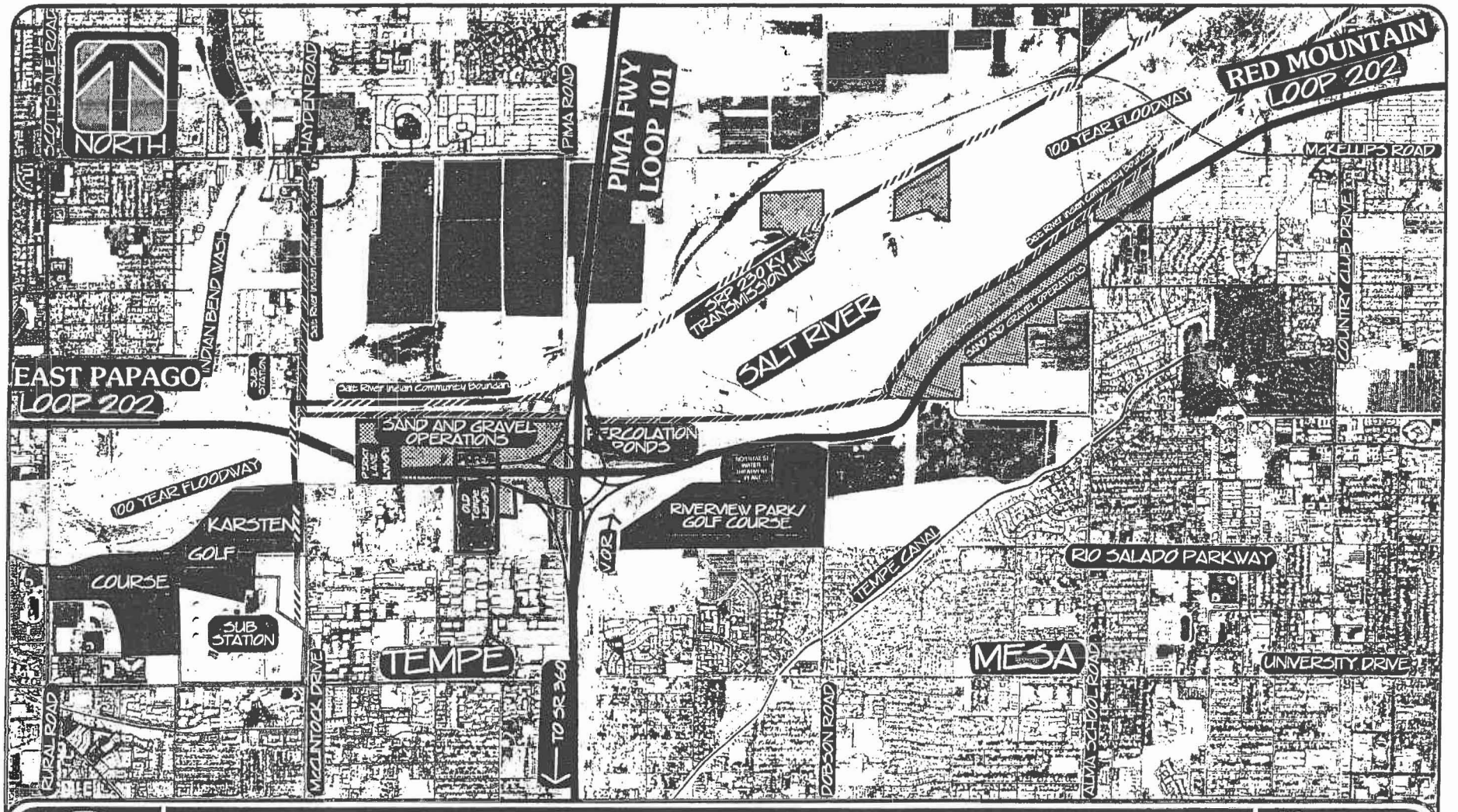
- they are under the jurisdiction of the Cities of Tempe and Mesa, thus ADOT funds cannot be used for improvements
- they are not eligible for the MAG 1/2¢ sales tax based funding
- upgrading arterials will not address regional transportation issues
- upgrading arterials would negatively affect existing adjacent businesses
- adding lanes to existing arterials will not solve regional congestion problems

3. Initial Alignment

As identified in the East Papago Location and Design Concept Report of September 1987, the alignment initially selected for the East Papago Freeway crossed the north bank of the Salt River east of Hayden Road, then crossed the river in a southeasterly direction and continued easterly along the south bank of the Salt River to the interchange of the Pima Freeway one mile east of Hayden Road.

This alignment (see Figure 2) did not result in any significant hydraulic impact to the Salt River due to the alignment of the river crossing, nor would there be any significant discharge of fill material into the Salt River resulting from construction activities.

Environmental factors are the most significant considerations related to this alignment. Crossing the Salt River at this location resulted in the freeway traversing the Perry Lane landfill on the south side of the river and continuing east on an alignment which crossed through the Old Tempe Landfill. Results of an extensive environmental testing program indicated that both of these landfills potentially contained considerable amounts of hazardous materials. The cleanup cost required to mitigate these



East Papago Freeway Initial Alignment

figure 2

hazardous materials was considered to be prohibitive, estimated to be as high as one hundred million dollars. As a result, this initial alignment was determined to not be viable or prudent because of the exorbitant cost of the environmental mitigation measures.

The initial alignment provided adequate highway geometrics based on the nature of the river crossing and the lack of curvature as the alignment continued east after the Salt River was crossed.

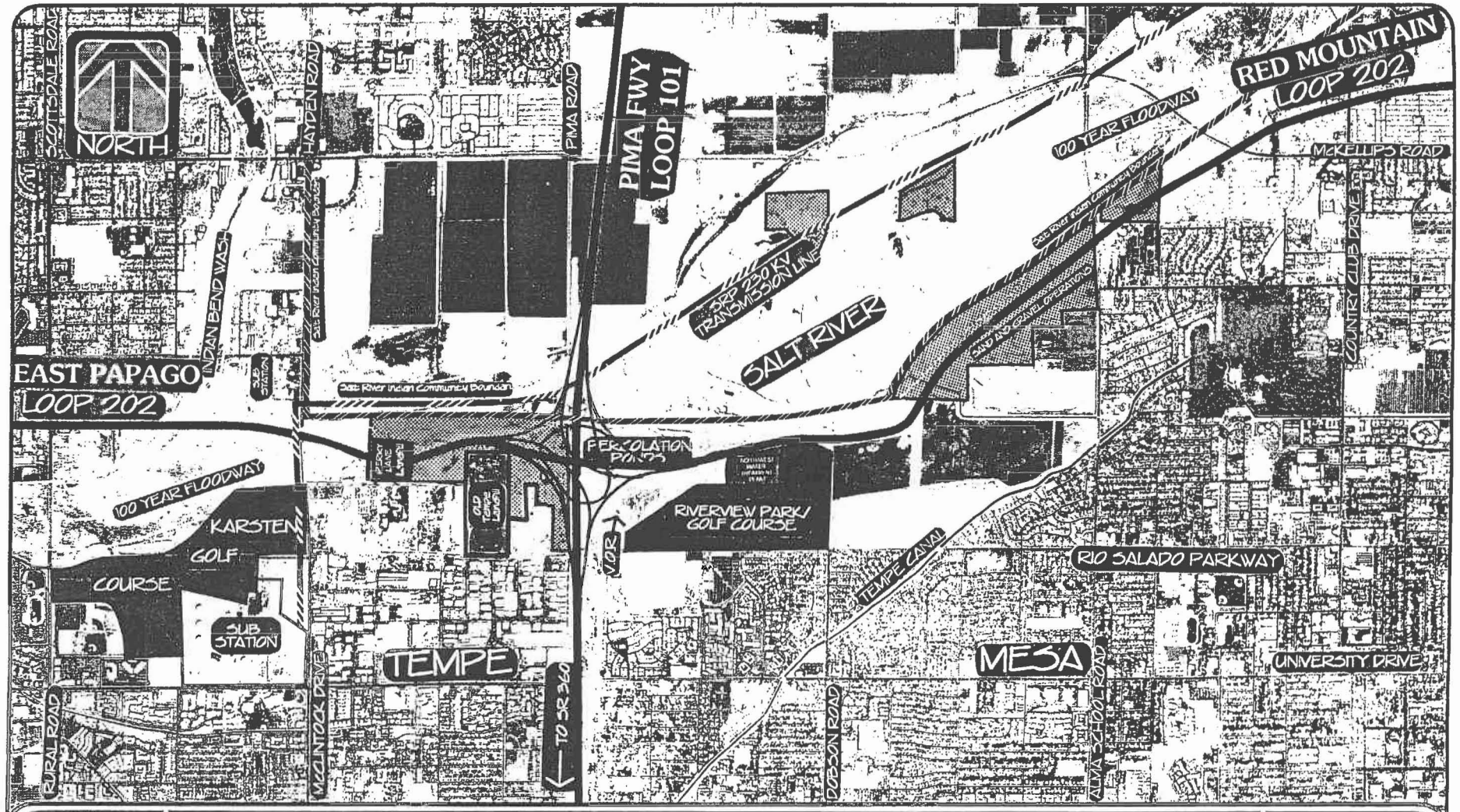
Social and economic impacts of this alternative were not considered significant. The properties crossed by the freeway alignment were landfills and industrial sites. There was minimal to no impact to the existing habitat associated with the alignment due to the location of the Salt River crossing.

Based on the prohibitive cost required for hazardous material cleanup, this alternative was considered to be unacceptable, and did not satisfy the project purpose.

4. Alternative A

Alternative A (see Figure 3) was quite similar to the Initial Alignment except for one significant difference. Alternative A avoided crossing through the Old Tempe Landfill, with the alignment adjusted to stay just north of the northern boundary of the Old Tempe Landfill. Specifically, after crossing over Hayden Road, Alternative A crossed the Salt River, intersected the south bank of the Salt River at the Perry Lane Landfill, followed the river on the south bank and curved slightly north in order to go around the north end of the Old Tempe Landfill. It then curved slightly south to intersect the Pima Freeway on the south side of the Salt River.

Alternative A resulted in a significant hydraulic impact to the Salt River, necessitating a large amount of discharge into the



East Papago Freeway Alternative A

figure 3

Waters of the U.S. This alternative encroached into the Salt River by as much as 200 feet, with the most severe encroachment being north of the Old Tempe Landfill. This encroachment would have caused a significant increase in upstream water surface elevations, river velocities, and would have forced floodwaters onto the SRPMIC property. Identification and evaluation of these relatively severe hydraulic conditions and resultant land use impacts ultimately resulted in Alternative A being discarded as a viable alternative.

Environmental considerations were better for Alternative A as compared to the Initial Alignment because the Old Tempe Landfill was avoided. However, as with the Initial Alignment, the crossing of the Perry Lane Landfill was a very negative factor because of the high potential for encountering hazardous wastes based on initial environmental test results. No additional hazardous materials were identified within the Alternative A alignment.

Cost considerations for freeway construction were favorable for Alternative A because of the relatively short crossing of the Salt River required by this alignment. Therefore bridge costs were minimized. Overall cost considerations were not favorable for Alternative A because of the unknown and potentially high (tens of millions of dollars) cost of hazardous waste cleanup associated with this alternate.

Highway geometrics were less desirable for Alternative A due to the additional curvature introduced when the alignment was adjusted to stay north of the Old Tempe Landfill. Although minimum standards could be met for highway geometrics, the resultant curvature was still less than desirable in terms of safety and operational considerations.

Social and economic impacts were not deemed to have been significant. Those impacts identified were quite similar to the

Initial Alignment, primarily involving only the landfills and industrial properties affected directly by this alignment.

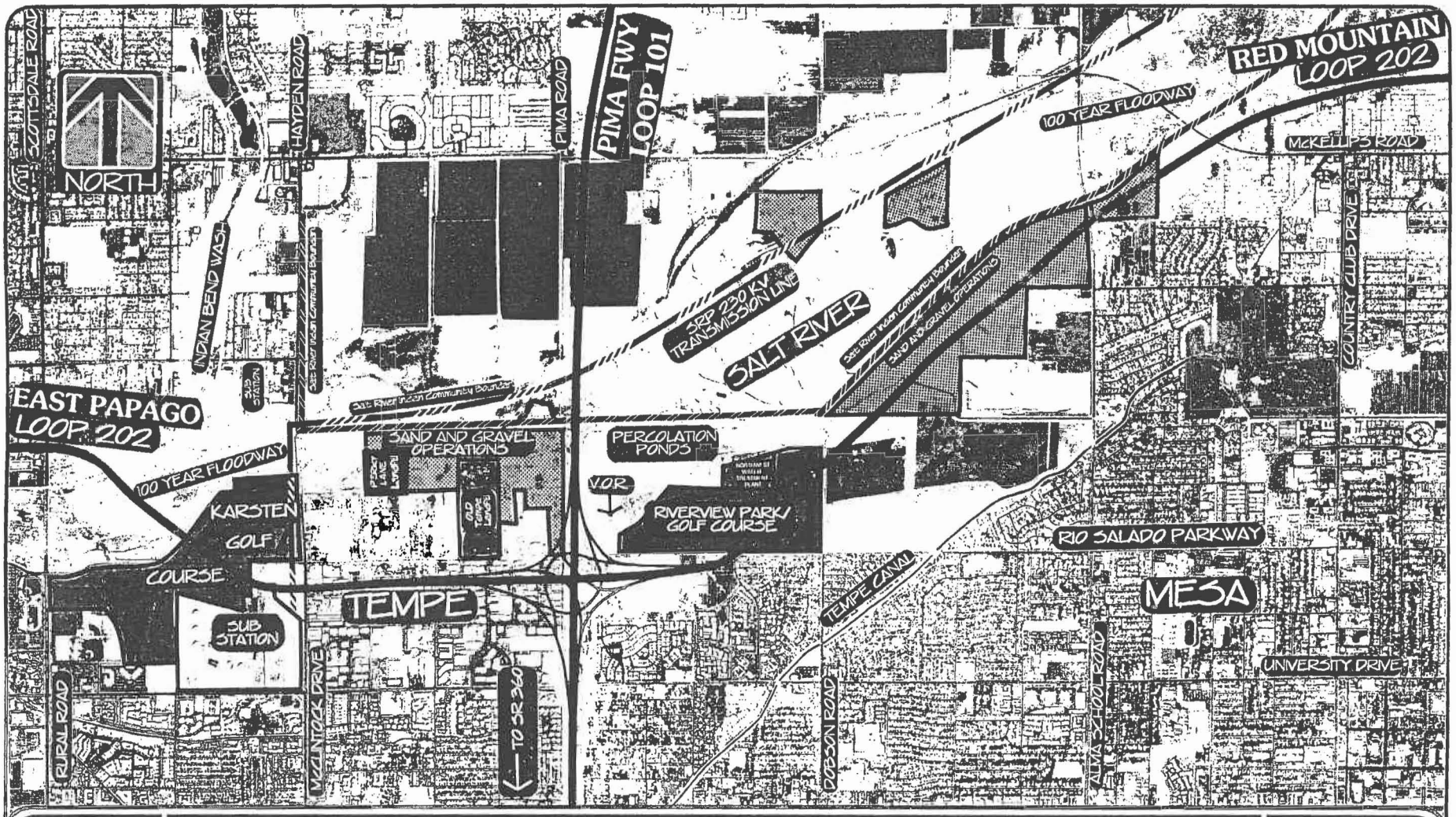
There were some adverse impacts to existing habitat associated with Alternative A due to the encroachment of the alignment into the Salt River.

Alternative A was determined to not satisfy the project purpose because of the high cost of hazardous waste cleanup and because the reduced width of the Salt River channel resulted in significant increases in water surface elevations, velocities and scour.

5. Alternative B

Alternative B (see Figure 4) is an extreme southern alternate which passes south of the Old Tempe Landfill. This alternative crossed the Salt River at a point beginning at the confluence with the Indian Bend Wash west of Hayden Road. It crossed the Salt River in a southeasterly direction and intersected the south bank on the recently completed Arizona State University Karsten Golf Course. The alignment proceeded easterly before crossing Hayden Road at approximately First Street (now Rio Salado Parkway) and continued east from Hayden Road to the Pima Freeway, basically along First Street. East of the Pima Freeway the alignment turned northeast and proceeded through the Riverview Park and Golf Course to a traffic interchange with Dobson Road. This alternative avoided both the Perry Lane Landfill and the Old Tempe Landfill by keeping the freeway alignment south of these properties.

The hydraulic impact of this alignment was minimal due to the relatively perpendicular crossing of the Salt River, which occurred in an area where the channel is wider than the area upstream from Hayden Road. No significant discharge was anticipated into either the Salt River or Indian Bend Wash for this alignment.



East Papago Freeway Alternative B

figure 4

Environmental factors were quite significant due to the discovery of several locations of hazardous wastes between Hayden Road and the Pima Freeway near the area of First Street. This alignment would have involved several known locations of serious contamination. The cleanup cost was an unknown factor, but was considered to be cost prohibitive (potentially tens of millions of dollars) and could have resulted in long-term ADOT superfund liability for groundwater cleanup.

The Alternative B alignment provided relatively good highway geometrics and the resultant interchange location with the Pima Freeway would have avoided any involvement with the Salt River.

Significant negative social and economic impacts would have resulted from construction of this alignment. One major factor was the crossing of the Karsten Golf Course, considered to be a major attraction to the entire Phoenix Metropolitan area, especially by the City of Tempe and Arizona State University. This would have resulted in negative social and economic impacts to both ASU and the City of Tempe with resultant political repercussions. The other notable negative social impact is that which would have occurred at the Riverview Park and Golf Course.

Also important was the potential negative economic impact that this alignment would have caused the businesses located along First Street between Hayden Road and the Pima Freeway. There are numerous small businesses in this area and the impact of relocation and/or freeway construction would have been quite negative, especially for the property owners who would have been obligated to pay for cleanup of hazardous wastes on properties acquired by ADOT.

As a result of the environmental related cost considerations associated with the known hazardous materials that would have been encountered by this alignment, in addition to the negative social

and economic impacts described above, this alternative was determined to not satisfy the project purpose and was rejected.

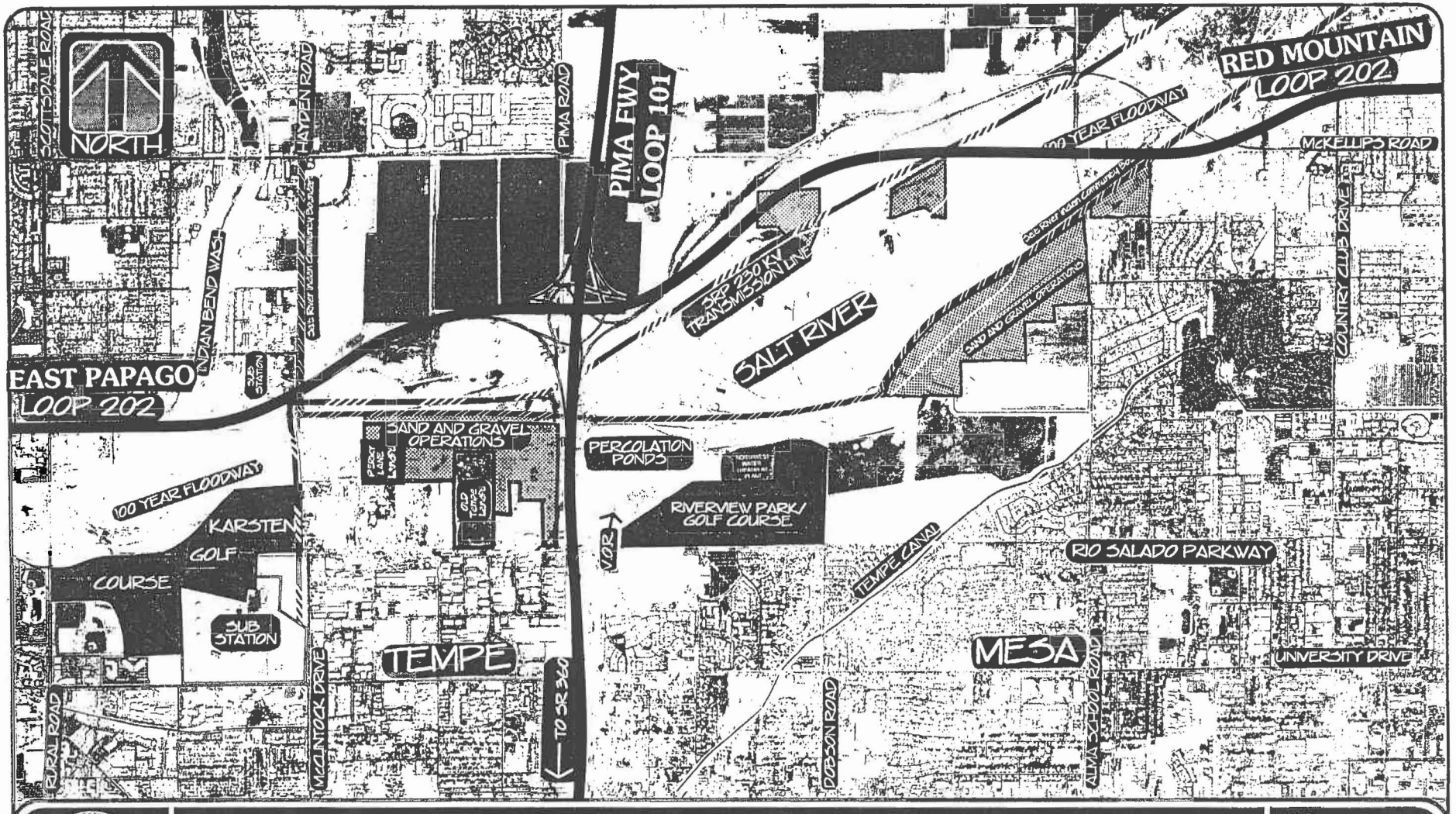
6. Alternative C

Alternative C (see Figure 5) is presented and discussed in detail in the Red Mountain Interchange Environmental Assessment, March 1991. This alternate reflects an East Papago/Red Mountain Freeway alignment which was located on the north bank of the Salt River to a point east of Dobson Road (one mile east of the Pima Freeway) and then crossed the Salt River. This alignment crossed Hayden Road north of the Salt River, curved slightly to the north, and continued in a northeasterly direction basically following the alignment of the north bank of the Salt River to McKellips Road. The alignment then continued eastward across the Salt River and intersected the south bank at a point east of Alma School Road. The hydraulic impacts of this alternative were not significant and discharge in the Salt River was not required. Environmental factors were considered to be positive due to the avoidance of any known landfills within the EPA Superfund Site.

Cost was considered to be a negative factor due to the extremely long river crossing between Dobson Road and Alma School Road (well over one mile in length). Highway geometrics were generally favorable and did not result in any substandard conditions.

There was little or no impact to the existing habitat associated with Alternative C due to the absence of habitat in the area of the Salt River crossing and the Red Mountain Traffic Interchange.

The most important negative factor affecting the viability of Alternative C is related to the SRPMIC and their position that this alignment resulted in a significant negative impact to the reservation property and the potential cultural resources in the area. It has been determined that this alignment following the



East Papago Freeway Alternative C

figure 5

north side of the Salt River channel between Hayden Road and the Pima Freeway had the potential to impact one prehistoric Indian village site and portions of other prehistoric sites.

The SRPMIC advised ADOT that this location alternative was not acceptable to either the Tribal Council or affected landowners, and was eliminated from further consideration.

7. Alternative D

Alternative D (see Figure 6) was also identified and discussed in the Red Mountain Interchange Environmental Assessment, March 1991. This alternate also located the East Papago/Red Mountain Freeway on the north bank of the Salt River. The alignment stayed basically along the north bank of the Salt River between Hayden Road and Pima Freeway, following an existing 230 KV power line easement. To satisfy the SRPMIC's desire to have the alignment cross the Salt River at a point further west than described above in Alternative C, this alternative crossed the Salt River between the Pima Freeway and Dobson Road.

Alternative D would not have resulted in any negative hydraulic or discharge impacts related to the Salt River. However, this alignment and resultant location of the Red Mountain Traffic Interchange would have caused severe impacts to existing habitat in the area. Virtually all of the highest quality habitat in the area would have been destroyed by this alternate.

There were no known hazardous wastes or landfill sites encountered by this alignment. The cost of Alternative D was considered to be essentially equivalent to the cost of Alternative C. Highway geometrics were considered to be acceptable for this alternative.

An additional consideration related to this alignment was the required relocation of the three 230-KV transmission lines that

East Papago Freeway Alternative D

figure 6

follow along the north bank of the Salt River where this freeway alignment would have been located. This utility relocation would have been a high cost element and would have resulted in negative impacts to the SRPMIC. Another significant negative factor associated with this alignment was the potential to impact a prehistoric Indian village site.

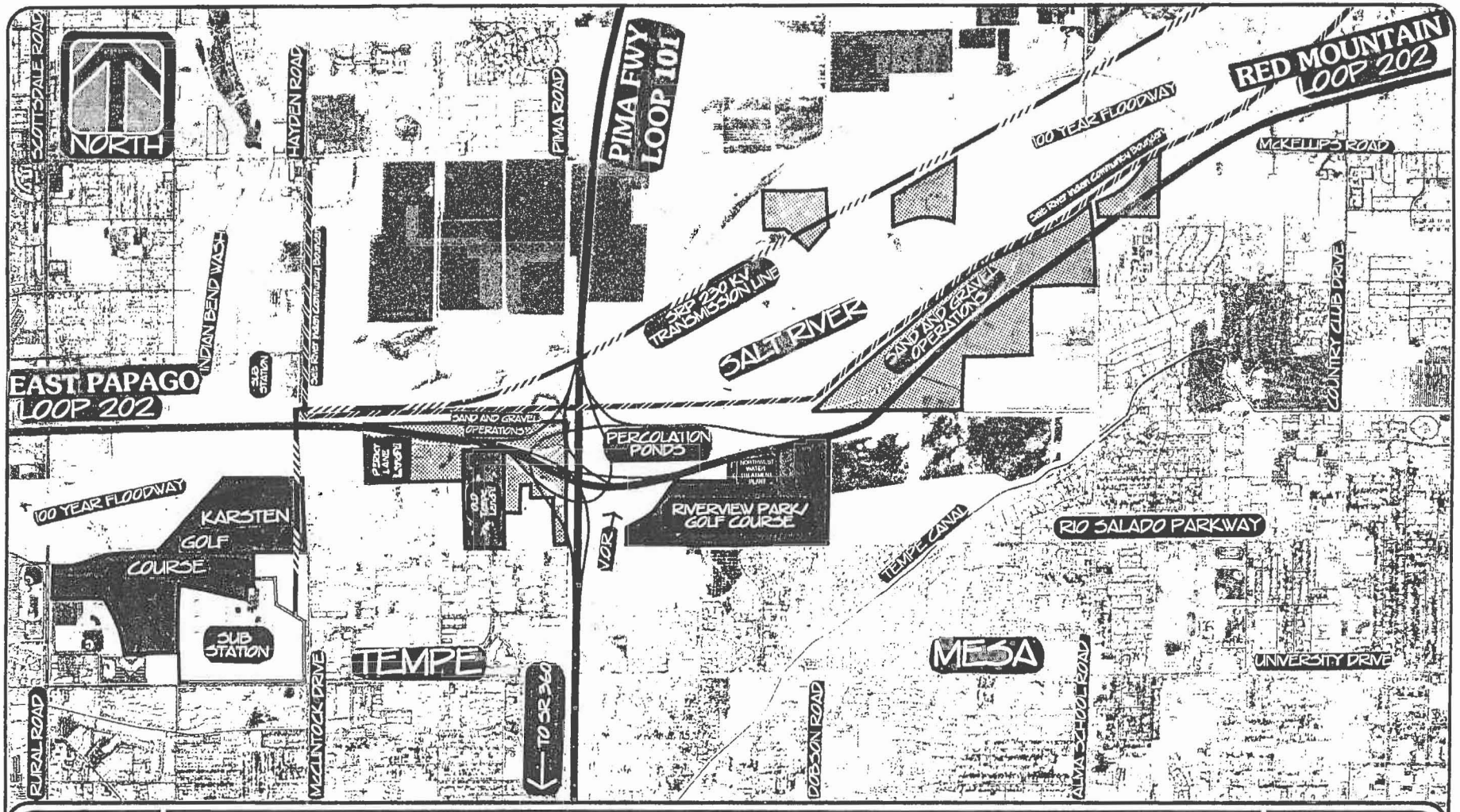
Numerous meetings were held with the SRPMIC in an attempt to reach agreement on an alignment north of the Salt River. Ultimately all such location alternatives were rejected by the tribal administration. Therefore, Alternative D was eliminated from further consideration.

8. Alternative E (Selected Alternative)

The Alternative E (see Figure 7) alignment crosses Hayden Road at the north bank of the Salt River and continues east across the river on structure to intersect the Pima Freeway on the south bank at the Red Mountain Traffic Interchange. Alternative E has been identified as the selected alignment for the East Papago Freeway.

There are minor hydraulic impacts associated with this alignment caused by the freeway bridges crossing the Salt River. Hydraulic analysis shows a slight increase in the potential for erosion of the north bank of the Salt River on the SRPMIC property. This situation can be prevented by the installation of bank protection which will prevent the erosion. ADOT has committed to the SRPMIC that bank protection will be constructed at the time the freeway is being built.

Discharge into the Salt River is not a significant factor for this alignment, impacting only a small area of the Salt River at Dobson Road. The hydraulic impacts of this alternative also require bank protection east of the Old Tempe Landfill extending to Dobson Road. Analysis of the hydraulic impacts in the area west of the Old Tempe



East Papago Freeway Selected Alternative

figure 7

Landfill show no significant water surface elevation or velocity increases. This indicated to ADOT that bank protection is not essential to maintain existing flow conditions of the Salt River on the south bank.

However, in order to satisfy concerns of other agencies, ADOT has agreed to provide Salt River bank protection for the south bank from Hayden Road to the eastern edge of the Old Tempe Landfill. A 10-year level of protection will be provided in this area. Ultimately 100-year protection is desirable at this location, but is not practicable at this time due to EPA Superfund issues related to the adjacent landfills.

Environmental factors are favorable for Alternative E. Extensive environmental investigation in cooperation with EPA's Superfund staff has been performed for this alignment. No hazardous material has been found on the property required for construction of the East Papago Freeway. Additionally, the Salt River environment will be enhanced by the removal of a considerable amount of municipal solid waste, rubbish and construction debris deposited in the area, as well as potentially unidentified hazardous wastes that are sometimes found in conjunction with such material.

Although the East Papago Freeway alignment and Red Mountain Traffic Interchange were located to avoid the majority of the higher quality habitat in the area, there are still some impacts to existing habitat associated with Alternative E. Appropriate habitat replacement will be provided by ADOT to mitigate this impact.

Costs for building a longer bridge crossing of the Salt River resulted in increased freeway costs for this particular alignment. However, the fact that no hazardous waste cleanup costs are anticipated for this alignment offsets the higher bridge costs.

Highway geometrics for this alignment are considered to be positive due to the lack of any significant curvature in crossing the Salt River.

Social and economic impacts related to this alignment are not considered to be significant. This particular alignment has been presented to the SRPMIC and was found to be acceptable once the commitment was made by ADOT to provide erosion protection for the north bank of the Salt River. Economic impacts are minimized to a great extent by this alignment when compared to the other freeway alignments due to the minimal effect on adjacent property owners. This is because most of the property lies within the Salt River flood plain.

In conclusion, Alternative E was determined to be the most practicable alternative. It satisfies the project purpose, and is acceptable in terms of hydraulic, environmental, cost, highway geometric and social and economic factors. Also, and very significant is the fact that the SRPMIC concurred with and supported this alignment. Therefore, the State Transportation Board approved Alternative E as the preferred alignment.

D. Selected Alternative Alignment

1. Satisfies Project Purpose

Alternative E was selected as the most practicable alternative and best satisfies the project purpose and project need. It provides this critical link of the MAG Freeway Plan in a safe and cost effective manner while minimizing social and economic impacts.

2. Bank Protection

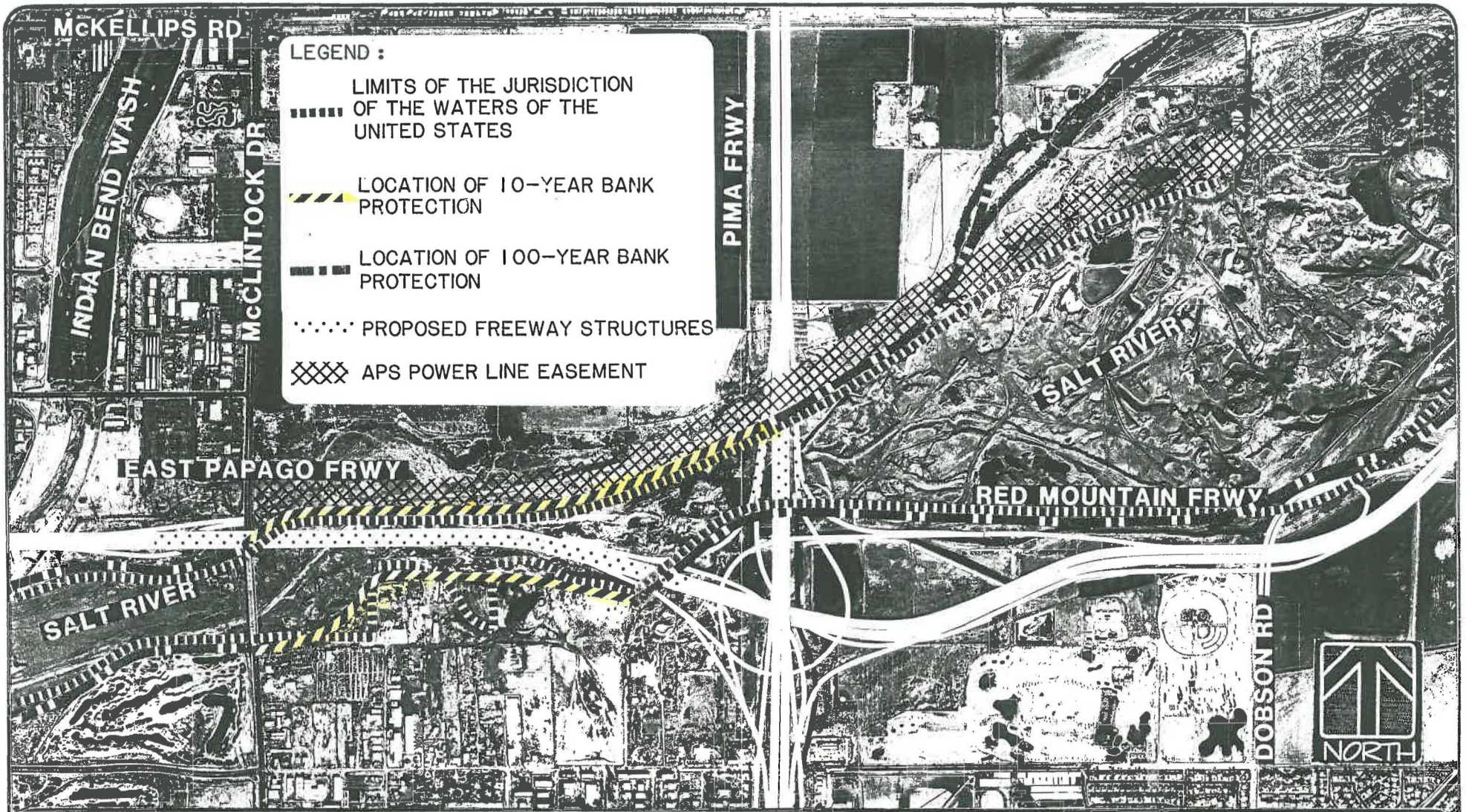
As detailed in the Alternative E discussion, bank stabilization is required for the north bank from Hayden Road east to the Pima

Freeway to prevent erosion that could potentially occur due to the East Papago Freeway bridges crossing the Salt River. North bank protection will also be provided east of the Pima Freeway in order to protect the Pima Freeway bridges which cross the Salt River at this location.

On the south side of the Salt River, bank protection will be provided from Hayden Road east to the point where the East Papago Freeway intersects the south bank (just east of the Old Tempe Landfill). The south bank protection then extends east through the Red Mountain Traffic Interchange in order to protect all of the bridges crossing the river at this location as part of the interchange. Finally, the south bank protection extends east from the Red Mountain Traffic Interchange to the Dobson Road Traffic Interchange. This portion of the bank treatment is required to protect elements of the Red Mountain Freeway from Salt River flows. Figure 8 illustrates the details of bank protection to be provided.

Analysis of the hydraulic impacts on the south bank from Hayden Road to the Red Mountain Traffic Interchange shows no significant water surface elevation or velocity increases due to the freeway. This indicates to ADOT that bank protection is not required in order to maintain existing flow conditions of the Salt River on the south bank. However, in order to satisfy concerns of various agencies, ADOT has agreed to provided bank protection in this area.

Alternative bank protection techniques for this area of the Salt River channel have been evaluated, consisting of gabions, rip rap, cement stabilized alluvium, roller compacted concrete and articulated revetment units. The details of this evaluation are presented in the report "Assessment of Alternative Bank-protection Techniques for the Salt River Channel located adjacent to Section 6 of the East Papago Freeway, Maricopa County, Arizona". Cement stabilized alluvium is the preferred technique based on cost



Salt River Bank Protection

figure 8

consideration, effectiveness in providing bank protection and long-term durability.

E. Habitat Mitigation

1. Avoidance

The Alternative E alignment and location of the Red Mountain Traffic Interchange were established in a manner which avoided a majority of the highest quality habitat in the area. Of the 22.0 acres of Level 1 habitat (cottonwood-willow) in the area identified by the U.S. Fish and Wildlife Service, only 8.6 acres are impacted by the project.

2. Minimization

Those areas of habitat which are impacted by the project will be replaced by ADOT at the Arlington Wildlife Area as the primary mitigation measure. However, measures will also be taken during construction to minimize the damage to those areas impacted by construction activities. Additionally, the existing habitat which is impacted by construction activity is expected to be replaced naturally in a manner similar to its current status. This will be aided by localized sources of drainage into the Salt River.

3. Replacement

ADOT will also achieve habitat mitigation for this project through replacement of the acreage impacted by construction. Extensive coordination has occurred with the Arizona Game and Fish Department and the U.S. Fish and Wildlife Service. These agencies have provided verbal approval of the concept for the Arlington Wildlife

Area to serve as the location of the habitat replacement. This mitigation will include both water and vegetation elements.

II. Pima Freeway Tailwater Wetland

A. Project Purpose

To construct a north/south freeway alignment in the vicinity of Pima Road from the Salt River north through Scottsdale, Arizona in a safe and cost effective manner while minimizing social and economic impacts as a critical link in the MAG regional freeway system.

B. Project Need

This section of freeway is needed to alleviate existing and projected traffic congestion and to enhance public safety. It is required as a part of the network of freeway facilities approved by Maricopa County voters in 1985.

C. Project Alternatives

Various corridor location alternatives have been studied for this segment of the Pima Freeway since the 1960's. Through consultation with the SRPMIC and local community officials, including an extensive number of public meetings and hearings, the alternatives have undergone considerable review. In 1985 the alternatives were narrowed to four alignments and presented to the public in a September 10, 1985, hearing at Scottsdale Community College. The preferred alternative at that time was an alignment that took equal amounts of right-of-way from the SRPMIC and the City of Scottsdale.

The resulting adverse reaction to the proposal from the public and City of Scottsdale prompted ADOT to pursue an alignment located entirely on SRPMIC lands. The evaluation of an SRPMIC alignment was authorized by the Tribal Council on April 19, 1989 (Resolution #SR-1470-89).

1. No Action

The No Action Alternative has been interpreted to mean that the right-of-way grant by the SRPMIC would not be approved and that the proposed Pima Freeway would not be constructed. This alternative would result in the continuation of present land use within the corridor. The No Action Alternative would also result in the following:

- The current and projected traffic demands in the Pima Freeway corridor would not be met.
- With adjacent components of the Pima Freeway in various stages of completion, the integrity and functionality of the freeway for east valley motorists would be compromised. This would place additional traffic burdens on existing arterial streets and secondary roads.
- SRPMIC local roads would continue to carry undesirable through traffic consisting of east valley motorists attempting to avoid congested arterials in Scottsdale and Mesa. These local SRPMIC roads are rural in nature and not designed to handle the current volumes. Without a freeway to accommodate the traffic demand and control access to rural roads, local SRPMIC traffic problems would worsen.
- There would be a negative effect on the SRPMIC's opportunity for self-determination, economic growth, and improved services to its members. Without the Pima Freeway, economic development opportunities would be limited, possibilities for new jobs reduced, and the direct economic benefit in terms of financial compensation from acquisition of freeway right-of-way would be lost.

The No Action Alternative is not supported by the SRPMIC Tribal Council (#SR-1448-88) or the majority of the Tribal members (August

23, 1989, Referendum), nor the general public of Maricopa County (Proposition 300).

2. Upgrade Existing Roadways

This alternative is not viable as it does not provide for a freeway alternative. The Pima Freeway is an integral element of the MAG regional freeway program and is a necessary link connecting Scottsdale and the northeast valley to all other geographic areas of Maricopa County. Upgrading existing roads would not provide the traffic capacity necessary to efficiently carry the large volume of traffic projected to use the freeway.

Secondly, there are only two other major north/south arterials serving Scottsdale, Scottsdale Road and Hayden Road. Upgrading these roadways would require extensive acquisition of right-of-way and create significant negative economic impacts upon existing Scottsdale businesses. This option is neither practicable nor viable. Additionally, neither facility is designated as a state highway nor are they eligible for 1/2¢ sales tax funding as they are not access controlled roadways, nor are they part of the MAG Regional Freeway Plan.

In summary, upgrading existing roadways in Scottsdale is not an acceptable alternative based on the following:

- they are not part of the MAG freeway program nor are they part of the State Highway System
- they are under the jurisdiction of the City of Scottsdale, thus ADOT funds cannot be used for improvements
- they are not eligible for the MAG 1/2¢ sales tax based funding
- upgrading arterials will not address regional transportation issues

- upgrading arterials would negatively affect existing adjacent businesses
- adding lanes to existing arterials will not solve regional congestion problems
- ADOT has no jurisdiction on roadways within the SRPMIC boundaries

3. Selected Alternative

Lengthy negotiations with the SRPMIC lasting over five years occurred prior to finalizing the selected alignment. The overriding requirement placed on ADOT by the Tribal Council was the stipulation that right-of-way for the freeway would be provided only if unanimous agreement was reached by all those landowners living in the freeway corridor. The designated freeway alignment was finalized only after those landowners affected agreed to allow the freeway to traverse their land.

This extensive process required many public and SRPMIC tribal hearings and meetings with all landowners having ownership in allotments, and culminated in a tribal vote approving the Selected Alternative alignment. This alignment crosses a tailwater wetland between McKellips Road and McDowell Road. (It must also be noted that ADOT cannot condemn property on the Reservation due to the SRPMIC Federal sovereignty status).

The selected alignment can be described as a curvilinear line east of Pima Road and west of Dobson Road (projected northward). The alignment centerline varies from about 500 feet to about 3,500 feet east of the existing Pima Road and avoids the Ramada-Pima Golf Course, Pavillions Shopping Center and Scottsdale Community College. This alignment is a compilation of all four separate SRPMIC routes which were presented through information packets and public meetings held by the SRPMIC Tribal officials. Therefore, the State Transportation Board approved this alternative in April

1990 because it was the alignment designated by the SRPMIC.

4. Other Alignments

The studies and negotiations with SRPMIC to develop a freeway on or near Pima Road included three alternatives to the selected alignment: 1) a "straight" 50/50 alignment, (2) a "curvilinear" 50/50 alignment and (3) an all Scottsdale alignment.

a. Straight 50/50 Alignment

This alternative would have centered the Pima Freeway on the section line between the SRPMIC and City of Scottsdale, taking equal (50/50) amounts of right-of-way from each community. Although this alignment avoided the tailwater pond and balances the acres of right-of-way taken from each community, it was not compatible with existing land use or planned development. The alignment would have required the relocation of hundreds of residences, several businesses, and the acquisition of land from numerous SRPMIC allottees. It would also have bisected the Pima-Ramada Golf Course, and impacted the Pavillions Shopping Center.

This alignment was not practicable in terms of residential acquisitions or responsiveness to the desires of the SRPMIC, local officials or the public. No support for this alternative was expressed at public meetings or hearings and, therefore, it was dropped from further consideration.

b. "Curvilinear" 50/50 Alignment

This alignment also would have taken equal amounts of right-of-way from the City of Scottsdale and the SRPMIC. The alignment shifted east and west across existing Pima Road in a manner compatible with existing land use, engineering

constraints, and guidance from the SRPMIC and the City of Scottsdale.

This shifting alignment avoided the tailwater pond and significant existing features, such as the Pima Ramada Golf Course and Scottsdale Community College, and took into account planned land uses, such as the Pavillions Shopping Center. However, it did impact hundreds of residences and several businesses, and required the acquisition of land from numerous SRPMIC allottees.

This alignment was adopted by the State Transportation Board in July 1986. However, as previously noted, continued consultation with the SRPMIC eventually resulted in an agreement for an all SRPMIC alignment.

c. <u>All Scottsdale Alignment</u>

ADOT also evaluated an alternative which located the entire freeway facility on the west side of Pima Road in Scottsdale. Such an alignment would have required the acquisition of thousands of residences and numerous businesses, as well as several city facilities, and two neighborhood parks. In addition to being cost prohibitive, ADOT could not justify such an adverse social and economic impact when such a desirable alternative was available. Therefore, this alternative was dropped from further consideration.

5. <u>Alignment Alternatives Between McKellips Road and McDowell Road</u>

The tailwater wetland that is impacted by the Pima Freeway is located between McKellips Road and McDowell Road. Alternatives which would eliminate the impact to this wetland are addressed below.

a. West of the Wetland Area

Moving the freeway alignment west of the wetland area would impact an extensive number of residences west of Pima Road and several located on the SRPMIC Reservation. The additional right-of-way cost for these properties is quite significant.

Shifting the alignment to west of Pima Road would result in adverse social, economic and environmental impacts to the affected residents. Those who would be displaced would be most seriously affected. Of those residents not displaced, most live in either townhouses or mobile homes. Moving the freeway closer to the remaining residences would create severe noise problems and would require major mitigation measures.

Additional costs would be incurred for construction of massive noise walls, particularly due to the close proximity of two-story townhouses and the low acoustical insulation quality of the metal mobile homes.

Highway geometrics for this Alternative would be less desirable than those of the selected alignment. Moving the alignment west of Pima Road would negatively impact the geometrics of the traffic interchanges located at McDowell Road and McKellips Road by introducing a skew in the roadway. The resultant alignment would also be less desirable due to the curvature introduced to avoid the tailwater pond.

In conclusion, because of the severe social impacts and significant cost increase that would be caused by this alignment, this option is considered to be neither practicable nor viable.

b. East of the Wetland Area

Location of the freeway east of the tailwater wetland site presents both discharge and hydraulic problems as well as operational difficulties. To irrigate farmland east of the freeway would require extensive utility modifications to existing pump stations and pipes to direct water under the freeway to those fields currently being used.

Although feasible, the cost would be prohibitive (millions of dollars). Moreover, as land use in this area may change in the future due to anticipated development, it is difficult to predict how long this area will continue to be used for agricultural purposes.

Highway geometric changes would be similar to those required for moving the alignment west of the site. Again, the changes would require geometric modifications affecting both mainline and adjacent traffic interchange plans, and would result in less desirable and less safe highway geometry.

c. Bridge Over the Wetland Area

This Alternative would not adversely affect the discharge or hydraulic operational characteristics of the existing irrigation system.

However, this concept was not acceptable to the SRPMIC for both aesthetic and practical reasons. The Tribal Council previously rejected this concept based upon input from landowners in the adjacent vicinity who collectively objected to a bridge. Dialogue with the Tribal Council and landowners reflected unanimous rejection of this concept.

Construction of a 750 foot long by 145 foot wide bridge is

estimated to cost approximately $5.5 million more than embankment, an amount which is considered prohibitive.

Highway geometrics would not be adversely affected.

This alternative was not acceptable to the SRPMIC, and therefore was eliminated from further consideration.

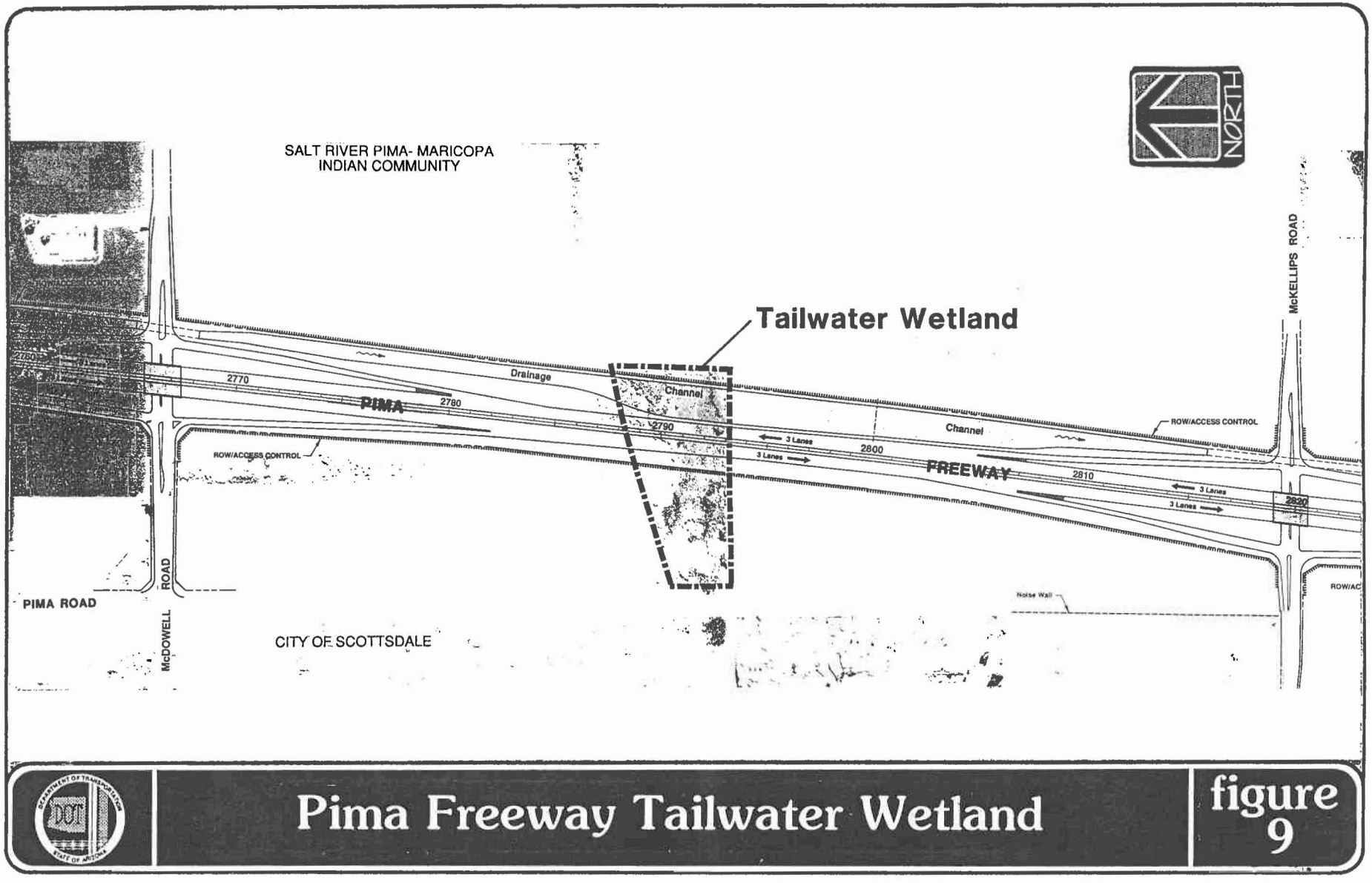
d. Fill the Wetland Area (Selected Alternative)

Filling the wetland area is the most practicable alternative due to acceptance by the SRPMIC and the affected landowners. It is the most cost effective in that no additional social or economic impacts will be created, nor will any engineering changes be required.

D. Selected Alternative

Filling the tailwater wetland area is the most practicable and prudent alternative. This alternative is the least disruptive in terms of project schedule and cost. It supports existing agreements between the SRPMIC and ADOT and is consistent with prior right-of-way negotiations and agreements. It meets ADOT's engineering objectives and is the most cost effective alternative. Equally important, it minimizes social, economic, and political impacts. Considering the lengthy delays already experienced, selection of this alternative (which includes habitat replacement) eliminates additional delays, yet meets the spirit and intent of both the Clean Water Act and the Wetlands Protection Act.

The identified wetland area is an irrigated tailwater pond located within the freeway right-of-way. It consists of approximately ten acres and is located approximately one-quarter of a mile south of McDowell Road and east of Pima Road (see Figure 9). This pond was previously used to detain tailwater which was periodically pumped



Pima Freeway Tailwater Wetland

figure 9

back to adjacent fields and normally was seasonally dry. However, several years ago, pumps were removed so that the man-made pond retains water throughout the year. This change has resulted in the creation of an artificial wetland which contains saturated soils and supports marsh-type vegetation.

This ponding area has wetland significance for wildlife, particularly as waterfowl habitat, and is afforded protection under the Wetlands Protection Act of 1977. Therefore, ADOT has coordinated its activities with both the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers to evaluate the significance of the site and determine what level of mitigation strategy is appropriate. It has been determined that 5.0 of the 10.0 acres of the wetland area will be impacted by the freeway construction.

E. Habitat Mitigation

1. Avoidance

Avoidance of the wetland site is not practicable or prudent based upon SRPMIC tribal jurisdictional interests, increased costs, engineering considerations, or social and economic factors.

2. Minimization

The impact to the tailwater wetland has been minimized to the extend possible. Of the ten acre wetland area, five acres will not be affected by the freeway construction.

3. Replacement

ADOT will achieve habitat mitigation for this project through replacement of the acreage impacted by construction. Extensive coordination has occurred with the Arizona Game and Fish Department and the U.S. Fish and Wildlife Service. These agencies have provided verbal approval of the concept for the Arlington Wildlife Area to serve as the location of the habitat replacement. This mitigation will include both water and vegetation elements.

REFERENCES

The following reports, available from the applicant, address the proposed project:

a) "East Papago and Hohokam Freeways, Location and Design Concept Report", prepared by John Carollo Engineers, Inc., September, 1987.

b) "Comparative Analysis Between Alternative Locations for the East Papago/Red Mountain/Outer Loop Interchange", prepared by Daniel, Mann, Johnson, & Mendenhall, July, 1988.

c) "Addendum to the East Papago and Hohokam Freeways Location and Design Report", prepared by Daniel, Mann, Johnson, & Mendenhall, March, 1989.

d) "Assessment of Alternative Bank-Protection Techniques for the Salt River Channel Located Adjacent to Section 6 of the East Papago Freeway, Maricopa County, Arizona", prepared by Simons, Li & Associates, August, 1991.

e) "East Papago and Hohokam Freeways, Location and Design Concept Report, Addendum II", prepared by Daniel, Mann, Johnson, & Mendenhall, May, 1990.

f) "Environmental Assessment, Pima Freeway (Loop 101), Salt River Pima-Maricopa Indian Community, Maricopa County, Arizona", prepared by Environmental Planning Services, Highways Division, ADOT, July, 1990.

g) "Interim Summary Report, Hydraulic Investigations of the Salt River for the East Papago Freeway and Red Mountain Interchange", prepared by Simons, Li & Associates, September, 1990.

h) "Environmental Assessment, Red Mountain Interchange (Loop 101 and Loop 202), Maricopa County, Arizona", prepared by Environmental Planning Services, Highways Division, ADOT, March, 1991