

Higley Area Drainage Master Plan

Data Collection Report

FCD #98-13
May, 1999

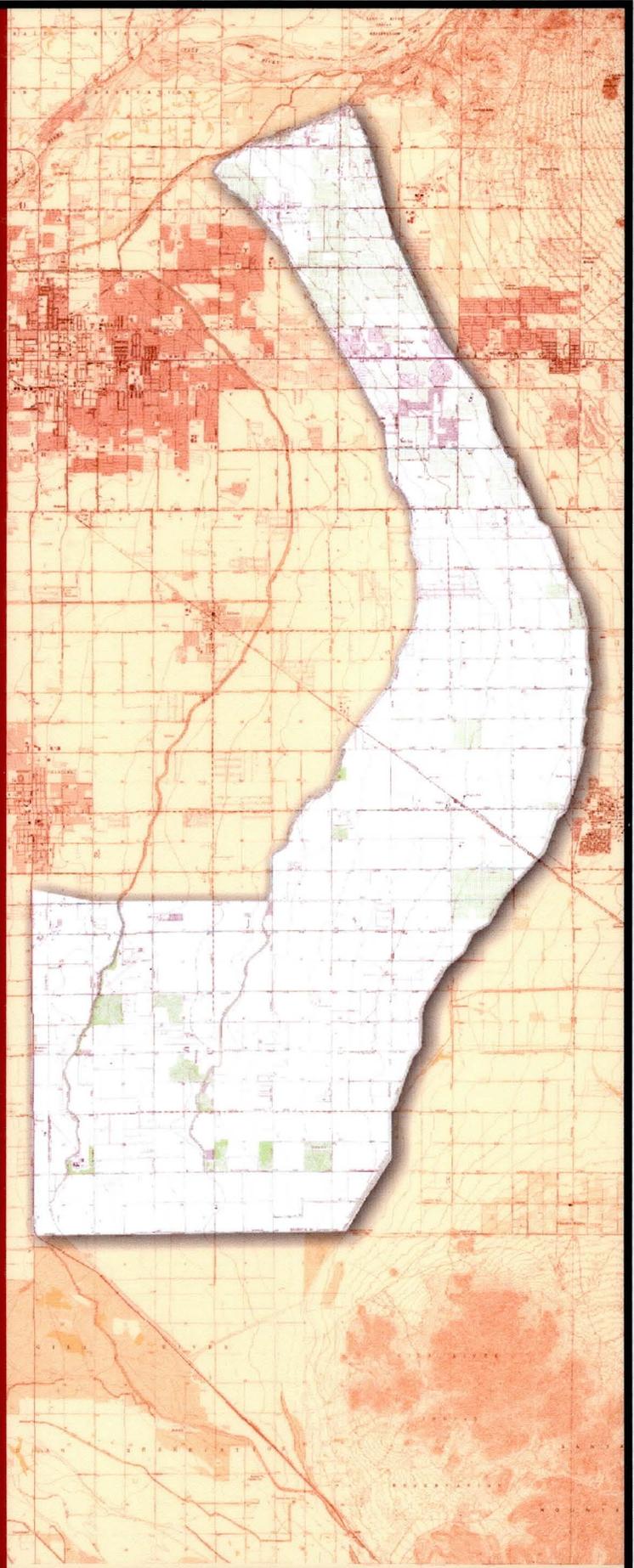
prepared for:
**FLOOD CONTROL DISTRICT OF
MARICOPA COUNTY**



prepared by:



DIBBLE & ASSOCIATES
CONSULTING ENGINEERS



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Figure 6 - Existing Facilities
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Agency Meeting Minutes



Higley Area Drainage Master Plan Data Collection Report

I. INTRODUCTION

This Data Collection Report has been prepared for the Flood Control District of Maricopa County (FCDMC) as part of the Higley Area Drainage Master Plan (ADMP). The study location is shown on **Figure 1**.

A. Purpose

The purpose of the Higley ADMP is to quantify the extent of flooding problems and develop alternative solutions to the flooding problems. The effort is limited to mitigation of flooding along the Eastern Canal, the Consolidated Canal, and the Southern Pacific Railroad adjacent to Arizona Avenue as well as flooding west of these features caused by possible overtopping of the canal or railroad. The ADMP will evaluate several sub-areas and develop a preferred solution. The ADMP effort will further identify outfall alternatives where natural outfalls do not exist. The plan will develop preliminary costs, alignments, right-of-way requirements and utility conflicts for the preferred alternatives. The study area covers eastern Maricopa County including portions of the City of Mesa, City of Chandler, the Town of Gilbert, and unincorporated Maricopa County. The jurisdictional boundaries are depicted on **Figure 2**.

The Data Collection Phase of the ADMP includes identifying known flooding locations and collecting data regarding existing and proposed drainage facilities, major natural washes, and existing utilities. The data collection effort also includes identification of planned residential developments, recreational facilities, and environmental issues and opportunities within the study area. The purpose of this Data Collection Report is to describe the data gathering process and to present the findings. Results from this report will be used in later phases of the study.

B. Scope of Project

The scope of work includes professional engineering services necessary for developing an area drainage master plan (ADMP) to identify drainage problems and develop cost effective solutions for



MARICOPA COUNTY

Not to Scale



STUDY AREA

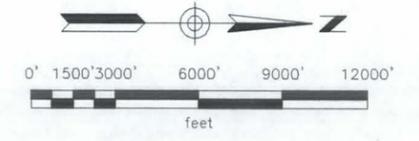
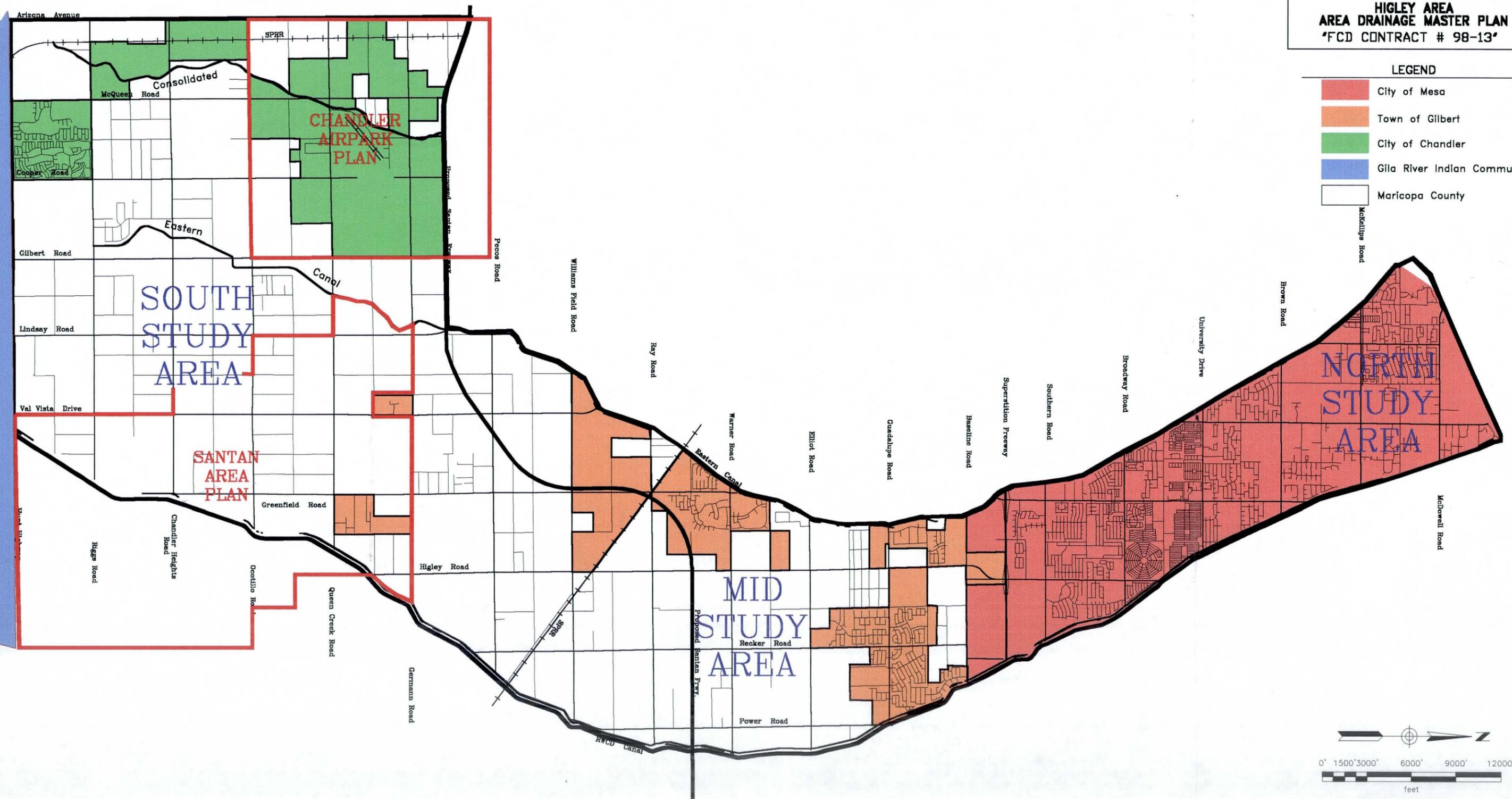
FIGURE-1
STUDY LOCATION MAP

**FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY**

**HIGLEY AREA
AREA DRAINAGE MASTER PLAN
'FCD CONTRACT # 98-13'**

LEGEND

- City of Mesa
- Town of Gilbert
- City of Chandler
- Gila River Indian Community
- Maricopa County



**FIGURE-2
JURISDICTIONAL BOUNDARIES**

a storm water collection and disposal system. The scope of work includes public coordination, survey and mapping, hydraulics, identification of drainage problems, development of alternative solutions, and preparation of preliminary design plans based on a preferred alternative.

The project consists of five phases resulting in an implementation plan with estimated costs for a recommended plan to address the drainage issues within the study area. The five project phases are summarized as follows:

<u>Phase</u>	<u>Activity</u>	<u>Products</u>
1. Data Collection	Data Collection	Data Collection Report Survey & Mapping
2. Level I Analysis	Alternatives Formulation	Potential Alternatives Submittal
3. Level II Analysis	Alternatives Analysis	Alternatives Analysis Report
4. Level III Analysis	Preliminary Design	Recommended Design Report Preliminary Design Plans
5. Implementation	Implementation Plan	Final Submittal Maintenance Plan

This Data Collection Report is the final product for Phase I of the project.

C. Study Area

The study area encompasses approximately 75 square miles bounded by the Roosevelt Water Conservation District (RWCD) Canal on the east and the Eastern Canal (from the Salt River to Pecos Rd) and Arizona Ave (from Pecos Rd to the County line) on the west, the Salt River Project South Canal on the north and Maricopa County Line (Hunt Highway) to the south. Three distinct drainage areas exist and will be evaluated individually. The study areas are shown on **Figure 2**.

The *North Study Area* is the area north of the Superstition Freeway. This area of approximately 10 square miles in the City of Mesa is urbanized. The objective within the North Study Area is to evaluate opportunities for structural or non-structural solutions, which can mitigate the impacts of

the floodplain. Because of limited availability of open land within the area, this area is considered the highest priority.

The *Mid Study Area* is between the Superstition Freeway and the Southern Pacific Railroad (SPRR). This area of approximately 16 square miles is predominately within the Town of Gilbert and is characterized as an area currently experiencing development. The floodplain in this area has been delineated and the Town of Gilbert has been able to limit development along the Eastern Canal. Flooding problems exist at major east-west crossroads particularly at Guadalupe Road. The RWCD submitted a CIP request to the District requesting evaluation and resolution of flooding and conveyance issues associated with the RWCD tail water ditch paralleling the Eastern Canal. The objective in this area is to evaluate alternative structural and/or non-structural solutions and to provide regional drainage and flooding relief within the area.

The *South Study Area* is south of the Southern Pacific Railroad to Hunt Highway. This area of approximately 47 square miles is generally rural in nature and provides the greatest opportunity to provide a proactive approach to providing drainage and flooding solutions, prior to the onset of development. The area is within the Town of Gilbert, the City of Chandler and unincorporated Maricopa County. Flooding problems exist at major east-west crossroads, particularly in the vicinity of Pecos Road. The RWCD submitted a CIP request to the District requesting evaluation of the potential utilization of the area adjacent to RWCD right-of-way along the Eastern Canal and the RWCD Tailwater Return System for a regional drainage system. The objective in this area is to evaluate alternative structural and/or non-structural solutions and to provide planning for development.

II. DATA COLLECTION RESULTS

A. Existing and Planned Drainage Facilities

Few drainage facilities exist within the study area. The drainage pattern is predominantly overland in an east to west direction accumulating along the Eastern and Consolidated Canals and the Southern Pacific Railroad adjacent to Rittenhouse Road and adjacent to Arizona Avenue. The

Superstition Freeway intercepts runoff reaching the freeway from the north and conveys it westerly in a concrete channel along the north right-of-way to Holmes Park. Holmes Park is a 17 acre retention basin situated along the east side of the Eastern Canal at Greenfield Road. The basin was constructed by ADOT as part of the Superstition Freeway drainage system and incorporated into the City of Mesa Park system. A storm drain in Greenfield Road discharges into the basin.

Crossroads Park is a detention basin located along the north side of the SPRR at the Eastern Canal west of Greenfield Road. Crossroads park was constructed by the Town of Gilbert and FCDMC to reduce flooding of the downtown area. Crossroads park is approximately 40 acres in size and stores 450 acre-feet of water which is pumped into the Eastern Canal after a storm event. The park is an example of a tiered, multi-use facility composed of a lake, baseball and soccer fields and a playground.

Other facilities receive and convey runoff by virtue of the fact that they are within the path of the runoff even though they are not designed for drainage. Existing features that receive runoff are the tailwater ditch along the east side of the Eastern canal, the upstream embankments of the Consolidated Canal, and the embankments of the SPRR at Rittenhouse Road and at Arizona Avenue. The Eastern and Consolidated Canals are designed for irrigation delivery and therefore are reduced in size in the downstream direction. This results in flooding when runoff spills out of the canals as conveyance capacity is lost. Runoff that is intercepted by the canal and railroad embankments makes its way southerly along the face of the embankments. Runoff flowing south along the embankments ponds behind section line roads that have raised profiles to pass over the embankments. Some of the cross-roads have culverts to drain nuisance flows through the roadway embankment to continue in a southerly direction to the next obstruction.

The type, size, and capacity of existing culverts are summarized in tables in the Appendix. The Manning's formula and HY8 were used to determine the capacities of the channels and culverts. The culvert capacities were determined using field survey data. Computations are summarized in the Appendix. In some cases, the capacities of existing structures have not been included because survey data or as-built plans were not available. The locations of each of the listed existing facilities

are illustrated on **Figures 6A through 6D**. Generally, the conditions of the existing man-made structures are good. If these facilities become a part of a design alternative, additional field work will be required in order to evaluate their capacities.

The proposed Santan Freeway will block westerly drainage within the study area from Ray Road to Pecos Road. The preliminary design for the freeway includes collector channels and basins to intercept the runoff, retain the flows, and drain westerly along the freeway to the Gila Drain. The potential may exist to cooperate with ADOT in developing a new drainage outfall for the area. A freeway conveyance system could be incorporated into the final drainage master plan.

B. Areas of Flooding

Areas of flooding within the study area have been delineated as FEMA floodplains along the upstream embankments of the Eastern and Consolidated Canals and along the SPRR along Rittenhouse Road and along Arizona Avenue. Existing FEMA floodplains are shown on **Figure 3**.

Areas of potential flooding that have not been delineated exist along the *downstream* side of irrigation canals, particularly, the Eastern Canal. As runoff ponds and overtops the canal embankments it flows into the canals and is diverted downstream within the canals. In the past the RWCD would open the delivery gates and "waste" the runoff onto the fields to prevent canal overtopping at downstream locations. In recent years development has begun converting the agricultural lands that historically received the "wasted" runoff to residential planned communities. As a result the gates cannot be opened and the potential exists for downstream flooding at unknown locations.

C. Existing Studies

Several other studies of this area have been conducted. They include;

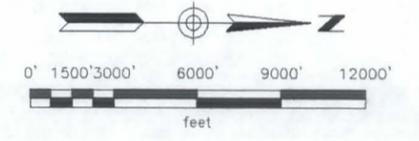
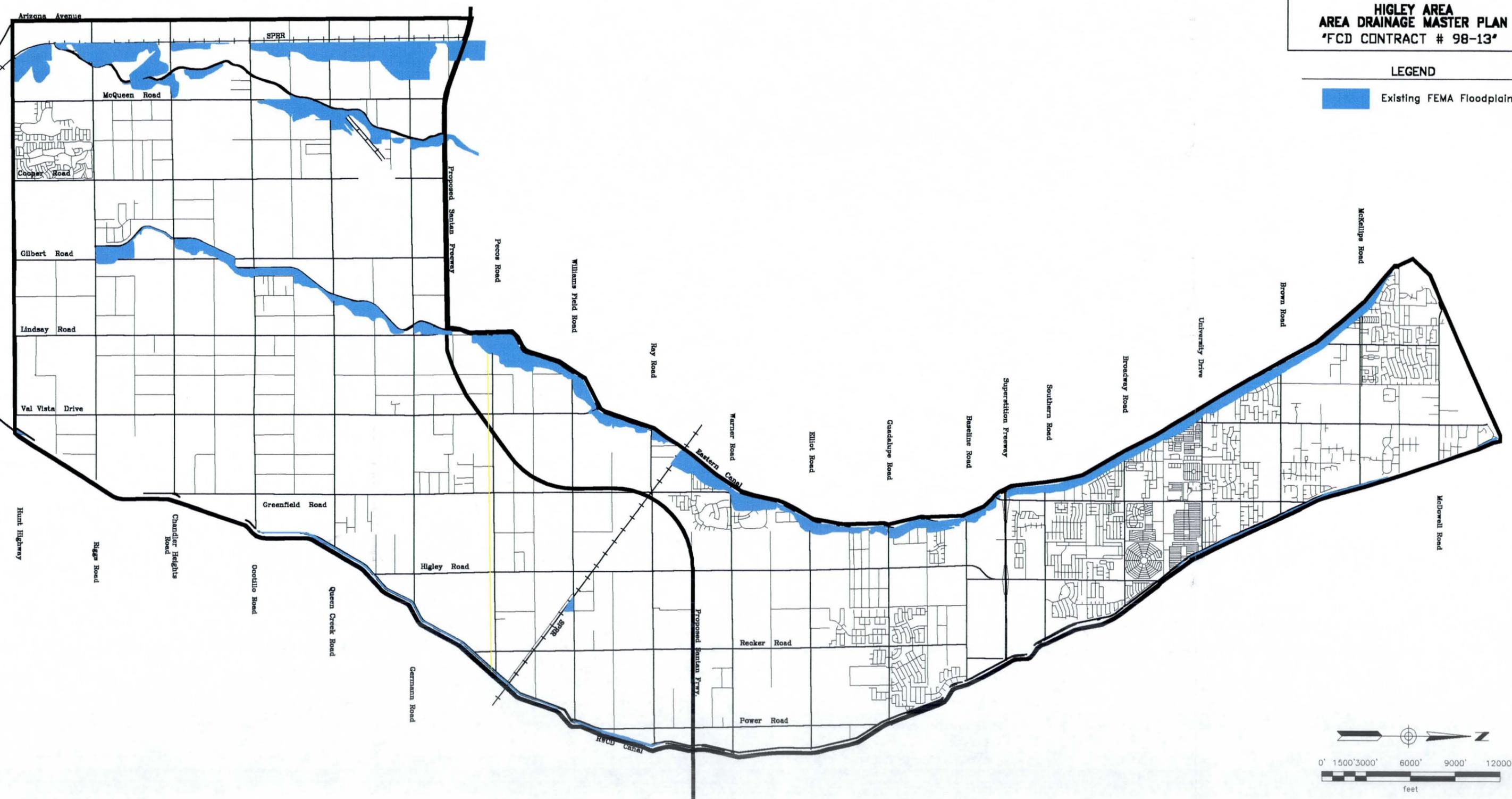
- 1) Gilbert-Chandler Area Flood Insurance Study,
- 2) Gilbert-Chandler Area Drainage Master Study,
- 3) Gilbert-Chandler ADMS Addendum,

**FLOOD CONTROL DISTRICT
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**HIGLEY AREA
AREA DRAINAGE MASTER PLAN
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LEGEND

 Existing FEMA Floodplain



**FIGURE-3
EXISTING FEMA FLOODPLAINS**

**DIBBLE & ASSOCIATES
CONSULTING ENGINEERS**

- 4) Concept Drainage Report for the Santan Freeway, and
- 5) City of Chandler Stormwater Management Master Plan.

D. Planned Developments

Staff from the various cities have provided information regarding developments, within their respective boundaries, which are currently in the site planning, engineering, or review stages. Planned major developments are illustrated on **Figure 4**. The size and number of these developments are indicators of the pace at which this area is developing.

E. Existing and Planned Major Utilities

The locations of existing and proposed utilities are indicated on the Utility Constraints Map, **Figure 5**. The existing and proposed water and sewer lines information was collected from the Cities of Mesa and Chandler and the Town of Gilbert. The map also shows the locations of overhead high-voltage transmission lines, a high-pressure petroleum pipe-line, and reclaimed water lines. These existing and proposed utilities will be considered during the design and development of the final alternative drainage solution.

F. Agency Contacts

The following agencies have jurisdiction within the project limits and have been invited to participate in the study process as part of a Review Committee:

- ▶ City of Mesa (COM)
- ▶ Town of Gilbert
- ▶ City of Chandler
- ▶ Maricopa County Department of Transportation (MCDOT)
- ▶ Salt River Project (SRP)
- ▶ Roosevelt Water Conservation District (RWCD)
- ▶ Gila River Indian Community (GRIC)
- ▶ Arizona Department of Transportation (ADOT)
- ▶ Arizona Game and Fish Department (AGFD)

Each of the agencies was contacted during the data collection phase of the project to inform them of the project and obtain pertinent information regarding flooding problems, existing and planned projects, planning constraints, and recreational and environmental opportunities within the project

**FLOOD CONTROL DISTRICT
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 Planned Developments

Chandler

- 1 Sun Groves
- 2 Springfield Lakes
- 3 Cooper Commons
- 4 Fieldstone Estates
- 5 Santan Vistas
- 6 RWCD
- 7 Riggs Ranch Meadows
- 8 Cooper Heights
- 9 Riggs & Cooper
- 10 Rockwood Estates
- 11 City Golf Course
- 12 Chandler Highlands
- 13 Adobe Land
- 14 Symphony II
- 15 The Pines
- 16 Queen Creek & Cooper
- 17 Ocotillo & Cooper
- 18 Tumbleweed Park

Gilbert

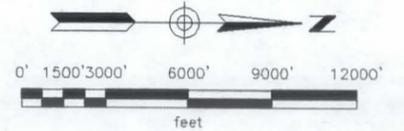
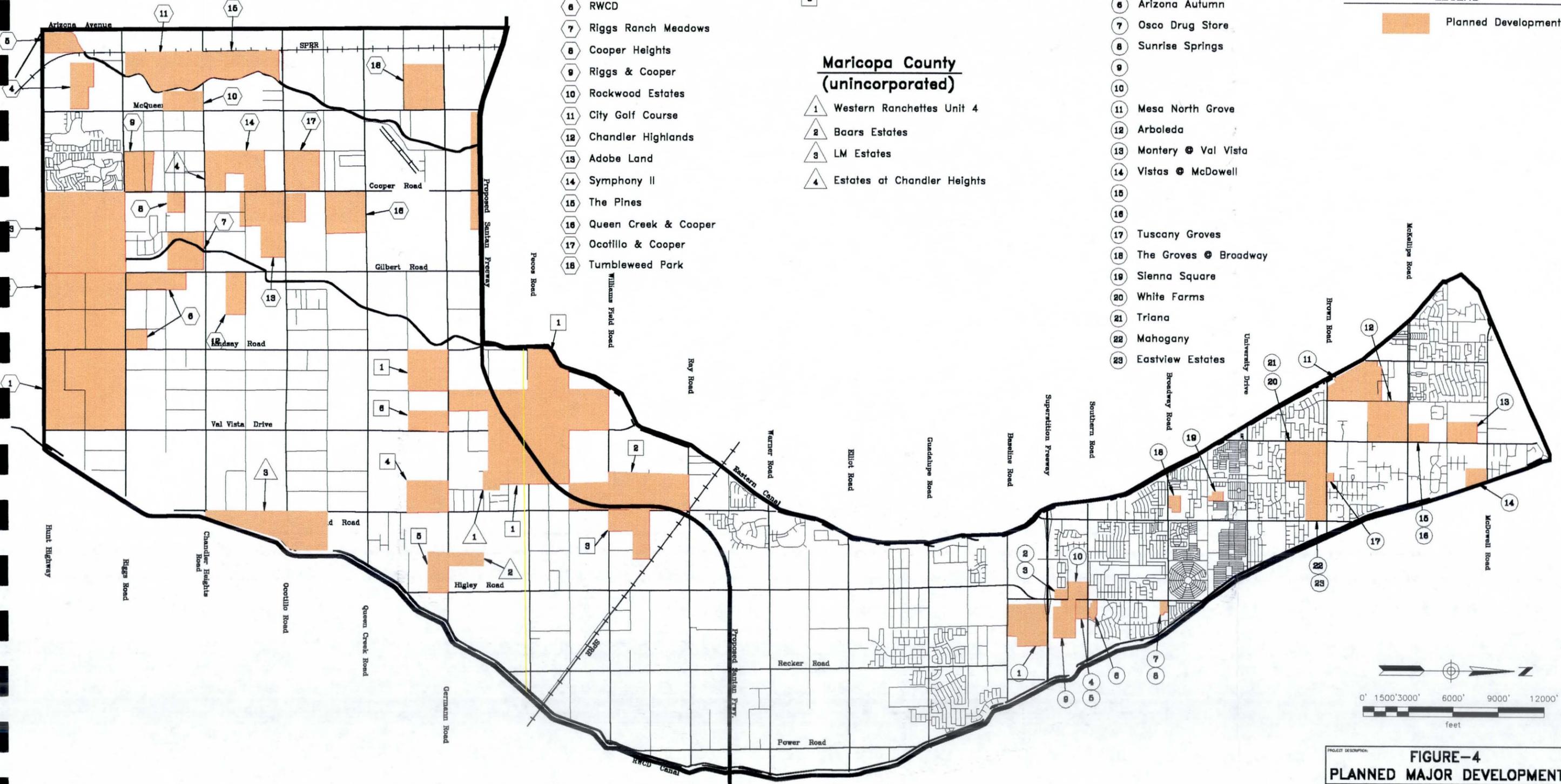
- 1 The Spectrum @ Val Vista
- 2 Mall Site
- 3
- 4 Wastewater Recharge Site
- 5
- 6

**Maricopa County
(unincorporated)**

- 1 Western Ranchettes Unit 4
- 2 Baars Estates
- 3 LM Estates
- 4 Estates at Chandler Heights

Mesa

- 1
- 2 Valencia Court
- 3 Office Bldg
- 4 Stonegate Plaza
- 5
- 6 Arizona Autumn
- 7 Osco Drug Store
- 8 Sunrise Springs
- 9
- 10
- 11 Mesa North Grove
- 12 Arboleda
- 13 Monterey @ Val Vista
- 14 Vistas @ McDowell
- 15
- 16
- 17 Tuscany Groves
- 18 The Groves @ Broadway
- 19 Sienna Square
- 20 White Farms
- 21 Triana
- 22 Mahogany
- 23 Eastview Estates



PROJECT DESCRIPTION: **FIGURE-4
PLANNED MAJOR DEVELOPMENTS**

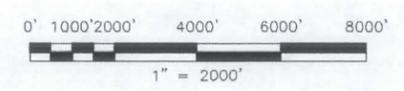
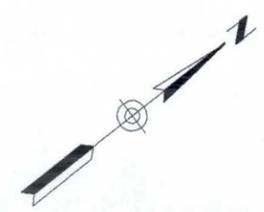
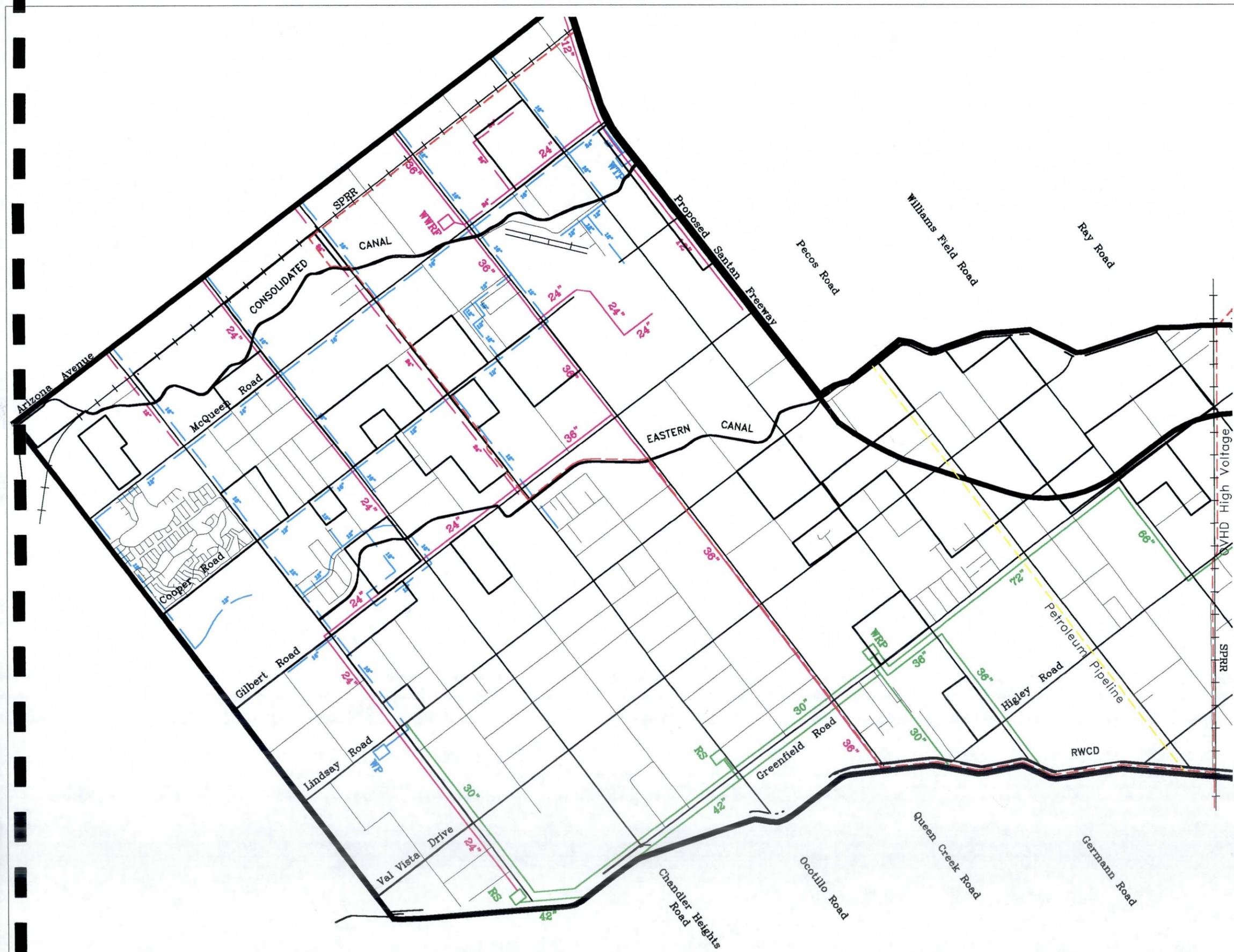
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- Planned Water
- - - Existing Water
- Planned Sewer
- - - Existing Sewer
- Planned Reclaimed Water
- - - Existing Reclaimed Water
- - - Existing Petroleum Pipeline
- - - Existing Overhead High Voltage



**FIGURE-5A
EXISTING & PLANNED UTILITIES**

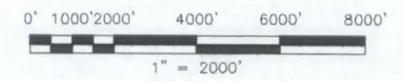
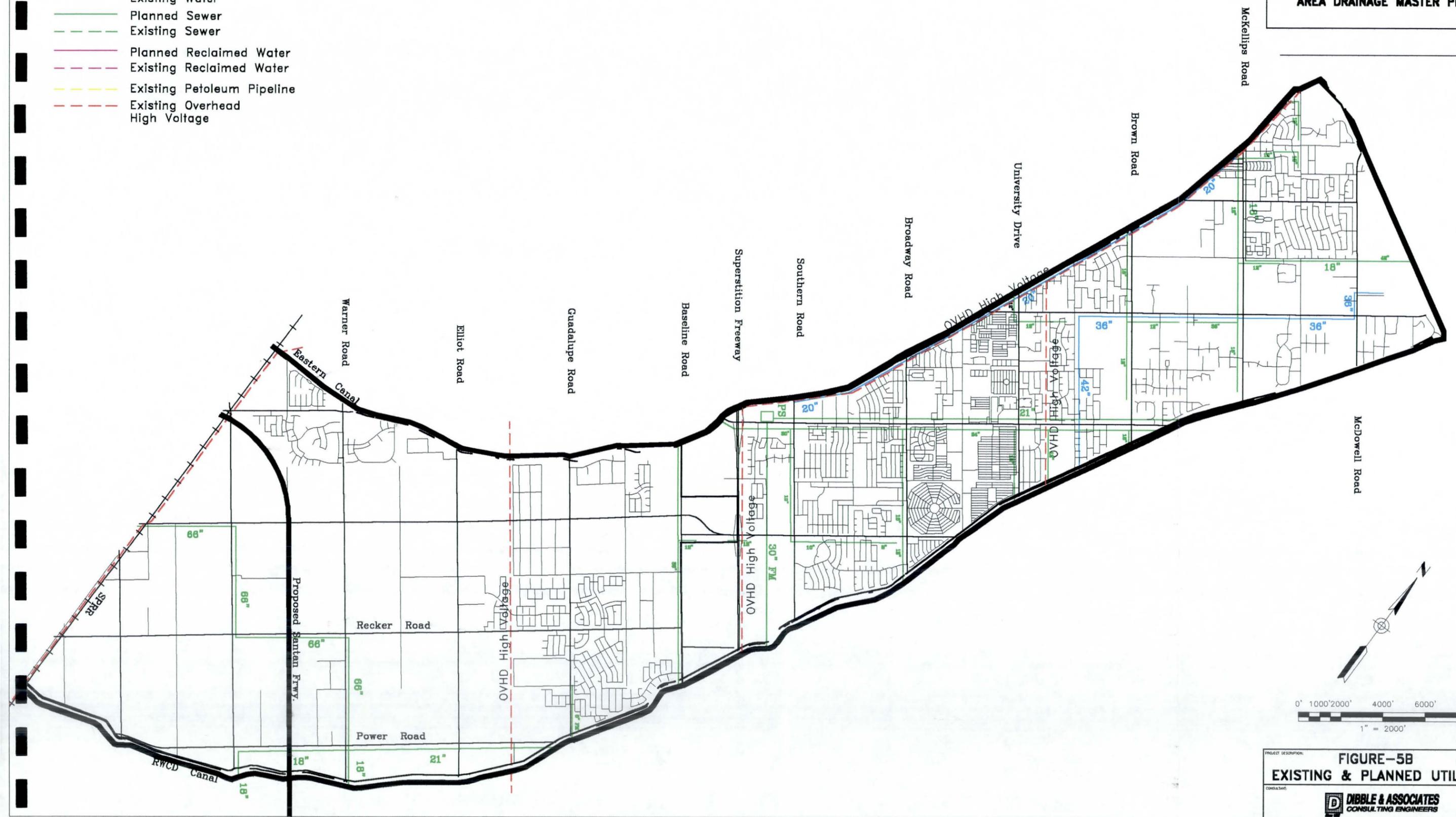
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LEGEND

- Planned Water
- - - Existing Water
- Planned Sewer
- - - Existing Sewer
- Planned Reclaimed Water
- - - Existing Reclaimed Water
- Existing Petroleum Pipeline
- - - Existing Overhead High Voltage



PROJECT DESCRIPTION: **FIGURE-5B
EXISTING & PLANNED UTILITIES**

CONSULTANT: **DIBBLE & ASSOCIATES
CONSULTING ENGINEERS**

limits. One of the project goals is to identify project participants for cost sharing and environmental enhancement to provide a "kinder and gentler" approach to flood control that provides multiple use benefits to the community. The results of the agency meetings are summarized in the following sections. The meeting minutes are contained in the Appendix.

1. City of Mesa

The City of Mesa occupies the North Study Area. The north study area is largely developed. Due to the extent of existing development, the City indicated that there is little opportunity for regional drainage improvements within the study area. The City does not have plans for any flood control or recreational projects along the east bank of the Eastern Canal.

The City of Mesa is undertaking a *Master Drainage Study* to identify drainage improvements to resolve existing drainage problems and to complete the arterial street storm drain system.

2. Town of Gilbert

The Town of Gilbert has already implemented several drainage projects to alleviate flooding in their downtown area such as Crossroads Park. The Town requires all new development to provide on-site retention for the full 50-year, 24 hour storm runoff including runoff from any adjacent public streets. As a result, future runoff peaks and volumes will be substantially less than under existing conditions. The on-site retention basins constructed with development are typically drained with dry-wells. The City requires that basins be drained within 36 hours and that additional dry-wells be installed if that requirement is not met. As a result, the dry-well system has been effective for the Town.

3. City of Chandler

The City of Chandler is in an area of very rapid growth. Although the pace of new development is evident from a drive through the City's planning area, the true extent and pace of development becomes apparent when the *planned* developments are superimposed on the area. The City of Chandler planning area may be fully developed within relatively few years.

The City of Chandler requires on-site retention for the 100-year, 2-hour storm runoff plus 10 percent. As with Gilbert, runoff peaks and volumes will be reduced as the area develops. City staff expressed concern about the potential hazard from runoff overtopping the Eastern Canal and flooding areas downstream from the canal. The City is finalizing an update to their *Stormwater Management Master Plan*.

The City is planning a linear park called "The Paseo" along the Consolidated Canal with an equestrian and pedestrian trail system. The City also expressed interest in developing new park sites within the study area including 10-acre parcels within every square mile and a 40-acre regional park within the planning area and is receptive to a multi-use concept with developer and regional detention basins.

The City is looking at opportunities associated with water deliveries to the GRIC that will likely be required as a result of the adjudication of water rights. The Eastern Canal may be used for potable water delivery and the Consolidated Canal to deliver treated effluent co-mingled with surface water for irrigation on GRIC lands. The City is also looking for opportunities for groundwater recharge particularly for times when they have available treated effluent.

4. MCDOT

MCDOT has undertaken several corridor studies within eastern Maricopa County, which partially fall within the Higley ADMP study area. The Riggs Road Corridor Study includes all of Riggs Road within the study area. The McQueen Road Design Concept Report (DCR) extends from Queen Creek Road to Pecos Road and is already in the design stage.

MCDOT is planning to construct new box culvert crossings across the Eastern Canal at Chandler Heights Road and Queen Creek Road which are in the design concept report phase. Two other sites have been identified by MCDOT for construction of new crossings in the near future. Currently, the crossings are oversized to meet the maintenance requirement and may provide additional capacity. There is still an opportunity to modify the size of these crossings if necessary per the ADMP.

5. Salt River Project

Salt River Project owns and operates the entire Consolidated Canal and the Eastern Canal from the north study area limit to 600 feet south of Pecos Road. SRP has historically not allowed stormwater into their canal system. However, as irrigated agricultural lands are converted to residential subdivisions the need for SRP irrigation water is rapidly declining. SRP's charter requires that they be able to deliver water to the high point of each quarter section within the SRP service area. As a result, the delivery systems must remain in place even if they're not used.

SRP is also heavily involved in the water rights adjudication with the GRIC and will likely be required to deliver water to GRIC lands. The Eastern and/or Consolidated canals may be used for such delivery. The declining need for continuous water delivery capacity for irrigation and the potential need to deliver water to the GRIC has resulted in a new "openness" from SRP to consider the mutual benefits of a joint use concept within the Eastern and Consolidated Canal corridors.

6. RWCD

The RWCD owns and operates the Eastern Canal, referred to as the Eastern Canal Extension, from 600 feet south of Pecos Road to its terminus at Riggs Road. The RWCD expressed concern about development that is occurring downstream (west) of the Eastern Canal Extension. As development takes place, the excess runoff that has historically been released into agricultural fields cannot be released and will be conveyed downstream within the canal until the canal overtops at some unplanned location. The RWCD has no canal management options to prevent flooding of new residential subdivisions in the event of a large storm. As a result, the RWCD has placed a high priority on cooperating with the FCDMC in developing a flood control solution for the area.

The RWCD already has in place an approximately 30 acre retention basin north of Riggs Road, west of Gilbert Road which is available for use in a flood control plan. The RWCD indicated that other District lands could be utilized in a drainage plan, if needed.

As with SRP, the RWCD is involved in the water rights adjudication with the GRIC and expressed an interest in cooperating with other local interests in developing a plan that will meet multiple objectives including flood control and water delivery to the GRIC.

7. Gila River Indian Community

The GRIC boundary is at the Maricopa - Pinal County line which is the Hunt Highway alignment. The natural lay of the land within the Higley ADMP study area is to drain from east to west. The Eastern and Consolidated canals drain from north to south approximately parallel to the elevation contours. The corridors that have been preserved by the canals provide an opportunity for flood control as has been implemented along the RWCD canal with the East Maricopa Floodway. To implement a similar concept along the Eastern and/or Consolidated Canals, an outfall needs to be identified. A logical outfall location is to extend the Eastern and/or Consolidated Canals south through the GRIC to the East Maricopa Floodway.

The GRIC has been involved in other negotiations for stormwater outfalls associated with the East Maricopa Floodway and with the Gila Drain which has been recently negotiated as a cooperative effort between ADOT and the FCDMC. Water quality is a primary issue with the GRIC and will need to be addressed as part of any solution involving an outfall across the GRIC. A wetlands concept was agreed upon for the Gila Drain project to meet water quality requirements.

As stated previously, the water rights adjudication may provide the impetus to find a common ground for an agreement for an outfall across the GRIC. If a flood control component can be incorporated into the implementation of the adjudication settlement, costs can be shared with several agencies and multiple benefits can be realized within the community.

8. ADOT

ADOT is planning the Santan Freeway which passes through the study area. ADOT is also faced with the challenge of identifying an outfall for runoff that reaches the freeway. Preliminary design concepts include collector channels along the freeway alignment with large retention basins to store

runoff and attenuate peak discharges. The runoff is eventually conveyed over 8 miles west to the Gila Drain. A new planning effort will be initiated by ADOT in the near future as plans progress for design and construction of the Santan Freeway. ADOT has recently adopted an accelerated construction schedule for the MAG freeway system to include portions of the Santan Freeway. The reach from Arizona Avenue to Gilbert Road has been accelerated from 10/2008 to 12/2005, the reach from Gilbert Road to Williams Field Road from 06/2011 to 12/2006 and the reach from Williams Field Road to Power Road from 6/2012 to 3/2007. The ADOT design is in an early enough stage that there are good opportunities to cooperate on a drainage and flood control concept.

9. Arizona Game and Fish Department

AGFD is interested in assisting in wildlife enhancement opportunities that may exist within the plan. The RWCD basin at Riggs Road and the Eastern Canal has a mature Mesquite bosque adjacent to it that may provide opportunities for wildlife enhancement within a floodplain area. AGFD offers Heritage Fund Grants for Urban wildlife enhancement.

III. ENVIRONMENTAL ISSUES

A. Cultural Resources

Information for the Class I cultural resource study was gathered from archaeological inventory and site records at the Arizona State Museum, the State Historic Preservation Office, the Pueblo Grande Museum, and Arizona State University. The National Register of Historic Places (NRHP) was consulted to determine if properties listed on the Register were located within the study corridors. Plats from the Government Land Office on file at the Bureau of Land Management (BLM) were consulted to locate historically recorded properties or features in the study corridors. Information about historic canals was provided by Salt River Project (SRP) and the Bureau of Reclamation.

The records search shows seventeen documented cultural resource surveys have occurred in the Class I study area and five archaeological sites have been recorded. Previous cultural resource surveys cover a small portion of the Class I study area. Most of the Class I study area has not been assessed for cultural resources. Four of the recorded sites contain a range of temporally and

functionally diverse artifacts and features associated with the prehistoric Hohokam culture. Sites of similar composition, age and magnitude found elsewhere in the Phoenix Basin are known to have extensive, intact, buried cultural deposits. These sites are considered potentially eligible to be listed on the NRHP. The other recorded site, a historic residence, does not meet the criteria for integrity or significance to be considered NRHP eligible.

Although no properties in the Class I study area are listed on the NRHP, the in-use SRP canals and the Southern Pacific Railroad are considered potentially eligible to be NRHP listed. The South Canal, the Consolidated Canal East Branch, the Eastern Canal, and the Southern Pacific Railroad require additional field-study and research to make a final determination of NRHP eligibility. Cultural resources in the Class I study area also include prehistoric properties that are potentially eligible to be NRHP listed. An intensive Class III cultural resources survey is recommended for previously unsurveyed portions of the study area that will be affected by proposed drainage improvements.

B. Environmental Regulatory Records Review

A search of environmental records was conducted in April 1999. Databases that were consulted include: National Priority List (NPL), NPL Deletions (Delisted NPL), Resource Conservation and Recovery Information System (RCRIS-TSD), Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS and CERC-NFRAP), Corrective Action Report (CORRACTS), Directory of Solid Waste Facilities (SWF/LF), Water Quality Assurance Revolving Fund (AZ WQARF), Department of Defense Sites (AZ DOD), Waste Water Treatment Facilities (AZ WWFAC), Leaking Tank Listing (LUST), RCRA Administrative Action Tracking System (RAATS), Resource Conservation and Recovery Information System (RCRIS-LQG), Hazardous Materials Information Reporting System (HMIRS), PCB Activity Database System (PADS), Emergency Response Notification System (ERNS), Toxic Chemical Release Inventory System (TRIS), NPL Liens (NPL Lien), Toxic Substances Control Act (TSCA), Material Licensing Tracking System (MLTS), Az Dry Well (Dry Well), Az Aquifers (Az Aquifers), Arizona Airs Database (AIRS), ROD (ROD), Superfund (CERCLA), Consent Decrees (CONSENT), and Former Manufactured Gas Sites (Coal Gas).

Listings within the Higley ADMP study area included two on the State Hazardous Waste, one on CERC-NFRAP, one on AZ WQARF, one on AZ WWFAC, three RCRIS Small Quantity Generator, seven LUST, two AZ Spills, and one HMIRS. These sites are described in more detailed in *The EDR Corridor Study Report*, April 7, 1999 submitted under separate cover. Of the hazardous material sites identified, one location is notable. Great Western Silicon at 11515 East Riggs Road is listed on the Federal CERC-NFRAP list. Listing on the CERC-NFRAP list means that following an initial investigation, the contamination at that location was not serious enough to require Federal Superfund Action. This site, however, is still on the State equivalent Superfund list and the AZ WQARF list. Sites on the AZ WQARF list may have an actual or potential impact upon the waters of the State caused by hazardous substances.

C. Ecological Assessment

An ecological assessment was prepared in coordination with the Arizona Game and Fish Department (AGFD), Maricopa County, the City of Chandler, the City of Mesa, the Town of Gilbert, the Roosevelt Water Conservation District (RWCD) and the SRP. The U.S. Fish and Wildlife Service's list of endangered and threatened species for Maricopa County was evaluated. The AGFD's Heritage Data Management System of Wildlife of Special Concern in Arizona (WSCA) for the project area was also reviewed. A reconnaissance field biological survey of the study area was conducted in March and April of 1999 and included site visits with personnel from FCDMC.

1. Existing Wildlife Habitat

Within the Higley ADMP study area, there is no prominent natural drainage feature such as a river or stream. The terrain generally slopes gently from east to west, and the drainage is characterized as sheet flow. Built features, such as the canals and railroad berms within the study area, interrupt sheet flow and create localized 100-year floodplains on the eastern sides of these built features.

A surprising abundance and diversity of wildlife inhabits the Higley ADMP study area. Along portions of the Consolidated Canal, the canal is earthen and, in some areas, supports small amounts of vegetation at the margins. Natural channels of this type occur parallel to the Eastern Canal north

of Pecos Road, and north of Ray Road. These earthen channels offer much higher habitat value for wildlife than the concrete canals because the soil banks support vegetation, permit burrowing activity, and allow wildlife to move freely in and out of the canals. Native Woodhouse toads and muskrats were observed in these earthen channels during this study. Muskrat burrows were also observed in the banks of these channels. Good breeding conditions for amphibians, i.e., relatively still, shallow, long-standing waters with some vegetative cover and a natural substrate, are scarce within the study area.

Most of the 'laterals' or irrigation side-ditches running east-west are concrete-lined; nevertheless, in some areas silt and vegetation are allowed to accrue, creating ephemeral wildlife habitat. Small fishes and tadpoles were observed in some of these laterals. For this reason, the Eastern and Consolidated Canals along their entire length constitute a significant wildlife attractant in the East Valley. Wildlife benefit most from water resources when adjacent natural vegetation is present.

A variety of fish species are known to occur in canals within the study area. Most of these species enter the canals via the Granite Reef Dam diversion structure that directs Salt River water into the canals. There is no grating at this location to stop fish from entering the canals, so fish of all life stages are able to enter. Electric fish barriers do exist to keep fish within the canal from moving upstream of the Granite Reef Dam into the Salt River.

Within the Higley ADMP study area, there are only two substantial areas of natural vegetation. One occurs at the southern end of the Eastern Canal, between Ocotillo Road in the north and Riggs Road in the south, along the west side of Gilbert Road. In this location there are two permanent ponds, referred to as RWCD Ponds #2 and #3. Surrounding these ponds are velvet mesquite bosque, and scrublands dominated by wolfberry, saltbush, and exotic grasses. Many of the wildlife species recorded in the study area were observed in this area during the reconnaissance survey. This woodland has possibly arisen because of the localized surface water drainage impacts of the elevated Eastern Canal, and by subsurface water impacts of the RWCD irrigation overflow ponds.

Another natural area exists on the southeast corner of McQueen Road and Queen Creek Road, just south of the Chandler Municipal Airport. The site is disturbed by grazing, but contains patches of native vegetation in a one-quarter square-mile area. A small woodland of large, non-native white mulberry trees (*Morus alba*) exists along the canal in this location. Numerous birds were present in this woodland at the time of the field survey.

The SPRR corridor does not contain substantial areas of wildlife habitat. The majority of the corridor is cleared of vegetation, and in some areas is highly disrupted by agricultural-industrial activity. Minimal perching and nesting opportunities are provided at railroad signs and bridges. Because of the absence of substantial water resources, the scarcity of natural vegetation, and the high level of disturbance, the railroad corridor is not considered to be ecologically significant.

2. Endangered and Threatened Species

The US Fish and Wildlife Service's list of endangered and threatened species for Maricopa County was evaluated to determine whether any of these species, or potentially suitable habitat for these species, exists within the project area. Within the Higley ADMP study area, there is no suitable habitat present for the Arizona agave, Arizona cliffrose, Arizona hedgehog cactus, desert pupfish, Gila topminnow, lesser long-nosed bat, Mexican spotted owl, razorback sucker, Sonoran pronghorn antelope, southwestern willow flycatcher, or Yuma clapper rail. Forage habitat for the American peregrine falcon is present. Peregrine falcons exist in downtown Mesa to the north, where they nest in high places on downtown buildings. No suitable nesting habitat is present within the study area. A dead American peregrine falcon was observed during the field reconnaissance survey of the study area. Bald eagles winter at Lake Pleasant in the Phoenix area, but no suitable nesting habitat is present within the East Valley study area for the bald eagle. There is suitable habitat present for the bonytail chub. AGFD does not report this species as occurring within the canal system. There is marginal habitat present for the cactus ferruginous pygmy-owl. It is considered very unlikely that cactus ferruginous pygmy-owls inhabit the small areas of mesquite bosque at the southern end of the Eastern Canal, or the mesquite-desertscrub area south of the Chandler Municipal Airport.

A list of WSCA species documented as occurring in the project vicinity was obtained from AGFD.

No suitable habitat was noted for the Sonoran desert tortoise. Suitable habitat was noted for the black-bellied whistling duck, black-necked stilt, and Mexican free-tailed bat. AGFD also noted that roundtail chub and lowland leopard frog potentially occur in the study area canals. During the reconnaissance survey, WSCA species observed included the great egret, black-bellied whistling duck, black-necked stilt, and belted kingfisher.

3. Urban Wildlife Hazards

The primary detriment to wildlife within the study area has been loss of habitat. Over 95% of the study area is characterized by residential development, agricultural land, streets and other disturbances. Built features within the study area can be hazardous to various species of wildlife. An American peregrine falcon was found electrocuted to death atop an overhead power line within the study area during the reconnaissance survey. Many canal crossings at roadways are not suitable for mammals, as they consist of shallow, water filled tunnels without an earthen bottom. Vehicle collisions with mammals such as coyote and with waterfowl, are expected to be most serious on roadways at canal crossings. Other roadway crossings impede the movement of waterfowl and fish, as canal gates are often located adjacent to roadways for service access. The study area canals feature various widths, depths, control structures and lining materials. A steep-sided, concrete channel is the typical design for these canals. Wildlife can be trapped in these canals with no opportunity to climb out. Control structures such as canal gates can also trap or otherwise imperil wildlife.

Wildlife are also adversely impacted by airport activities. Although airports offer wildlife large areas of undeveloped land, noise problems, vehicle activity and the possibility of air or runway strike reduce the habitat value of these open areas. At the Chandler Municipal Airport, a transient run-off pond was observed at the end of the southwest runway during the field survey for this study. Waterfowl were observed using this water area. FAA regulations state that no wetland or other waterfowl-attracting land use should occur within 10,000 feet of the runway at airfields where turbine aircraft are present. Where no turbine aircraft are present, the limit for these land uses is 5,000 feet. The Chandler Municipal Airport is adjacent to the Consolidated Canal within the study area and is used by turbine aircraft.

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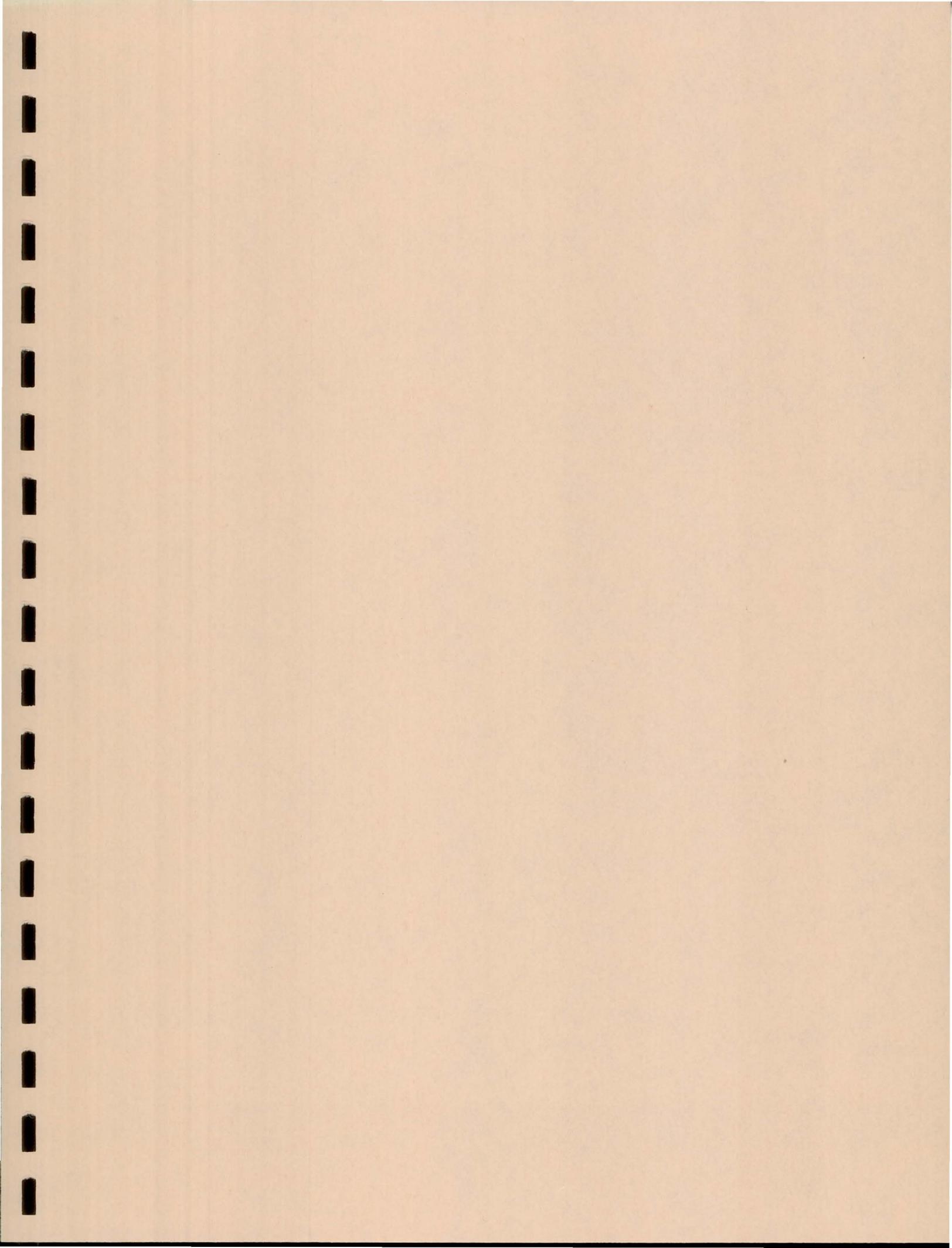
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Appendix

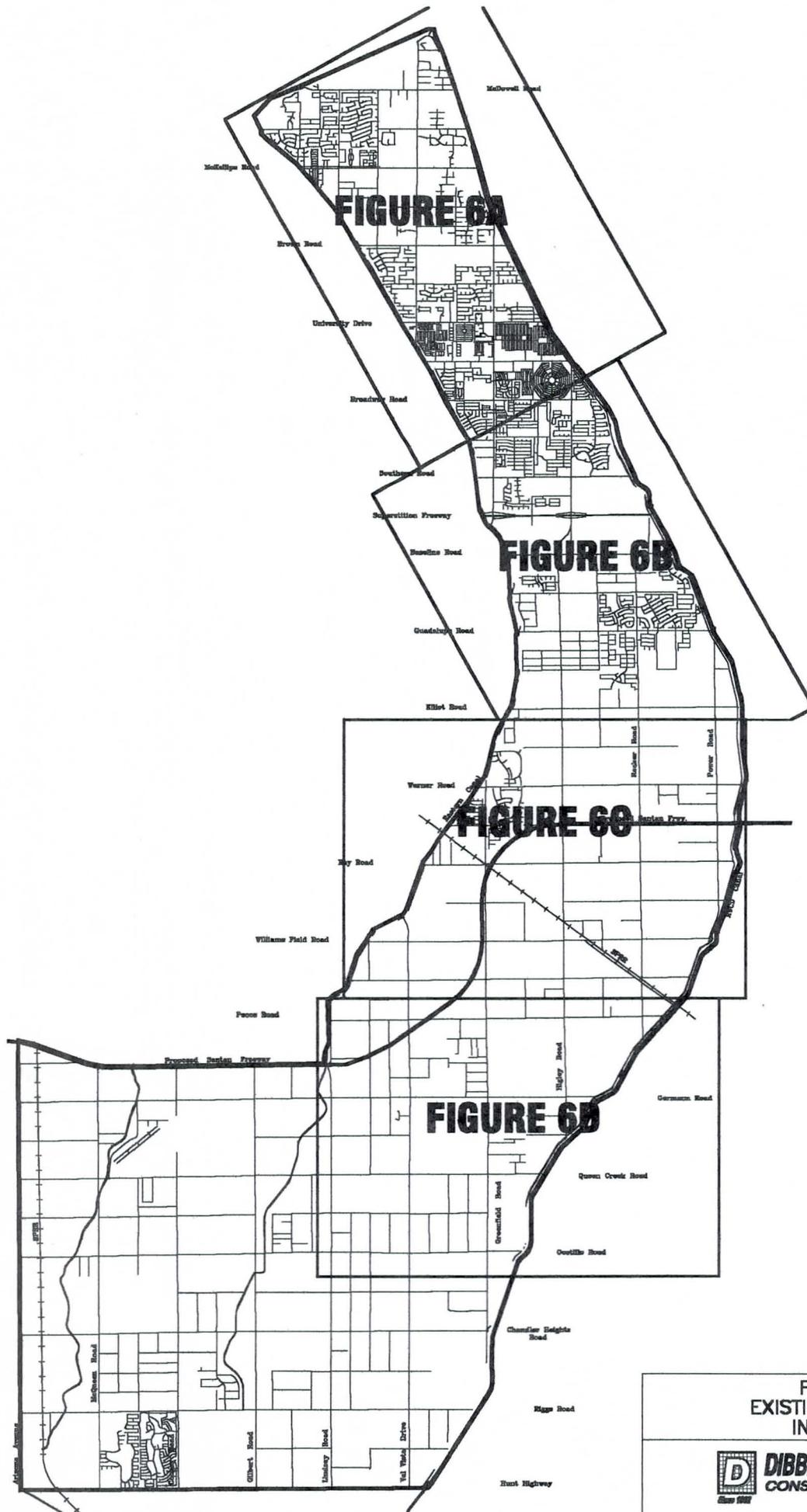


FIGURE 6
EXISTING FACILITIES
INDEX MAP



DIBBLE & ASSOCIATES
CONSULTING ENGINEERS

Since 1962

MATCHLINE FIGURE 6B

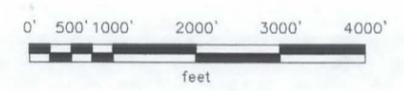


**FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY**

**HIGLEY AREA
AREA DRAINAGE MASTER PLAN
'FCD CONTRACT # 98-13'**

LEGEND

 Detention Basins



PROJECT DESCRIPTION: **FIGURE-6A
EXISTING FACILITIES**

CONSULTANT:  **DIBBLE & ASSOCIATES
CONSULTING ENGINEERS**

**FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY**

**HIGLEY AREA
AREA DRAINAGE MASTER PLAN
'FCD CONTRACT # 98-13'**

LEGEND

CULVERTS

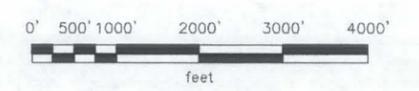
- ① 2 - 48"
- ② 2 - 42"
- ③ 1 - 42"
- ④ 1 - 66"

DETENTION BASINS

- ① Holmes Park

CHANNELS

- ① ADOT Channel



**FIGURE-6B
EXISTING FACILITIES**

**DIBBLE & ASSOCIATES
CONSULTING ENGINEERS**



MATCHLINE FIGURE 6C

MATCHLINE FIGURE 6A

MATCHLINE FIGURE 6B

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

HIGLEY AREA
AREA DRAINAGE MASTER PLAN
"FCD CONTRACT # 98-13"

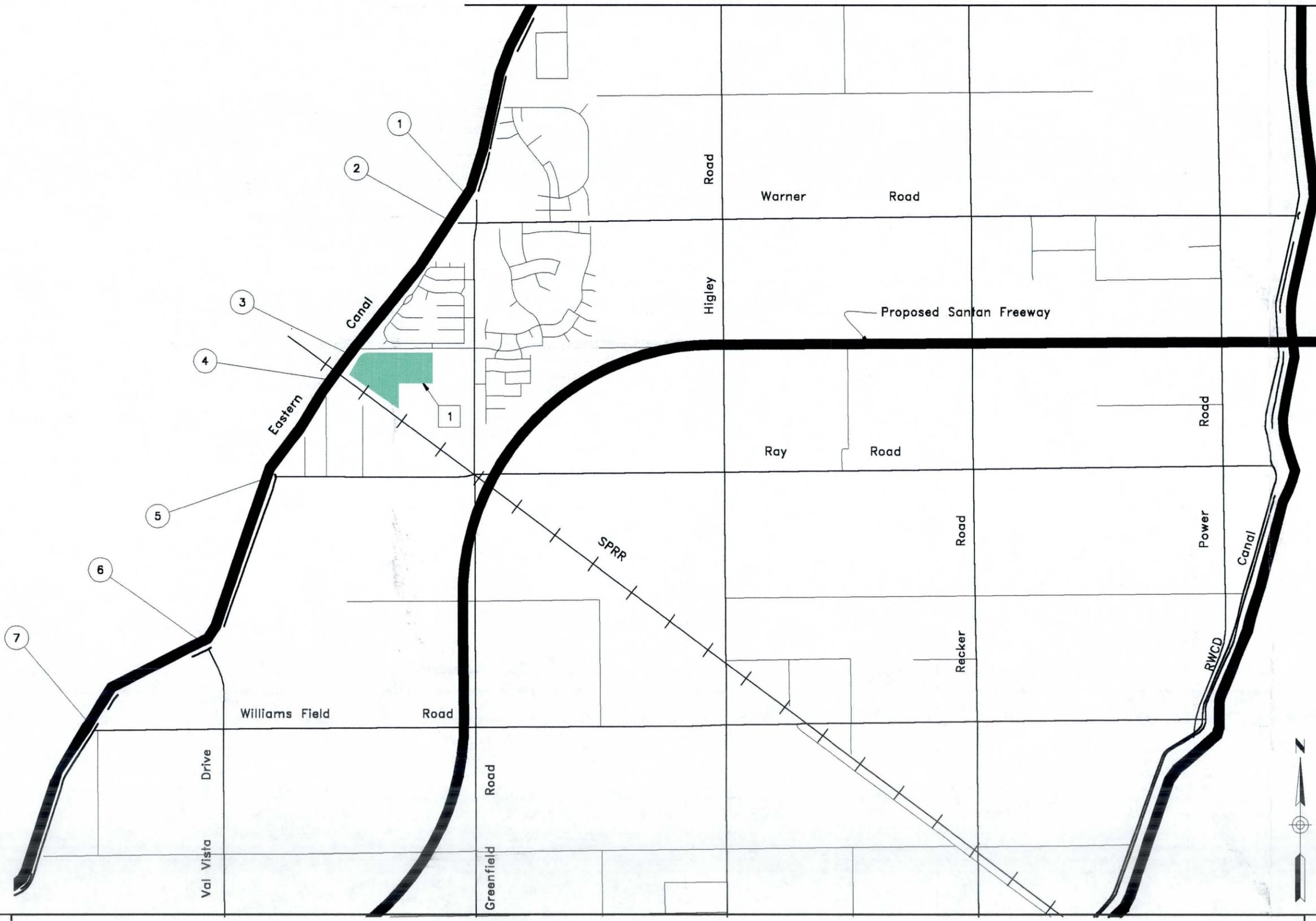
LEGEND

CULVERTS

- ① 2 - 48" RCP
- ② 2 - 48" RCP
- ③ 1 - 54" RCP
- ④ 1 - 36" RCP
1 - 48" RCP
- ⑤ 2 - 48" RCP
- ⑥ 12x5.5 CBC
- ⑦ 1 - 72" RCP

DETENTION BASINS

- ① Crossroads Park



MATCHLINE FIGURE 6D

FIGURE-6C
EXISTING FACILITIES

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS

MATCHLINE FIGURE 6C

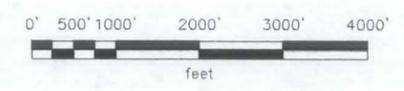
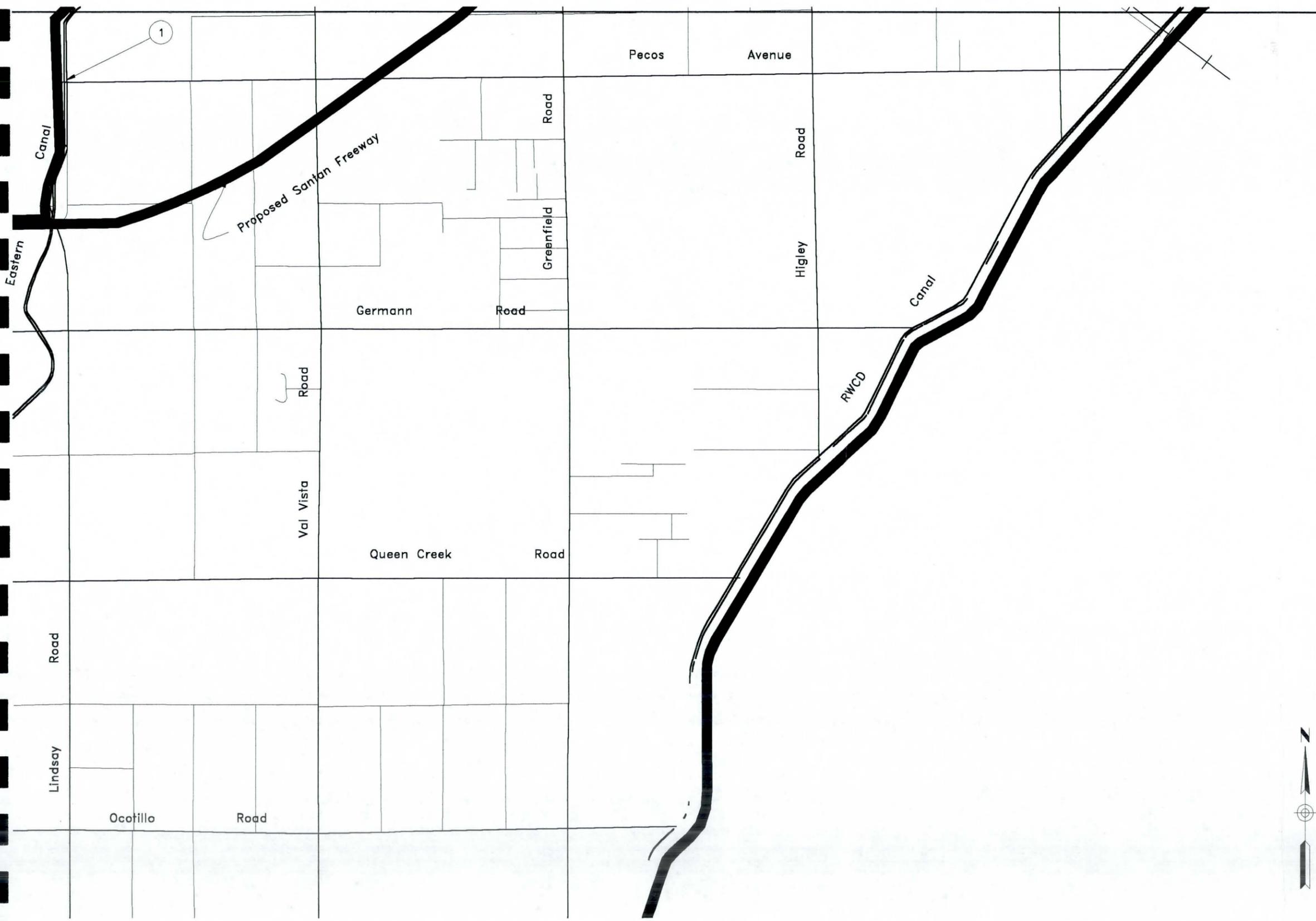
**FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY**

**HIGLEY AREA
AREA DRAINAGE MASTER PLAN
'FCD CONTRACT # 98-13'**

LEGEND

CULVERTS

① 1 - 48"



PROJECT DESCRIPTION: **FIGURE-6D
EXISTING FACILITIES**

CONSULTANT: **DIBBLE & ASSOCIATES
CONSULTING ENGINEERS**

Culvert Inventory Summary

ID	Location	Capacity	No. of Barrels	Culvert		Mat'l	Length	Slope
				Diam./ Height	Unit			
C6B-1	Basinline Rd	296	2	48 in.		RCP	160	0.88%
C6B-2	Guadalupe Rd	233	2	42 in.		RCP	64	0.53%
C6B-3	1/2 mile South of Guadalupe Rd	75	1	42 in.		RCP	19	0.68%
C6B-4	Elliot Rd	240	1	66 in.		RCP	105	0.77%
C6C-1	Greenfield Rd	367	2	48 in.		RCP	162	-0.25%
C6C-2	Warner Rd	263	2	48 in.		RCP	58	0.28%
C6C-3	North Side of Crossroads Park	146	1	54 in.		RCP	20	0.20%
C6C-4	Southern Pacific Railroad	**		in.		RCP		
C6C-5	Ray Rd	259	2	48 in.		RCP	105	0.19%
C6C-6	Val Vista Dr	450	1	5.5 ft		RCBC	132	0.14%
C6C-7	Williams Field Rd	105	1	72 in.		RCP	135	0.64%
C6D-1	Pecos Ave	**	1	48 in.		RCP		

** Indicates insufficient data

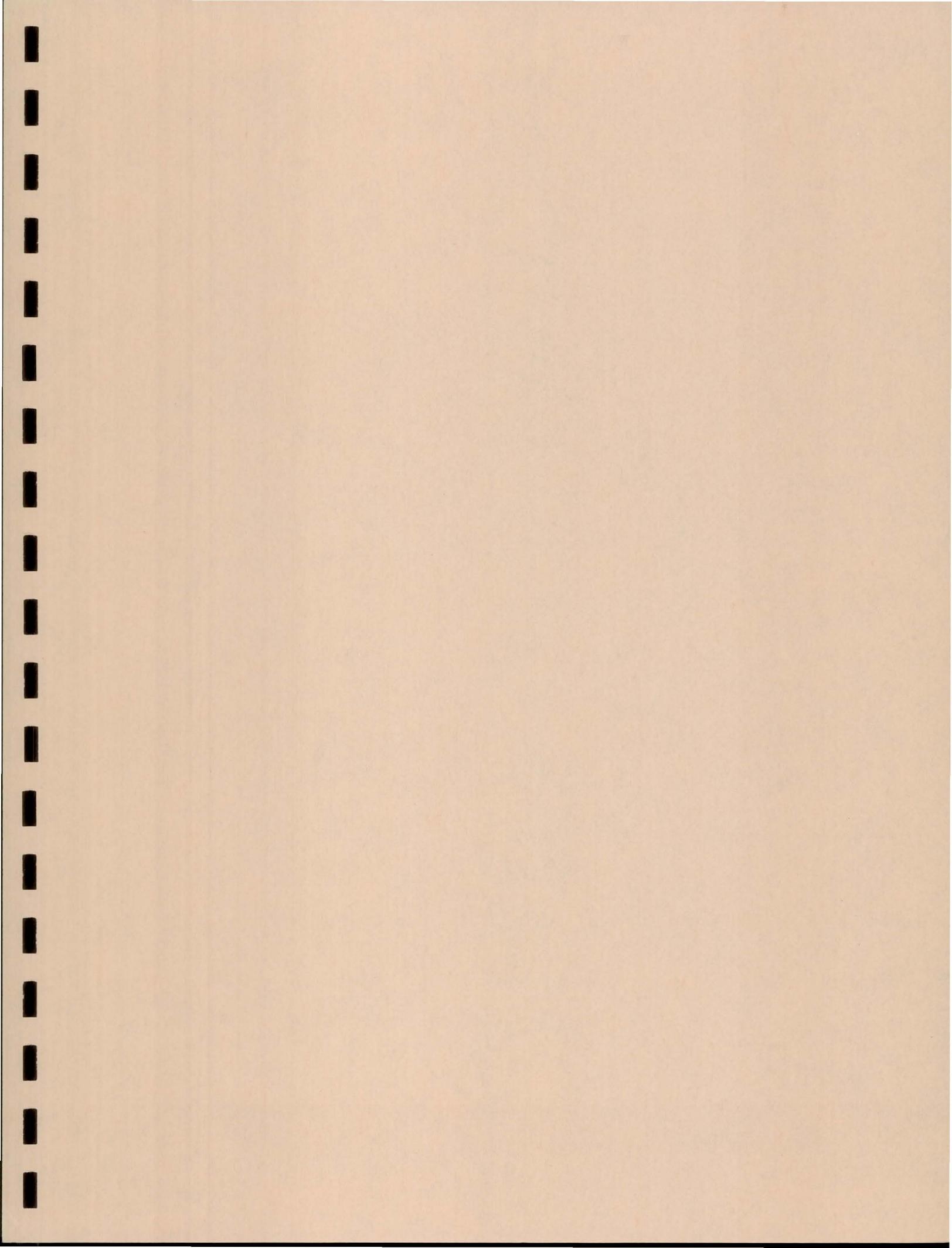
C6D-1



Feature #

Sheet #

Feature Type C=culvert, B=Basin, CH=Channel, S=Stormdrain



MEETING MINUTES

DATE: March 22, 1999

LOCATION: 1) City of Mesa
2) Maricopa County Department of Transportation
3) Salt River Project

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

PURPOSE: **Project Coordination/Data Collection**

DISCUSSION:

1) City of Mesa - 9:30 am

Attendees:

Frank Mizner, City of Mesa Planning
Tim Phillips, FCDMC
Ashley Kowallis, Logan Simpson Design
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Frank presented a zoning map mosaic and list of recent zoning cases. **Dibble** will access City files and review zoning cases at COM.
2. Frank presented a current land use map for the city.
3. Gene Larson, COM Development Services is the best person to contact re: drainage & utilities - (ph# 644.2558).
4. Most of the City of Mesa within the Higley ADMP study area is already developed and leaves little opportunity for flood control improvements.
5. There are few parks within the city. Joe Holmwood, COM Director of Parks & Recreation (ph# 644.2190) is the best person to call re: park information and the possibility of having a green-belt along the canal. Liability of a green-belt has been a concern of COM and SRP in the past.
6. For GIS information, Lisa Johnson is the best person to contact - (ph# 644.2609).

2) Maricopa County Department of Transportation - 11:00 am

Attendees:

Dave Deweese, MCDOT
Andy Wojakiewicz, MCDOT
Tom Sonnemann, MCDOT
Amir Masowdi, MCDOT
Gary Lasham, MCDOT
Mike Smith, MCDOT
Chris Hassert, MCDOT
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Tom - there are at least 3 structures within the study limits that have been annexed. MCDOT's structure inventory is a sub-set of ADOT's bridge management system. All structures over 20' in span are listed in this inventory. MCDOT keeps a list of box culverts smaller than 20' span
2. Tom presented a list of existing MCDOT bridges and box culverts within the Higley ADMP study area. There are also plans for 3 new Eastern Canal crossing improvements. (14x7 box culverts). RWCD is planning to underground their channels along Riggs Road.
3. Andy asked if there was a way to estimate the size of the future culverts so that they could incorporate them into their ongoing design. Tim's answer was "not yet - but soon...could the culvert crossings be designed for future expansion?"
4. Dave - Where are the areas of flooding?
 - Gary - the area along the eastern canal is a floodplain
5. Tim - is there a record of complaints of flooding on the roads?
 - Gary - yes, Flood Control should have that information.
6. Dave - as for planned private developments, Gerralad Toscano could provide information on County development permits. It may be better to go directly to County Planning and Zoning, talk to Neil Urban.
7. Mike - Other planning data could come from the Riggs Road Corridor Study by Lee Engineering. Also, talk to the Town of Gilbert re: plans for Guadalupe Road. Ann Blech, from MCDOT Planning, may be able to provide information about the proposed light rail system through Chandler. There is also the potential that Riggs Rd. will be re-aligned at Arizona Ave.
8. There is also a project under design by Carter/Burgess for McQueen Rd. from Pecos to Queen Creek. It uses linear retention basins for storm water drainage. Also the Queen

Creek road profile should be modified. Why build something that will flood? But by raising the road, we would cause a barrier to flow thus causing a potential for flooding up-stream. This needs to be addressed.

9. **Dave** will provide a copy of the draft DCR for Queen Creek Road.
10. **Mike** will provide a copy of the Southwest Planning Study.
11. **Dave** - There is also a MCDOT in-house design for Val Vista from Riggs to ½ mile south.

3) Salt River Project - 1pm

Attendees:

Paul Cherrington, SRP
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Paul - There are injection wells north of Queen Creek @ McQueen Rd.
2. There are culverts under the SPRR @ Ryan. These culverts are assumed to be full for the purposes of hydraulics.
3. Paul - the canals are manually drained during storm events to allow flood water to enter their canals. However, historically SRP doesn't provide Flood Control.
4. Paul - It sounds feasible to have a joint-use facility for both flood control and irrigation. However, further discussion on this is required. **Paul** will discuss internally about this.
5. A HEC-2 is available for the consolidated canal. (Paul provided after mtg).
6. Since, the agriculture use for the canal is diminishing, the City of Chandler may be a potential customer to handle treated effluent.
7. It is SRP's charter to be able to deliver water to the high-point of every quarter section in the service area.
8. As part of the GRIC water adjudication process, SRP is looking for ways to deliver water to the GRIC.
9. The Town of Gilbert is planning a water treatment plant at Guadalupe Rd. No stormwater should be admitted to the canal upstream of the plant.

Respectfully Submitted,



Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees

MEETING MINUTES

DATE: March 23, 1999

LOCATION: 1) Town of Gilbert
2) City of Chandler
3) Roosevelt Water Conservation District

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

PURPOSE: **Project Coordination/Data Collection**

DISCUSSION:

1) Town of Gilbert - 9:00 am

Attendees:

Lonnie Frost, Town of Gilbert
Tim Phillips, FCDMC
Theresa Hoff, FCDMC
Ashley Kowallis, Logan Simpson Design
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. There is a drainage study for Gilbert by Franzoy/Corry (1989)
2. The Purpose of Crossroads Park is to take as much area out of the floodplain as possible. It took all of the downtown area out of the floodplain.
3. There is nothing published yet on the San-Tan Area Plan. Right now, it only addresses zoning.
4. Gilbert's retention requirements are; 50-yr, 24-hr which roughly equates to the FCDMC 100-yr, 2-hr. Retention requirement (3" of rain). Developers are also required to retain runoff from all adjacent ½ streets. Gilbert uses drywells exclusively and they work well. It is also enforced that the basins drain in 36-hr. If they don't, it is up the HOA's to take corrective measures.
5. Currently stormwater is pumped from Crossroads Park. It is proposed by Gilbert that something be worked out so that ADOT could aid in the disposal of water from Crossroads Park.

2) City of Chandler - 11:00 am

Attendees:

Sandy Story, City of Chandler
Tim Phillips, FCDMC
Theresa Hoff, FCDMC
Ashley Kowallis, Logan Simpson Design
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Meeting was canceled - but we planned for the next meeting.
2. **Sandy** will schedule another meeting, or series of meetings with; Tom Little - Development Services Director, Carl Doak - Street Supervisor, Karen Barfoot - Water Resources Director.
3. We will also need someone representing Parks & Recreation.
4. **Tom Little** will be able to furnish plans for new developments.
5. **Sandy** will compile the following; 1) CDM Drainage Master Plan, 2) Parks Plan, 3) Land-use Master Study
6. **Sandy** will try to schedule meetings for next week.

3) Roosevelt Water Conservation District

Attendees:

Mike Leonard, RWCD
Shane Leonard, RWCD
Tim Phillips, FCDMC
Theresa Hoff, FCDMC
Brian Fry, Dibble & Associates

1. RWCD is willing to cooperate and share their irrigation facilities to reach a solution to the flooding problems within the area.
2. Mr. Leonard's priorities for the drainage project are as follows.
 - Take out the bottlenecks in the system and improve road crossings.
 - Utilize 60 acres of available land for retention basins
 - Develop a drainage outfall along the GRIC.
3. The RWCD is concerned with potential damage to residential subdivisions downstream from the Eastern Canal Extension. Historically, during flood events, runoff that drained into the Eastern Canal Extension was discharged into the agricultural fields west of the canal to disburse the runoff and reduce downstream canal overtopping. With new

developments replacing the fields, the runoff cannot be released from the canal in a planned manner.

4. With the current water rights adjudication with the GRIC, there is a unique opportunity for a creative solution to meet multiple needs within the area. The need for a flood control outfall, coupled with the need for a means to deliver water to the GRIC may provide a flood control opportunity. A number of agencies may have a strong enough interest in the project to provide the impetus to develop agreements and cost sharing in a way that may not otherwise be possible.

Respectfully Submitted,



Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees

MEETING MINUTES

DATE: March 31, 1999

LOCATION: City of Chandler

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

PURPOSE: **Project Coordination/Data Collection**

DISCUSSION:

1) City Of Chandler Public Works - 1:00 pm

Attendees:

Sam Sherrill, COC
Charles Higginson, COC
Tom Little, COC
Carl Doak, COC
Sandy Story, COC
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Tim opened the meeting with a brief description of the project and what the "100%" view of the project involves. (multi use, linear parks, water delivery, flood control, recharge...)
2. Brian inquired about the drainage master plan for the city. Dibble would be interested in obtaining a copy of it.
 - COC provided a copy but it has some minor items to address before it is finalized.
3. There is a DCR for Riggs Road from Arizona Ave to Val Vista Dr. The first phase of which is from Arizona Ave. to Gilbert Rd.
4. There is an IGA between Gilbert and Chandler delineating the agreed future annexation boundary.
5. Brian inquired about information pertaining to the new/planned developments.
 - Sam said he would provide a map that shows the new developments.
6. COC retention requirement is for the 100-yr, 2-hr storm.
 - Tom is concerned about the area east of Chandler contributing to the flooding problem downstream. How is this area being handled?
 - The City is also concerned about "wild-cat" subdivisions and how they are dealing with storm water retention.

7. There is very little, if any, available land for regional retention facilities. A better choice for retention sites would be up-stream from planning area.
8. Another concern for the City is that of the RWCD conveying storm water to Chandler.
9. Charles asked if we would be revising the floodplain.
 - Tim- if it is warranted, yes.
 - Tom- shouldn't we revisit the east valley MP due to development?
 - Tim- it is the goal of FCD to get rid of the floodplain if possible.
10. According to Carl, Pinal County is in the process of a corridor study along the county line (Hunt Highway) from Val Vista eastward..
11. Contact CDM for more information regarding the Drainage Master Plan.
 - Jim Folton, Kathy Hendricks, Judd Hunemuller
12. Other IGA's w/MCDOT include; McQueen Rd form Queen Creek to Pecos. And Queen Creek Rd from Arizona Ave to Mc Queen.
13. Contact Stanley Consultants (Bret Olsen) for information on Riggs Rd DCR.

2) City of Chandler Parks Department - 2:00 pm

Attendees:

Sandy Story, COC
 Mickey Ohland, COC
 Tim Phillips, FCDMC
 Brian Fry, Dibble & Associates
 Dan Frank, Dibble & Associates
 Diane Simpson-Colbank, Logan Simpson Design

1. Tim opened the meeting with a brief description of the project and what the "100%" view of the project involves. (multi use, linear parks, water delivery, flood control, recharge...)
2. Brian- What plans does City of Chandler have for parks in the area?
 - Mike- the Consolidated Canal (Con) is the main focus of the city right now. The City is planning a multi-use trail system from Riggs Rd to Galveston St.
 - They are planning on developing the canal in 1-1/2 mile per year increments starting at the north end for a total of 6.5 miles.
 - Development on the Con is planned to take place within SRP ROW per a licensing agreement w/SRP.
 - City of Chandler is working with the developers to build "pocket-parks" in conjunction with on-site retention.
 - The trail will be a multi-use system with equestrian and pedestrian uses. The west

side of the canal will be equestrian (DG trail) and the east side will have a 10' concrete sidewalk.

- This plan is called the Paseo System (copy was presented after the meeting)
- Carter/Burgess is currently developing a plan for the Con as well as a set of design guidelines.

3. One of the questions/concerns the City has is to identify an east/west link between the Con and the eastern canal as well as a link to the Santan Mountains.

4. The Park Department is in need of park sites in the south area. They would like the following;

- 10 acres each for neighborhood parks (1 per sq. mi.)
- 30 acres for a community park

5. Mickey will provide a copy of the park guidelines.

6. Tumbleweed park will be 154 acres and will have a trail connecting it to the Con.

- Dave McDowell 786.2786 will provide information on this park.

7. The parks department would definitely want to work with us to find good locations for detention-parks.

8. Riggs Rd may be a good alignment for an east/west link between the Con and the Eastern Canal.

3) City of Chandler Planning Department - 3:00 pm

Attendees:

Sandy Story, COC
Robert Pazera, COC
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates
Diane Simpson-Colebank, Logan Simpson Design

1. Tim opened the meeting with a brief description of the project and what the "100%" view of the project involves. (multi use, linear parks, water delivery, flood control, recharge...)
2. Bob mentioned that the Chandler Airpark Plan has been updated.
3. Bob inquired if we could have basins adjacent to agriculture fields (micro farms)
4. **Bob** will provide a copy of the Southeast Chandler Area Plan and an updated Chandler Airpark Plan
5. The city would be interested in using the floodplain for open-space.

Respectfully Submitted,



Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees

MEETING MINUTES

DATE: April 1, 1999
LOCATION: City of Chandler
PROJECT: FCD 98-13, Higley Area Drainage Master Plan
PURPOSE: **Project Coordination/Data Collection**

DISCUSSION:

1) City of Chandler Engineering - 2:00 pm

Attendees:

Karen Barfoot, COC
Jacqueline Strong, COC
Bob Pazera, COC
Sandy Story, COC
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Tim opened the meeting with a brief description of the project and what the "100%" view of the project involves. (multi use, linear parks, water delivery, flood control, recharge...)
2. Karen- one of the concerns is "how much water can the GRIC take without flooding St. Johns?"
 - Dr. Mock (geo-hydrologist) is currently reviewing this situation
3. The concept out right now is that of a dual pipeline from the RWCD canal which will deliver water to the Consolidated Canal (Con) along the Hunt Highway Alignment. This will be a mixture of 50% A+ effluent water and 50% surface supply to be used for GRIC irrigation.
4. The GRIC will probably have their own standard for water quality which will most likely be higher than ADWR.
5. Currently, COC used dry-wells for retention disposal and developments aren't connected to the stormdrain system.
6. We must keep bird attractants away from the airport (2 mile radius).
7. The idea of a linear park along the Eastern Canal is acceptable and could be irrigated with reclaimed water.
8. The Con will be kept "wet"

9. In SRP "staff-level" talks Chandler may participate in the expansion of the Con to deliver water to the GRIC.
10. Since a precedent has been set in the construction of a water quality wetland at the Gila Drain, a similar feature may need to be constructed at the end of the Con. & Eastern Canals before discharging to the GRIC
11. Groundwater in the area is fairly shallow (30')
12. There is a hazardous materials contamination site within the study area (near Arizona Ave, look on the WEB.)
13. Contact Stanley Consultants (Bret Olsen) for info on Riggs Rd DCR.

Respectfully Submitted,



Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees

MEETING MINUTES

DATE: May 13 1999

LOCATION: Arizona Department of Transportation

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

ATTENDEES: Javier O. Guana, ADOT
Jeff Minch, DMJM
Thomas M. Monchak, DMJM
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

PURPOSE: **Project Coordination/Data Collection Meeting - 1:30 pm**

DISCUSSION:

1. The Higley ADMP presents a unique opportunity to partner with various agencies in order to achieve a common goal. We are currently looking for project partners & opportunities for identifying a regional drainage outfall, environmental enhancement, and community detention basin parks.
2. According to Javier, ADOT isn't expecting to do too much within this study area until 2002 when DMJM is scheduled to begin 30% design of that reach of the Santan Freeway. It is expected that the Gilbert reach of the Santan freeway will be completed in 2007.
3. ADOT & DMJM are invited to attend a "brain-storming" session scheduled for June 2, 1999 at the Flood Control District of Maricopa County offices. This session should be attended by the project review committee to aid in the formulation of drainage concepts withing the study area. - **Javier** indicated that ADOT would participate.
4. ADOT is currently in the EIS phase for this reach of the Santan Freeway and nothing has changed since the 1988 HDR report.
5. Phase III of the Santan Channel to Price Rd. will be completed by the end of the year.

Respectfully Submitted,


Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees