# Gillespie Area Drainage Master Study

## *Data Collection*

Flood Control District of Maricopa County

October 2013

**Submitted by:**
Stantec Consulting Services Inc.
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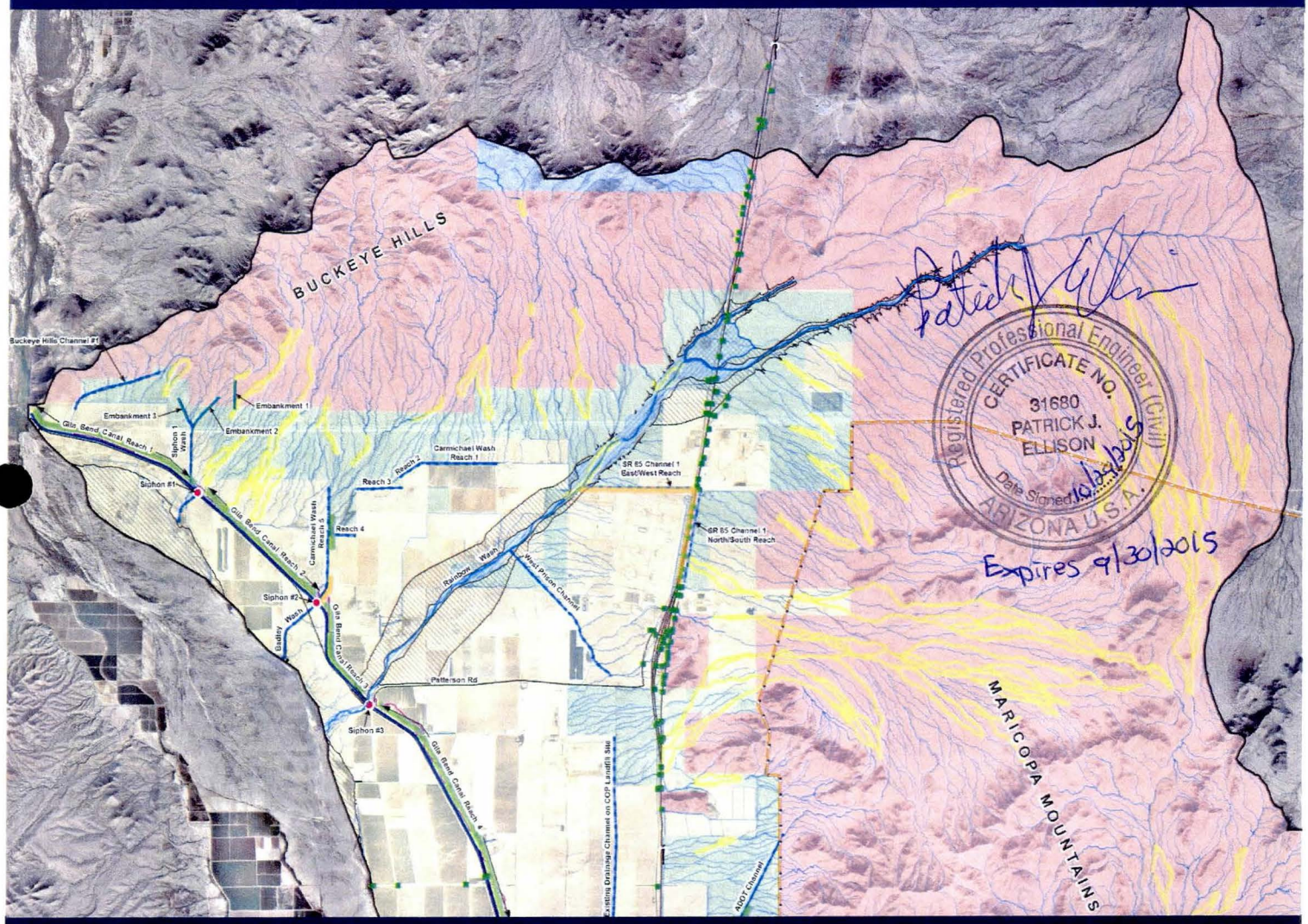
Stantec

Flood Control District of Maricopa County

# Gillespie Area Drainage Master Study
# Data Collection Report




Registered Professional Engineer (Civil)
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ARIZONA U.S.A.
Expires 9/30/2015

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October 2013

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# Contents




Expires 9/30/2015

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# 1.0 Introduction

## 1.1 PURPOSE

The Data Collection task for the Gillespie Area Drainage Master Study (ADMS) consists of collecting information that pertains to engineering and planning evaluations and land uses within the project area. This information is used to identify existing resources and to define opportunities and constraints that would influence the formulation of design considerations that will be offered as an aid to development to mitigate risk associated with flood hazards. The type of information collected and reviewed includes historical photographs, current land use plans, planning documents, previous hydraulic and hydrologic reports, existing topographic mapping, "As-Built" plans for existing drainage structures, FEMA Flood Insurance Rate Maps, and transportation, trails and utility plans.

## 1.2 STUDY AREA

The study area is located in southwestern Maricopa County approximately 10 miles south of the Town of Buckeye. The study area consists of approximately 148 square miles of land and is bisected by State Route 85 and bordered on the west by the Gila River. Figure 1 depicts the location of the Gillespie ADMS study area.

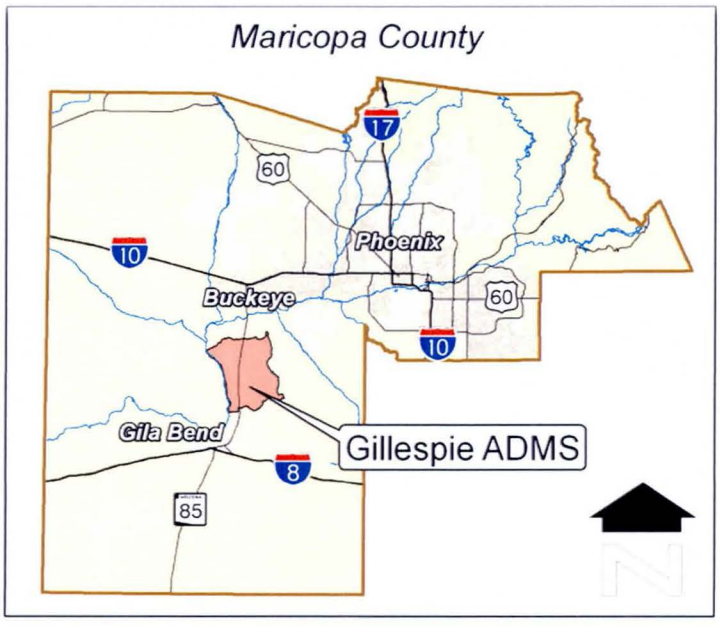



Figure 1 Project Location Map

## 1.3 PROJECT GOALS

The purpose of the Gillespie ADMS is two-fold: 1) Identify and quantify flooding problems and flood hazards and 2) Generate development guidelines or considerations to ensure public safety for residents and property owners in the study area.

### 1.3.1 Specific Goals

The following, outlines the specific goals and associated objectives necessary to achieve the purpose of the Gillespie ADMS.

- Goal #1: Identify and quantify flooding and sedimentation and erosion hazards:
  - Obtain and document pictures, written and verbal accounts of flooding and/or flood damage within the study area;
  - Develop a comprehensive list of flooding and erosion problems impacting the study area;
  - Develop an existing conditions hydrologic model utilizing the NOAA Atlas 14 point precipitation values in order to quantify the drainage and flooding hazards within the study area;
  - Identify and prioritize washes for future floodplain delineation studies.
  - Evaluate the erosion and sedimentation patterns and characteristics of select reaches of Rainbow Wash and other drainage features where deemed appropriate.
- Goal #2: Establish guidance for future development that protects public safety and considers the unique natural and physical characteristics of the Gillespie watershed.
  - Identify tributaries and reaches of Rainbow Wash and other washes in the study area that serve as important conveyance corridors;
  - Create guidelines for future development that can be utilized by local jurisdictions to coordinate future drainage improvements and protect public safety;
  - Solicit and incorporate public and stakeholder input; and
  - Prepare an ADMS Report that documents the technical analysis, data collection efforts, the public and stakeholder involvement process, and the development considerations for the ADMS.

## 1.4 PREVIOUSLY COMPLETED STUDIES

Previous flood hazard related studies conducted in the project area that were used to develop an understanding of the characteristics of the watershed include, candidate assessment reports, floodplain delineation studies, and surficial geology and soils studies. A log of the studies that were collected and reviewed is included in Appendix B. Previous studies include:

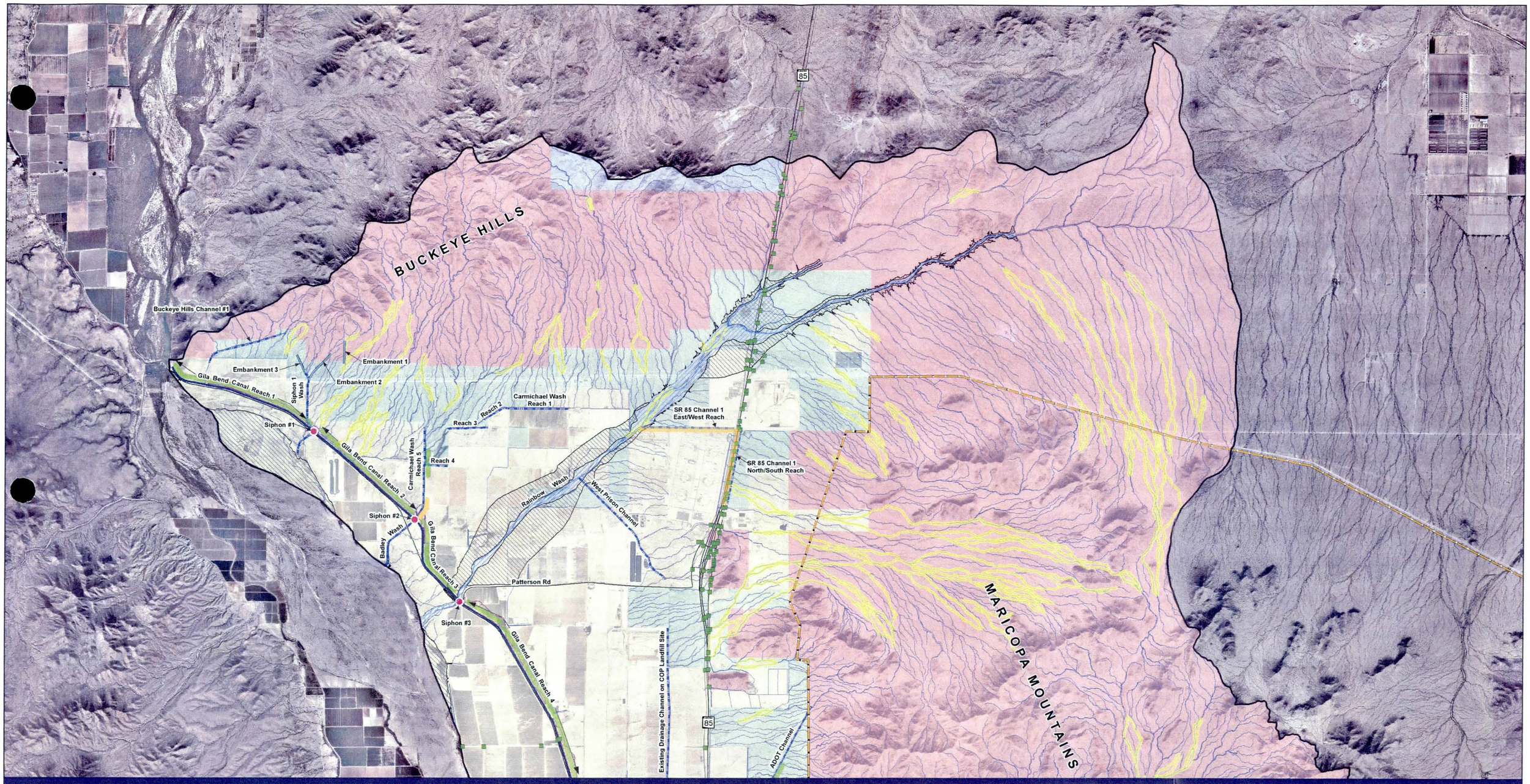
- FIS, Approximate Studies, Unincorporated Areas of Maricopa County, Arizona, January 1979.
  - This study includes a floodplain delineation for the Gila Bend Canal.
- Gila Bend Canal, FDS, Gillespie Dam to Gila Bend, Hydrology Report, November 1991.
  - Hydrology used for the floodplain delineation upstream of the Gila Bend Canal.

- Gila Bend Canal, FDS, Gillespie Dam to Gila Bend, Hydraulic Analysis and Floodplain Delineation Report, November 1991.
    - Hydraulic analysis for the floodplain delineation upstream of the Gila Bend Canal.
- Rainbow Wash FIS, N-Value Determination Report, April,1992
    - Report presents the results off a detailed analysis to define Manning's roughness coefficients for Rainbow Wash and is intended to provide supplementary technical documentation for the development of a detailed hydraulic model.
- Rainbow Wash FIS, Gila River through SR 85, Hydraulics TDN, May, 1994
    - Study provides floodplain evaluations for Rainbow Wash and its tributary from the Gila River to upstream of SR 85.
- Final Woolsey FPD, Candidate Assessment Report, June , 2005
    - Report documents the existing and planned conditions concerning drainage in the northern portion of the Woolsey Flood Protection District. Using any information available.
- Terrain, Soils and Runoff Potential in Rainbow Wash Watershed, Maricopa County, Arizona, February 2010.

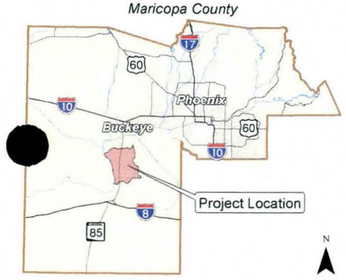
## 2.0 Flooding and Drainage Hazards

Flood conveyance facilities within the project include natural watercourses, agricultural drains, flood conveyance channels, and drainage structures such as culverts and bridges. Flood hazards while not limited to these facilities are typically associated with them. Impacts to these facilities from flood events include impacts from sedimentation and erosion. Erosion and sedimentation is a natural channel forming process, however if accelerated due to physical changes in the watershed or hydraulic conditions, the system's ability to convey storm water could be diminished and the extent and severity of the flood hazards could be increased. Watershed sediment yield, the process by which sediment enters a watercourse or drainage facility can impact the integrity of the facility. Should erosion undermine structural elements of a facility leading to failure, the risk and extent of the associated flood hazard is increased. With an understanding of the characteristics of the existing flood conveyance facilities and the sedimentation process of a watershed enables engineers and planners to formulate a course of action to mitigate flood hazards and sediment and erosion issues.

Exhibit 1 (Drainage Issues, located in the back of the report) depicts flood and erosion hazards identified from review of previous studies (see section 1.4), review of aerial photography, interviews with land owners and stakeholders and field visits. Field visits where conducted to document the physical condition of the drainage facilities and evidence of erosion and scour. The figure depicts natural water courses, constructed drainage facilities (channels, culverts and embankments) and Effective FEMA Flood Zones. Natural water courses are subdivided into two categories tributary (Wash Thalweg) and distributary (Distributary Flow Areas). Given the uncertainty of flow direction and conveyance capacity that are inherent to distributary flow areas the risk associated with distributary flow is greater than tributary flow. Natural and constructed drainage facilities are discussed in greater detail in the next section. A smaller scale version of Exhibit 1 is presented as Figure 2.




*Maricopa County*




VICINITY MAP

NOTES:

Aerial imagery flight dates Oct 2009 and Nov 2006
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LEGEND:

- Culvert
- Clogged Culvert
- Siphon Location
- Road
- Gila Bend Canal
- Constructed Channel
- Embankment
- Sedimentation Issues Areas
- Erosion Issues Areas
- Distributary Flow Areas *(Potential Lateral Migration Issue Areas)*
- Wash Thalweg
- Project Boundary
- National Monument Boundary

**100-Year Flood Zone**

- A
- AE
- AO
- FW

**Land Owner**

- BLM
- Local or State Parks
- Private
- State Trust

*Areas within the Rainbow Wash 100-Year Flood Zone are potential lateral migration issue areas.*

**FIGURE 2**
**FLOODING & DRAINAGE ISSUES**
**SHEET 1 OF 2**

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**GILLESPIE AREA DRAINAGE MASTER STUDY**
**F.C.D. CONTRACT NO. 2009C039**

Flood Control District of Maricopa County
2801 W. Durango St. Phoenix, AZ 85009

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8211 S. 48th Street
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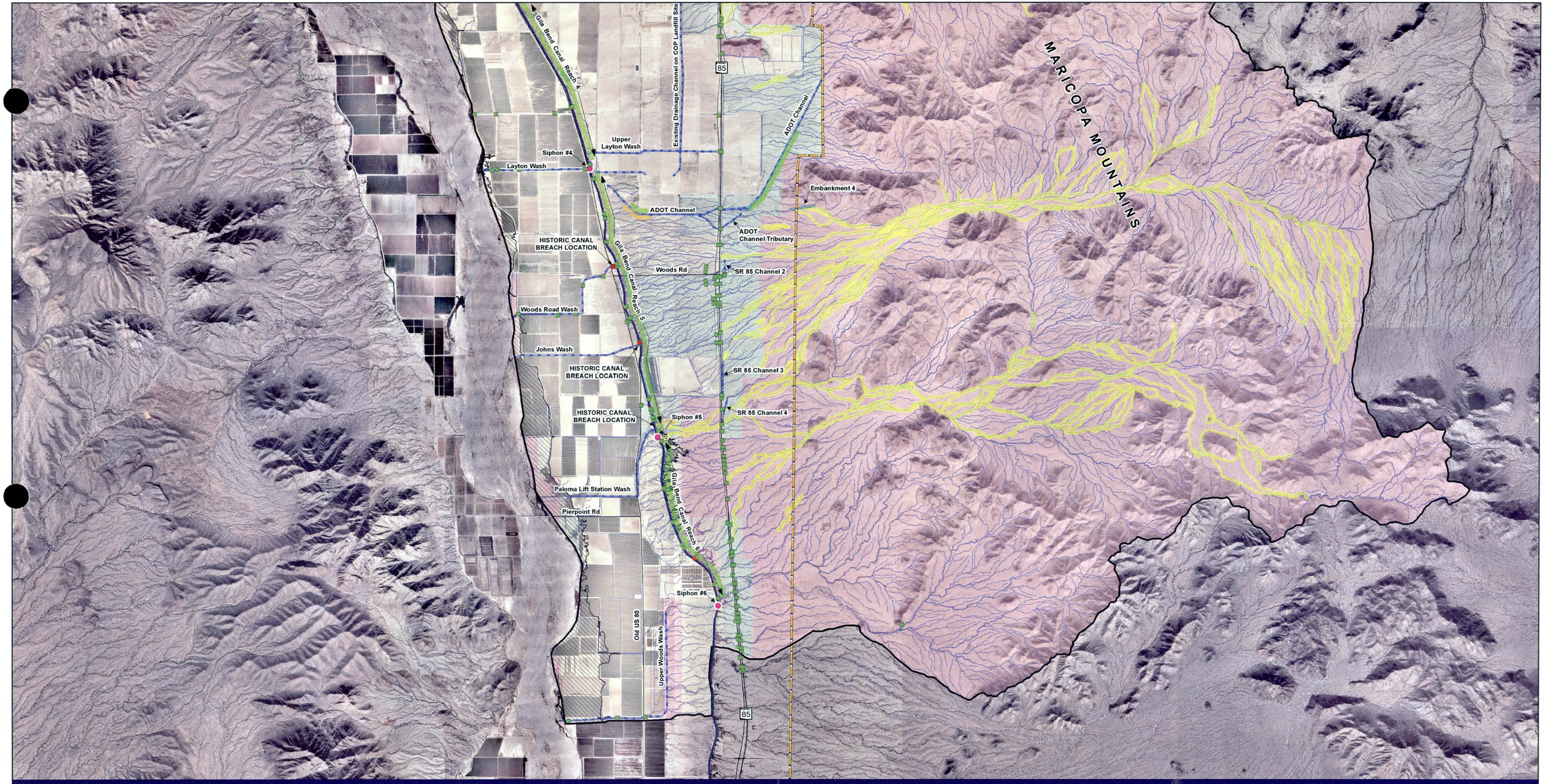


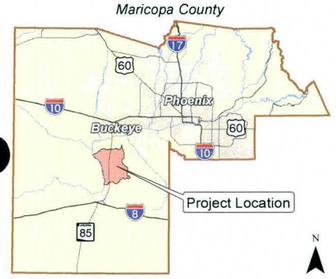


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**FIGURE 2**
**FLOODING & DRAINAGE ISSUES**
**SHEET 2 OF 2**

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# 3.0 Existing and Proposed Drainage Facilities and &Utilities

As part of the Gillespie ADMS existing storm water conveyance facilities, major utilities and transportation corridors are identified and inventoried. Storm water conveyance/storage facilities consist of man-made features and natural washes. Utilities identified consist of major electrical lines, and gas main lines. Major transportation corridors through the project area are SR 85, Old US 80, Patterson Road and Woods Road. The location and type of facility were determined from aerial photographs, roadway plans, and field investigation.

An Existing Facilities Map (Exhibit 2, Located in the back of the report) was prepared from the facilities inventory illustrating the location of major drainage facilities in the Gillespie ADMS study area. The Existing Facilities Exhibit is a compilation of geographic information system (GIS) layers developed/obtained for the study. A smaller scale version of the Existing Facilities Map is presented as Figure 3.

## 3.1 STORM WATER CONVEYANCE FACILITIES

Storm water conveyance facilities provide a measure of public safety during runoff events. The degree of safety provided is dependent on the condition and capacity of the facility and the location of the facility in the drainage network. Field investigation and review of roadway plans were undertaken to identify the type and location of existing drainage facilities. The purpose of the investigation was to identify and inventory channels, culverts, and dams within the study area and to make qualitative inferences as to the ability of the facility to convey/store storm water by observing the physical characteristics and condition of the facilities

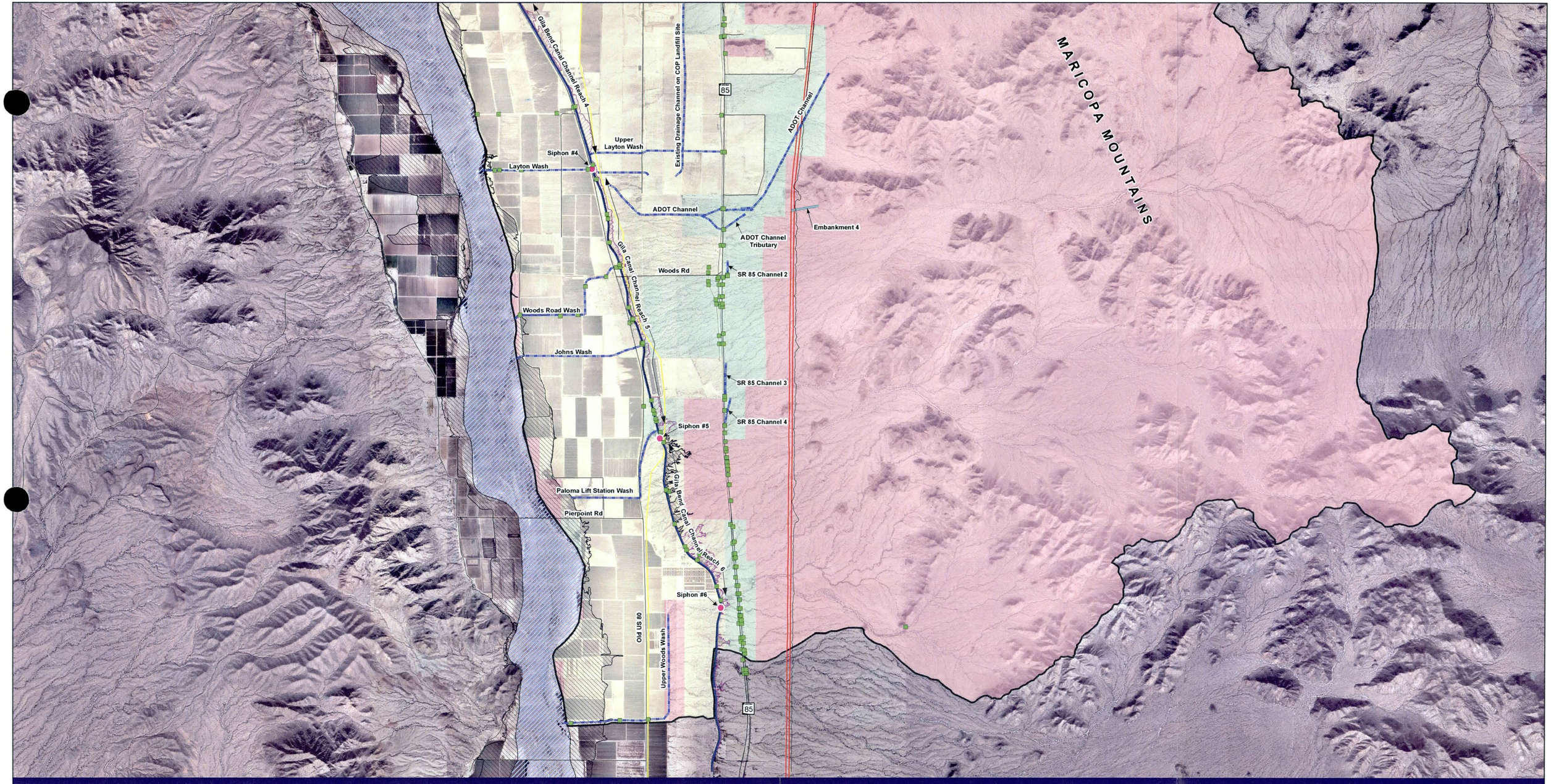
## 3.2 DRAINAGE FACILITY DESCRIPTIONS

The existing drainage network consists of natural washes and drainage facilities. Drainage facilities are comprised of constructed channels, embankments that delineate storm water runoff to a facility and drainage structures that convey runoff across roadways and the Gila Bend Canal. Washes drain runoff from the Buckeye Hills and the Maricopa Mountains to drainage facilities or to Rainbow Wash. Storm water runoff collected in drainage facilities drain to the Gila Bend Canal, Rainbow Wash or to the Gila River. Runoff concentrated up stream of the Gila Bend Canal drains laterally behind the canal to six openings in the canal where it outfalls to a drainage facility.

### 3.2.1 Natural Channels

#### 3.2.1.1 Washes

Washes within the project area typically display two drainage patterns, tributary dendritic and distributary. Dendritic patterns form in areas where the subsurface geology has similar resistance to weathering. Channels forming the dendritic pattern are typically well incised and convey runoff and sediment delivered to the channel. A distributary pattern is formed when a wash bifurcates and multiple channels branch off from the main channel joining adjacent channels or rejoining the main channel downstream. Due to the changes in hydraulic conditions between the main channel and downstream branches sedimentation in the form of aggradation takes place thus decreasing flood conveyance. Flood hazards and erosion hazards associated with distributary systems are less predictable than those associated with a tributary system.




*Maricopa County*


VICINITY MAP

NOTES:

Aerial imagery flight dates Oct 2009 and Nov 2006
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LEGEND:

- Culvert
- Siphon Location
- Road
- Gila Bend Canal
- Gasline
- Channels
- Powerline
- Embankments
- Project Boundary

**100-Year Flood Zone**

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**FIGURE 3**
**EXISTING FACILITIES & UTILITIES**
**SHEET 2 OF 2**

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BUCKEYE HILLS

MARICOPA MOUNTAINS

Buckeye Hills Channel #1

Embankment 1

Embankment 2

Embankment 3

Gila Bend Canal Channel Reach 1

Siphon 1 Wash

Siphon #1

Gila Bend Canal Channel Reach 2

Carmichael Wash Reach 5

Reach 4

Siphon #2

Badley Wash

Gila Bend Canal Channel Reach 3

Siphon #3

Gila Bend Canal Channel Reach 4

Reach 3

Reach 2

Carmichael Wash Reach 1

Rainbow Wash

West Prison Channel

Bruner Rd

Patterson Rd

SR 85 Channel 1 East/West Reach

SR 85 Channel 1 North/South Reach

Existing Drainage Channel on COP Landfill Site

ADOT Channel

85

Maricopa County

Phoenix

Buckeye

Project Location

VICINITY MAP

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#### 3.2.1.1.1 Tributary Flow Areas

Flood hazards in areas where the drainage pattern is tributary are easily predictable because channels are typically single thread channels that are well incised, channel banks are stable in regards to lateral migration, evidence of channel bifurcations and channel avulsions is typically not present and channels have sediment transport capacity to convey sediment that is delivered to the channel. Channels are typically is a state of dynamic equilibrium where sediment and erosion issues would not be present or issues would be limited to specific areas. Figure 4 depicts a typical tributary drainage pattern in the Gillespie ADMS project area. Figure 5 is a picture of a channel within a tributary drainage system.

Figure 4 - Tributary flow pattern

Figure 5 - Incised tributary channel

#### 3.2.1.1.2 Distributary

Flood hazards in areas where the drainage pattern is distributary are harder to define than in areas defined by tributary drainage patterns because the erosion and sedimentation process is dynamic and variable. The process is variable because the hydraulic and sediment transport conditions are constantly changing. Channel geometry is typically ill defined and variable with channel bifurcations, avulsions and lateral migration occurring throughout a reach. Because of these characteristics sediment and erosion issues are expected in areas where distributary flow patterns are prevalent. Figure 6- depicts a typical distributary flow pattern within the Maricopa Mountains.

Damage to property located in distributary flow areas can occur both by flooding and erosion. The natural characteristics of distributary flow deem themselves as problematic to development. Characteristics of distributary flow areas cited in State Standard SS 4-95, *(January 1995) Identification of and Development within Sheet Flow Areas*, are presented as the first order bullets listed below. Subordinate bullets lists significance of the subject presented in the first order bullet.

- A significant amount of the flow is not conveyed in well-defined channels but as overland flow.
    - Greater area of sediment source due to the surface area of overland flow.
- Shallow bands of flow (sheet flow) occur between faster bands of concentrated flow (streams).
    - Promotes deposition of wash load in sheet flow areas.
- Sheet flows over poorly vegetated areas often have the ability to transport large sediment particles over long distances.
- Sheet flooding has markedly different hydraulic characteristics for sediment laden and sediment-deprived flows.
    - In areas where the flow is sediment laden, aggradation would occur as sediment transport decreases due to loss of flow volume as sheet flooding expands over greater areas.
    - In areas where sediment deprived flow occurs, channel avulsions and head cutting where flow concentrates in channels that bisect the sheet flow area would occur.
    - Significant loss of flow volume may occur during sheet flooding due to infiltration and other abstractions. This promotes aggradation.
- Very poorly-defined channels downstream of a relatively large drainage area.
    - In these areas channel characteristics indicated that there is a high potential for lateral migration, stream bifurcation, channel avulsions and aggradation.

### 3.2.2 Culverts

Culverts are an integral element of a drainage network, and typically convey runoff across roadways. A culvert's capacity to convey runoff is dependent on its size, available headwater depth, and the presence or absence of sediment and debris within the culvert. An inventory of drainage culverts was conducted for the study area to document the location of the structures within the storm drainage channel network.

### 3.2.3 Dams/Embankments

There are engineered and non-engineered embankments that pond flow or function as flow delineators within the study area. Engineered embankments include cannels and roadways. Typically flow is conveyed along an engineered embankment to a location where flow is conveyed across the embankment. Non-engineered structures typically vary in height and top width, do not have defined spillways, and are not maintained. Typically dense vegetation lines the pooling area of non-engineered structures.

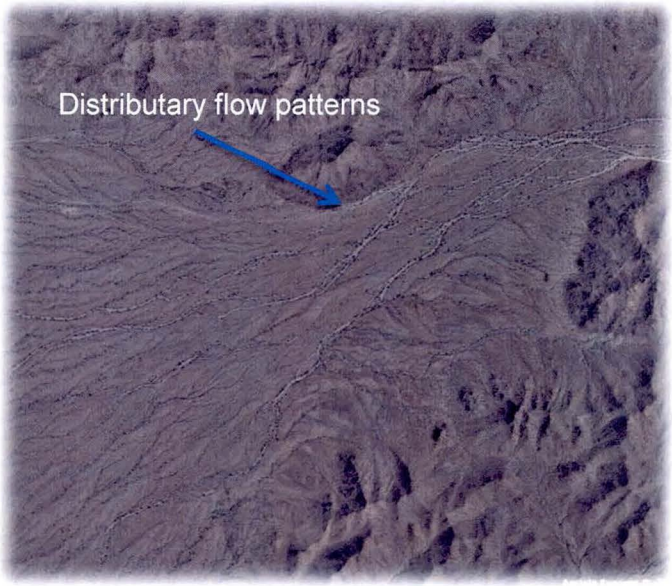


Figure 6, Distributary Flow Pattern

### 3.2.4 Utilities

As part of the development of the Existing Facilities Map, major utilities were located and inventoried. Major utilities identified are electrical transmission lines, and gas pipelines.

# 4.0 Studies and Regulatory Inventory

The inventory and synthesis of existing adopted policy and regulatory foundation will assist in safely and aesthetically accommodating storm water runoff and drainage within the study area. A review of the pertinent jurisdictional comprehensive/general plans, ordinances and/or regulations was conducted to provide the basis for ADMS recommendations and for implementation related efforts. The following plans were reviewed and pertinent policy or regulatory guidance statements excerpted and synthesized from:

- Town of Buckeye
  - General Plan
  - Zoning Ordinance
  - Subdivision Regulations
- Town of Gila Bend General Plan
  - General Plan
  - Zoning Ordinance
  - Subdivision Regulations
- Maricopa County
  - Comprehensive Plan
  - Old US Highway 80 Area Plan
  - State Route 85 Corridor Plan

## 4.1 POLICY GUIDANCE

The intent of this task was to identify the direct and indirect goal and policy guidance presented within the applicable plan elements (i.e. land use, circulation, open space etc.) for each of the three jurisdictions within the study area. The pertinent goal and policy statements (which are included in Appendix A) have been compared and contrasted to determine the extent of goal and policy coverage (or the existence of gaps) to provide appropriate policy guidance for Town and County staff and appointed and elected officials. The pertinent goal and policy have been compared and contrasted to determine the extent of goal and policy coverage (or the existence of gaps) to provide appropriate policy guidance for Town and County staff and appointed and elected officials. A summary of the goals and policies are presented below in Table 1, Goal Topic/Pertinent General Plan/Comprehensive Plan Policy Synthesis.

## Table 1 Goal Topic/Pertinent General/Comprehensive Plan Policy Synthesis

| Goal Topic/Pertinent General Plan Policies | Jurisdiction | | | | |
|---|---|---|---|---|---|
| **Built Environment/Flood Protection/Cultural Resources** | Town of Buckeye | Town of Gila Bend | Maricopa County/ Comp. Plan | Maricopa County/ SR 85 Corridor Area Plan | Maricopa County/ Old Highway 80 Plan |
| Minimize locating buildings and human activities around washes storm water drainage systems | X POLICY 10.5 | | | | |
| Encourage intergovernmental partnerships to address drainage ways and flood control facilities. | X POLICY 12.8 | | | | |
| Use buffers and compatible development to protect river corridors and natural drainage ways | X POLICY 12.9 | | | | |
| Protect and preserve significant historical and archaeological sites and structures. | X POLICY 12.17 | | | X POLICY OS1.6.1 | |
| Conduct surveys and evaluations and implement mitigation measures for cultural resources as required by state and national regulations and guidelines. | | | X POLICY E3.1/E3.2 | | |
| Consider alternative funding sources for cultural resource impact avoidance or mitigation | | | X POLICY E3.3 | | |
| Ensure that local floodplain management regulations remain in conformance with state flood control statutes and the National Flood Insurance Program (NFIP) Rules and Guidelines. | | | X POLICY E7.1 | | |
| Review proposed floodplain uses and issue only appropriate permits and clearances. | | | X POLICY E.7.2 | | |
| Review existing 100-year floodplains as necessary against changed conditions and obtain revisions through (FEMA) | | | X POLICY E.7.3 | | |
| Encourage flood identification studies to identi- | | | X | | |

## Table 1 Goal Topic/Pertinent General/Comprehensive Plan Policy Synthesis

| Goal Topic/Pertinent General Plan Policies | Jurisdiction | | | | |
|---|---|---|---|---|---|
| **Built Environment/Flood Protection/Cultural Resources** | Town of Buckeye | Town of Gila Bend | Maricopa County/ Comp. Plan | Maricopa County/ SR 85 Corridor Area Plan | Maricopa County/ Old Highway 80 Plan |
| fy 100-year flood hazard areas. | | | POLICY E7.4 | | |
| Continue public education efforts for flood-prone properties. | | | X POLICY E7.5 | | |
| Encourage property owners to contact the County for drainage requirements prior to land division | | | | | X POLICY L1.2.6 |
| Request clearance letters from the State confirming that development will have no effect on historical or cultural resources | | | | | X POLICY E.1.2.4 |
| Encourage sensitive development techniques to protect cultural resources | | | | | X POLICY O.1.5.1 |
| Coordinate with the BLM and ASLD regarding the classification, exchange, disposal, and acquisition of their lands | | | | | X POLICY O.1.5.2 |
| Maximize penetration and filtering of surface water runoff into the soil to replenish the local aquifer | | | | | X POLICY W2.1.1 |
| Protect significant cultural resources on developable lands from degradation by encouraging sensitive development or public acquisition. (Policy OS1.6.1) | | | X | | X POLICY OS1.6.1 |
| **Natural Environment** | | | | | |
| Preserve the desert ecosystem including natural corridors for wildlife, drainage and protective buffering techniques | X POLICY 9.4 X POLICY 12.13 | | | | X Policy E.1.4.1. |

## Table 1 Goal Topic/Pertinent General/Comprehensive Plan Policy Synthesis

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| | X POLICY L11.3 | | | | |
| Maintain major wash corridor and classify riparian areas as regulated by 404 Permitting or other laws | X POLICY 12.7 | | X POLICY E5.1 | X POLICY W2.1.1 | |
| Discourage development within major 100-year floodplains. | | | X POLICY L11.4 | X POLICY E1.1.4 | |
| Encourage environmentally compatible development | | | | X POLICY E1.1.2 | |
| Discourage the location of structures that increase water ponding and sheet flow in flood prone areas | | | | X POLICY E1.1.5 | |
| Consider incentives and options for preservation of riparian areas that are close to development. | | | | X POLICY W2.1.2 | |
| Encourage cooperation with state and federal agencies to help prevent encroachment on riparian scrub habitat and/or channels associated with major wash systems | | | | | X POLICY E1.4.3 |
| **Recreation and Open Space** | | | | | |
| Integrate natural systems and man-made facilities | X POLICY 9.2 | X POLICY GOAL 17 | X POLICYE1.1.1. | | X POLICY O.1.2.4. X POLICY O.1.6.2. |
| Foster mutually beneficial uses of regional drainage facilities and flood control structures | X | | X | X POLICY | X POLICY |

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| with public and private recreational areas and trails. | POLICY 9.6<br>X<br>POLICY 9.14<br>X<br>POLICY 9.16 | | POLICY O2.1<br>X<br>Policy OS1.2.1 | E1.4.3 | O1.2.2. |
| Use regional drainage corridors as land use buffers, wildlife corridors, and multi-use trails. | X<br>POLICY 9.20 | X<br>POLICY-GOAL 13<br>X POLICY – GOAL 17 | X<br>POLICY O2.4 | | |
| Design all road crossings to minimize disturbance to the natural environment, and to accommodate trail crossings and open space. | | | X<br>POLICY O2.3 | | |
| Support and participate with affected jurisdictions in the planning, development, and implementation of the proposed Maricopa County Regional Trail system | | | X<br>POLICY O2.6 | | X<br>POLICY O.1.2.6<br>X<br>Policy O.1.2.7. |
| Encourage development of trails along the Gila River, Rainbow Wash, and irrigation canals to link existing open space resources throughout the region | | | X<br>POLICY OS1.2.2 | X<br>POLICY E.1.2.3<br>X<br>POLICY E.1.4.2 | |
| Design all road crossings to minimize disturbance to the natural environment and to accommodate identified trail crossings and other | | X | | X<br>POLICY OS1.2.3 | X<br>POLICY O.1.2.5. |

## Table 1 Goal Topic/Pertinent General/Comprehensive Plan Policy Synthesis

| Goal Topic/Pertinent General Plan Policies | Jurisdiction | | | | |
|---|---|---|---|---|---|
| **Built Environment/Flood Protection/Cultural Resources** | Town of Buckeye | Town of Gila Bend | Maricopa County/ Comp. Plan | Maricopa County/ SR 85 Corridor Area Plan | Maricopa County/ Old Highway 80 Plan |
| open space. | | | | | |
| Encourage the preservation of riparian habitat along the Gila River. | | X | | X POLICY OS 1.4.7 | X POLICY E.1.1.7. X POLICY O.1.3.2. |
| Monitor and coordinate with State and Federal entities to promote open space conservation. | | | X POLICY OS1.6.1 | | |
| Encourage the preservation of natural drainage ways, major washes, including the Hassayampa and Gila Rivers | | | | X POLICY L1.2.3 | X POLICY E.1.1.6 |
| Support the use of density transfers to discourage development within floodplains and floodways, and on significant slopes. | | | | | X POLICY E.1.1.4 |
| Minimize adverse impacts through drainage guidelines developed for single lot and lot-split development | | | | | X POLICY E.1.1.5 |
| Encourage property owner/local jurisdiction consultations prior to land division to adequately plan for local washes and landforms | | | | | X POLICY 1.1.9 |
| **Scenic Resources** | | | | | X |
| Require sand and gravel operations to mitigate all impacts of their mining operations. | X POLICY 12.9 | | | | X |
| Encourage preservation of scenic corridors and vistas. | X POLICY E2.2 | | | | X |

## Table 1 Goal Topic/Pertinent General/Comprehensive Plan Policy Synthesis

| Goal Topic/Pertinent General Plan Policies | Jurisdiction | | | | |
|---|---|---|---|---|---|
| **Built Environment/Flood Protection/Cultural Resources** | Town of Buckeye | Town of Gila Bend | Maricopa County/ Comp. Plan | Maricopa County/ SR 85 Corridor Area Plan | Maricopa County/ Old Highway 80 Plan |
| Preserve the scenic quality of the Buckeye Hills, the Gila Bend Mountains, and the Sonoran Desert National Monument | | | X POLICY E1.2.1 | | X |
| Encourage development that enhances the scenic quality of the Old U.S. Highway 80 area. | | | | X POLICY L1.4.1 | |

# 5.0 Land & Resources

The Land and Resources section includes an overview of the patterns of land ownership, existing land use and future land use as identified through the summary text and maps presented below.

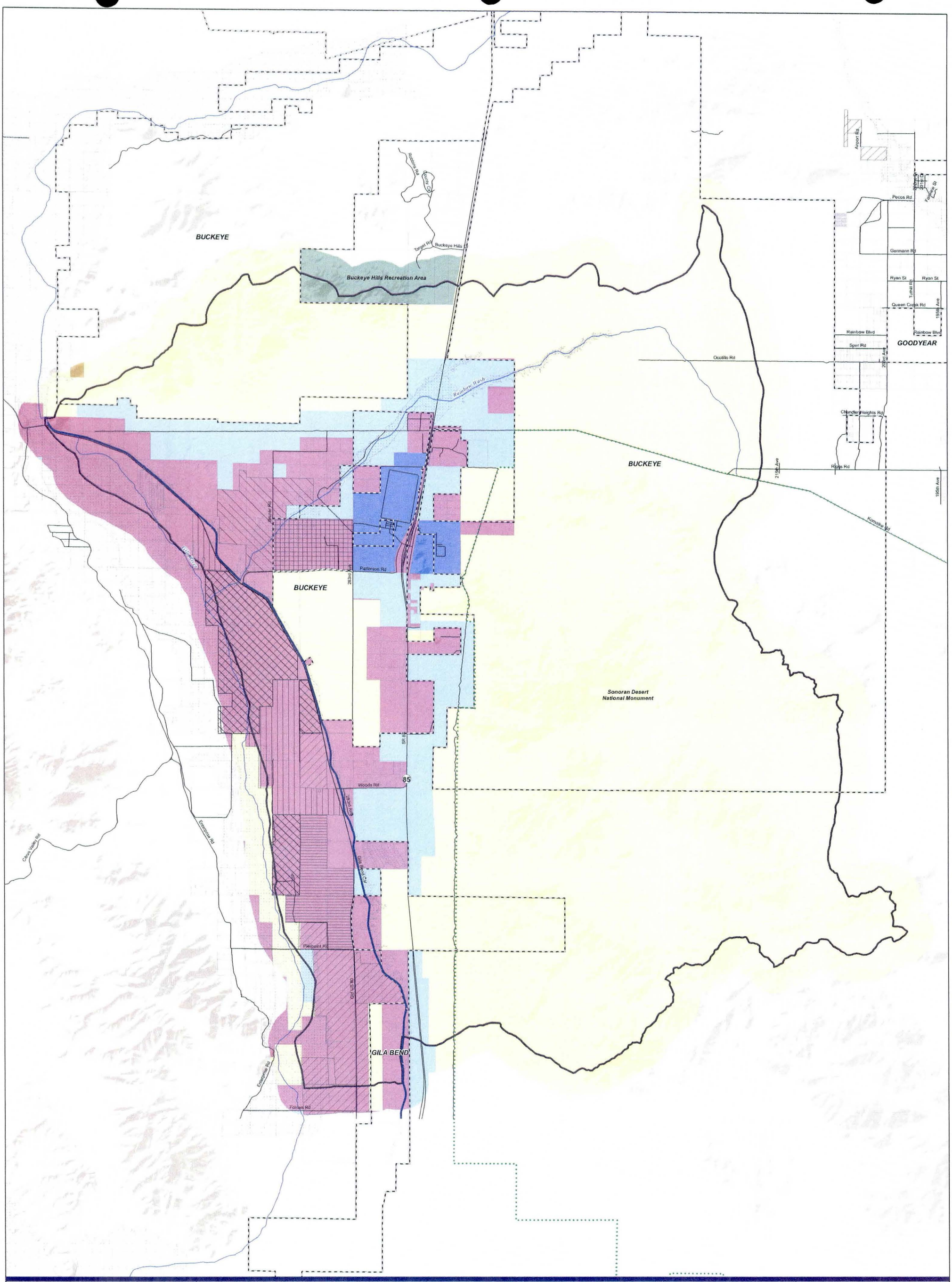
## 5.1 LAND OWNERSHIP MAP

The pattern of land ownership within the study area consists of public, quasi-public and private ownership. Public ownership includes the Bureau of Land Management (BLM), State of Arizona (i.e. Department of Corrections and Department of Transportation), Arizona State Game and Fish, Arizona State Land Department, Maricopa County, City of Phoenix. These entities own and develop their properties to benefit the public interest, from recreation to prisoner incarceration). Quasi-public ownership is comprised of the Arizona State Land Department. While a public entity, the ASLD manages its land assets for its beneficiaries, seeking to provide the highest return possible when its lands are sold or leased. Private owners consist of individuals or groups that have purchased parcels of land within the study area for their residence, business or investment purposes.

The data utilized to determine the pattern and type of land ownership within the study area is based on information provided by the Arizona State Land Department and Maricopa County Assessor's Office. This information is compiled spatially on Figure 7, Land Ownership Map to assist in determining the anticipated land use objectives of the underlying ownership relative to the identification, location and severity of flood hazards. As shown, the majority of the land is held by the Bureau of Land Management (BLM), most of which is part of the Sonoran Desert National Monument. The pattern of ownership by the ASLD is generally linear across the northern portion of the study area and along both sides of SR 85. The pattern of private land ownership and the presence of numerous owners with large holdings may provide the impetus for larger assemblage and master planned community growth in the distant future. For these larger contiguous holdings of private lands, drainage can be successfully addressed at a larger scale, rather than on a parcel by parcel basis.

## 5.2 EXISTING LAND USE MAP

The pattern and location of unimproved and improved properties assists in the identification of alternative courses of action to reduce flood hazards (either structural or non-structural improvements) and then determine the preferred strategic direction to enhance the protection of property, structures and quality of life. While the long term agricultural use of the area is expected to continue, there have been notable changes in the study area over the past 10 years. These new developments include two landfill operations, prison facilities and solar generation facilities (to the east and south). Residential use is scattered throughout the study area, but two water ski oriented residential developments have completed their first phases of construction. In addition, several natural resource extraction facilities also are located in the northern portion of the study area. A small portion of the Buckeye Hills Recreation Area (managed by the Maricopa County Parks and Recreation Department) is located to the north, and the western portion of the Sonoran Desert National Monument is located on the eastern half of the study area. Agricultural uses exist on both sides of Old US 80.




**Notes:**

Sources:
- Arizona State Land Department, March 2012.
- Maricopa County Assessor, March 2012.

**Legend:**

**Ownership (acres)**
- Arizona Dept. of Game and Fish (37)
- Arizona State Trust Land (9,372)
- State of Arizona (1,814)
- Bureau of Land Mgmt. - BLM (78,037)
- City of Phoenix (2,654)
- Maricopa County (1,574)
- Private Land (22,297)

**Contiguous Large Private Property Ownership**
- Bioflora Systems
- DeJong
- DYM Inc
- John Farms
- Johnston Properties
- Wyatt Aguila Farms

- Study Area
- City
- Parcel
- 100-Year Floodplain
- Sonoran Desert National Monument
- Street / Road
- Gila Bend Canal
- River/Wash

LAND OWNERSHIP MAP

N

0 4,000 8,000
Feet

**Flood Control District of Maricopa County**
**2801 W. Durango St. Phoenix, AZ 85009**

**GILLESPIE AREA DRAINAGE MASTER STUDY**
**F.C.D. CONTRACT NO. 2009C039**

Stantec

**Stantec Consulting Inc.**
**8211 S. 48th Street**
**Phoenix, AZ U.S.A. 85044**

mailing_map_ownership_RGR_20120514.pdf

The existing land uses have been identified and mapped to assist in illustrating areas where existing and future flood hazards may impact site and structural improvements. Figure 8, Existing Land Use Map shows the pattern of land improvements that have been significant along the northern portion of SR 85 while the majority of the remaining study area exhibits a very rural/agrarian character.

## 5.3 FUTURE LAND USE MAP

Future land use is predicated on the pattern of desired growth and development of the study area. The watershed is located within the jurisdiction of three entities consisting of the Town of Buckeye, the Town of Gila Bend and portions of unincorporated Maricopa County. Pursuant to Arizona Revised Statutes (ARS 9-461/11-801 et al) each incorporated jurisdiction and county within the State is required to prepare and adopt a comprehensive or general plan (and adopt/readopt it every 10 years) to guide appropriate land uses (as well as other related community development factors (i.e. transportation, parks and open space, etc.).

The mosaic of future land use within the study area is comprised of three plans. The northern two thirds of the study area is located within the Town of Buckeye and is guided by its adopted General Plan. The Plan was adopted in January 2008 and consists of a community vision, supportive goals and policies and seven elements. The Plan acknowledges the importance of identifying and mitigating flood hazards and the importance of native vegetation and wildlife through the inclusion of floodway transitional areas (as identified on Figure 3-10). It also identifies numerous drainage and flood control related goals and policies to minimize structural/property damage and potential loss of life from flood events. The southern third of the study area is located within the jurisdiction of the Town of Gila Bend. The Town's General Plan was adopted in November 2006 and consists of a vision and supportive goals, objectives and policies and four elements. The Plan's goals and policies do not provide a substantial amount of guidance relative to drainage and flood control issues. The remaining western and southeastern portions of the study area are located within unincorporated Maricopa County. As such, the western area is guided by the Old US 80 Area Plan (May 2007) and the southeastern area is guided by the Maricopa County Comprehensive Plan (adopted in August 2002). The Area Plan consists of supportive goals, objectives and policies for each of the eight plan elements. The Plan provides information related to flood issues and conditions within the study area as well as several supportive goals and policies that guide decisions related to drainage and flood control. The Maricopa County Comprehensive Plan provides guidance throughout the entire County and contains a total of eight plan elements and supportive goals, objectives and policies for each. An additional plan, the State Route 85 Corridor Area Plan also was prepared (August 2003) but has been superseded by the subsequent annexation of lands within the study area by the Towns of Buckeye and Gila Bend, and the reference to the recommendations of the Old US Highway 80 Area Plan for lands located within its study area.

The land use recommendations for the comprehensive/general plans described above have been composited onto a map to provide a complete illustration of the intended land use pattern anticipated to occur at full build out of the study area, as expressed by the Towns of Buckeye and Gila Bend and unincorporated areas of Maricopa County. As shown on Figure 9, Future Land Use Map, the influences of the existing land uses, the pattern of land ownership and presence of the Gila River and Sonoran Desert National Monument create a very linear land use pattern characterized by industrial and heavy commercial uses along State Route 85, transitioning to lower density residential uses to the south and west.

BUCKEYE
Buckeye Hills Recreation Area
Robbins Rd
Country Gdn
Target Rd
Buckeye Hills Dr
Airport Rd
GOODYEAR
Pecos Rd
Fairway Dr
Germann Rd
Ryan St
Tuthill Rd
Queen Creek Rd
195th Ave
Rainbow Blvd
Spur Rd
Ocotillo Rd
Rainbow Wash
Chandler Heights Rd
Riggs Rd
Spring Mountain Ski Ranch
Bisner Rd
Gila River
Patterson Rd
283rd Ave
Sonoran Desert National Monument
SR 85
85
Woods Rd
Lakeside Ski Village
Old US 80
Clovis Valley Rd
Enterprise Rd
Pierpoint Rd
GILA BEND
Fornes Rd
Komatke Rd
215th Ave
195th Ave

Maricopa County


**Notes:**

Sources:
- Maricopa Association of Governments, February 2012.
- Maricopa County Assessor, March 2012.
- Matrix Design Group, May 2012.

**Legend:**

**Existing Land Use (acres)**
- Single Family Low Density 1 du/ac (169)
- Single Family Medium Density 1 to 4 du/ac (9)
- Single Family High Density > 4 du/ac - Includes Mobile Homes (1)
- Developing Residential (53)
- Resource Extraction (306)
- Commercial Recreation (84)
- Public Facility (32)
- Electrical Substation (90)
- Passive Recreation (50,246)
- Agriculture (13,064)
- Agricultural Feedlot (186)
- Landfill (710)
- Prison (1,353)
- Undeveloped (43,660)
- Study Area
- City
- Parcel
- 100-Year Floodplain
- Street / Road
- Gila Bend Canal
- River/Wash

EXISTING LAND USE MAP

N

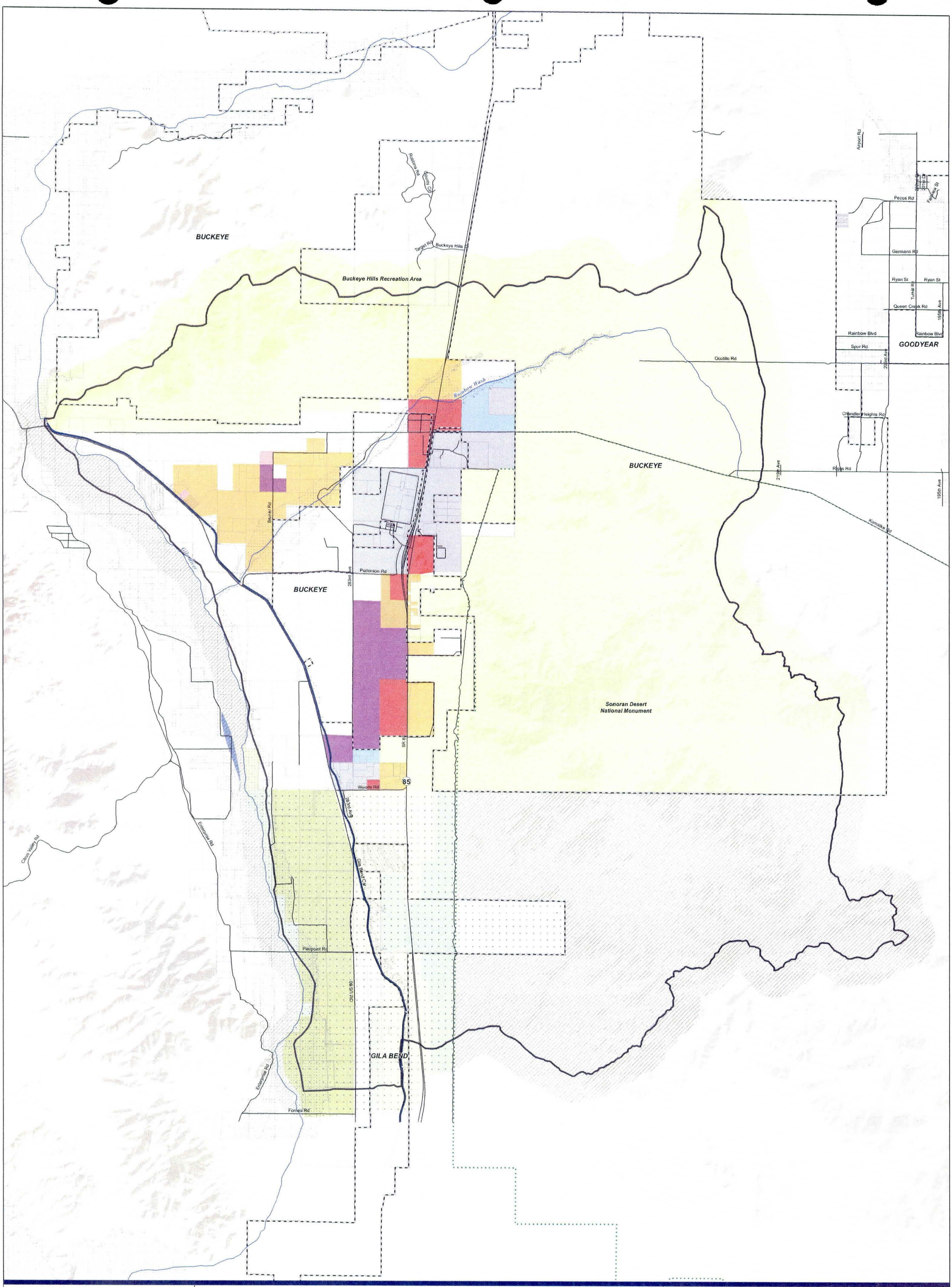
0 4,000 8,000
Feet

**Flood Control District of Maricopa County**
**2801 W. Durango St. Phoenix, AZ 85009**

**GILLESPIE AREA DRAINAGE MASTER STUDY**
**F.C.D. CONTRACT NO. 2009C039**


Stantec
**Stantec Consulting Inc.**
**8211 S. 48th Street**
**Phoenix, AZ U.S.A. 85044**


meeting map landuse RGR 20120514.pdf




## Maricopa County


**Notes:**

Sources:
- Old U.S. Highway 80 Area Plan, May 2007.
- Maricopa County Comprehensive Plan, August 7, 2002.
- Town of Buckeye General Plan Land Use Map, January 18, 2008.
- Town of Gila Bend General Plan Land Use Map, November 28, 2006.

**Legend:**

**Comprehensive / General Plan Land Use (acres)**

**Town of Buckeye**
- Very Low Density Residential 0-1 du/ac (2,407)
- Low Density Residential 1-3 du/ac (11,460)
- Medium Density Residential 3-6 du/ac (3,339)
- Medium High Density Residential 6-10 du/ac (259)
- Business Park (487)
- Community Commercial (58)
- Regional Commercial (1,246)
- Industrial (3,405)
- Mixed Use (1,484)
- Open Space (51,380)

**Town of Gila Bend**
- Sonoran Desert National Monument (1,318)
- Very Low Density Residential 0-1 du/ac (669)
- Rural Residential 0-1 du/ac (4,587)
- Low Density Residential 1-5 du/ac (3,822)
- Bureau of Land Management (3,180)

**Unincorporated Maricopa County**
- Rural Residential (0-1 du/ac) (570)
- Mixed Use (75)
- Dedicated Open Space (26,041)

- Study Area
- City
- Parcel
- 100-Year Floodplain
- Street / Road
- Gila Bend Canal
- River/Wash

# FUTURE LAND USE MAP

N

0 4,000 8,000
Feet

**GILLESPIE AREA DRAINAGE MASTER STUDY**
**F.C.D. CONTRACT NO. 2009C039**


**Flood Control District of Maricopa County**
**2801 W. Durango St. Phoenix, AZ 85009**

Stantec
**Stantec Consulting Inc.**
**8211 S. 48th Street**
**Phoenix, AZ U.S.A. 85044**

The presence of Rainbow Wash is a major drainage component within the watershed (under the jurisdiction of the Town of Buckeye) that will have to be carefully addressed in terms of its floodplain and floodway transition areas relative to the intended adjacent future low and medium density residential uses. To the south, while the future land use pattern anticipates a rural to low density residential character, the large assemblages of private land, distance from heavier uses to the north, and available water and transportation may be catalysts for master planned communities in the distant future. The remaining areas within unincorporated Maricopa County focus on portions of the floodplain and floodway of the Gila River and the area to the east of Gila Bend. The edges of the River are primarily identified for open space, as is the unincorporated area to the east, which is part of the Sonoran Desert National Monument.

# 6.0 Mapping

## 6.1 TOPOGRAPHIC MAPPING

Topographic mapping for the project area was provided by the District and prepared under a separate contract. There are four mapping sets. The limits of these mapping sets within the watershed are shown in Figure 10.

Circa 2000 10-foot contour interval mapping prepared for the entire county. The horizontal datum is NAD 83 referenced to the HARN, Arizona Central state plane coordinate system with units of international feet. The vertical datum is NAVD 88. This mapping is provided in shape file format as well as raw ascii data for the break lines and mass points.

Circa 2008 2-foot contour interval mapping for the northern portion of the watershed was prepared under contract with the District (FCD 07-45). The horizontal datum is NAD 83 referenced to the HARN, Arizona Central state plane coordinate system with units of international feet. The vertical data is NAVD 88. Photography for the mapping was flown in June and July of 2008. This mapping is provided in shape file format as well as raw ascii data for the break lines and mass points.

Circa 2008 2-foot contour interval mapping for the southern portion of the watershed was prepared under contract with the District (FCD 07-45). The horizontal datum is NAD 83 referenced to the HARN, Arizona Central state plane coordinate system with units of international feet. The vertical datum is NAVD 88. Photography for the mapping was flown in June and July of 2008. This mapping is provided in shape file format as well as raw ascii data for the break lines and mass points.

Circa 2010 2-foot contour interval mapping for the eastern portion of the Rainbow Wash was prepared under contract with the District (FCD 07-39). The horizontal datum is NAD 83 referenced to the HARN, Arizona Central state plane coordinate system with units of international feet. The vertical datum is NAVD 88. Photography for the mapping was flown on February 2, 2008. This mapping is provided in shape file format as well as raw ascii data for the break lines and mass points.

## 6.2 SURVEY DATA

Survey for the study was performed in support of the topographic mapping. Survey data provided as part of this project includes culvert invert data, roadway pavement spot elevations and

Gila Canal embankment spot elevations. No additional field survey was performed as part of this study.

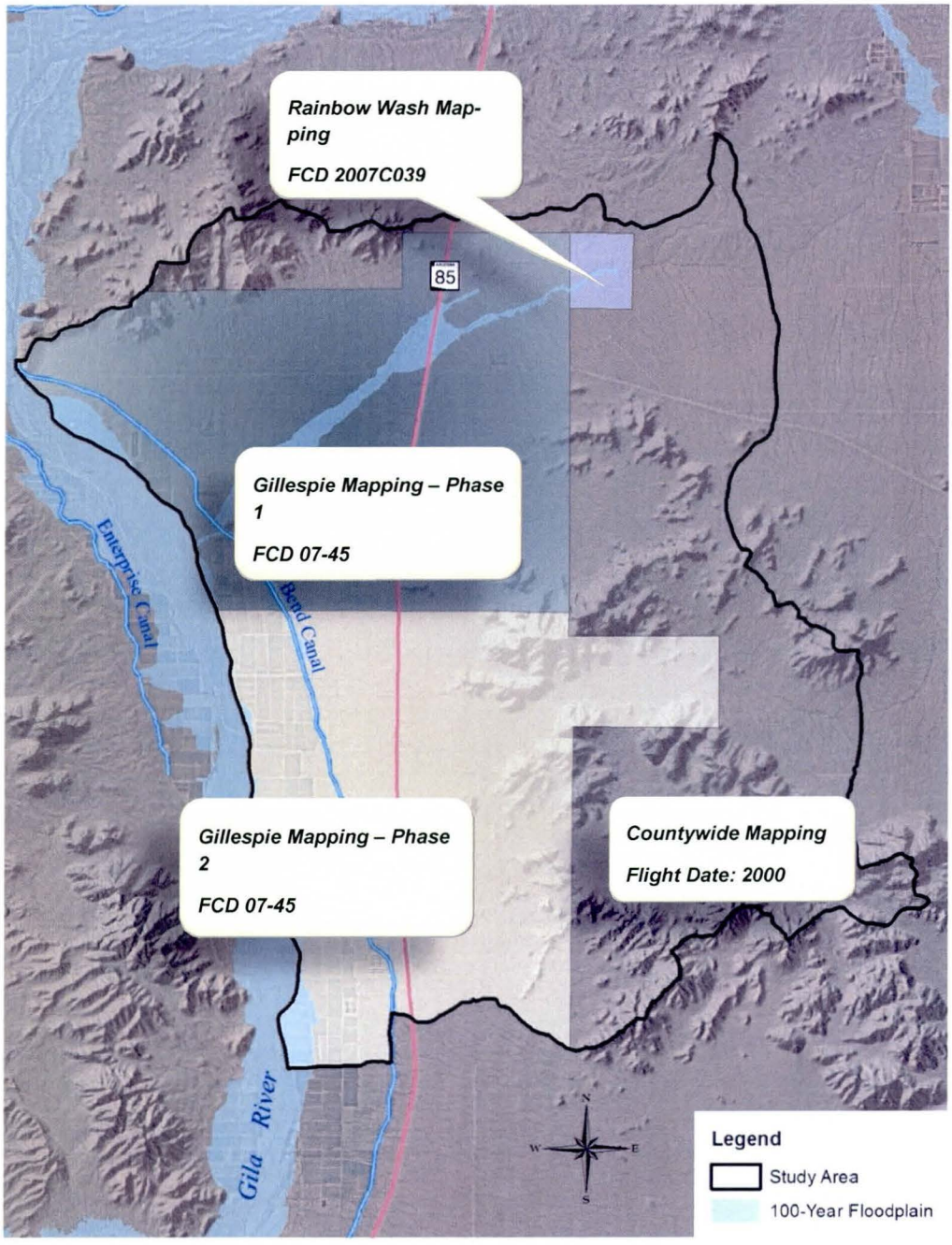



Figure 10, Location of Mapping Projects

# 7.0 Data Log

## 7.1 REFERENCE DATA LOG

References which have been collected by Stantec for use in the Gillespie ADMS are compiled in an Access data log entitled. Appendix B is a printout of the data log. The data log contains the following information about each reference: Reference type (Aerials, As Built Plans, Report, Manual etc), Reference Date, Author, Owner (FCD, FEMA, etc), and a brief description of the relevant information contained in the reference. In addition, a Location field has been included to indicate where the reference can be found for the duration of the project.

## 7.2 SHAPE FILE DATA LOG

Spatial information such as zoning, roadway locations, GPS field work, etc. is stored in GIS shape files. In order to present these shape files in a useful fashion, they have been entered into an Access data log. Each file is listed, along with the source of the information and a description of the information. Appendix C is a printout of the shape file data log.

Information from previous District projects in the project area which were submitted in HIS format was obtained as shape files. This information followed the District's file naming convention as set forth in Data Delivery Specifications. Under this system, shape files are named both by the information they contain and a number which refers to the FCD project number.

# Appendix A, Listing of General/Comprehensive Plan Policies

| General/Comprehensive Plan Policy (Number) | Jurisdiction | | | | |
|---|---|---|---|---|---|
| | Town of Buckeye | Town of Gila Bend | Maricopa County Comprehensive Plan | Mar. Co-SR 85 Corridor Area Plan | Mar Co Old Highway 80 Plan |
| **Built Environment/Flood Protection/Cultural Resources** | | | | | |
| Minimize locating buildings and human activities around washes and natural storm water drainage systems. (Policy 10.5) | X | | | | |
| Collaborate, encourage, and financially participate in intergovernmental partnerships to address and creatively plan for the future use of drainage ways and flood control facilities. (Policy 12.8) | X | | | | |
| Protect the river corridors and natural drainage-ways within the Planning Area by ensuring adequate buffers and compatible development. (Policy 12.9) | X | | | | |
| Protect and preserve significant historical and archaeological sites and structures. (Policy 12.17) | X | | | | |
| Conduct surveys and evaluations for cultural resources as required by the Arizona Antiquities Act, the State Historic Preservation Act, the National Historic Preservation Act, and other applicable laws, regulations and guidelines. (Policy E3.1) | | | X | | |
| Implement mitigation measures for cultural resources as required by the Arizona Antiquities Act, the State Historic Preservation Act, the National Historic Preservation Act, and other applicable laws, regulations and guidelines. (Policy E3.2) | | | X | | |
| Consider alternative funding sources for impact avoidance or mitigation of impacts to significant cultural resources. (Policy E3.3) | | | X | | |
| Ensure that local floodplain management regula- | | | X | | |

| General/Comprehensive Plan Policy (Number) | Jurisdiction | | | | |
|---|---|---|---|---|---|
| | Town of Buckeye | Town of Gila Bend | Maricopa County Comprehensive Plan | Mar. Co-SR 85 Corridor Area Plan | Mar Co Old Highway 80 Plan |
| tions remain in conformance with state flood control statutes and the National Flood Insurance Program (NFIP) Rules and Guidelines. (Policy E7.1) | | | | | |
| Review proposed floodplain uses and issue only appropriate permits and clearances. (Policy E7.2) | | | X | | |
| Review existing 100-year floodplains as necessary against changed conditions and obtain revisions through the Federal Emergency Management Agency (FEMA) where necessary. (Policy E7.3) | | | X | | |
| Encourage flood identification studies in areas where development is imminent or ongoing to identify 100-year flood hazard areas. (Policy E7.4) | | | X | | |
| Continue public education efforts pertaining to the judicious uses of flood-prone properties. (Policy E7.5) | | | X | | |
| Protect significant cultural resources on developable lands from degradation by encouraging sensitive development or public acquisition. (Policy OS1.6.1) | | | | X | |
| Encourage property owners to contact Maricopa County Environmental Services Department for drainage requirements prior to land division (Policy L.1.2.6) | | | | | X |
| Prior to development, excavation, or grading, request that developers submit a letter from the Arizona Historic Preservation Officer stating that the proposed land development will have no effect on historical or cultural resources. (Policy E.1.2.4) | | | | | X |

| General/Comprehensive Plan Policy (Number) | Jurisdiction | | | | |
|---|---|---|---|---|---|
| | Town of Buckeye | Town of Gila Bend | Maricopa County Comprehensive Plan | Mar. Co-SR 85 Corridor Area Plan | Mar Co Old Highway 80 Plan |
| Protect significant cultural resources from degradation by encouraging sensitive development techniques (Policy O.1.5.1) | | | | | X |
| Coordinate with the BLM and State Land Department regarding the classification, exchange, disposal, and acquisition of lands under their management. (Policy O.1.5.2) | | | | | X |
| Encourage preservation of Sonoran desert vegetation and other land conservation practices to maximize penetration and filtering of surface water runoff into the soil to replenish the local aquifer. (Policy W2.1.1.) | | | | | X |
| **Natural Environment** | | | | | |
| Preserve the desert ecosystem, which is the interconnected network of protected land and water resources that supports native plant and animal species, maintains natural ecological processes, sustains air and water resources and contributes to the community's health, welfare, and quality of life. (Policy 9.4) | X | | | | |
| Maintain major wash corridors as regulated by 404 Permitting in a natural state with exceptions for clearance for fire protection. (Policy 12.7) | X | | | | |
| Protect and maintain wildlife corridors that link washes and river valleys to mountain slopes. (Policy 12.13) | X | | | | |
| Encourage the protection of ridgelines, foothills, significant mountainous areas, wildlife habitat, native vegetation, and riparian areas. (Policy L 11.3) | | | X | | |
| Discourage development within major 100-year floodplains. (Policy L11.4) | | | X | | |
| Encourage site evaluation and classification of riparian areas as required by the U.S. Army Corps of Engineers 404 permit program or by other state | | | X | | |

| General/Comprehensive Plan Policy (Number) | Jurisdiction | | | | |
|---|---|---|---|---|---|
| | Town of Buckeye | Town of Gila Bend | Maricopa County Comprehensive Plan | Mar. Co-SR 85 Corridor Area Plan | Mar Co Old Highway 80 Plan |
| or federal laws, regulations and/or guidelines. (Policy E5.1) | | | | | |
| Encourage land uses and development designs that are compatible with environmentally sensitive areas such as floodplains, hillsides, wildlife habitat, scenic areas, and unstable geologic and soil conditions. (Policy E1.1.2) | | | | X | |
| Control land use and development within the 100-year floodplain to minimize the threat to life and property (Policy E1.1.4) | | | | X | |
| Discourage the location of structures that increase water ponding and sheet flow in flood prone areas. (Policy E1.1.5) | | | | X | |
| Encourage site evaluation and classification of riparian areas as required by the US Army Corps of Engineers 404 Permit Program or by other state or federal laws, regulations, and guidelines. (Policy W2.1.1) | | | | X | |
| Consider incentives and options for preservation of riparian areas that are close to development. (Policy W2.1.2) | | | | X | |
| Support natural drainage corridors and protective buffering techniques along significant wash systems where new development is proposed, to provide flood control, preserve wildlife corridors, and protect open space. (Policy E.1.4.1.) | | | | | X |
| Encourage cooperation with the Arizona Game and Fish Department (AGFD) and the U. S. Fish and Wildlife Service to help prevent encroachment on riparian scrub habitat and/or channels associated with significant local wash systems (Policy E.1.4.3.) | | | | | X |
| **Recreation and Open Space** | | | | | |
| Satisfy both the community's active and passive recreational needs by integrating natural systems, such as rivers washes, mountains, and environ- | | | | | |

| General/Comprehensive Plan Policy (Number) | Jurisdiction | | | | |
|---|---|---|---|---|---|
| | Town of Buckeye | Town of Gila Bend | Maricopa County Comprehensive Plan | Mar. Co-SR 85 Corridor Area Plan | Mar Co Old Highway 80 Plan |
| mentally sensitive desert environments, to that of man-made parks, trails, and recreational facilities (Policy 9.2) | | | | | |
| Enhance areas with regional drainage facilities and flood control structures by creating recreational areas, community parks, and connecting trails. (Policy 9.6) | X | | | | |
| Coordinate with developers, local school districts, and other government agencies for joint-use facilities where practical. (Policy 9.14) | X | | | | |
| Coordinate with the Bureau of Land Management, Flood Control District of Maricopa County, Maricopa County Parks and Recreation Department, Arizona State Land Department, Arizona Game and Fish Department, and other agencies to identify sites for open space or recreational amenities that could be mutually beneficial. (Policy 9.16) | X | | | | |
| Use regional drainage corridors as land use buffers, wildlife corridors, and multi-use trails. The Maricopa County Flood Control District established these corridors in the El Rio Water Course Master Plan, Sun Valley Area Drainage Master Plan, Rainbow Valley Area Drainage Plan, Gillespie Area Drainage Plan, and White Tanks Area Drainage Master Plan. (Policy 9.20) | X | | | | |
| The Town shall require all proposed developments to include a trails plan that allows for off-street internal circulation and connections to regional trails as appropriate.(Policy under Goal 13) | | X | | | |
| The Town shall consider increased utilization of its existing recreational facilities and archaeological /historical resources. (Policy under Goal 17) | | X | | | |
| The Town shall identify natural drainage washes to create a lineal open space corridor linking residential and community facility land uses. (Policy under Goal 17) | | X | | | |

| General/Comprehensive Plan Policy (Number) | Jurisdiction | | | | |
|---|---|---|---|---|---|
| | Town of Buckeye | Town of Gila Bend | Maricopa County Comprehensive Plan | Mar. Co-SR 85 Corridor Area Plan | Mar Co Old Highway 80 Plan |
| Coordinate trail linkages in new developments with Maricopa County Flood Control projects and other open space projects and/or resources. (Policy O2.1) | | X | | | |
| Encourage development of trails along rivers, significant washes, and canals to link existing open space resources throughout the region. (Policy O2.4) | | | X | | |
| Design all road crossings to minimize disturbance to the natural environment, and to accommodate identified trail crossings and other open space. (Policy O2.3) | | | X | | |
| Support and participate in the planning, development, and implementation of the proposed Maricopa County Regional Trail in coordination with local stakeholders, to ensure a widely accessible, unified trail system. (Policy O2.6) | | | X | | |
| Coordinate trail linkages in new developments with Maricopa County Flood Control projects and other open space projects and/or resources. (Policy OS1.2.1) | | | X | | |
| Encourage development of trails along the Gila River, Rainbow Wash, and irrigation canals to link existing open space resources throughout the region. (Policy OS1.2.2) | | | | X | |
| Design all road crossings to minimize disturbance to the natural environment and to accommodate identified trail crossings and other open space. (Policy OS1.2.3) | | | | X | |
| Encourage the preservation of riparian habitat along the Gila River. (Policy OS1.4.7) | | | | X | |
| Monitor and coordinate with the State Land Department, the Bureau of Land Management, and the U.S. Forest Service regarding reclassification, exchange, disposal, and acquisition of lands identified as proposed open space under their man- | | | | | |

| General/Comprehensive Plan Policy (Number) | Jurisdiction | | | | |
|---|---|---|---|---|---|
| | Town of Buckeye | Town of Gila Bend | Maricopa County Comprehensive Plan | Mar. Co-SR 85 Corridor Area Plan | Mar Co Old Highway 80 Plan |
| agement, to<br>promote the cause of open space conservation. (Policy OS1.6.2) | | | | | |
| Where necessary or appropriate, encourage the preservation of natural drainageways, major washes, including the Hassayampa and Gila Rivers (Policy L1.2.3.) | | | | X | |
| Encourage efforts to establish an open space and trails system along canals and rivers. (Policy E.1.2.3) | | | | X | |
| Support the use of irrigation canals, Gila River floodplain, and Rainbow Wash floodplain as recreation corridors. (Policy E1.4.2) | | | | X | |
| Encourage developers to provide outdoor recreation facilities and amenities in their projects, including linear parks that provide for the joint use of flood control facilities. (Policy E1.4.3) | | | | X | |
| Encourage land uses and development designs that are compatible with environmentally sensitive areas such as the Palo Verde-Saguaro community, floodplains, significant washes, hillsides, protected wildlife species habitat, scenic areas, and unstable geologic and soil conditions. (Policy E1.1.1.) | | | | | X |
| Support the use of density transfers to discourage development within floodplains and floodways, and on significant slopes. (Policy E.1.1.4.) | | | | | X |
| Support efforts to help property owners minimize adverse impacts to existing natural washes, erodible soils, desert vegetation, and landforms through Maricopa County drainage guidelines developed for single lot and lot-split development in the planning area. (Policy E1.1.5.) | | | | | X |
| Encourage the preservation of washes in their natural state (Policy E.1.1.6.) | | | | | X |

| General/Comprehensive Plan Policy (Number) | Jurisdiction | | | | |
|---|---|---|---|---|---|
| | Town of Buckeye | Town of Gila Bend | Maricopa County Comprehensive Plan | Mar. Co-SR 85 Corridor Area Plan | Mar Co Old Highway 80 Plan |
| Edges of major washes or rivers should remain undisturbed. (Policy E.1.1.7.) | | | | | X |
| Encourage property owners to consult with the Maricopa County Planning & Development Drainage Review division prior to land division to adequately plan for local washes and landforms (Policy E.1.1.9.) | | | | | X |
| Coordinate trail linkages in new developments with drainage easements and other open space projects and/or resources. (Policy O1.2.2.) | | | | | X |
| Investigate opportunities for development of trails adjacent to major washes as interconnected linkages throughout the region (Policy O.1.2.4.) | | | | | X |
| Where roads must cross washes, design all road crossings to minimize disturbance to the natural environment, and to accommodate identified trails. (Policy O.1.2.5.) | | | | | X |
| Encourage integration and consideration of the Maricopa County Regional Trail System into future development, especially along the Gila River. (Policy O.1.2.6.) | | | | | X |
| Coordinate with the Town of Buckeye, Town of Gila Bend, BLM, State Land Department, Maricopa County Parks and Recreation Department, and other jurisdictions in planning for future local and regional trails. (Policy O.1.2.7) | | | | | X |
| Encourage preservation of riparian habitat along the Gila River (Policy O.1.3.2.) | | | | | X |
| Coordinate with the Town of Buckeye and Town of Gila Bend to enhance open space and outdoor recreation amenities (Policy O.1.6.2.) | | | | | X |
| **Scenic Resources** | | | | | |
| Require sand and gravel operations within the Buckeye Planning Area to mitigate all impacts of | X | | | | |

| General/Comprehensive Plan Policy (Number) | Jurisdiction | | | | |
|---|---|---|---|---|---|
| | Town of Buckeye | Town of Gila Bend | Maricopa County Comprehensive Plan | Mar. Co-SR 85 Corridor Area Plan | Mar Co Old Highway 80 Plan |
| their mining operations. (Policy 12.9) | | | | | |
| Encourage preservation of scenic corridors and vistas. (Policy E2.2) | X | | | | |
| Preserve the scenic quality of the Buckeye Hills, the Gila Bend Mountains, and the Sonoran Desert National Monument in the review of applications for land development and develop other preservation programs and strategies as necessary. (Policy E1.2.1 | | | X | | |
| Encourage development that enhances the scenic quality of the Old U.S. Highway 80 area. (Policy L1.4.1.) | | | | X | |

# Appendix B
# Reference Data Log

# Gillespie ADMS References

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Appendix G: Guidance for Alluvial Fan Flooding Analyses and Mapping | Manual | 01-Apr-03 | FEMA | FEMA | Stantec | Guidelines and Specifications for Flood Hazard Mapping Partners |
| Depth and Velocity Grid Methodology Evaluation | PowerPoint | 19-May-11 | Glondys, D., Ingargiola, J., & Parson, S. | FEMA | Stantec | PowerPoint Presentation from the 2011 ASFPM National Conference |
| Draft of The Maricopa County Wildlife Connectivity Assessment: Report on Stakeholder Input, | Report | 01-Dec-11 | AGFD | AGFD | Stantec | |
| Flood Hazards of Distributary-Flow Areas in Southwestern Arizona | Report | 01-Dec-91 | Hjalmarson, H.W. and Kemna, S.P. | USGS | Stantec | USGS Water-Resources Investigations Report 91-4171. |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Geomorphic Analysis of Flood Hazards on The Northern McDowell Mountains Piedmont, | Report | 01-Aug-92 | Pearthree, P.A. and Wellendorf, W.G. | AZGS | Stantec | Arizona Geological Survey Open-File Report 92-8 |
| Gillespie ADMS Landscape Inventory & Analysis (LIA) | Report | 01-Aug-10 | Holcomb, D. and Melo-Rodriguez, P. | FCDMC | Stantec | Brief summary of the information contained in the LIA |
| Guidelines for Determining Flood Hazards on Alluvial Fans | Manual | 23-Feb-00 | FEMA | FEMA | Stantec | Document provides guidance for the identification and mapping of flood hazards occuring on alluvial fans, irrespective of the fan forming activity. |
| Lateral-Erosion Hazard Zone for Natural Channels in Maricopa County, Arizona | Report | 23-Mar-11 | FCDMC | FCDMC | Stantec | Document presents methodology for estimating lateral-erosion or lateral-migration hazard zones for straight or meandering natural channels in Maricopa County |
| Photographs of Gillespie area | Photo | 16-Aug-90 | Flood Control District of Maricopa County | Flood Control District of Maricopa County | Stantec | Photographs are contained within a Microsoft Word document. The photographs are the following dates: August 1990, May 1990, and April 1978, |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Physical Soil Properties Table, Gila Bend-Ajo Area, Arizona, Parts of Maricopa and Pima Counties | Table | 03-Sep-08 | USDA NRCS | USDA NRCS | Stantec | Table of Physical Soil Properties of soils within the Gila Bend-Ajo Area, Arizona, Parts of Maricopa and Pima Counties |
| Physical Soil Properties, Maricopa County, Arizona, Central Part | Table | 29-Aug-08 | USDA NRCS | USDA NRCS | Stantec | Table of the physical soil properties for Maricopa County, Arizona, Central Part |
| Piedmont Flood Hazard Assessment For Flood Plain Management, User's Manual (Draft) | Manual | 01-May-03 | H.W. Hjalmarson | FCDMC | Stantec | Preliminary Draft Revision of Manual, which is not yet finalized by District |
| R&D Outputs: Flood Risks to People, Phase 2, FD2321/TR1, The Flood Risks to People Methodology | Report | 01-Mar-06 | HR Wallingford | Flood Hazard Research Centre | Stantec | Phase 2 method is a form of multi-criteria assessment based on the concepts of flood hazard, area vulnerability and people vulnerability. |
| Report - Map Unit Description | Report | 10-Apr-13 | USDA NRCS | USDA NRCS | Stantec | Map Unit Description Report - Gila Bend Ajo Area, Arizona, Partsw of Maricopa and Pima Counties |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Soil Map Unit Description Table | Table | 03-Sep-08 | USDA NRCS | USDA NRCS | Stantec | Table of Map Unit Descriptions for Gila Bend-Ajo Area, Arizona, Parts of Maricopa and Pima Counties |
| Soil Survey of Gila Bend-Ajo Area, Arizona Parts of Maricopa and Pima Counties | Report | 01-May-97 | USDA NRCS | USDA NRCS | Stantec | |
| Soil Survey of Maricopa County, Arizona, Central Part | Report | | National Cooperative Soil Survey | USDA Soil Conservation Service | Stantec | 1972 Soil Survey for about 1,682 sq mi in the central and west central part of Maricopa County. Extends from 16th Street in Phoenix to the Yuma County Line. |
| Sonoran Solar Energy Project Draft Environmental Impact Statement | Report | 01-Apr-10 | Bureau of Land Management | Bureau of Land Management | Stantec | Draft EIS analyzes the environmental effects of constructing and operating a 375-megawatt concentrated solar thermal (CST) electrical generating facility on approximately 3,700 acres of BLM-administered public lands in Maricopa County, Arizona. |
| State Standard for Identification of and Development Within Sheet Flooding Areas | Report | | State of Arizona Department of Water Resources | State of Arizona Department of Water Resources | Stantec | Document details minimum floodplain management criteria for identification of, and development within, sheet flooding areas in Arizona. |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Surficial Geologic Map Units - Buckeye Hills and Maricopa Mountains Piedmont | List | 24-Jan-11 | AGS | AGS | Stantec | List of the Mapped Units and their desciptions for the Buckeye Hills and Maricopa Mountains Piedmont Report |
| Terrain, Soils and Runoff Potential in Rainbow Wash Watershed, Maricopa County, Arizona | Manual | 01-Feb-10 | DRI, Nevada System of Higher Education | USACE, FCDMC | Stantec | |
| The Maricopa County Wildlife Connectivity Assessment: Report on Stakeholder Input, January | Report | 01-Jan-12 | AGFD | AGFD | Stantec | Report and GIS datasets summarizing the results of the stakeholder 2008 FCDMC workshop held in Phoenix, AZ |
| Woolsey Flood Protection District Channel Names and References | Report | 20-Oct-05 | Doug C. Nelson | Woolsey Flood Control District | Stantec | Channel names and references of the major channels and washes. Information includes common names, locations, discharge areas, and peak flow if known. |
| Woolsey Flood Protection District, List of Maps and other documents | Report | 22-Jun-00 | Doug C. Nelson | Woolsey Flood Control District | Stantec | List of Maps and other documents, |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Alluvial Fan Flood Hazard Management Symposium | Handout | 21-Apr-05 | FCDMC | FCDMC | Stantec | PDF of Symposium material. Objectives of Symposium were: Identify FP Management needs and to develop tools needed for effective FP Management of Alluvial Fans |
| FIS, Approximate Studies, Unincorporated Areas of Maricopa County, Arizona | Report | 01-Jan-79 | Harris-Toups Associates | US Department of Housing and Urban Development | Stantec | Approximate Studies of the following washes: Centenial Wash, Cooper Wash, Jackrabbit Wash, Gila Bend Canal, Trilby Wash, Buckeye Detention Dike, Wash #1, Waterman Wash, Cline Creek, Rodger Creek, Grand Canal, Roosevelt Canal, Rowe Wash, Wash #6 (Ocotillo |
| Gila Bend Canal, FDS, Gillespie Dam to Gila Bend, Hydraulic Analysis and Floodplain Delineation | Report | 27-Nov-91 | Donohue & Associates, Inc. | Flood Control District of Maricopa County | Stantec | Study revises existing flood hazard information and provides floodplain elevations in areas adjacent to the east berm of the Gila Bend Canal between Gillespie Dam and the Gila Bend town limits. |
| Gila Bend Canal, FDS, Gillespie Dam to Gila Bend, Hydrology Report | Report | 27-Nov-91 | Donohue & Associates, Inc. | Flood Control District of Maricopa County | Stantec | Report presents the hydrologic methods and data used to compute the present condition basin and subbasin discharge rates to be used in the hydraulic analysis and floodplain delineation portions of the FDS |
| Plan and Profile of Proposed State Highway Gila Bend - Buckeye Hwy (SR 85), Gila River Bridge #1274 | As Builts | 03-Sep-98 | ADOT | ADOT | Stantec | AC-STP-023-1(19), 085 MA 146, Bridge replacement, plan set covers mile post 146.80 to 149.25 |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Plan and Profile of Proposed State Highway Gila Bend - Buckeye Maricopa County | As Builts | 21-Mar-74 | ADOT | ADOT | Stantec | (F-023-1-504), 1.385 Miles, Station 6565+35.29 to 6635+50 |
| Plan and Profile of Proposed State Highway Gila Bend - Buckeye, Maricopa County | As Builts | 01-Aug-86 | ADOT | ADOT | Stantec | FR-023-1(11), 5 Miles of AC Overlay |
| Plan and Profile of Proposed State Highway Gila Bend - Buckeye, Maricopa County, Bridge Repair | As Builts | 21-May-80 | ADOT | ADOT | Stantec | ER-023-1 (7), Bridge repair, |
| Plan and Profile of Proposed State Highway Gila Bend - Buckeye, Maricopa County, Gila River Crossing | As Builts | 30-May-85 | ADOT | ADOT | Stantec | ER-023-1 (8) P / SB-023-1-908, |
| Plan and Profile of Proposed State Highway Phoenix - Yuma, Maricopa County | As Builts | | ADOT | ADOT | Stantec | F 159 (1) Schedule I, Mile post 134.84 to 149.47 |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Plan and Profile of Proposed State Highway, Gila Bend - Buckeye Highway (SR 85), Gila Bend to MC 85, Phase I | As Builts | 10-Sep-99 | ADOT | ADOT | Stantec | F-023-1-527, 085 MA 134, Construct passing lanes and turning lanes, Mile Post 134.00 to 150.50 |
| Plan and Profile of Proposed State Highway, Gila Bend - Buckeye Highway (SR 85), Gila Bend to MC 85, Phase II | As Builts | 25-Feb-00 | ADOT | ADOT | Stantec | F-023-1-528, 085 MA 120, Construct passing lanes and turning lanes, Mile post 120.70 to 146.89 |
| Plan and Profile of proposed State Highway, Gila Bend - Buckeye Highway (SR 85), State Prison Access | As Builts | 26-May-99 | ADOT | ADOT | Stantec | F-023-1-526, 085 MA 137, Construct Access Road and intersection, Mile post 137.96 to 139.02 |
| Plan and Profile of Proposed State Highway, Gila Bend - Buckeye Hwy (SR 85), Rainbow Wash Bridge #466 | As Builts | 09-Feb-93 | ADOT | ADOT | Stantec | F-023-1-519, 085 MA 141, Scour protection, |
| Plan and profile of proposed State Highway, Gila Bend - Buckeye, Maricopa County | As Builts | 15-May-92 | ADOT | ADOT | Stantec | FR-023-1(10), AC overlay, Mile Post 126.8 to 134.8 |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Plan and Profile of Proposed State Highway, Phoenix - Yuma, Maricopa County | As Builts | 26-Feb-74 | ADOT | ADOT | Stantec | F 159 (3), Mile Post 120.24 to 127.82 |
| Plan and Profile of Proposed State Highway, Phoenix - Yuma, Maricopa County | As Builts | | ADOT | ADOT | Stantec | F 159 (2) Schedule I, Mile post 127.82 to 134.84, |
| Plan and Profile of Prpposed State Highway Phoenix - Yuma, Maricopa County | As Builts | | ADOT | ADOT | Stantec | Non FA 159 (2) 1956, Sta 5900+, special details for culvert and culvert road guards |
| Plan and Proposed State Highway Gila Bend - Buckeye, Maricopa County | As Builts | 15-May-92 | ADOT | ADOT | Stantec | FR-023-1(9), 2" AC ACFC, Mile Post 139.80 to 150.50 |
| Project Plans, Lewis Prison TI, MP 137 to 139.5 | As Builts | 20-Jun-02 | ADOT | ADOT | Stantec | State Highway Gila Bend-Buckeye Highway (SR 85) STP-085-B(005) 085 MA 137, Tracs No. H5955 02 C, plans are broken into 2 separate PDF files |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Project Plans, SR 85, MP 122.58 to 126.08 | As Builts | 20-Nov-08 | ADOT | ADOT | Stantec | State Highway Gila Bend-Buckeye Highway (SR 85) AC-NH-085-B(012)B 085 MA 122. Tracs No. H 5995 08 C, PDF titled: H5955-01C-AS BUILTS.pdf |
| Project Plans, SR 85, MP 126.08 to MP 130.71 | As Builts | 03-Nov-03 | ADOT | ADOT | Stantec | State Highway Gila Bend-Buckeye Highway (SR 85) NH-085-B(007)B 085 MA 126 Tracs No. H5955 03 C |
| Project Plans, SR 85, MP 130 to 138 | As Builts | 05-Mar-10 | ADOT | ADOT | Stantec | State Highway Gila Bend-Buckeye Highway SR 85, Project No. 085 MA 130 H5955 07 C, Federal Aid No. NH-085-B(011), plan set broken into two separate PDF files. |
| Project Plans, SR 85, MP 139.01 to 141.71 | As Builts | 02-Feb-09 | ADOT | ADOT | Stantec | State Highway Gila Bend-Buckeye Highway SR 85, Project No. 085 MA 139 H5955 05 C, Federal Aid No. AC-NH-085-B(009)B, PDF plan set broken into 3 separate PDFs |
| Project Plans, SR 85, MP 141.71 to 147.74 | As Builts | 24-Feb-09 | ADOT | ADOT | Stantec | State Highway Gila Bend-Buckeye Highway (SR 85) AC-NH-085-B(006)B 085 MA 142, Tracs No. H5955 06 C |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Rainbow Wash Additional Mapping | Mapping | 30-Apr-10 | Pinnacle Mapping Technologies, Inc. | Flood Control District of Maricopa County | Stantec | Data consists of DTM data, mapping data, and PDFs of Plots |
| Rainbow Wash FIS, FEMA Applicatoin/Certification Forms | Report | 04-Mar-93 | Simons, Li & Associates, Inc. | Flood Control District of Maricopa County | Stantec | FEMA Application Certification Forms for the Rainbow Wash FIS |
| Rainbow Wash FIS, Gila River through SR 85, Hydraulics TDN | Report | 25-May-94 | Simons, Li & Associates, Inc. | Flood Control District of Maricopa County | Stantec | Study provides floodplain elevations in areas adjacent to Rainbow Wash and its tributary from the Gila River to upstream of SR 85. |
| Rainbow Wash FIS, N-Value Determination Report | Report | 23-Apr-92 | Simons, Li & Associates, Inc. | Fllood Control District of Maricopa County | Stantec | Report presents the results off a detailed analysis to define Manning's roughness coefficients for Rainbow Wash and is intended to provide supplementary technical documentation for the development of a detailed hydraulic model. |
| SR 85 Landfill Stormwater Control System, Old Highway 80 and Layton Wash (PW16810004) | As Builts | 19-Aug-09 | URS | FCDMC | Stantec | As Built Plans for the Layton Wash engineered channel from the Old Highway 80 to the Gila River. |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| SR 85 Landfill, Stormwater Control System Phase 1 (PW16810004) | Design Plans | 31-Jan-11 | URS | FCDMC | Stantec | Design plan set for the SR85 Landfill, Phase 1 |
| Geologic Data for the Phoenix South 30'x60' Quandrangle | Geologic Data | | Arizona Geological Survey | AZGS | Stantec | Data available at 1:100,000 scale and provided in a standard National Geologic Map Database (NGMDB) |
| Survey Report Manual for Gillespie Wash Area Drainage Master Plan | Report | 25-Aug-08 | A Team Professional Associates, Inc. | Flood Control District of Maricopa County | Stantec | Manual includes the Surveyors Summary/Certification, GPS & Aerial Photo Contorl Panels, Cross Sections, Randon DTM Checks and Airborne GPS Processing |
| Final Woolsey FPD, Candidate Assessment Report | Report | 20-Jun-05 | Project Engineering Consultants | Flood Control District of Maricopa County | Stantec | Report documents the existing and planned conditions concerning drainage in the northern portion of the Woolsey Flood Protection District. Using any information available. |
| Inventory Report on Woolsey Flood Protection District | Report | 01-Mar-90 | Arizona Department of Water Resources | Woolsey Flood Control District | Stantec | |

| Reference | Reference Type | Reference Date | Author | Owner | Location | Description |
|---|---|---|---|---|---|---|
| Maricopa County Board of Supervisors February 4, 1985 meeting minutes extract | Minutes | 12-Feb-85 | Maricopa County Clerk | Woolsey Flood Control District | Stantec | Extraction from the Board of Supervisors Meeting regarding the canvass of development of the Little Rainbow Valley Flood Control District (Woolsey Flood Control District) and the elections for the District directors. |
| Maricopa Trail Design and Construction Manual | Manual | 01-Aug-07 | Maricopa County Parks and Rec Dept | Maricopa County Parks and Rec Dept | Stantec | Manual identifies specific design treatments, which demonstrate the aesthetic venacular of the various trail elements. |
| Woolsey Flood Control District Audit Map 2010 | Map | 26-Jan-10 | Arizona State Land Department | Woolsey Flood Control District | Stantec | 2010 Map of the Woolsey Flood Control District |

# Appendix C
# Shape File Log

# Gillespie Shapefiles

| File Name | Source | Description |
|---|---|---|
| 10FT_DTM_Index_2001.shp | FCD | Polygon index of the Countywide 10 ft DTM data |
| 2007_Aerial_Photography_Index.shp | FCD | Index of the 2007 District Aerials |
| 2009_Aerial_Photography_Index.shp | FCD | Index of the 2009 District Aerials |
| 2010_Aerial_Photography_Index.shp | FCD | Index of the 2010 District Aerials |
| ADMP.shp | FCD | Area Drainage Master Plan Polygons: Lower Centennial #2, Luke Wash, Rainbow Valley/Waterman Wash, Gillespie, Painted Rock |
| ADMS.shp | FCD | Area Drainage Master Study Polygons: Lower Centennial, Luke Wash, Rainbow Valley/Waterman Wash, Gillespie, Painted Rock |
| agrcltr-1010.shp | FCD | Data from Luke Wash FDS (FCD 90-68) |
| alris_gapveg.shp | FCD | Gap Vegetation data |
| alris_gfveg.shp | FCD | Vegetation data |
| alris_natveg.shp | FCD | Native Vegetation data |
| alris_own.shp | FCD | General Land Ownership data: BLM, Local or State Parks, Other, Private, or State Trust |
| alris_riparia.shp | FCD | Riparia areas |

| File Name | Source | Description |
|---|---|---|
| alris_streams.shp | FCD | Stream polylines |
| Annex_20120119_buc.shp | FCD | Town of Buckeye boundaries with updated annexed portions |
| az_dist83.shp | BLM | Coverage of BLM District Office Boundaries in Arizona |
| az_surf_mgmt.shp | BLM | Land Ownership, Surface Management Information |
| AZSchool_Polygons.shp | FCD | School Districts |
| AZVegetationAssocCommunity_ASLD.shp | FCD | Vegetation Polygons |
| AZWilderness.shp | FCD | Wilderness Area polygons for Woosley Peak and North Maricopa Mountains |
| BaselineFCD.shp | FCD | Baselines from Rainbow Wash, Waterman Wash, and Luke Wash FDS |
| BaselineFEMA.shp | FCD | Baselines for Gila River, Centennial Wash, Gila Bend Canal, Rainbow Wash and Rainbow Wash Tributary |
| BFEFCD.shp | FCD | 2 BFE Polylines from Luke Wash FDS |
| BFEFEMA.shp | FCD | BFE polylines from several FDS in or surrounding the Gillespie ADMS |
| Bike_Paths.shp | FCD | Bike path polylines |
| BioticCommunitySouthwest_ASLD.shp | FCD | Biotic communities of the Southwest polygons |
| Bridge.shp | FCD | Bridge polyline for the OLD US 80 built in 1927 |

| File Name | Source | Description |
|---|---|---|
| bridge-1030.shp | FCD | Unknown bridge polylines from the Salt/Gila River Master Plan Mapping |
| bridge-1290.shp | FCD | Bridge polylines, Gillespie Mapping |
| cartoln-1010.shp | FCD | Line Cartographic features from Luke Wash FDS |
| cartoln-1030.shp | FCD | Line Cartographic features from the Salt/Gila River Master Plan |
| cartoln-1180.shp | FCD | Line Cartographic features from the Buckeye/Sun Valley Mapping |
| cartoln-1226.shp | FCD | Line Cartographic features from the Rainbow Valey Mapping |
| cartoln-1258.shp | FCD | Line Cartographic features from the Luke Wash and Arlington Mapping |
| cartoln-1290.shp | FCD | Line Cartographic features from the Gillespie Mapping |
| cartoln-1307.shp | FCD | Line Cartographic features from the Rainbow Wash Mapping |
| cartoln-2300.shp | FCD | Line Cartographic features from the Rainbow Wash FDS |
| cartopt-1010.shp | FCD | Point Cartographic features from the Luke Wash FDS |
| cartopt-2300.shp | FCD | Point Cartographic features from the Rainbow Wash FDS |
| CENSUS_Blocks_2006.shp | FCD | 2006 Census Blocks |
| CENSUS_Tracts_2006.shp | FCD | 2006 Census Tracts |

| File Name | Source | Description |
|---|---|---|
| Cities_Election.shp | FCD | Polygons for Town of Buckeye, Town of Gila Bend, and City of Goodyear |
| cnl-1010.shp | FCD | Canals from the Luke Wash FDS |
| cnl-1030.shp | FCD | Canals from the Salt/Gila River Master Plan |
| cnl-1226.shp | FCD | Canals from the Rainbow Valley Mapping |
| cnl-1258.shp | FCD | Canals from the Luke Wash and Arlington Mapping |
| cnl-1290.shp | FCD | Canals from the Gillespie Mapping |
| Concentration_Point.shp | FCD | Concentration Points from Centennial Wash FDS (Phase 1) and Waterman Wash FDS |
| Connectivity Area.shp | FCD | Wildlife Connectivity Area |
| CoreMuleDeerActivityAreas_Pr.shp | FCD | Core Mule Deer Activity Areas |
| Crossings.shp | FCD | Wildlife Crossings |
| ctrl-1030.shp | FCD | Miscellaneous Control Survey Points from the Salt River/Gila River Master Plan |
| ctrl-1180.shp | FCD | Miscellaneous Control Survey Points from the Buckeye/Sun Valley Mapping |
| ctrl-1258.shp | FCD | Miscellaneous Control Survey Points from the Luke Wash and Arlington Mapping |
| ctrl-1307.shp | FCD | Miscellaneous Control Survey Points from the Rainbow Wash Mapping |

| File Name | Source | Description |
|---|---|---|
| ctrlplss.shp | FCD | Quarter Sections, coverage for the entire county with additional buffer |
| ctrlplss.shp | FCD | Quarter Section polygons, coverage of only a portion of ADMS |
| culvert-1010.shp | FCD | Culverts from the Luke Wash FDS |
| culvert-1258.shp | FCD | Culverts from the Luke Was & Arlington Mapping |
| culvert-1290.shp | FCD | Culverts from the Gillespie Mapping |
| Development_MAG.shp | FCD | Development Polygons |
| Development_SubDiv_MAG.shp | FCD | Development Sub Division polygon for one named "Villages 7-10" |
| developments_TOB.shp | FCD | Planned and Existing Development within or near the Town of Buckeye |
| DevelopmentSubdivLandUse_Mag.shp | FCD | "Villages 7-10" subdivision landuse |
| DFIRM_Surface_Water_Line.shp | FCD | DFIRM surface water polylines |
| DikeVienMarkerTrace.shp | AGS | Dike Vein Markers |
| Draft_BuckHills-SDNM_ProposedLinkage.s | FCD | Represents draft linkage design between the Buckeye Hills and North Maricopa Mountains wildland habitat blocks |
| Drainage_Path.shp | FCD | Hydrology Drainage paths from Waterman Wash and Centennial Wash (Phase 1) FDS |
| drnbsn-1099.shp | FCD | Attribute Description reads drainage basin from Gila River / Luke Wash |

| File Name | Source | Description |
|---|---|---|
| drnbsn-1221.shp | FCD | Waterman Wash drainage basins |
| drnbsn-1255.shp | FCD | Lower Centennial Phase 1 drainage basins |
| drnbsn-1278.shp | FCD | Attribute Description reads drainage basin from Gila River / Luke Wash |
| drnpthln-1221.shp | FCD | Hydrology drainage paths from the Waterman Wash FDS |
| drnpthln-1255.shp | FCD | Hydrology drainage paths from the Centennial Wash FDS (Phase 1) |
| drnpthpt-1221.shp | FCD | Concentration points from the Waterman Wash FDS |
| drnpthpt-1255.shp | FCD | Concentration points from the Centennial Wash FDS (Phase 1) |
| elec_SUPERVISORDISTRICTS.shp | FCD | County Supervisor Districts |
| elecSCHOOLDISTRICTS.shp | FCD | School District boundaries |
| elecTECHNICALEDUCATIONDISTRICTS.s | FCD | Polygon for the WEST-MEC District #5 |
| elvln-1010.shp | FCD | 2-foot contours from the Luke Wash FDS |
| elvln-1030.shp | FCD | 4-foot contours from the Salt/Gila River Master Plan |
| elvln-1180.shp | FCD | 2-foot contours from the Buckeye/Sun Valley Mapping |
| elvln-1208.shp | FCD | 10-foot contours from the Countywide 10 Foot Contour Mapping |

| File Name | Source | Description |
|---|---|---|
| elvln-1226.shp | FCD | 2-foot contour mapping from the Rainbow Valley Mapping |
| elvln-1258.shp | FCD | 2-foot contour mapping from the Luke Wash & Arlington Mapping |
| elvln-1290.shp | FCD | 2-foot contour mapping from the Gillespie Mapping |
| elvln-1307.shp | FCD | 2-foot contour mapping from the Rainbow Wash Mapping |
| elvln-2300.shp | FCD | 2-foot contour mapping from the Rainbow Wash FDS |
| elvpt-1010.shp | FCD | Elevation points from the Luke Wash FDS |
| elvpt-1030.shp | FCD | Elevation points from the Salt/Gila River Master Plan |
| elvpt-1180.shp | FCD | Elevation points from the Buckeye/Sun Valley Mapping |
| elvpt-1208.shp | FCD | Elevation points from the Countywide 10 foot Contour Mapping |
| elvpt-1226.shp | FCD | Elevation points from the Rainbow Valley Mapping |
| elvpt-1258.shp | FCD | Elevation points from the Luke Wash & Arlington Mapping |
| elvpt-1290.shp | FCD | Elevation points from the Gillespie Mapping |
| elvpt-1307.shp | FCD | Elevation points from the Rainbow Wash Mapping |
| elvpt-2300.shp | FCD | Elevation points from the Rainbow Wash FDS |

| File Name | Source | Description |
|---|---|---|
| Existing_Land_Use_2010_Clip2.shp | FCD | Land use in Maricopa County |
| Farm_Facilities.shp | FCD | Hidden Waters Parkway |
| FCDMC_Contract_Boundaries.shp | FCD | District Mapping Boundaries |
| FCDMC_Project_Subbasins.shp | FCD | FDS Subbasins for Centennial Wash (Phase 1), Luke Wash, Luke Wash/Arlington Area, Waterman Wash |
| Fire_Department_Districts.shp | FCD | Buckeye Valley Rural Fire Districts |
| floodway_transitional_areas | FCD | Transitional floodway zones |
| FPBLN.shp | FCD | Hydraulic Baseline for Rainbow Wash |
| fpctlfcd-1010.shp | FCD | Elevation Reference Marks, 2 points |
| fpctlfcd-1030.shp | FCD | Elevation Reference Marks, 13 points |
| fpctlfcd-1180.shp | FCD | Elevation Reference Marks, 5 points |
| fpctlfcd-2300.shp | FCD | Elevation Reference Marks, 11 points |
| fpsrfelv.shp | FCD | County wide base flood water surface elevations approved by FEMA |
| fpsrfelv.shp | FCD | FEMA approved base flood WSE for the FIRM. Centennial Wash FDS, Gila Bend Canal FDS, Gila River - Gillespie Dam to Bullard Ave FDS, Gila River FDS, Rainbow Wash FDS, and Waterman Wash FDS |
| fpsrffcd.shp | FCD | District computed base flood WSE for Luke Wash FDS, two polylines |

| File Name | Source | Description |
|---|---|---|
| FPXFCD.shp | FCD | District Cross Sections for Rainbow Wash |
| fpxfema.shp | FCD | FEMA Floodplain Cross Sections for streams: Centennial Wash, Gila Bend Canal, Gila River, Rainbow Wash, Rainbow Wash Tributary, and Waterman Wash. |
| fpxfema.shp | FCD | County wide cross sections approved by FEMA |
| fpznfcd.shp | FCD | Floodplain zones as computed by District according to FEMA letter coding scheme, prior to FEMA approval. |
| fpznfcd.shp | FCD | Floodplain zones computed by FCDMC according to the FEMA coding scheme, prior to FEMA approval. Zones included are from Centennial Wash FDS (Phase 1), Luke Wash FDS, and Waterman Wash FDS |
| fpznfema.shp | FCD | Floodplain zone as approved by FEMA for the FIRM. Differentiated according to the FEMA letter coding scheme |
| fpznfema.shp | FCD | Floodplain zone as approved by FEMA for the FIRM. Differentiated according to the FEMA letter coding scheme |
| Future_Land_Use.shp | FCD | Gillespie Future Landuse received from District |
| Future_Landuse_draft3.shp | FCD | Boundaries of areas of particular future landuse |
| future_streets_TOB.shp | FCD | Future streets as identified by the Town of Buckeye |
| future_trailhead.shp | FCD | Point shapefile of two future trailheads |
| future_trails.shp | FCD | Future trails |
| future_trans_per_GP | FCD | Town of Buckeye future arterial transportation routes per the General Plan |
| Gaslines.shp | FCD | Hidden Waters Parkway |

| File Name | Source | Description |
|---|---|---|
| GeologicUnitOutcrop.shp | AGS | Geologic Units |
| Geologicunits.shp | AZGS | AZ GS provided Geologic map units for the Buckeye Hills and Maricopa Mountain Piedmont areas |
| Geology_ASLD.shp | FCD | Geology boundaries |
| Geomorph.shp | FCD | Geomorphology data |
| Gillespie_ADMS.shp | FCD | Project boundary for the Gillespie ADMS |
| Habitat_Blocks.shp | FCD | Arizona Habitat Blocks, Hidden Waters Parkway |
| HingeSurfaceTrace.shp | AGS | Hinge Surface |
| lake.shp | FCD | Outline of water features which may include lakes, ponds, and reservoirs from several mapping sources: Gillespie, Luke Wash & Arlington, and Rainbow Valley |
| land_use.shp | FCD | Landuse from the Town of Buckeye General Plan |
| Landfill.shp | FCD | Point location of a landfill |
| Landfills.shp | FCD | Hidden Waters Parkway |
| linework.shp | AGS | Surficial Geology Mapping |
| MAG_Desert_Space.shp | FCD | MAG Identified Desert Spaces |
| mag_future_landuse07.shp | FCD | 2007 MAG Future Landuse |

| File Name | Source | Description |
|---|---|---|
| mag_genplan_landuse07.shp | FCD | 2007 MAG General Plan Landuse |
| mag_landuse2004draft.shp | FCD | Draft 2004 MAG Landuse |
| MapAnnotationPoint.shp | AGS | Map Annotation Point Locations |
| Maricopa_ArizonaMissingLinkages_200720 | AZGFD | Linkage design from AZ Missing Linkages 2007 and 2008 reports to AZGFD |
| Maricopa_County_Parks.shp | FCD | Boundary for the Buckeye Hills Regional Park |
| Maricopa_County_Trail_System.shp | FCD | Future trail alignments |
| Maricopa_DetailedLinkages_2012.shp | AZGFD | Linkage designs |
| MaricopaCountyBoundary.shp | FCD | Maricopa County Boundary |
| master_planned_communities.shp | FCD | Master Planned communities around and within the Town of Buckeye |
| Mines_ASLD.shp | FCD | Point locations of mines |
| National_Monument.shp | FCD | Boundary of the Sonoran Desert National Monument |
| noaa100y24h.shp | FCD | NOAA Atlas 2 |
| noaa100y2h.shp | FCD | NOAA Atlas 2 |
| noaa100y6h.shp | FCD | NOAA Atlas 2 |

| File Name | Source | Description |
|---|---|---|
| noaa100yr10m.shp | FCD | NOAA Atlas 14 |
| noaa100yr12h.shp | FCD | NOAA Atlas 14 |
| noaa100yr15m.shp | FCD | NOAA Atlas 14 |
| noaa100yr24h.shp | FCD | NOAA Atlas 14 |
| noaa100yr2h.shp | FCD | NOAA Atlas 14 |
| noaa100yr30m.shp | FCD | NOAA Atlas 14 |
| noaa100yr3h.shp | FCD | NOAA Atlas 14 |
| noaa100yr5m.shp | FCD | NOAA Atlas 14 |
| noaa100yr60m.shp | FCD | NOAA Atlas 14 |
| noaa100yr6h.shp | FCD | NOAA Atlas 14 |
| noaa10y24h.shp | FCD | NOAA Atlas 2 |
| noaa10y6h.shp | FCD | NOAA Atlas 2 |
| noaa10yr10m.shp | FCD | NOAA Atlas 14 |
| noaa10yr12h.shp | FCD | NOAA Atlas 14 |

| File Name | Source | Description |
|---|---|---|
| noaa10yr15m.shp | FCD | NOAA Atllas 14 |
| noaa10yr24h.shp | FCD | NOAA Atlas 14 |
| noaa10yr2h.shp | FCD | NOAA Atlas 14 |
| noaa10yr30m.shp | FCD | NOAA Atlas 14 |
| noaa10yr3h.shp | FCD | NOAA Atlas 14 |
| noaa10yr5m.shp | FCD | NOAA Atlas 14 |
| noaa10yr60m.shp | FCD | NOAA Atlas 14 |
| noaa10yr6h.shp | FCD | NOAA Atlas 14 |
| noaa25y24h.shp | FCD | NOAA Atlas 2 |
| noaa25y6h.shp | FCD | NOAA Atlas 2 |
| noaa25yr10m.shp | FCD | NOAA Atlas 14 |
| noaa25yr12h.shp | FCD | NOAA Atlas 14 |
| noaa25yr15m.shp | FCD | NOAA Atlas 14 |
| noaa25yr24h.shp | FCD | NOAA Atlas 14 |

| File Name | Source | Description |
|---|---|---|
| noaa25yr2h.shp | FCD | NOAA Atlas 14 |
| noaa25yr30m.shp | FCD | NOAA Atlas 14 |
| noaa25yr3h.shp | FCD | NOAA Atlas 14 |
| noaa25yr5m.shp | FCD | NOAA Atlas 14 |
| noaa25yr60m.shp | FCD | NOAA Atlas 14 |
| noaa25yr6h.shp | FCD | NOAA Atlas 14 |
| noaa2y24h.shp | FCD | NOAA Atlas 2 |
| noaa2y6h.shp | FCD | NOAA Atlas 2 |
| noaa2yr10m.shp | FCD | NOAA Atlas 14 |
| noaa2yr12h.shp | FCD | NOAA Atlas 14 |
| noaa2yr15m.shp | FCD | NOAA Atlas 14 |
| noaa2yr24h.shp | FCD | NOAA Atlas 14 |
| noaa2yr2h.shp | FCD | NOAA Atlas 14 |
| noaa2yr30m.shp | FCD | NOAA Atlas 14 |

| File Name | Source | Description |
|---|---|---|
| noaa2yr3h.shp | FCD | NOAA Atlas 14 |
| noaa2yr5m.shp | FCD | NOAA Atlas 14 |
| noaa2yr60m.shp | FCD | NOAA Atlas 14 |
| noaa2yr6h.shp | FCD | NOAA Atlas 14 |
| noaa50y24h.shp | FCD | NOAA Atlas 2 |
| noaa50y6h.shp | FCD | NOAA Atlas 2 |
| noaa50yr10m.shp | FCD | NOAA Atlas 14 |
| noaa50yr12h.shp | FCD | NOAA Atlas 14 |
| noaa50yr15m.shp | FCD | NOAA Atlas 14 |
| noaa50yr24h.shp | FCD | NOAA Atlas 14 |
| noaa50yr2h.shp | FCD | NOAA Atlas 14 |
| noaa50yr30m.shp | FCD | NOAA Atlas 14 |
| noaa50yr3h.shp | FCD | NOAA Atlas 14 |
| noaa50yr5m.shp | FCD | NOAA Atlas 14 |

| File Name | Source | Description |
|---|---|---|
| noaa50yr60m.shp | FCD | NOAA Atlas 14 |
| noaa50yr6h.shp | FCD | NOAA Atlas 14 |
| noaa5y24h.shp | FCD | NOAA Atlas 2 |
| noaa5y6h.shp | FCD | NOAA Atlas 2 |
| noaa5yr10m.shp | FCD | NOAA Atlas 14 |
| noaa5yr12h.shp | FCD | NOAA Atlas 14 |
| noaa5yr15m.shp | FCD | NOAA Atlas 14 |
| noaa5yr24h.shp | FCD | NOAA Atlas 14 |
| noaa5yr2h.shp | FCD | NOAA Atlas 14 |
| noaa5yr30m.shp | FCD | NOAA Atlas 14 |
| noaa5yr3h.shp | FCD | NOAA Atlas 14 |
| noaa5yr5m.shp | FCD | NOAA Atlas 14 |
| noaa5yr60m.shp | FCD | NOAA Atlas 14 |
| noaa5yr6h.shp | FCD | NOAA Atlas 14 |

| File Name | Source | Description |
|---|---|---|
| nrcs_soil_erosion.shp | FCD | Soil erosion polygons from the NRCS |
| nrcs_soil_hydrologic.shp | FCD | Hydrologic soil polygons from the NRCS |
| nrcs_soil2003Oct.shp | FCD | Soil polygons from the NRCS |
| nrcs_soil2010apr.shp | FCD | Soil polygons from the NRCS |
| Outcropboundaries.shp | AZGS | AZ GS provided geologic map units out crop boundaries for the Buckeye Hills and Maricopa Mountains piedmont areas. |
| OutcropBoundaryTrace.shp | AGS | Outcrop Boundary |
| Parcel_Data_3_27_12.shp | FCD | Parcel Data |
| Parcels.shp | FCD | Parcels |
| Parks.shp | FCD | Boundary of the Buckeye Hills Park |
| Phase 2 Flowlines_dxf Polyline.shp | FCD | Flowlines |
| Physiography_AGS.shp | FCD | Physiography |
| PhysiographyAGS_Clip.shp | FCD | Clipped Physiography data |
| Planned_Developments.shp | FCD | Hidden Waters Parkway |
| planning_area.shp | FCD | Town of Buckeye planning area |

| File Name | Source | Description |
|---|---|---|
| PLZ_across_HB.shp | FCD | Hidden Waters Parkway |
| pnlfcd.shp | FCD | District panel boundaries |
| pnlfirm.shp | FCD | FIRM panel boundaries as approved by FEMA |
| polygons.shp | AGS | Surficial Geology Mapping |
| Post_Office.shp | FCD | Hidden Waters Parkway |
| Potential_Linkage_Zones.shp | FCD | Hidden Waters Parkway |
| Power Transmission Lines.shp | FCD | Hidden Waters Parkway |
| Preferred_Alternative_North.shp | FCD | Hidden Waters Parkway |
| Preferred_Alternative_South.shp | FCD | Hidden Waters Parkway |
| Preferred_Interchanges.shp | FCD | Hidden Waters Parkway |
| Public_Land_Ownership_Clip2.shp | FCD | Surface management responsibility for Arizona |
| Rainfall_Boundary_Clip.shp | FCD | Rainfall boundary used for the FLO-2D model calibration after Aug 21-22, 2012 storm |
| river-1030.shp | FCD | River features from the Salt/Gila River Master Plan |
| river-1208.shp | FCD | River features from the Countywide 10 foot contour mapping |

| File Name | Source | Description |
|---|---|---|
| river-1226.shp | FCD | River features from the Rainbow Valley Mapping |
| river-1258.shp | FCD | River features from the Luke Wash & Arlington Mapping |
| river-1290.shp | FCD | River features from the Gillespie Mapping |
| river-1307.shp | FCD | River features from the Rainbow Wash Mapping |
| Sand_and_Gravel_FCDMC_Permit_Sites.s | FCD | Boundaries of FCDMC permitted Sand and Gravel operations |
| sbap_roadway_classification.shp | FCD | Roadways |
| Schools.shp | FCD | Hidden Waters Parkway |
| Schools.shp | FCD | Location of Arlington Elementary School |
| Section_Lines.shp | FCD | Section Lines |
| SoilErosion_NRCS.shp | FCD | NRCS Soil Erosion polygons |
| SoilHydrology.shp | FCD | NRCS Soil Hydrology |
| soils_TOB.shp | FCD | Soils as received from the Town of Buckeye |
| Solar_Development.shp | FCD | Hidden Waters Parkway |
| south_buckeye_buffer.shp | FCD | Buffer zone around south Buckeye, approximately 10 mile buffer distance |

| File Name | Source | Description |
|---|---|---|
| stnetres.shp | FCD | Residential street network |
| strct-1030.shp | FCD | Planimetric structures outlines from the Salt/Gila River Master Plan |
| strct-1226.shp | FCD | Planimetric structures outlines from the Rainbow Valley Mapping |
| strct-1258.shp | FCD | Planimetric structures outlines from the Luke Wash & Arlington Mapping |
| strct-1290.shp | FCD | Planimetric structures outlines from the Gillespie Mapping |
| strct-2300.shp | FCD | Planimetric structures outlines from the Rainbow Wash FDS |
| strtdtl-1010.shp | FCD | Planimetric street detail outlines from the Luke Wash FDS |
| strtdtl-1030.shp | FCD | Planimetric street detail outlines from the Salt/Gila River Master Plan |
| strtdtl-1180.shp | FCD | Planimetric street detail outlines from the Buckeye/Sun Valley Mapping |
| strtdtl-1226.shp | FCD | Planimetric street detail outlines from the Rainbow Valley Mapping |
| strtdtl-1258.shp | FCD | Planimetric street detail outlines from the Luke Wash & Arlington Mapping |
| strtdtl-1290.shp | FCD | Planimetric street detail outlines from the Gillespie Mapping |
| strtdtl-1307.shp | FCD | Planimetric street detail outlines from the Rainbow Wash Mapping |
| Subdivision_Year.shp | FCD | Spring Mountain Ski Ranch Phases 1-4, Thomasville, and Rainbow Valley Acres 2 |

| File Name | Source | Description |
|---|---|---|
| SubStations.shp | FCD | Hidden Waters Parkway |
| SurveyPointCorner_MCDOT.shp | FCD | MCDOT Corner Survey Points from GDACs, Woods Rd at SR85, and the Assessors Monument Inventory Project |
| SurveyPointsMisc_MCDOT.shp | FCD | MCDOT Miscellaneous Survey Points from GDACs and the Assessors Monument Inventory Project |
| swtrln.shp | FCD | Profile baseline as approved by FEMA for the FIRM |
| swtrln.shp | FCD | Profile baselines as approved by the FEMA for the FIRM |
| Township_Range.shp | FCD | 16 Township and Range polygons |
| traffic_interchanges.shp | FCD | Point shapefile of 8 traffic interchange locations from the TOB |
| US_Quad_Features.shp | FCD | Point file with 33 USGS Quad Features |
| Watersheds_as_Defined_by_Hydrology.shp | FCD | Watershed polygons for Buckeye Hills, Painted Rock, Arlington, Gillespie, Waterman, and Lower Centennial |
| Well_ADWR.shp | FCD | Point file with locations of wells |
| WhiteTanks_LinkageDesign_draftFinal.shp | FCD | Linkage design for wildlife connectivity for the White Tanks |
| Wilderness_Area_ASLD.shp | FCD | Polygon of Woolsey Peak and North Maricopa Mountain Wilderness Areas |
| wildlife.shp | FCD | Hidden Waters Parkway |
| XSFCD.shp | FCD | FCDMC Cross Section alignments from FDS: Rainbow Wash, Centennial Wash (Phase 1), Waterman Wash and Luke Wash |

| File Name | Source | Description |
|---|---|---|
| XSFEMA.shp | FCD | FEMA Cross Section alignments for: Centennial Wash, Gila Bend Wash, Gila River, Rainbow Wash, Rainbow Wash Tributary, and Waterman Wash |
| ZIP_Codes.shp | FCD | Zip code polygons for: Arlington 85322, Goodyear 85338, Tonopah 85354, Buckeye 85326, and Gila Bend 85337 |
| zoning_county_01272010.shp | FCD | Southwest Maricopa County zoning polygons |
| zoning_TOB.shp | FCD | Town of Buckeye zoning polygon shapefile |

# Exhibits

BUCKEYE HILLS

MARICOPA MOUNTAINS

Buckeye Hills Channel #1

Embankment 1

Embankment 3

Embankment 2

Siphon 1 Wash

Gila Bend Canal Channel Reach 1

Siphon #1

Gila Bend Canal Channel Reach 2

Carmichael Wash Reach 5

Reach 4

Reach 3

Reach 2

Carmichael Wash Reach 1

SR 85 Channel 1 East/West Reach

SR 85 Channel 1 North/South Reach

Siphon #2

Badley Wash

Rainbow Wash

West Prison Channel

Bruner Rd

Patterson Rd

Gila Bend Canal Channel Reach 3

Siphon #3

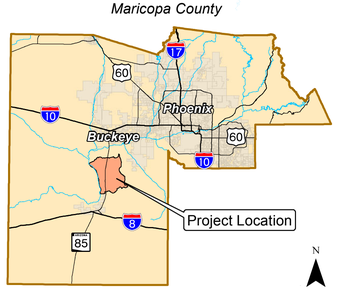
Gila Bend Canal Channel Reach 4

Existing Drainage Channel on COP Landfill Site

ADOT Channel

85

## Maricopa County




VICINITY MAP

## NOTES:

Aerial imagery flight dates Oct 2009 and Nov 2006
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## LEGEND:

- Culvert
- Siphon Location
- Road
- Gila Bend Canal
- Gasline
- Channels
- Powerline
- Embankments
- Project Boundary

**100-Year Flood Zone**

- A
- AE
- AO
- FW

**Land Owner**

- BLM
- Local or State Parks
- Private
- State Trust

# EXHIBIT 2
# EXISTING FACILITIES & UTILITIES
# SHEET 1 OF 2

N

0 3,000 6,000
Feet

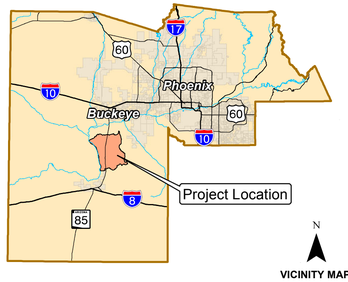
Flood Control District of Maricopa County
2801 W. Durango St. Phoenix, AZ 85009

**GILLESPIE AREA DRAINAGE MASTER STUDY**
**F.C.D. CONTRACT NO. 2009C039**

Stantec Consulting Inc.
8211 S. 48th Street
Phoenix, AZ U.S.A. 85044

Gila Bend Canal Channel Reach 4
Existing Drainage Channel on COP Landfill Site
85
ADOT Channel
MARICOPA MOUNTAINS
Upper Layton Wash
Siphon #4
Layton Wash
ADOT Channel
Embankment 4
ADOT Channel Tributary
Gila Canal Channel Reach 5
Woods Rd
SR 85 Channel 2
Woods Road Wash
Johns Wash
SR 85 Channel 3
SR 85 Channel 4
Siphon #5
Gila Bend Canal Channel Reach 6
Paloma Lift Station Wash
Pierpoint Rd
Siphon #6
Old US 80
Upper Woods Wash
85

*Maricopa County*




VICINITY MAP

NOTES:

Aerial imagery flight dates Oct 2009 and Nov 2006
V:\52813\active\181300167\GIS\Project\ExistingFacilities_Figure_3_Sheet_2.mxd

LEGEND:

- Culvert
- Siphon Location
- Road
- Gila Bend Canal
- Gasline
- Channels
- Powerline
- Embankments
- Project Boundary

**100-Year Flood Zone**

- A
- AE
- AO
- FW

**Land Owner**

- BLM
- Local or State Parks
- Private
- State Trust

**EXHIBIT 2**
**EXISTING FACILITIES & UTILITIES**
**SHEET 2 OF 2**

N

0 3,000 6,000
Feet

**GILLESPIE AREA DRAINAGE MASTER STUDY**
**F.C.D. CONTRACT NO. 2009C039**


Flood Control District of Maricopa County
2801 W. Durango St. Phoenix, AZ 85009

Stantec Consulting Inc.
8211 S. 48th Street
Phoenix, AZ U.S.A. 85044