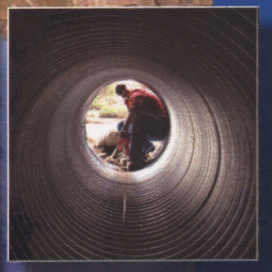
Upper New River Area Drainage Master Plan

June 2008

Flood Control District of Maricopa County

Contract FCD 2005C020
Stantec Project No. 182000418





Data Collection Report

Stantec

Upper New River ADMP

Data Collection Report

PREPARED FOR:

FLOOD CONTROL DISTRICT

of

MARICOPA COUNTY

PREPARED BY:

STANTEC CONSULTING INC.

8211 South 48th Street

Phoenix, Arizona 85044

(602) 438-2200

June 2008

Stantec Consulting Inc.

Project No. 182000418

CONTRACT FCD 2005C020

Table of Contents

Table of Contents Continued

List of Figures

List of Appendices

1.0 DATA COLLECTION REPORT

The Data Collection task for the Upper new River Area Drainage Master ADMP Plan consists of collecting information that pertains to engineering evaluations and land use within the project area. This information is used to define resources and constraints in the study area, and influences design elements. 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, transportation, trails and utility plans, flood control facilities design guidelines and drainage manuals.

2.0 PROJECT DESCRIPTION

Currently, the Upper New River ADMP watershed and study area is mostly undeveloped and relatively pristine, undisturbed Sonoran Desert. It is anticipated that wide development interest within the project area will increase over the next 5 years. Generally, the opportune time to develop an Area Drainage Master Plan is before land development significantly affects or impacts the drainage characteristics of the watershed. Floodplain managers, planners, developers, and land owners can use and implement the Upper New River ADMP for planning and designing flood mitigation solutions and for guiding or regulating development that either affects drainage or is within the Upper New River floodplain.

3.0 SCOPE OF PROJECT

Major objectives of the Upper New River ADMP are to:

- Identify the flood hazards in the study area and quantify the extent of existing and future potential flood hazards.
- Prepare FEMA floodplain delineations for selected watercourses.
- Identify tributaries and reaches of the Upper New River that should remain undisturbed based on existing or potential flooding and erosion hazards and/or their unique natural or physical characteristics.
- Develop cost-effective, sustainable flood and erosion control solutions that may be implemented together or individually, based on scheduling, funding, and cost sharing.
- Perform a qualitative evaluation of the erosion and sedimentation patterns and characteristics of select reaches of the Upper New River and major tributaries where deemed appropriate, to provide a tool for estimating the long-term benefits or effects of proposed solutions.
- Prepare an Area Drainage Master Plan and associated reports that document the technical analysis, data collection efforts, the planning process, the public and stakeholder involvement process, the alternatives development, the alternative analysis, the conceptual design plans for the preferred alternative(s), and the implementation plan for the ADMP.

4.0 DATA COLLECTION

4.1 MAPPING

4.1.1 Project Topographic and Aerial Maps

Detailed topographic mapping and aerial photography was obtained from the Flood Control District of Maricopa County (District). Flight dates for aerial photography were between January 8 and February 11, 2006. The District compiled new topographic data along with existing topographic data to develop topographic mapping for the project area. Flight dates for the new topographic data were August 30 and 31 of 2005. New topographic data was mapped at a scale of 1 inch=200 feet at a 2-foot contour interval and at 1 inch=400 feet at a 4-foot contour interval. Figure 4.0 depicts the location and datum specifics of the different mapping sets utilized in developing topographic mapping for the project. Detail topographic data is used in the development of hydraulic models.

4.1.2 Additional Mapping

10-foot contour interval, mapping obtained by the district is utilized in the development of hydrologic models and terrain slope analysis, as well as in areas not covered by detailed mapping. Flight dates for the topographic data were December 16, 2000 and January 4, 2001, vertical datum is NAVD 88, and horizontal datum is Stateplane, Zone 3176, Units International Feet, GRS 1980, NAD83. Outside of Maricopa County, USGS Quadrangles were used to depict topographic conditions.

USGS Quadrangles utilized:

- Squaw Creek Mesa - Published in 1972 40-foot CI, NGVD of 1929
- Cooks Mesa - Published in 1968 40-foot CI, NGVD of 1929

4.2 CURRENT CONDITIONS

Topographic and aerial mapping were used to help identify some physical characteristics of the watershed. Figure 4.1, the Terrain Slope Map, gives a visual representation of terrain slopes in the watershed. Communities and agencies often use terrain slope to define areas of preservation or areas where special development consideration must be met.

Landform characteristics can also be inferred from topographic and aerial mapping. Figure 4.2, developed by JE Fuller Hydrology and Geomorphology, show a variety of landforms that have been identified within the project area. Specific flooding hazards can be associated with certain types of landforms. As an example, unique flood hazards are associated with alluvial fans which can be identified in part by fan shape morphology and distributaries flow patterns

4.3 EXISTING FACILITIES EXHIBIT

As part of the Upper New River ADMP existing stormwater conveyance facilities, major utilities and transportation corridors are identified and inventoried. Stormwater conveyance/storage facilities consist of man-made features and natural washes. Utilities identified consist of major electrical lines, gas main lines and water trunk lines. Major transportation corridors through the project area are Interstate 17, Carefree Highway, Lake Pleasant Parkway, and New River Road. The location and type of facility were determined from aerial photographs, roadway plans, quarter section maps and field investigation.

An Existing Facilities Map was prepared from the facilities inventory illustrating the location of major drainage facilities in the Upper New River ADMP study area. The Existing Facilities Exhibit is a compilation of geographic information system (GIS) layers developed/obtained for the study. The Existing Facilities Map is presented as Figure 4.3 (Sheets 1 through 10).

4.3.1 Stormwater Conveyance Facilities

Stormwater 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 stormwater by observing the physical characteristics and condition of the facilities

4.3.1.1 Drainage Facility Descriptions

Types of drainage facilities inventoried are: constructed stormwater channels, natural channels with existing or pending FEMA floodplains, culverts, dams, and levees. The type and location of drainage facilities are presented on Figure 4.3 (Sheets 1 through 10). The following text gives general descriptions of the facilities inventoried.

4.3.1.1.1 Channels

With the exception of the New River levee reach in the community of New River, the channels within the study area are natural channels. Natural channels in mountainous and foothill areas (piedmount) are typically single thread channels that collectively define a tributary network and at many locations have rock channel beds. Natural channels in areas of flatter terrain are typically alluvial, braided channels where a distributary flow pattern characterizes the main flow conveyance area of the watercourse. Typical examples are the New River floodplain downstream of Interstate 17 and Deadman Wash upstream and downstream of the Carefree Highway. Within the study area there are numerous locations along New River where flow breaks out of the main channel and drains to adjacent watercourses.

4.3.1.1.2 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. The culvert's type, length, material and headwall design elements were observed and recorded in a database, which is provided in Appendix A, and culvert locations are shown on Figure 4.3. Evidence of scour and/or sediment deposition and the presence of debris build-up were also recorded. Culverts at driveway entrances to property adjacent to roadways and culvert structures on private property were not inventoried. Approximately 30 percent of the culverts identified in the community of New River had sediment accumulation to a degree that 25 percent or more of the conveyance area of the culvert was clogged. Due to limited access along Interstate 17 (I-17), not all of the culvert structures that convey flow across I-17 were field-verified, nor were the working conditions of the culverts observed.

4.3.1.1.3 Dams/Embankments

There are engineered and non-engineered embankments that pond flow or function as flow delineators within the study area, including an engineered dam. The engineered dam is the New River Dam, which functions as a flood control facility. Through the dam's storage function, flood hazards downstream of the dam are reduced. Engineered embankments are the CAP Canal, the Carefree Highway and Interstate 17. At locations along the Carefree Highway, runoff pools to the height of the roadway and then overtops the roadway or drains along the roadway to a culvert crossing. Culvert crossings of I-17 and the CAP Canal typically convey flow under the facility with minor pooling of runoff at the upstream end of the structure. Non-engineered earthen structures in the study area are placed across a watercourse to pool runoff for livestock, and are shown as stock tanks in Figure 4.3. Non-engineered structures typically vary in height and top width, do not have defined spillways, and are not maintained. Dense vegetation lines the pooling area of non-engineered structures that function as dams.

4.3.1.2 Utilities

As part of the development of the Existing Facilities Map, major utilities were located and inventoried so that potential conflicts with a proposed flood control management alternative can be identified. Major utilities identified are electrical transmission lines, and water and gas pipelines.

4.4 AREAS OF POTENTIAL FLOODING

Areas of potential flooding in the project area are defined by effective Federal Emergency Management Agency floodplain delineations, pending floodplain delineation developed by the District, floodplain breakout areas inferred from aerial photography, areas where new floodplain delineations are to be conducted as part of this study, and from field investigations. Figure 4.3 (Existing Facilities Map) depicts floodplains, floodways and potential breakout locations. Through field and aerial photography investigations, review of documents including Floodplain Insurance Study Reports,

drainage complaints, newspaper articles, and conversations with the local population the following observations/comments are offered:

- **Structures within the floodplain**
  There are many residential structures within the floodplain limits of Gavilan Peak Wash, tributaries to Gavilan Peak Wash and New River within the community of New River. The locations of these structures are depicted on Figure 4.4. (See Figure)

- **Jenny Lin Road Wash**
  Homes have been constructed in Jenny Lin Road Wash a tributary to New River. The tributary is located approximately a quarter of a mile to the south of the I-17 bridge crossing of New River.

- **Carefree Highway at Deadman Wash**
  Historic photos show flow overtopping the Carefree Highway. There does not appear to be sufficient capacity in the existing culvert to convey the peak flow. As development proceeds on the west side of New River, all weather access to the Carefree Highway could become an issue.

- **Old Stagecoach Road at Dip Crossing**
  There was a fatality at the low flow crossing of New River in August of 2005. Residents described the flood as a "15 foot wall of water". The incident was documented by the Arizona Republic in the story entitled "1 Dead, 1 lost in Flash Floods."

- **Elementary School at New River**
  The project team has received reports of flooding at the elementary school due to drainage coming across the I-17 and through a series of box culverts. No details were provided.

- **New River Road near Gavilan Peak Wash and roadway crossing of tributaries to Gavilan Peak Wash**
  The project team observed signs of flow overtopping the road, and in some areas causing significant erosion and undermining of the roadway shoulder.

- **Meander Road in New River**
  The team observed major scour and signs that the flow had overtopped the roadway at culvert locations after summer rains.

- **Flood issue areas identified in a public meeting**
  Property owners, residential structures and lots within the Gavilian Peak Wash floodplain and the New River floodplain upstream of the Old Stagecoach Road crossing of New River have been impacted by a flood event (Figure 4.4).

- **New River 1993 Flood Event**

  In January 1993, precipitation and associated runoff resulted in estimated flows of 25K cfs in New River (i.e., approximately a 50-year event). One house had water flowing through it and access to 26 homes was cut off for over a day. The flows overtopped the banks and traveled down 36th Avenue for about ¾ of a mile,

lowering/scouring the road from one to three feet. The channel eroded laterally at two locations.

The Flood Control District (District) completed a flood mitigation study of this area in October 1993. Four alternatives were considered, which were:

- Construction of a soil cement levee that would be 7000 feet long, 12 feet high with at least an 8 foot toe down. Estimated cost was $17.9 million.
- Construct a dam at the across the New River Canyon upstream of Table Mesa Road. The dam would have been 100 feet tall and 3000 feet long. Estimated costs were $30 million.
- Acquire the 25 houses in the floodway for an estimated cost of $2.2 million.
- No Action

After evaluating the alternatives, the No Action alternative was actually the recommended alternative with Acquisition as the second choice. The structural alternatives were not considered feasible due to the costs and environmental impacts.

The end result was that the District acquired 15 properties consisting of approximately 29-acres. Some property owners did not accept the offers.

Six vegetation types were identified on the District property. The vegetation types and associated acreage were identified as:

- Wetland Vegetation (.1 acre)
- River Channel (3.9 acres)
- Broadleaf Riparian (1 acre)
- Mesquite Bosque (12 acres)
- Upland Vegetation (5 acres)
- Disturbed Areas (7 acres)

FCDMC is in the process of acquiring approximately 60 acres of land currently owned and managed by the U.S. Bureau of Land Management (BLM). The BLM property is immediately upstream of the District property. Under the Recreation or Public Purposes Act, the federal government is authorized to sell or lease public lands to state and local governments for recreation or public purposes.

With the acquisition of the BLM property, the District will own about ¾ of a mile of land adjacent to and in the floodplain of the New River. The land will be managed to preserve the natural and beneficial uses of the floodplain and riparian

habitat. The District's long term goal is for a local government agency or a non-profit corporation, such as Desert Foothills Land Trust, to manage the property as a natural riparian area for conservation and wildlife habitat.

4.5 EXISTING DEVELOPMENT AND FUTURE DEVELOPMENT PLANS

A majority of the project area is owned by the State Land Department, and is undeveloped. State Land Department representatives estimated that auction and development of the state lands north of the Carefree Highway is five to ten years out. Disposition of state lands south of the Carefree Highway could occur in the next five years. It is expected that when the land is auctioned it will be developed into master planned developments.

Currently, much of the private land in the watershed is either developed or under development. Master planned communities currently in progress include Arroyo Vista, Arroyo Norte, Anthem West (all City of Phoenix), and Sonoran Mountain Ranch (City of Peoria). Field observations indicate that most of the master planned communities in the watershed have left the natural drainage patterns more or less intact.

4.6 FUTURE TRANSPORTATION PLANS

Planned transportation corridors were identified in the project area, and are shown on Figure 4.5. As the area continues to develop, additional crossings of New River are proposed at the arterial street level. In addition, two major freeways are planned for the area: a potential freeway referred to in this report as the New River Freeway, and the Loop 303 Freeway.

4.6.1 New River Freeway

The New River Freeway will parallel the existing New River Road, and is planned as a limited access freeway. The final alignment is not yet determined, but it will cross Sweat Canyon Wash and other western tributaries of New River.

4.6.2 Loop 303

The Loop 303 alignment passes through the project area, crossing New River just north of the New River Dam impoundment area, and Deadman Wash downstream of the Carefree Highway before connecting to the I-17. A connector is planned between the 303 and Carefree Highway on the west side of New River. Current estimates are that construction will begin in 2008.

4.7 EXISTING AND FUTURE DRAINAGE FACILITIES

Existing drainage facilities were identified through field visits, aerial photographs, and as-built plans. Identified facilities are shown on Figure 4.3, the Existing Facilities Exhibit. Facilities identified in the project area include culverts, roadway dip sections at wash crossings, stock tanks, siphons, bridges, levees through the community of New River and the New River Dam and associated spillway. Known future drainage facilities

in the watershed are associated with transportation corridors. Proposed Loop 303 drainage facilities within the project area consist of collector channels, culvert structures, bridges, bank protection and levees.

4.8 LAND OWNERSHIP

Currently, the majority of land in the watershed is owned by public entities with the largest being Arizona State Trust and Federal lands within the Tonto National Forest. Figure 4.6 depicts the major land holders in the project planning area. Within the planning area the major owners are State Trust Land (70.7%), Private (15.6%), and Bureau of Land Management (8.3%).

4.9 HYDROLOGY/HYDRAULICS/FLO-2D MODELS

The Upper New River watershed was the subject of seven previous large scale hydrologic and hydraulic studies in the past 20 years. The aerial extent of the studies is shown on Figure 4.7. These studies were collected and reviewed as part of the data collection effort, and full bibliographical information can be found in the reference database printout. The studies span almost 20 years, and use different standards of mapping and hydrologic and hydraulic model construction. A summary of each study follows. More detail on the hydrologic and hydraulic aspects of the studies can be found in the individual reports.

- Flood Insurance Study, New River, New River Dam to Rock Springs, Maricopa County, Arizona; 1987
  The original Flood Insurance Study (FIS) initiated by the District in the project area was performed by Coe & Van Loo (CVL) in 1987. USGS Quadrangle maps were used to delineate the watershed for HEC-/hydrologic models. The size of the watershed upstream of the dam is 170 square miles total, including the portion of the watershed within the Tonto National Forest. Four-foot contour interval mapping developed for the project was utilized for HEC-2 hydraulic models of the New River upstream of the New River Dam.

- Deadman Wash Floodplain Delineation Study; 1992, 1995
  A floodplain delineation of Deadman Wash completed by HNTB, from the confluence with New River to a point upstream of the I-17 bridge. USGS Quadrangle maps were used to delineate the 34-square mile watershed. A HEC-1 /hydrologic model and HEC-2 hydraulic model are developed.

- Sweat Canyon Flood Insurance Study; 1999
  David Evans and Associates performed the Sweat Canyon Flood Insurance Study. The study watershed is approximately 15 square miles in size and drains to Sweat Canyon Wash and its tributaries including Doe Peak Wash. Approximately 3.5 linear miles of floodplain was delineated for Sweat Canyon Wash and Doe Peak Wash. Two-foot contour aerial mapping performed for the study was used to build HEC-1 hydrologic models and HEC-RAS hydraulic models. The digital files for this project are available in GIS format from the District.

- New River above I-17 Floodplain Delineation Study; 2002
  Primatech performed a detailed hydraulic analysis of New River through the community of New River and Black Wash to its confluence with New River. A hydrologic analysis was conducted for the watershed draining to Black Wash. Digital files are available in GIS format from the District.

- New River West Tributaries FDS; 2005
  Eleven washes south and south west of Sweat Canyon Wash and west of New River were studied by URS for the New River West Tributaries study. Project specific topographic two-foot contour interval mapping was developed. HEC-1 hydrologic and HEC-RAS hydraulic models were developed for the project.

- Gavilan Peak Floodplain Study; 2000-2005
  Gavilan Peak Wash was the subject of a hydrology study performed by the District in 2000, and then updated in 2006. The resulting HEC-1 model was used by Michael Baker Jr., Inc. in the Gavilan Peak Floodplain Delineation Study, which used project specific mapping provided by the District at a scale of 1 inch=200 feet and a 4-foot contour interval. HEC-RAS hydraulic models were developed to delineate 19.5 linear miles of floodplain within and around the community of New River.

- New River Road Bridge Levees Update TDN; 2005
  Hoskin-Ryan Consultants, Inc. (HRC) was contracted by the District to prepare a LOMR update for New River at the New River Road Bridge crossing. This floodplain revision reflects levee improvements north and south of the bridge, which have occurred since the effective floodplain study.

4.10 PLANNING AND REGULATORY CONSIDERATIONS

Portions of the Upper New River watershed are included in numerous planning studies, which were collected and reviewed to determine if information/data in the studies are applicable to the Upper New River ADMP. The major entities with planning jurisdiction within the Upper New River ADMP watershed are Maricopa County, City of Phoenix, and City of Peoria. In order to ascertain whether the published planning studies still reflected current ideas, the planning departments of the three jurisdictions were consulted about ongoing and future development plans for the project area.

Portions of the watershed fall into special planning areas for agencies such as the US Forest Service and the Bureau of Land Management. For a complete list of the planning studies collected, please see the Reference Database Printout.

The planning information contained in these studies will influence the development of flood control management alternatives. Points of interest that may influence the development of the Upper New River ADMP are briefly summarized below.

In addition to planning studies, City Codes and Ordinances were reviewed. Codes and ordinances may influence the development and selection of flood control management alternatives for the Upper New River ADMP.

4.10.1 MAG Regional Transportation Plan; 11/25/2003

The Regional Transportation Plan for Maricopa County developed by the Maricopa Associations of Governments provides a vision for a regional transportation system. The plan addresses transportation needs that include freeways, highways, streets, mass transit, airports, bicycle, and pedestrian facilities. Of particular interest to the Upper New River ADMP planning efforts is the potential location of freeways (SR LOOP 303), arterial roadway network and a general aviation airport. Figures from the Regional Transportation Plan depicting potential locations for the Loop 303, arterial roadways, and a possible general aviation facility are in Appendix B.

4.10.2 City of Peoria

Planning documents developed by the City of Peoria that in part include portions of the Upper New River ADMP planning area are the General Plan and the Loop 303 Specific Area Plan. Figure 4.8 depicts the City of Peoria General Land Use in the ADMP planning area.

The Hillside Development Overlay District and the City's Floodplain Management Code were reviewed as part of the data collection effort. These ordinances and codes may influence the development and selection of flood control management alternatives and hydrologic/hydraulic models.

4.10.2.1 General Plan

The Peoria General Plan is the fundamental planning document for the City of Peoria to guide growth and development within the City and its planning areas. The plan was revised in December, 2005. Land Use, Recreation and Open Space, Safety, Circulation and Environmental Resources elements of the plan provide policy level guidance for development, and are directly applicable to the Upper New River ADMP.

Portions of the Land-Use element of the plan depicted in Figure 4.8 are used in this study for the development of future condition hydrologic models. The Land Use element will also be used in the development of flood mitigation alternatives.

The circulation element of the plan provides a policy framework for improving the transportation network in the City. The circulation plan is used in this study for the development of flood mitigation alternatives.

4.10.2.2 Loop 303 Specific Area Plan

Peoria's Loop 303 Specific Area Plan approved by the City Council December 13, 2005 updates Land Use data presented in the General Plan. The plan updates Land Use classifications within a corridor adjacent to the proposed Loop 303 alignment and a freeway alignment referred to as the New River Freeway. The updated Land Use information will be used in this study for the development of flood mitigation alternatives.

4.10.2.3 Hillside Development Overlay District

The Hillside Development Overlay District provides regulations for the development of hillside slopes greater than 10%. Intensity of development is regulated for slopes exceeding 10%. Regulations will be utilized in the development of future condition hydrologic models.

4.10.2.4 Floodplain Management Code

The Floodplain Ordinance provides regulations for the management of floodplains within the City of Peoria. The regulations will be utilized in the delineation of floodplains, the development of hydraulic models and the evaluation of flood control management alternatives.

4.10.2.5 Peoria Desert Lands Conservation Master Plan

The major goal of the Peoria Desert Lands Conservation Plan, completed in August of 1999 is to "Maintain the vitality of the unique Sonoran Desert environment by providing high quality passive and active open space areas, while encouraging development that is sustainable and supportive of the environment". To meet the intent of the goal, recommended policies that prescribe a course of action are provided to help guide development. In addition to recommended policies, sensitive land areas identified for potential preservation or conservation are presented. Sensitive land areas referred to as drainage corridors in the project area include the New River 100-year floodplain and hill side slopes exceeding 10%.

4.10.3 City of Phoenix

Documents developed by the City of Phoenix that in part include portions of the Upper New River ADMP planning area are the General Plan and the Sonoran Preserve Master Plan.

Various documents were reviewed to become familiar with ordinances that would influence the development and selection of flood control management alternatives developed for the Upper New River ADMP. They are the Grading and Drainage Ordinance, Floodplain Ordinance, Development Standards of General Applicability Zoning Ordinance and Zoning Overlay Districts that include Desert Character Overlay District, North Black Canyon Overlay District, and FH-Flood Hazard and Erosion Management District.

4.10.3.1 General Plan

The City of Phoenix General Plan provides comprehensive direction for growth and redevelopment within the City. The plan, adopted December 5, 2001, provides guidance through a set of goals, policies or regulations for Land Use, Cost Development, Recreation and Open Space, Safety, Circulation and Environmental Resources elements.

The Land-Use element of the plan depicted in Figure 4.9 is utilized in this study in the development of future condition hydrologic models. The Land Use element will also be used in the development of flood mitigation alternatives.

The Upper New River ADMP project area lies within the City of Phoenix's New Village and the North Gateway Village. Village boundaries along with General Plan Land Use categories for these villages are provided in Appendix C

4.10.3.2 Sonoran Preserve Master Plan

The Sonoran Preserve Master Plan adopted by the City of Phoenix in 1998 identifies desert areas around Phoenix for preservation. It stresses maintaining the desert character of the landscape and preserving a variety of vegetative communities. It specifically stresses maintaining washes and buffer areas due to the diverse plants and wildlife that thrive in the washes. As stated in the Sonoran Preserve Master Plan:

Preserve Natural Hydrological Process

The watercourses or washes are the most biologically diverse and ecologically significant component of the desert landscape. This goal envisions preserving the floodway (actual sandy wash from bank to bank), the definable 100-year floodplains, and sufficient buffers to allow wide enough corridors for wildlife movement and natural meandering of the wash course to occur over time. This represents a significant change in development practices and will ensure long-term preservation of washes, expand the land area within the reserve, and capture a diversity of vegetation communities. A figure from the Sonoran Preserve Master Plan depicting areas that the plan applies to within the City of Phoenix is provided in Appendix D.

4.10.3.3 Grading and Drainage Ordinance

The Grading and Drainage Ordinance provides minimum requirements for regulating grading and drainage associated with development. The ordinance includes design standards for drainage and for storm water retention and detention. Design standards will be utilized in the development of future condition hydrologic models.

4.10.3.4 Floodplain Ordinance

The Floodplain Ordinance provides regulations for the management of floodplains within the City of Phoenix. The regulations will be utilized in the delineation of floodplains, the development of hydraulic models and the evaluation of flood control management alternatives.

4.10.3.5 Development Standards of General Applicability (Zoning Ordinance)

This chapter of the Zoning Ordinance includes the Hillside Ordinance, which provides regulations for development on hillside slopes greater than 10%. Intensity of development is regulated for slopes exceeding 10%. Regulations will be utilized in the development of future condition hydrologic models.

4.10.3.6 Desert Character Overlay Districts

The purpose of the Desert Overlay Districts is to implement land use elements of a specific area plan and to provide development guidance in fragile undisturbed desert. The Desert Character Overlay Districts do not fall within the planning area of the Upper New River ADMP, however the ordinance provides regulations and design guidance for

development within and adjacent to desert washes that could be applicable to the Upper New River ADMP. The following excerpt is an example of the type of regulation provided:

Desert washes and related habitat corridors shall be designated according to the following minimum criteria. Allowance is to be made for wash migration over time using the most current acceptable method for watercourse management. (It is not the intent of the following criteria to replace requirements by other flood control agencies).

1. *Regional wash corridors: Flows of seven hundred fifty cfs or greater. Characterized as large and picturesque. Designation as drainage/vegetation tract is required along this type of wash at the one hundred-year rainfall inundation as determined by the drainage design manual of Maricopa County or fifty feet from top-of-uppermost bank hinge whichever is greater. The area within this boundary is to be maintained as permanent undisturbed open space with the exception of wash crossings.*

4.10.3.7 North Black Canyon Overlay District

The North Back Canyon Overlay District is located adjacent to the Upper New River ADMP south of the Carefree Highway and east of I-17. The Ordinance provides regulations and design guidance for development within North Black Canyon Overlay District. The following excerpt is an example of the type of regulation provided:

Manage stormwater via the natural wash system to the greatest extent possible.

1. *Preserve identified washes (guideline D.1.) As amenities and allow them to serve multi-use functions, including drainage.*
2. *Allow for the natural function of the floodplain where feasible, based on engineering parameters and public safety.*
3. *Construct bridges and culverts to minimize impacts to washes.*
4. *The wash system can provide a place for trails within the setbacks above the wash banks. They become a recreational and visual amenity.*

4.10.3.8 FH-Flood Hazard and Erosion Management District.

The purpose of the FH-Flood Hazard and Erosion Management District is to provide regulations to the use and development of lands in an erosion hazard zone developed as part of a Watercourse Master Plan or Area Drainage Master Plan. The ordinance provides permitted uses within and adjacent to erosion hazard zones. The ordinance would help to implement a non-structural alternative. The following are excerpt from the ordinance:

a) *District is to establish regulations pertaining to the use and development of land within erosion control zones. These regulations are designed to minimize potential adverse impacts to the public health, safety, and general welfare, including but not limited to the loss of life and property which may result from flooding caused by storm event surface runoff. It is further intended that watercourses be retained and maintained in a natural desert state with limited*

flood control structures. Flood control structures shall be designed to reflect a natural condition and to blend with the natural environment. +1

b) Permitted Uses.

1. *Conveyance of stormwater. The watercourse shall remain in a natural state, except that limited structural improvements shall be permitted (when deemed necessary by the Flood Control District of Maricopa County and/or City of Phoenix pursuant to a Watercourse/Area Drainage Master Plan Study to ensure the public health, safety, and welfare and when designed to reflect a natural condition through such means as color treatment or buried cutoff walls).*
2. *Water recharge.*
3. *Open space, natural or unimproved.*
4. *Open space, improved– shall be limited to non-motorized recreational activities including hiking/riding trails, exercise par courses, picnic areas and similar activities within a natural desert landscape. There shall be no game/sports courts or grassed areas. Structures shall be limited to security lighting, open fencing, shade structures, tables, seating, and exercise equipment which shall not impede stormwater conveyance.*
5. *Residential use– When a lot or parcel that is partially covered by this zoning district also includes land that is residentially zoned, then residential use at a density not to exceed one dwelling unit per acre on the portion covered by this district may be transferred to the adjoining residential district. In addition, all structures, parking, and accessory uses, except as otherwise permitted by this district, shall be transferred to the adjoining residential zoning district.*
6. *Non-residential development– When a lot or parcel that is partially covered by this zoning district also includes land that is non-residentially zoned, then non-residential intensity at a floor area ratio of 0.1 on the portion covered by this district may be transferred to the adjoining non-residential district. In addition, all structures, parking, and accessory uses, except as otherwise permitted by this district shall be transferred to the adjoining non-residential districts.*
7. *Utilities– which shall be limited to wash crossings only. All installations shall be protected against scouring.*
8. *Roadway/bridge crossings. The span between bridge abutments shall be as recommended in the Flood Control District of Maricopa County and/or City of Phoenix Watercourse Master Plan. The use of piers (as necessary) is not precluded. The height of the span shall allow for appropriate wildlife corridor use as approved by the City of Phoenix. Temporary wet crossings, as approved by the City of Phoenix, may be allowed when deemed necessary to provide private or public access.*

4.10.4 Maricopa County

Documents developed by Maricopa County that in part include portions of the Upper New River ADMP planning area are the Eye to the Future 2020 Comprehensive Plan the New River Area Plan, the County's Hillside Ordinance and Floodplain Regulations.

4.10.4.1 Eye to the Future 2020

The Eye to the Future 2020, the Maricopa County Comprehensive Plan was adopted in 1997 and amended in August of 2002. Goals and objectives of the plan include; conservation of the natural resources of the county, ensure efficient expenditure of public funds, and to promote the health, safety, convenience, and general welfare of the public. Figure 4.10 shows Land Use designations in Maricopa County.

4.10.4.2 The New River Area Plan

The New River Area Plan is an implementation measure of the Comprehensive Plan. The New River Area plan was developed by the County and adopted in April of 1999. The Land-Use element of the plan depicted in Figure 4.10 is utilized in this study in the development of future condition hydrologic models. The Land Use element will also be utilized in the development of flood mitigation alternatives.

4.10.4.3 Hillside Ordinance

The Hillside Ordinance provides regulations for the development on hillsides for hillside slopes of greater than 15%. Intensity of development is regulated for slopes exceeding 15%. Regulations will be utilized in the development of future condition hydrologic models.

4.10.4.4 Floodplain Regulation

Floodplain regulations provide regulations for the management of floodplains within Maricopa County. The regulations will be utilized in the delineation of floodplains, the development of hydraulic models and the evaluation of flood control management alternatives.

4.11 PLANNING ISSUES, OPPORTUNITIES AND CONSTRAINTS

Potential planning issues, opportunities and constraints identified through the data collection effort that may influence the development and selection of a flood control management alternatives are:

4.11.1 Braided Channels

A braided watercourse is one flowing in several dividing and reuniting channels resembling the strands of a braid. Braided channel floodplains are typically wide. New River and portions of Deadman Wash have braided channels.

- Opportunity
  Left in a natural condition the 100-year floodplain provides open space, recreation and possible wildlife habitat and corridors.

- Constraints
  The physical process that forms a braided channel typically includes avulsion and lateral migration. Over time the channel and thus the 100-year floodplain can migrate to new locations. Developing within or adjacent to a lateral migrating river system requires structural flood and erosion mitigation measures or sufficient erosion hazard buffers. Structural solutions could create adverse impacts downstream. Roadway crossings of braided systems typically require wider culvert/bridge crossings.

4.11.2 Single Thread Channels

A single thread watercourse is typified by a well-defined channel and floodplain. Relative to a braided channel system, single channel floodplains are smaller. Gavilan Peak Wash, Sweat Canyon Wash and the West tributaries are examples of single thread channels.

- Opportunities
  Floodplains associated with single thread channels are easier to define and manage. Design of roadway crossings so that there is no adverse impact to downstream properties is easier than a design for braided channels. Left in a natural condition the 100-year floodplain provides open space and possible wildlife habitat and corridors. Inline retention/detention scenarios are possible in a signal thread channel system whereas they are problematic in a braided system.

- Constraints
  Due to the sinuous nature of channels proposed roadway alignments may need to be revised so that they are parallel or perpendicular to a channel.

4.11.3 Flow Splits

Flow splits occur at locations where the conveyance capacity of a watercourse is limited by channel morphology. At these locations there is potential for flow to break out of the channel and drain to other channels. There are multiple locations along New River where flow splits occur.

- Opportunities
  Flow splits can be eliminated by structural flood control measures. The elimination of the split can greatly increase the amount of property removed from the floodplain.

- Constraints
  Flow splits lead to channel avulsion, undefined changes to downstream floodplains, public safety issues due to undefined or inadequately defined floodplains.

4.11.4 Land-Use

Planning documents developed by communities have a land use element that provides a framework for defining future development patterns. The Land Use element helps guide future growth, revitalization, and preservation efforts in the community. An understanding of future or anticipated land use is key to the development of an Area Drainage Master Plan. Urbanization of an area typically alters existing rainfall-runoff relationships that could ultimately result in flooding impacts to the community. The land use element of general and specific area plans defines residential, commercial, industrial and business areas and densities within a planning area.

- Opportunity
  Land use designations will help define and select flood control management alternatives because of the alternative compatibility with the land use. As an example a non-structural alternative in a residential land use area could be more favorable than a structural alternative due to the open space and esthetic quality that it provides.

- Constraints
  Single lot development in low density land use areas in which 100-year floodplains were not delineated prior to development such as in the community of New River typically have flooding issues because individual landowners are unaware of and do not know how to define potential flooding issues. The common flooding issue is that roadway and structures are built within washes and associated floodplains, which can result in adverse impacts to the structure and surrounding property. Adverse impacts include increases in flooding depth and velocity, as well as egress limitations.

4.11.5 Transportation Corridors

Freeways, highways, and community streets cross watercourses and it is typically at these crossings where drainage issues occur. Typical roadway crossings of a watercourse are at-grade crossings, culvert structures, and bridges.

At-grade crossings typically have only minimal or localized impacts on watercourse stability. More commonly, the stream impacts the at-grade crossing, rather than vice-versa. Flow over the at-grade crossing can cause erosion of the pavement and subgrade, deposition of sediment in the road section, and disruption of traffic flow. Examples of at-grade crossings in the Upper New River Planning area are Old Stagecoach crossing of New River, New River Road crossing of New River West Tributary K and Sweat Canyon Wash.

The design of culvert structures takes into consideration public safety, long-term function and maintenance, and impacts to the channel form and function. Typically, the impact of culvert crossings on a watercourse system is primarily a function of their size in

relationship to design discharge, channel and floodplain morphology, clogging potential, sediment transport capacity, and scour potential.

Undersized (relative to channel capacity) or clogged culverts and culverts that create headwater ponding can have detrimental impacts to both upstream and downstream properties. There are a number of clogged culverts in the community of New River. In addition, flooding experienced on the Carefree Highway crossing of Deadman Wash is due to insufficient culvert structures.

Bridges that span the floodplain typically have no measurable impact on channel stability. Bridges with narrow openings relative to natural channel and floodplain widths have the potential for adverse impacts, such as an increase in water surface elevation upstream of the bridge and increase in velocity and scour potential downstream of the bridge.

- Opportunities
  Culvert crossings can provide an opportunity for inline retention and/or detention facilities. They can also accommodate wildlife movement and recreation if properly sized.

- Constraints
  If properly designed, the constraints on a watercourse due to a roadway crossing are insignificant.

4.11.6 Utility Corridors

Utility crossings, if properly constructed, have no inherent impact on channel stability since they are typically buried beneath the channel or extended overhead. Direct impacts on channel stability or flood hazards can occur during utility construction due to disturbance of bank and floodplain soils and vegetation. Where vegetation is removed, the underlying soils are more vulnerable to erosion and scour. If floods occur before the vegetation is reestablished, erosion of the construction alignment may occur and initiate erosion of adjacent channel reaches

- Opportunities
  There are no unique opportunities in relation to flood control management development and design.

- Constraints
  A utility corridor could impact the design and construction cost of an alternative.

4.11.7 Land Ownership

Issue with land ownership primarily deals with size of the parcel or parcels that a landowner may own.

- Opportunities
  The development of large parcels of land require that the development plan goes through a formal planning and engineering process that includes agency review. The process implements design guidelines that are developed for and presented in planning documents.

- Constraints
  Areas that were subdivided into small parcels for individual lot development limit uniform flood control management strategies, and typically the collective impacts of development are not addressed.

5.0 Scenery and Recreational Resource Assessment

Data Collection for the Scenery and Recreational Resource Assessment task is described in the Scenery and Recreational Resource Assessment report to be prepared by EDAW as part of the project.

6.0 References/Figures

6.1 REFERENCE DATABASE PRINTOUT

References which have been collected by Stantec for use in the Upper New River Area Drainage Master Plan are compiled in an Access database entitled Data Collection Database. Appendix E is a printout of the database, organized by major discipline use. The database contains the following information about each reference: Reference type (Photo, Article, Report, etc), Reference Date, Author, Owner (FCD, FEMA, etc), Discipline and Sub-discipline Use (Engineering, Planning, Hydraulics, 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.

6.2 SHAPE FILE DATABASE PRINTOUT

Spatial information such as zoning, roadway locations, drainage complaints, 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 database. Each file is listed, along with the date it was received or created, the source of the information and a description of the information. In addition, some shape files have been assigned a Discipline and Sub-Discipline Use to indicate the nature of the information they contain. Appendix F is a printout of the shape file database, organized by Discipline.

Information from previous District projects in the 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: The Hydrologic Information System Rev. 3.1. Under this system, shape files are named both by the information they

contain and a number which refers to the FCD project. For convenience, Table 6.2.1 lists the project name along with the number assigned to it in HIS.

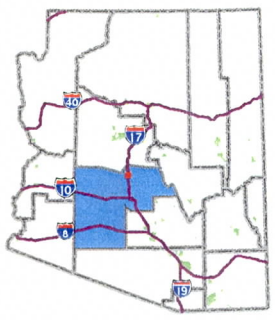
Table 6.2.1, HIS Project Number Key

HIS #	Name
1007	Deadman Wash FDS
1042	Sweat Canyon Wash FDS
1063	Gavilan Peak FDS
1088	New River Above I-17 FDS
1111	New River at New River Bridge Mapping
1208	Countywide 10 Foot Contour Mapping
1225	Upper New River Mapping
1244	Gavilan Peak FDS
1245	New River West Tributaries FDS

T08NR02E
T08NR03E
T08NR04E
T07NR01E
T07NR02E
T07NR03E
T07NR04E
T06NR01E
T06NR02E
T06NR03E
T06NR04E
T05NR01E
T05NR02E
T05NR03E
T05NR04E
New River Road
Anthem Way
17
74

File Name	Flight Date	Vertical Datum	Horizontal Datum	Contour Interval
New River	8/30/05 & 8/31/05	NAVD 88	Stateplane Zone 3176 International Feet GRS 1980 NAD 83	2'
New River	8/30/05 & 8/31/05	NAVD 88	Stateplane Zone 3176 International Feet GRS 1980 NAD 83	4'
Sweat Canyon FIS	9/23/1997	NGVD 29	Stateplane Zone 3176 International Feet GRS 1980 NAD 83	2'
Upper New River	4/10/2003	NAVD 88	Stateplane Zone 3176 International Feet GRS 1980 NAD 83	2'

Location Map:



Notes:

Legend:

- Roadway
- Township & Range Line
- Section
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Watershed Boundary
- New River 4' Contour Interval Mapping

Mapping Projects

- Sweat Canyon FIS
- Upper New River
- New River

N

Project No.
182000418

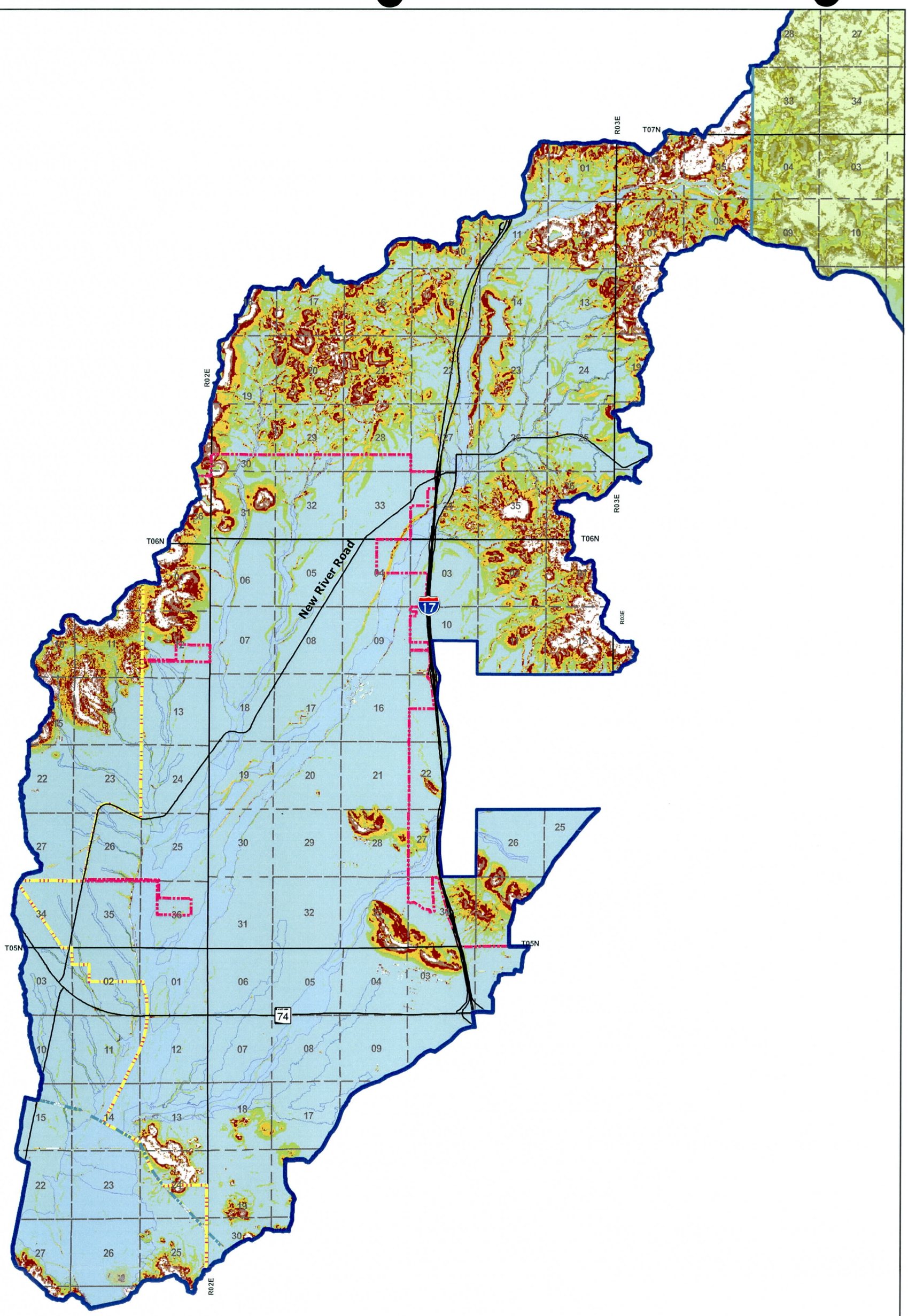
Prepared By:
RKJ
4 January 2006

W:\active\182000418\GIS\Project\contour_mapping.mxd

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

Upper New River ADMP
FCD 2005CO20
Figure 4.0
Mapping Coverage

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



Location Map:

Notes:

Legend:

N

1" = 2000'

- Roadway
- CAP Canal
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range Lines
- Sections
- Floodplain
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

Slope Intervals

- 0 - 5%
- 5 - 10%
- 10 - 15%
- 15 - 20%
- 20 - 25%
- >25%

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

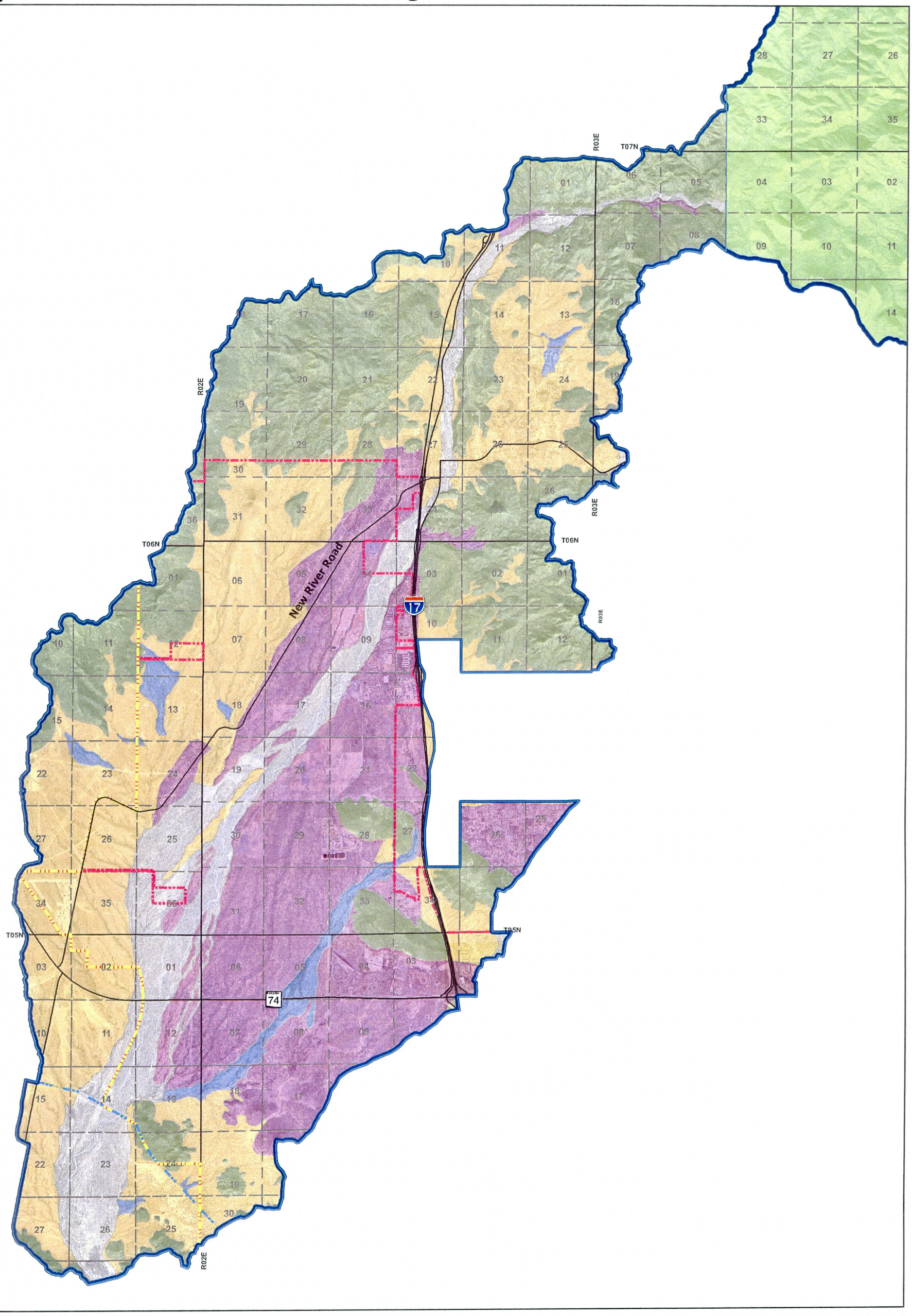
Upper New River ADMP
FCD 2005CO20
Figure 4.1
Terrain Slope Map

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

Project No.
182000418

Prepared By:
RKJ
4 January 2006

W:\active\182000418\GIS\Project\terrain_slope11x17.mxd



Location Map:

Notes:

Legend:

N

1" = 8000'

- Roadway
- CAP Canal
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range Lines
- Sections
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

Landform

- Alluvial Fans
- Major Riverine Floodplain
- Mountains
- Piedmont - Tributary Systems
- Sheet Flow

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

Upper New River ADMP
FCD 2005CO20
Figure 4.2
Landform Map

Stantec

JE FULLER HYDROLOGY & GEOMORPHOLOGY, INC.

Project No.
182000418

Prepared By:
RKJ
4 January 2006

W:\active\182000418\GIS\Project\11_17_landform_map.mxd

Sheet 2 of 10

Sheet 3 of 10

Sheet 4 of 10

Sheet 5 of 10

Sheet 6 of 10

Sheet 7 of 10

Sheet 8 of 10

Sheet 9 of 10

Sheet 10 of 10

T07N
T06N
T05N
R02E
R03E
New River Road
74

Location Map:

Notes:

Sheet 1 of 10

Legend:

N

1" = 8000'

- Potential Breakout Areas
- Dip Sections
- Structures within the Floodplain
- Bridges
- Culverts w/ Sedimentation
- Culverts
- Siphon
- Spillway
- Stock Tanks
- Roadway
- New Detail Floodplain Delineation Limits
- New Zone A Floodplain Delineation Limits
- Gasline
- Powerline
- Waterline
- CAP Canal
- Dam
- Sand & Gravel Operation
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range Lines
- Sections
- Pending FEMA Floodplains
- Reservoir Floodplain
- FEMA Floodplain
- FEMA Floodway
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

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

Upper New River ADMP
FCD 2005CO20
Figure 4.3
Existing Facilities Map

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

Project No.
182000418

Prepared By:
RKJ
4 January 2006

W:\active\182000418\GIS\Project\11_17_existing_facilities.mxd

R03E

T07N

28 27

33 34

06 05 04 03

01 08 09 10

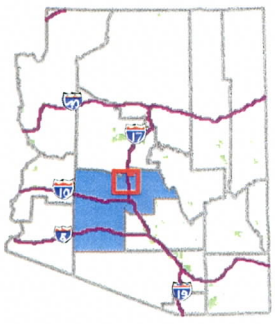
12 07

18

13

24 19

Location Map:



Notes:

Sheet 2 of 10

Legend:

- Potential Breakout Areas
- Dip Sections
- Culverts w/ Sedimentation
- Culverts
- Bridges
- Siphon
- Spillway
- Stock Tanks
- Gasline
- Powerline
- Waterline
- Roadway
- New Detail Floodplain Delineation Limits
- New Zone A Floodplain Delineation Limits
- CAP Canal
- Dam
- Sand & Gravel Operation
- Township & Range Line
- Section
- Pending FEMA Floodplains
- Reservoir Floodplain
- FEMA Floodplain
- FEMA Floodway
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

Project No.
182000418

Prepared By:
RKJ
May 2008

W:\active\182000418\GIS\Project\culverts_zoomed.mxd

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

Upper New River ADMP
FCD 2005CO20
Figure 4.3
Existing Facilities Map

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

R03E

01

11

12

10

16

15

14

13

21

22

23

24

1

133
132
148
149
131
130
147
129
146
128
143
144
145
127
126
3
4
6
5
7
8
9
2
1

Location Map:

Notes:

Sheet 3 of 10

Legend:

- Potential Breakout Areas
- Dip Sections
- Culverts w/ Sedimentation
- Culverts
- Bridges
- Siphon
- Spillway
- Stock Tanks
- Gasline
- Powerline
- Waterline
- Roadway
- New Detail Floodplain Delineation Limits
- New Zone A Floodplain Delineation Limits
- CAP Canal
- Dam
- Sand & Gravel Operation
- Township & Range Line
- Section
- Pending FEMA Floodplains
- Reservoir Floodplain
- FEMA Floodplain
- FEMA Floodway
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

N

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

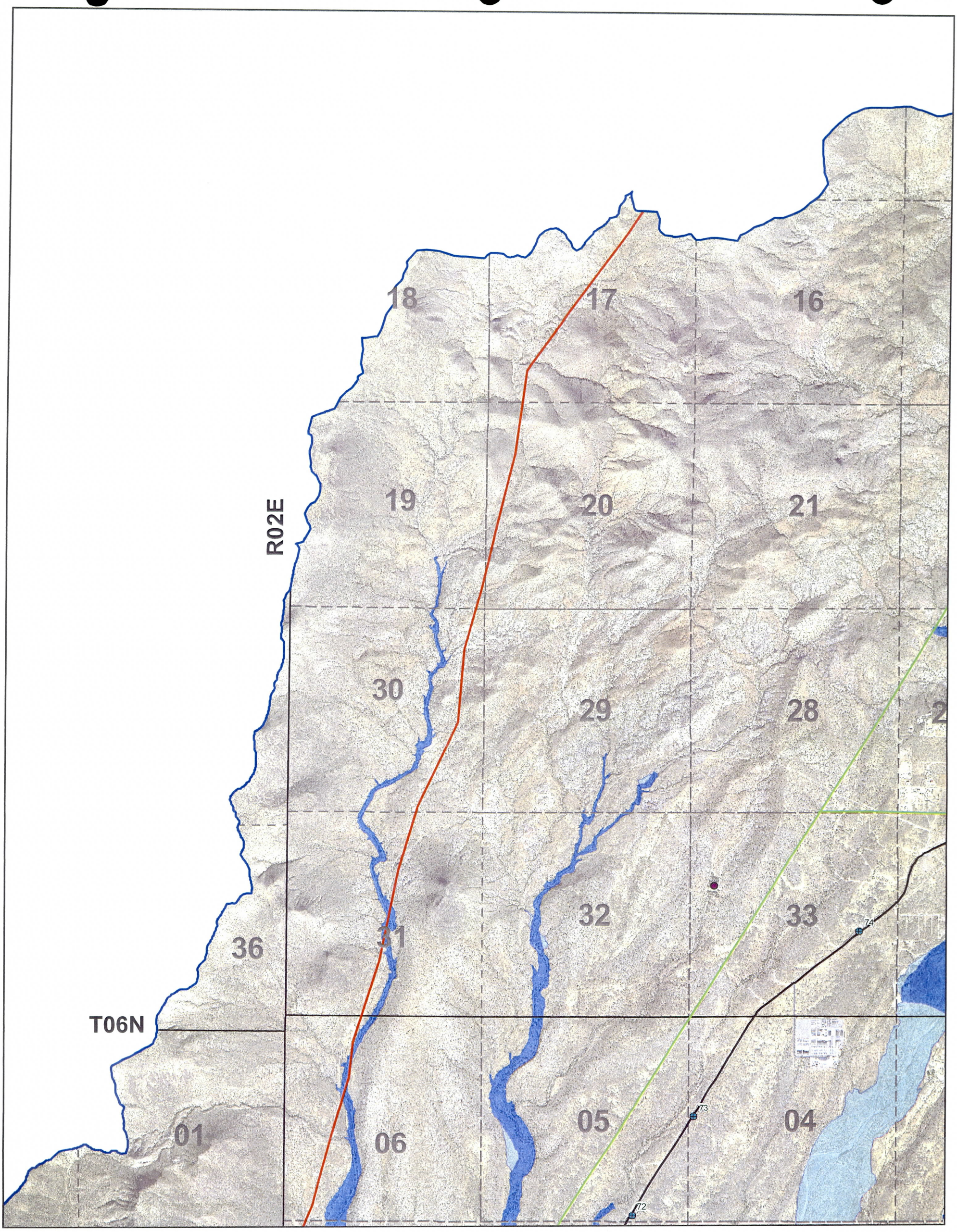
Upper New River ADMP
FCD 2005CO20
Figure 4.3
Existing Facilities Map

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

Project No.
182000418

Prepared By:
RKJ
May 2008

W:\active\182000418\GIS\Project\culverts_zoomed.mxd



Location Map:

Project No.
182000418

Prepared By:
RKJ
May 2008

W:\active\182000418\GIS\Project\culverts_zoomed.mxd

Notes:

Sheet 4 of 10

Legend:

- Potential Breakout Areas
- Dip Sections
- Culverts w/ Sedimentation
- Culverts
- Bridges
- Siphon
- Spillway
- Stock Tanks
- Gasline
- Powerline
- Waterline
- Roadway
- New Detail Floodplain Delineation Limits
- New Zone A Floodplain Delineation Limits
- CAP Canal
- Dam
- Sand & Gravel Operation
- Township & Range Line
- Section
- Pending FEMA Floodplains
- Reservoir Floodplain
- FEMA Floodplain
- FEMA Floodway
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

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

Upper New River ADMP
FCD 2005CO20
Figure 4.3
Existing Facilities Map

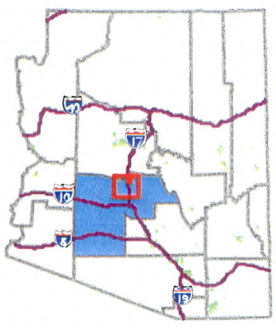
Stantec Consulting Inc.
8211 S. 48th Street
Phoenix, AZ U.S.A. 85044

T06N

R03E

R03E

Location Map:



Notes:

Sheet 5 of 10

Legend:

- Potential Breakout Areas
- Dip Sections
- Culverts w/ Sedimentation
- Culverts
- Bridges
- Siphon
- Spillway
- Stock Tanks
- Gasline
- Powerline
- Waterline
- Roadway
- New Detail Floodplain Delineation Limits
- New Zone A Floodplain Delineation Limits
- CAP Canal
- Dam
- Sand & Gravel Operation
- Township & Range Line
- Section
- Pending FEMA Floodplains
- Reservoir Floodplain
- FEMA Floodplain
- FEMA Floodway
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

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

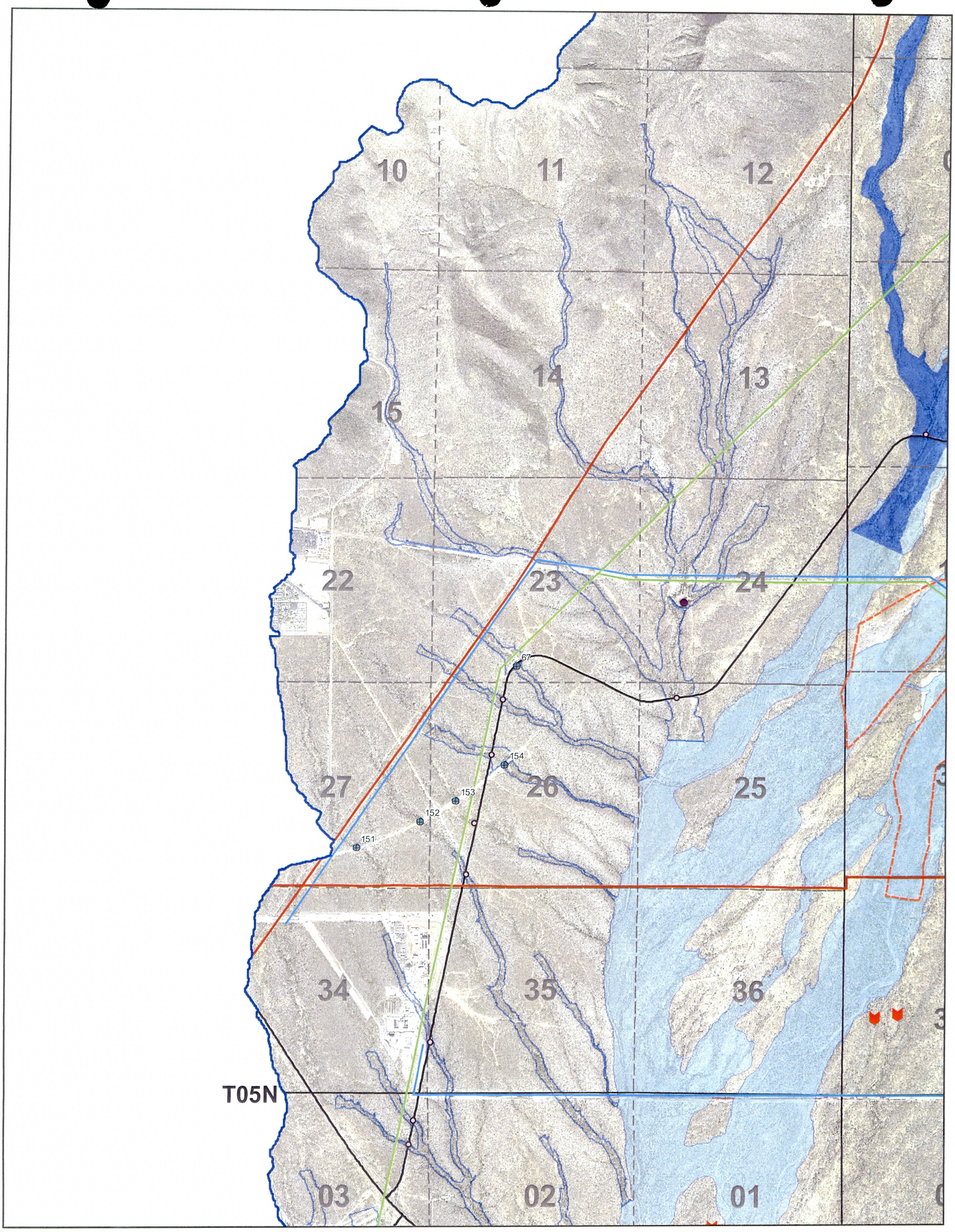
Upper New River ADMP
FCD 2005CO20
Figure 4.3
Existing Facilities Map

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

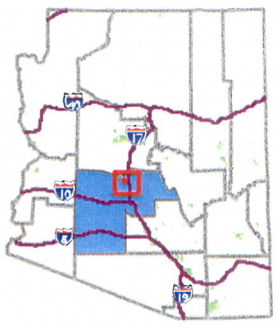
Project No.
182000418

Prepared By:
RKJ
May 2008

W:\active\182000418\GIS\Project\culverts_zoomed.mxd



Location Map:



Project No.
182000418

Prepared By:
RKJ
May 2008

W:\active\182000418\GIS\Project\culverts_zoomed.mxd

Notes:

Sheet 6 of 10

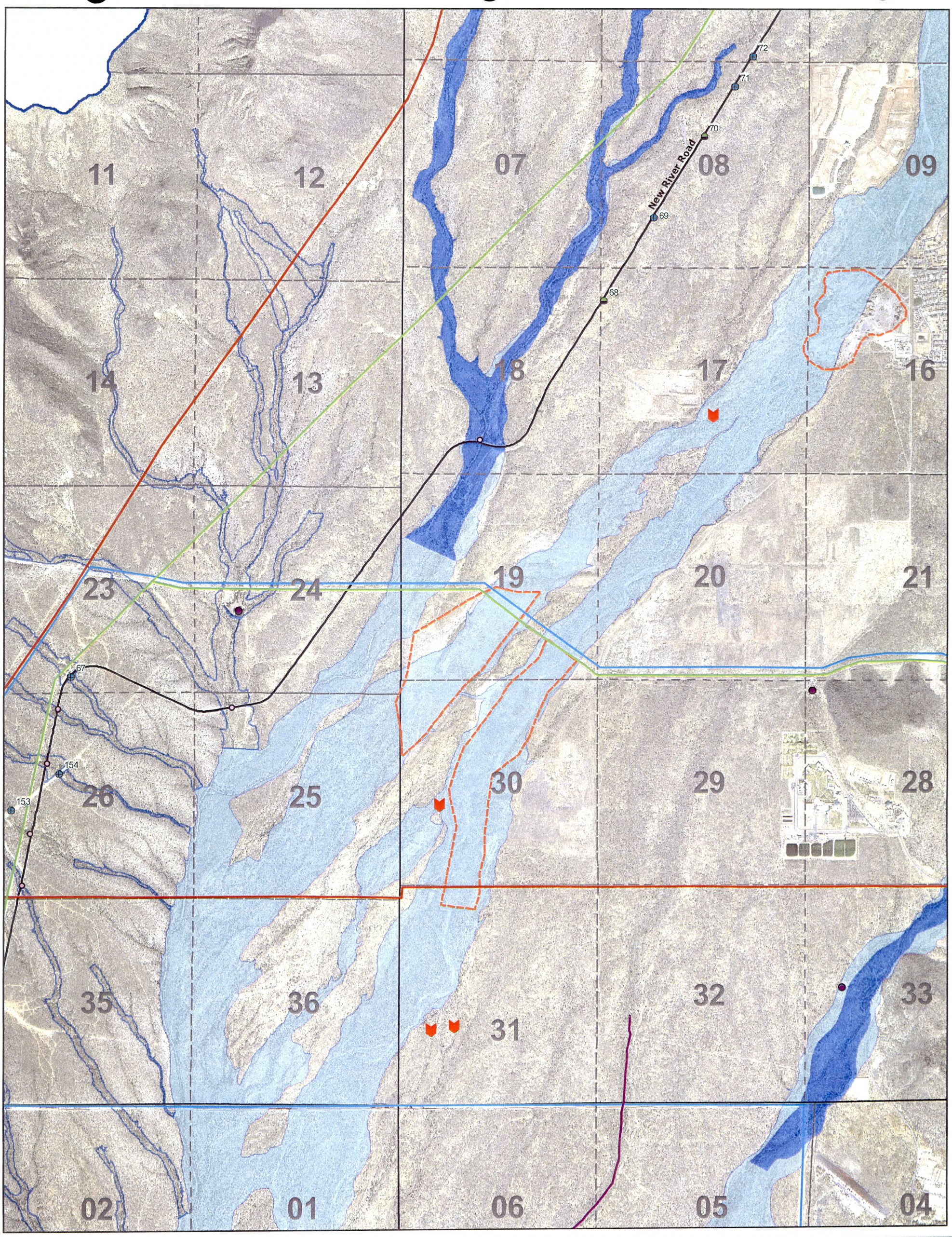
Legend:

- Potential Breakout Areas
- Dip Sections
- Culverts w/ Sedimentation
- Culverts
- Bridges
- Siphon
- Spillway
- Stock Tanks
- Gasline
- Powerline
- Waterline
- Roadway
- New Detail Floodplain Delineation Limits
- New Zone A Floodplain Delineation Limits
- CAP Canal
- Dam
- Sand & Gravel Operation
- Township & Range Line
- Section
- Pending FEMA Floodplains
- Reservoir Floodplain
- FEMA Floodplain
- FEMA Floodway
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

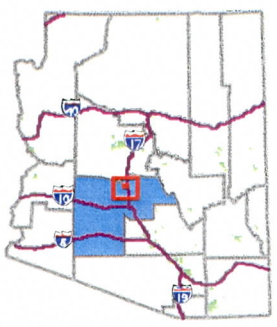
Flood Control District of Maricopa County
2801 W. Durango St.
Phoenix, AZ 85009

Upper New River ADMP
FCD 2005CO20
Figure 4.3
Existing Facilities Map

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



Location Map:



Notes:

Sheet 7 of 10

Legend:

- Potential Breakout Areas
- Dip Sections
- Culverts w/ Sedimentation
- Culverts
- Bridges
- Siphon
- Spillway
- Stock Tanks
- Gasline
- Powerline
- Waterline
- Roadway
- New Detail Floodplain Delineation Limits
- New Zone A Floodplain Delineation Limits
- CAP Canal
- Dam
- Sand & Gravel Operation
- Township & Range Line
- Section
- Pending FEMA Floodplains
- Reservoir Floodplain
- FEMA Floodplain
- FEMA Floodway
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

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

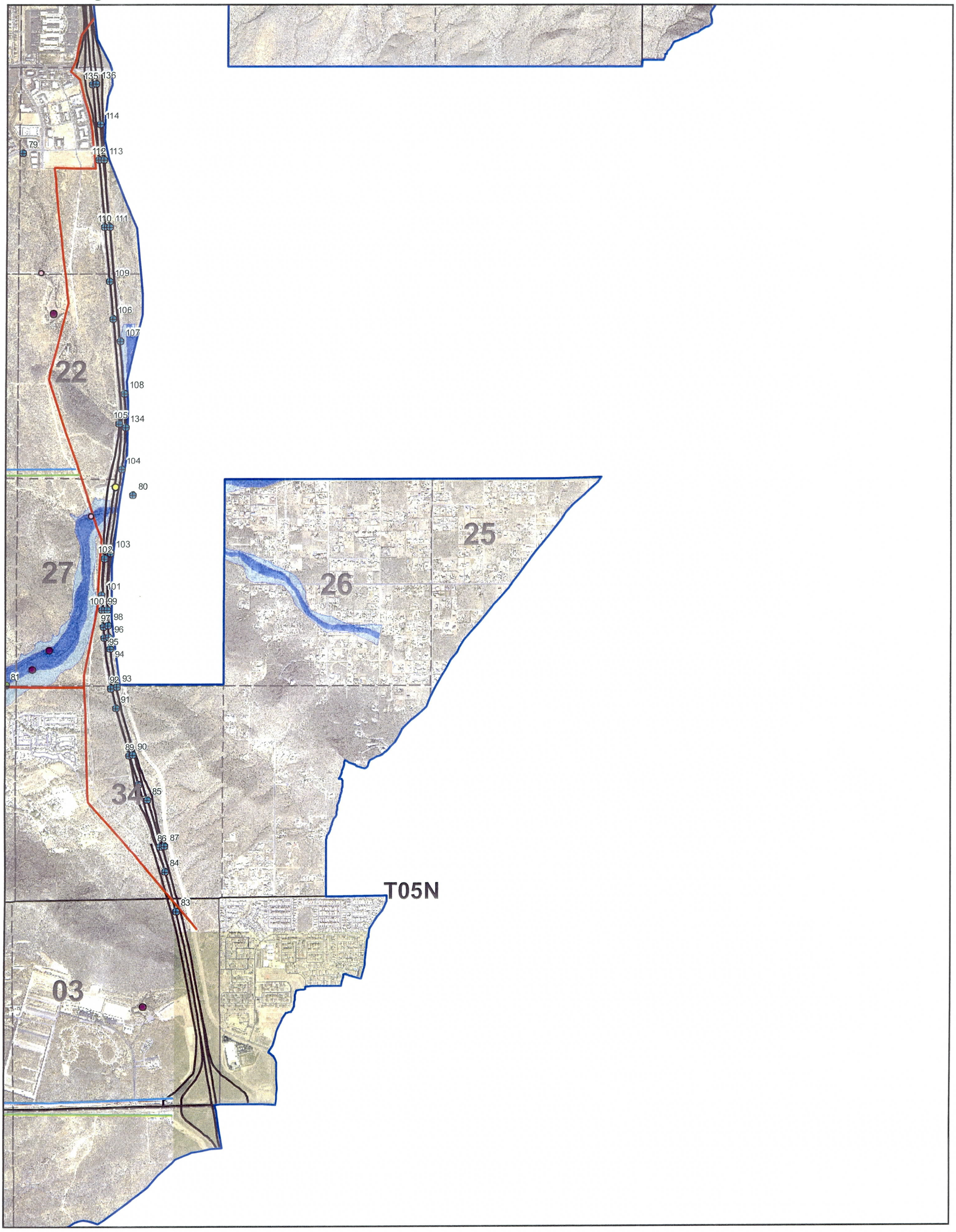
Upper New River ADMP
FCD 2005CO20
Figure 4.3
Existing Facilities Map

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

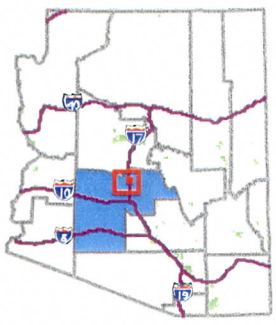
Project No.
182000418

Prepared By:
RKJ
May 2008

W:\active\182000418\GIS\Project\culverts_zoomed.mxd



Location Map:



Notes:

Sheet 8 of 10

Legend:

- Potential Breakout Areas
- Dip Sections
- Culverts w/ Sedimentation
- Culverts
- Bridges
- Siphon
- Spillway
- Stock Tanks
- Gasline
- Powerline
- Waterline
- Roadway
- New Detail Floodplain Delineation Limits
- New Zone A Floodplain Delineation Limits
- CAP Canal
- Dam
- Sand & Gravel Operation
- Township & Range Line
- Section
- Pending FEMA Floodplains
- Reservoir Floodplain
- FEMA Floodplain
- FEMA Floodway
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

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

Upper New River ADMP
FCD 2005CO20
Figure 4.3
Existing Facilities Map

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

Project No.
182000418

Prepared By:
RKJ
May 2008

W:\active\182000418\GIS\Project\culverts_zoomed.mxd

T05N

R02E

03 02 01 06

10 11 12 07

15 14 13 18

22 23 24 19

27 26 25 30

66 162 65 74

161 159 160 158 157 156 61 62 63 64

Location Map:

Notes:

Sheet 9 of 10

Legend:

- Potential Breakout Areas
- Dip Sections
- Culverts w/ Sedimentation
- Culverts
- Bridges
- Siphon
- Spillway
- Stock Tanks
- Gasline
- Powerline
- Waterline
- Roadway
- New Detail Floodplain Delineation Limits
- New Zone A Floodplain Delineation Limits
- CAP Canal
- Dam
- Sand & Gravel Operation
- Township & Range Line
- Section
- Pending FEMA Floodplains
- Reservoir Floodplain
- FEMA Floodplain
- FEMA Floodway
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

N

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

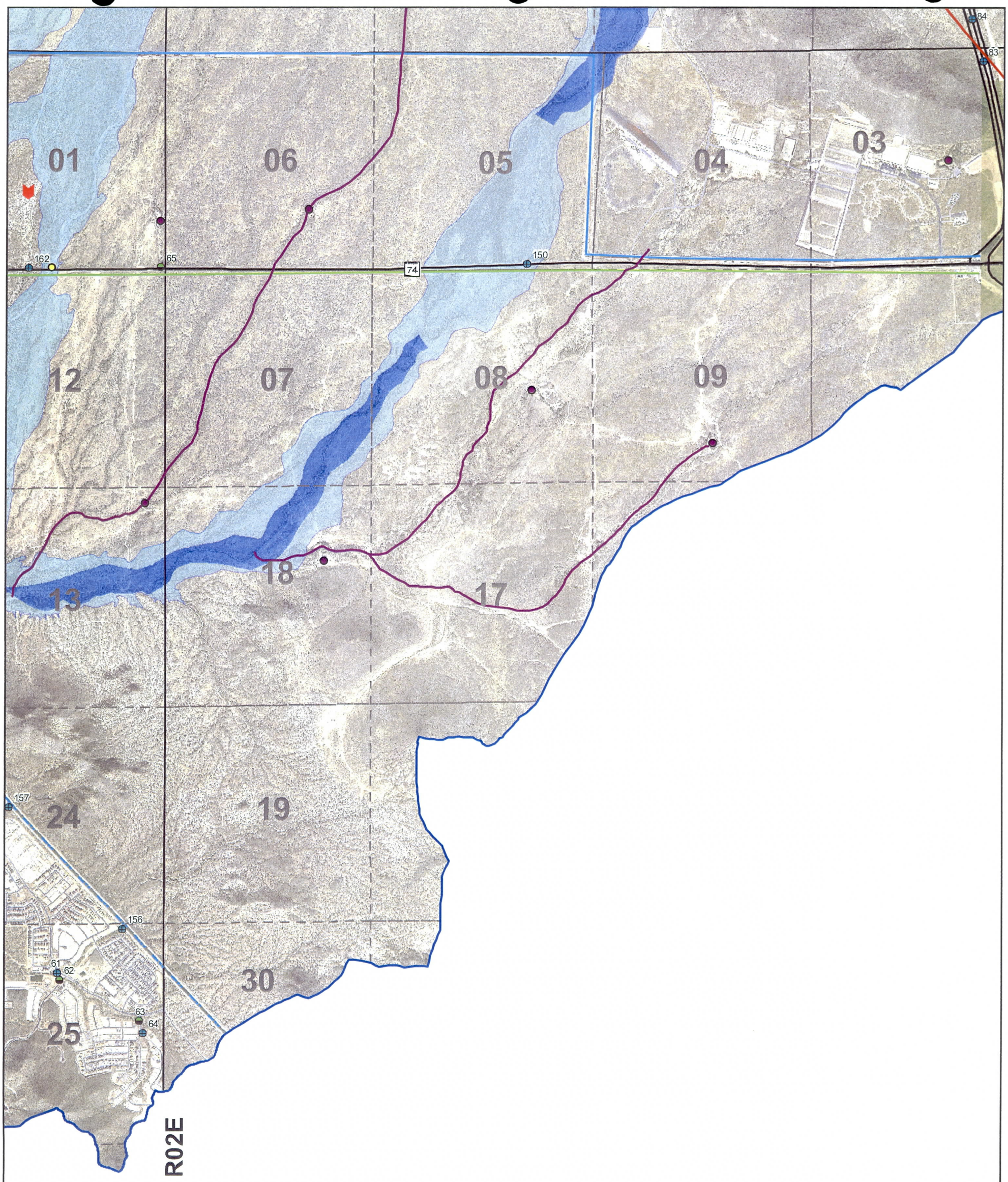
Upper New River ADMP
FCD 2005CO20
Figure 4.3
Existing Facilities Map

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

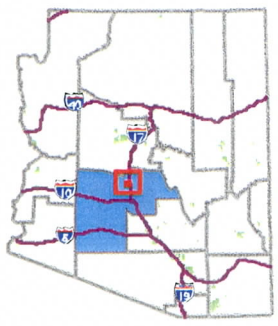
Project No.
182000418

Prepared By:
RKJ
May 2008

W:\active\182000418\GIS\Project\culverts_zoomed.mxd



Location Map:



Project No.
182000418

Prepared By:
RKJ
May 2008

W:\active\182000418\GIS\Project\culverts_zoomed.mxd

Notes:

Sheet 10 of 10

Legend:

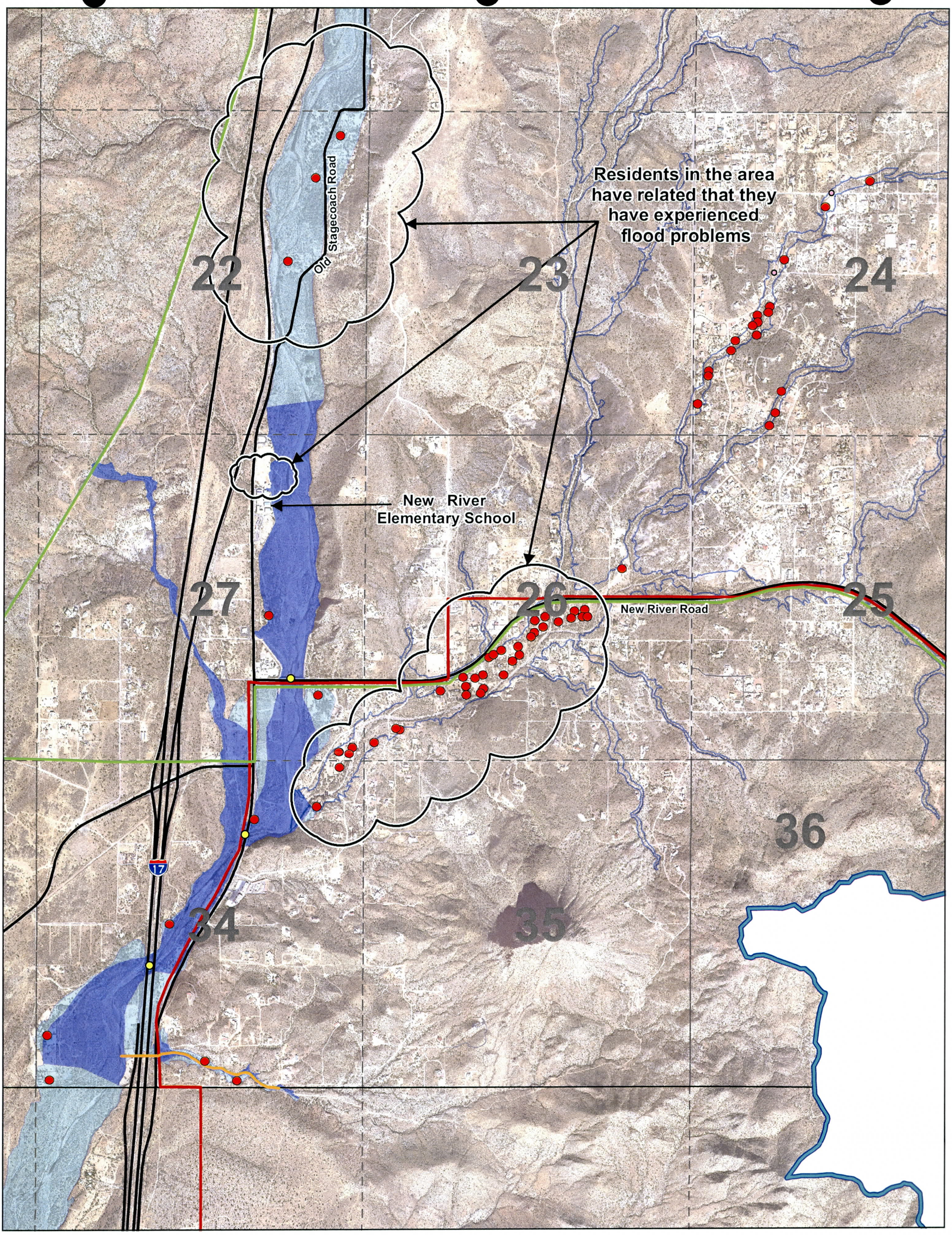
- Potential Breakout Areas
- Dip Sections
- Culverts w/ Sedimentation
- Culverts
- Bridges
- Siphon
- Spillway
- Stock Tanks
- Gasline
- Powerline
- Waterline
- Roadway
- New Detail Floodplain Delineation Limits
- New Zone A Floodplain Delineation Limits
- CAP Canal
- Dam
- Sand & Gravel Operation
- Township & Range Line
- Section
- Pending FEMA Floodplains
- Reservoir Floodplain
- FEMA Floodplain
- FEMA Floodway
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

N

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

Upper New River ADMP
FCD 2005CO20
Figure 4.3
Existing Facilities Map

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



Location Map:

Project No.
182000418

Prepared By:
AMG
June 2008

W:\active\182000418\GIS\Project\structures_floodplain.mxd

Notes:

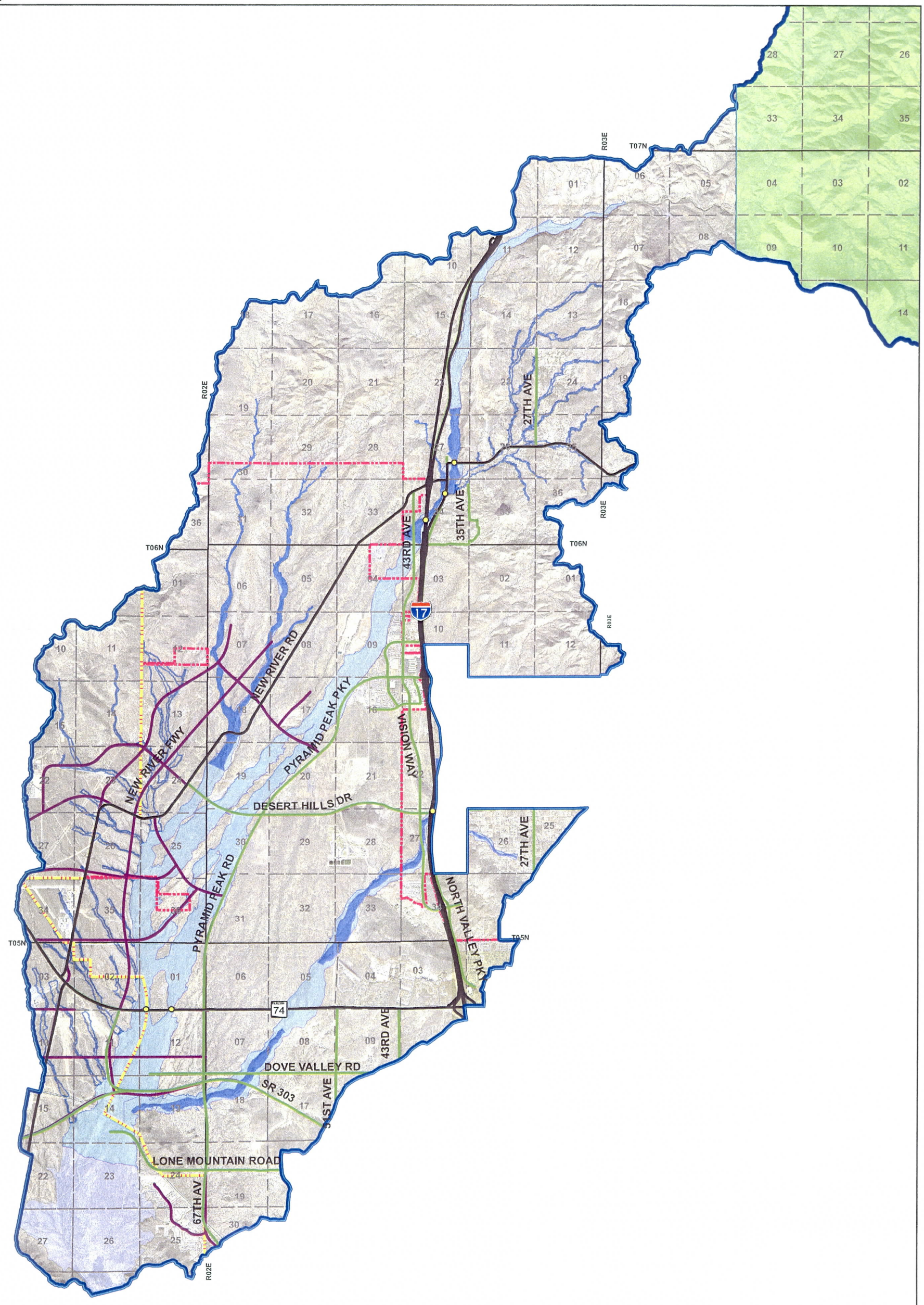
Legend:

- Potential Breakout Areas
- Dip Sections
- Structures within the Floodplain
- Bridges
- Siphon
- Spillway
- Stock Tanks
- New Detail Floodplain Delineation Limits
- New Zone A Floodplain Delineation Limits
- Gasline
- Powerline
- Waterline
- Roadway
- CAP Canal
- Sand & Gravel Operation
- Dam
- Township & Range Line
- Section
- Pending FEMA Floodplains
- Reservoir Floodplain
- Floodplain
- Floodway
- Tonto National Forest
- Upper New River ADMP Project Boundary
- Upper New River ADMP Planning Area Boundary

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

Upper New River ADMP
FCD 2005CO20
Figure 4.4
Structures within the Floodplain

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



Location Map:

Notes:

Legend:

N

1" = 8000'

- Bridges
- Existing Roadway
- Roadway Alignments from City of Phoenix Circulation Plan
- Roadway Alignments from City of Peoria Circulation Plan
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range Lines
- Sections
- Pending FEMA Floodplains
- Reservoir Floodplain
- Floodplain
- Floodway
- Tonto National Forest
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

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

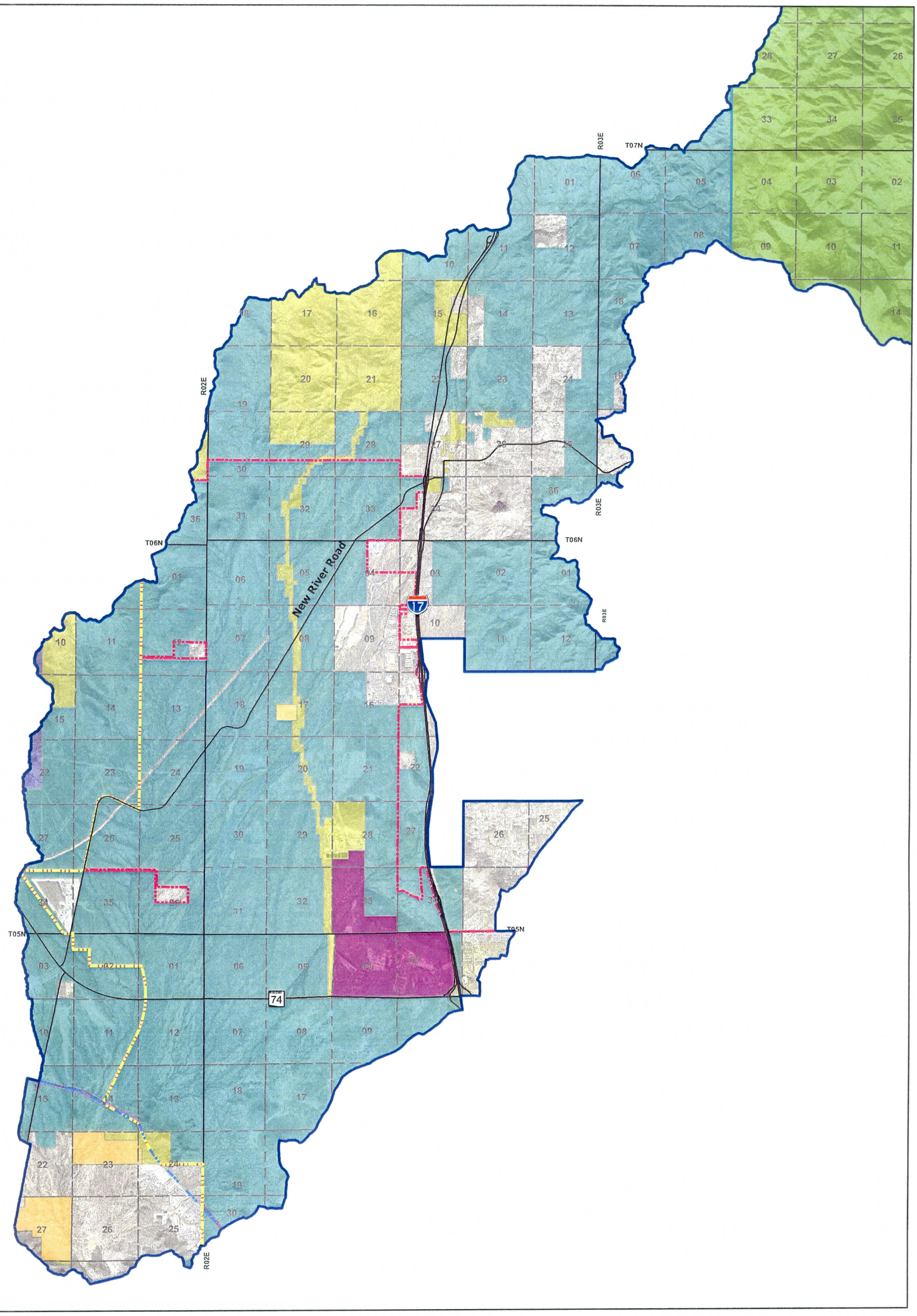
Upper New River ADMP
FCD 2005CO20
Figure 4.5
Future Transportation Plans

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

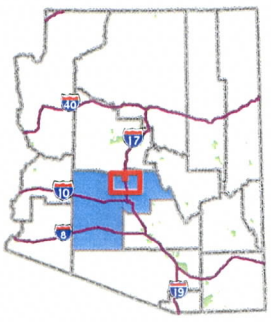
Project No.
182000418

Prepared By:
RKJ
4 January 2006

W:\active\182000418\GIS\Project\future_transportation_plans.mxd



Location Map:



Notes:

Legend:

- Roadway
- CAP Canal
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range Line
- Section
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary
- Bureau of Reclamation
- County Land
- Game and Fish
- BLM
- Forest
- Private
- State Trust

N

1" = 8000'

Project No.
182000418

Prepared By:
RKJ
4 January 2006

W:\active\182000418\GIS\Project\11_17_landownership_map.mxd

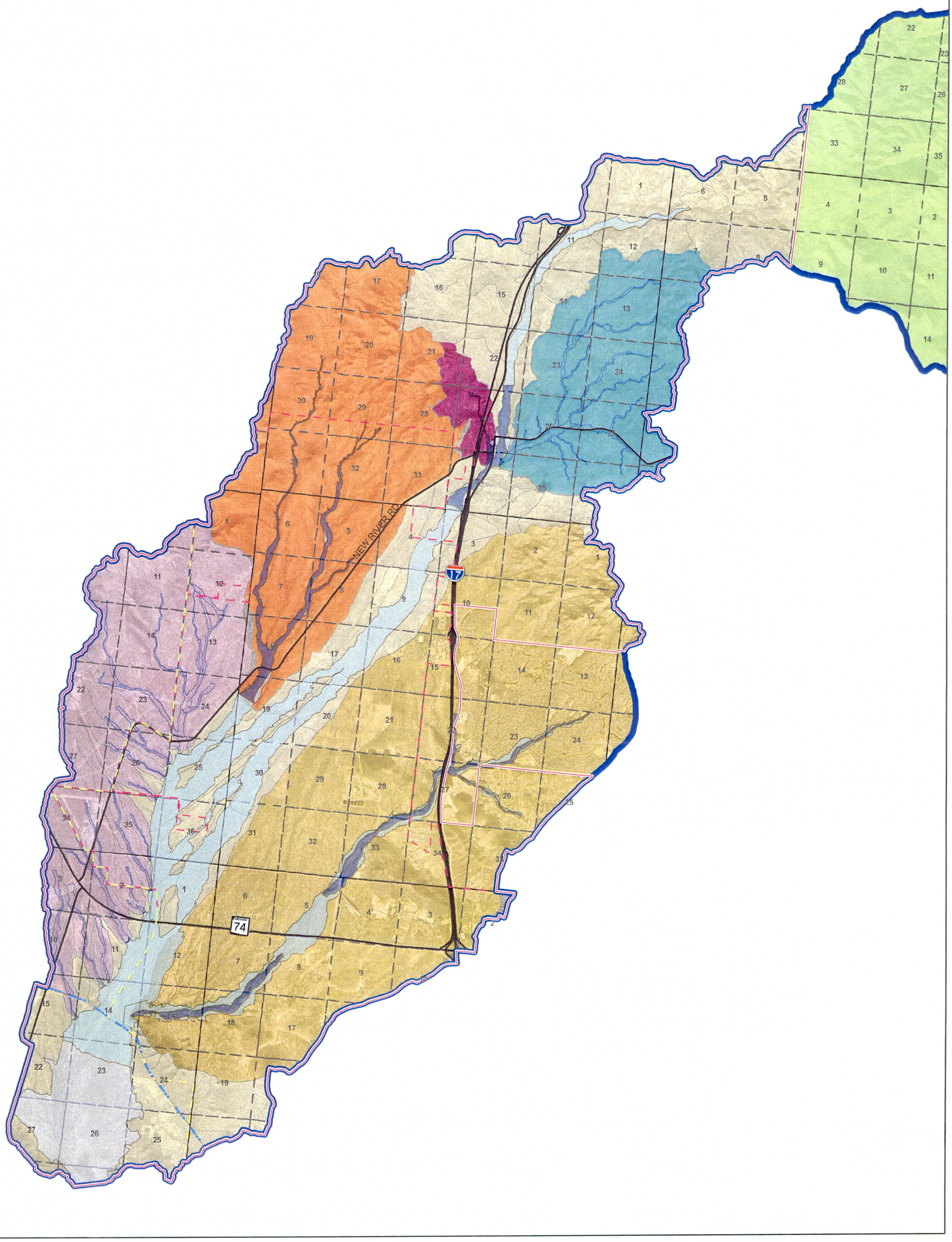
Flood Control District of Maricopa County

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

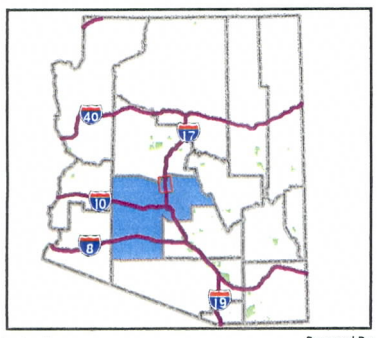
Upper New River ADMP
FCD 2005CO20
Figure 4.6
Land Ownership Map

Stantec

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



Location Map:



Project No.
182000418

Prepared By:
AMG
May 2008

W:\active\182000418\GIS\Project\MXDs\existing_hydrologic_studies.mxd

Notes:

N

1" = 8000'

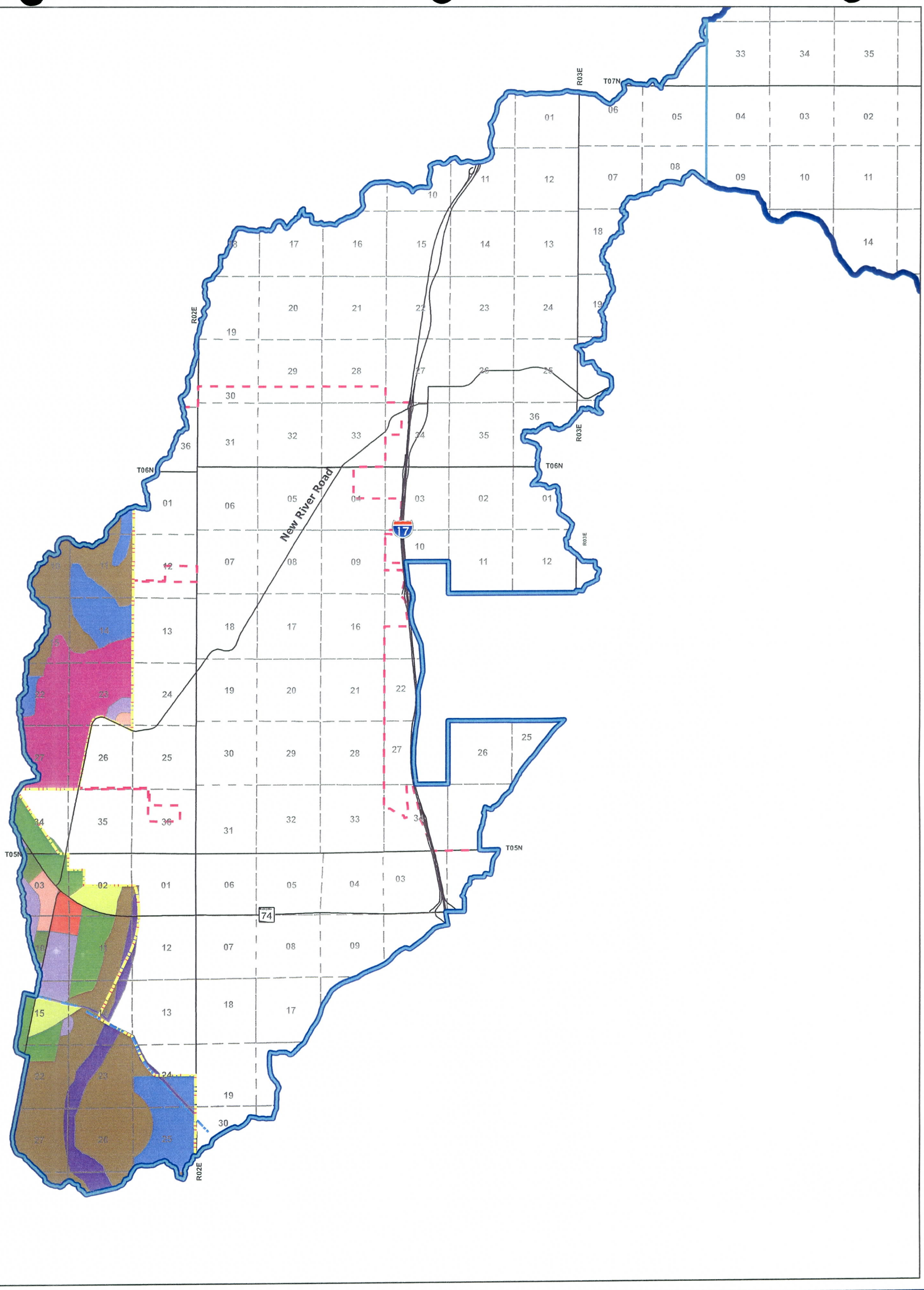
Legend:

- Roadway
- CAP Canal
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range Lines
- Sections
- Reservoir Floodplain
- Floodplain
- Floodway
- Pending Floodplain
- Tonto National Forest
- Flood Insurance Study New River from New River Dam to Rock Springs
- Sweat Canyon Wash Flood Insurance Study
- New River West Tributaries Floodplain Delineation Study
- Gavilan Peak Floodplain Study
- Deadman Wash Floodplain Delineation Study
- New River Above I-17 Floodplain Delineation Study
- Planning Area Boundary
- Watershed Boundary

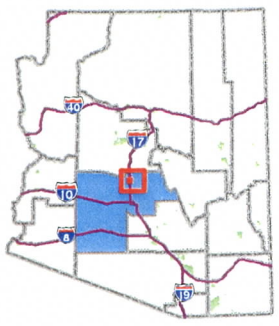
Flood Control District
of Maricopa County
2801 W. Durango St.
Phoenix, AZ 85009

Upper New River ADMP
FCD 2005CO20
Figure 4.7
Existing Hydrologic Studies

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



Location Map:



Notes:

Legend:

N

1" = 8000'

- Roadway
- CAP Canal
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range Line
- Section
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

Peoria Landuse

- Business Park
- Business Park/Industrial
- COMM
- Community Commercial
- Golf Course
- Industrial
- MU
- Mixed Use
- Mixed Use - Business Park
- Mixed Use - Neighborhood
- Mixed Use - Regional Comm
- Mixed Use - Residential L
- Mixed Use - Residential M
- Neighborhood Commercial
- Park/Open Space
- Public/Quasi-Public
- R-15+
- Regional Commercial
- Residential/Estate
- Residential/High
- Residential/Low
- Residential/Medium
- Residential/Medium High
- Water

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

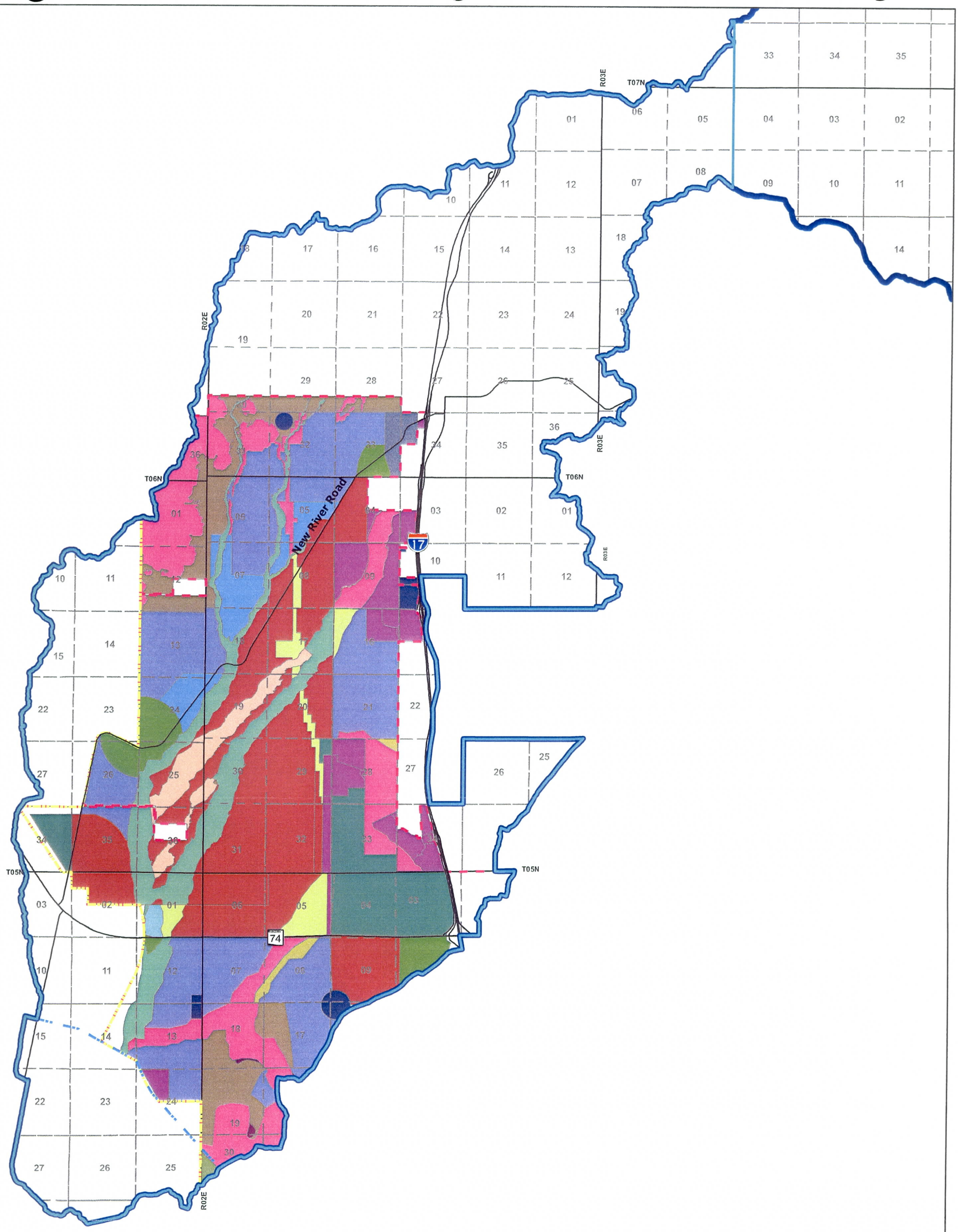
Upper New River ADMP
FCD 2005CO20
Figure 4.8
General Land Use Map
City of Peoria

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

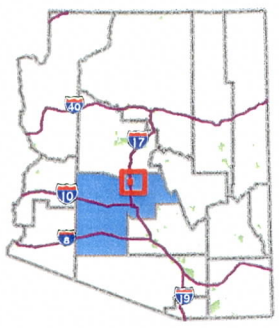
Project No.
182000418

Prepared By:
RKJ
4 January 2006

W:\active\182000418\GIS\Project\existing_planning_studies.mxd



Location Map:



Project No.
182000418

Prepared By:
RKJ
4 January 2006

W:\active\182000418\GIS\Project\existing_planning_studies.mxd

Notes:

- Roadway
- CAP Canal
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range Line
- Section
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

Phoenix Landuse

- Commercial
- Floodplain
- Mixed Use (Commerce Park, Industrial, Commercial, Public/Quasi-Public / Parks/Open Space)
- Mixed Use (Commercial / Commerce Park)
- Mixed Use (North Gateway and Northwest Area / Floodplain)
- Mixed Use (North Gateway and Northwest Area)

Legend:

N

1" = 8000'

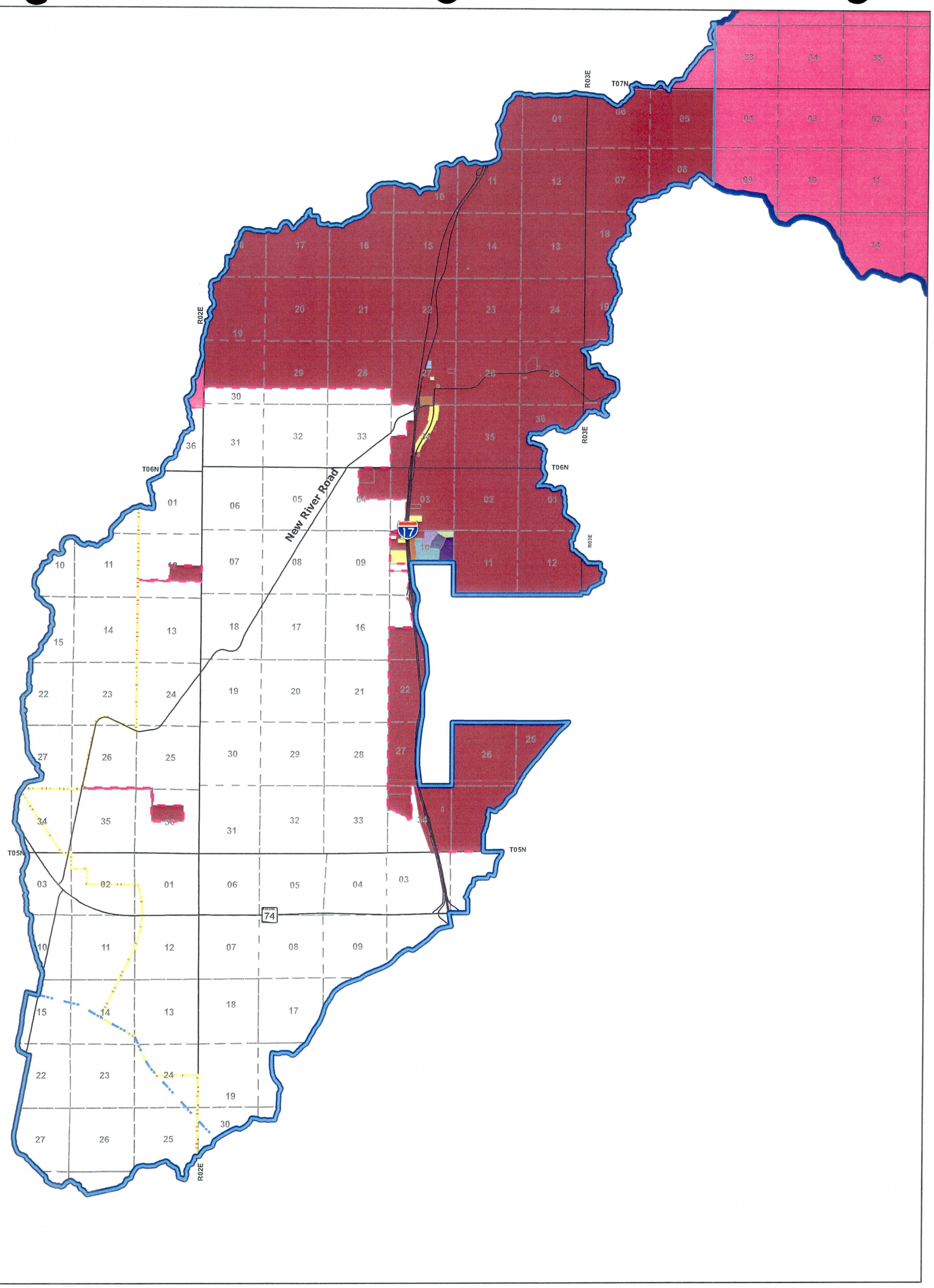
- Parks / Open Space - Future 1 du
- Parks / Open Space-Public
- Preserves / 0-1 & 1-2 du / acre
- Preserves / 2-3.5 & 3.5-5 du / acre
- Preserves / Floodplain
- Preserves / Mixed Use / Commercial / Commerce Park
- Preserves / Undesignated
- Public / Quasi-Public
- Residential 0 to 1 du / acre
- Residential 0 to 2 du / acre
- Residential 2 to 3.5 du / acre
- Residential 2 to 5 du / acre
- Residential 5 to 10 du / acre
- Undesignated

Flood Control District of Maricopa County

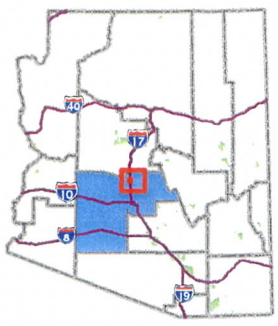
Flood Control District of Maricopa County
2801 W. Durango St.
Phoenix, AZ 85009

Upper New River ADMP
FCD 2005CO20
Figure 4.9
General Land Use Map
City of Phoenix

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



Location Map:



Notes:

Legend:

N

1" = 8000'

- Roadway
- CAP Canal
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range Line
- Section
- Upper New River ADMP Planning Area Boundary
- Upper New River ADMP Project Boundary

Maricopa County Landuse

- C-2
- C-3
- R-2
- R-4
- R1-10
- R1-18
- R1-35
- R1-6
- R1-7
- R1-8
- RURAL-190
- RURAL-43

Project No.
182000418

Prepared By:
RKJ
4 January 2006

W:\active\182000418\GIS\Project\existing_planning_studies.mxd

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

Upper New River ADMP
FCD 2005CO20
Figure 4.10
Maricopa County Land Use Map

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

R1E

T7N
T6N

Maricopa County
City of Phoenix

MATCH TO SHEET 2

Anthem Way

New River Rd

New River Rd

City of Peoria
City of Phoenix

Loop 303

74

17

Location of Planning Areas

Rock Springs
Gavilan Peak
Sweat Canyon/ Doe Peak
SHEET 2
SHEET 1
Upper Deadman
West Tributaries
New River
Lower Deadman
Lone Mountain
New River Dam

Location Map:

Project No.
182000418

Prepared By:
AMG
May 2008

W:\active\182000418\GIS\Project\MXDs\NR_PlAreas(sht1).mxd

Notes:

N

N.T.S.

Legend:

- Potential Breakout Area
- Dip Section
- Structure within the Floodplain
- Bridges
- Culvert with Sedimentation
- Culvert
- Siphon
- Spillway
- Stock Tank
- Gasline
- Powerline
- Waterline
- Sand & Gravel Operation
- Roadway
- Floodplain
- Erosion Hazard
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range
- Section
- Bureau of Reclamation
- County Land
- Game and Fish
- BLM
- Forest
- Private
- State Trust

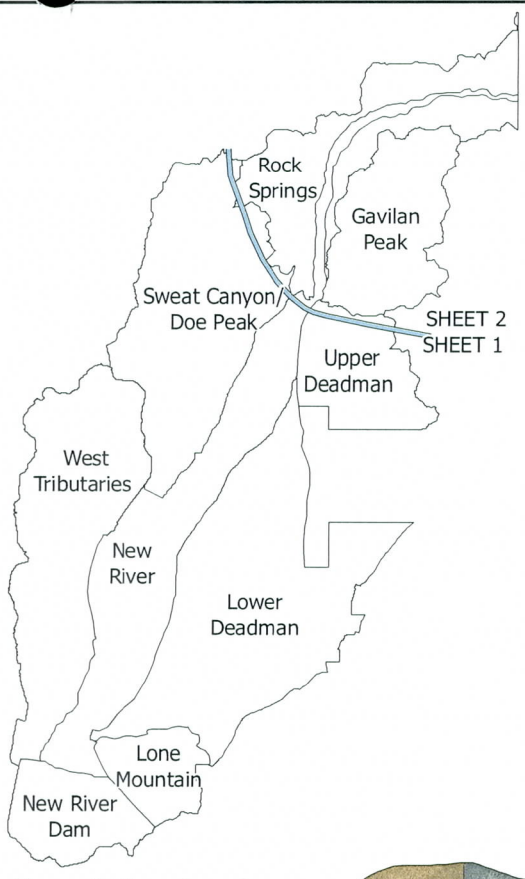
Flood Control District of Maricopa County

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

Upper New River ADMP
FCD 2005CO20
Sheet 1 of 2:
Land Ownership/ Utilities/Drainage Structures

Stantec

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



Location of Planning Areas

R2E

T8N

1 6 7 11 12 13 14 15 16 17 18 20 21 22 23 24 25 26 27 28 29 32 33 34 35

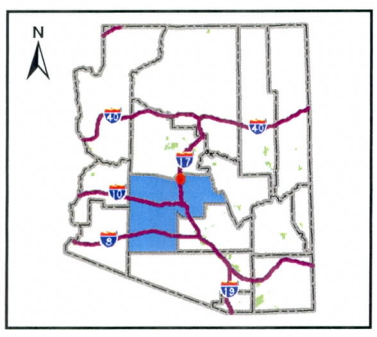
Old Stagecoach Road

New River Road

17

MATCH TO SHEET 1

Location Map:



Project No.
182000418

Prepared By:
AMG
May 2008

W:\active\182000418\GIS\Project\MXDs\NR_PlAreas(sht2).mxd

Notes:

N

N.T.S.

Legend:

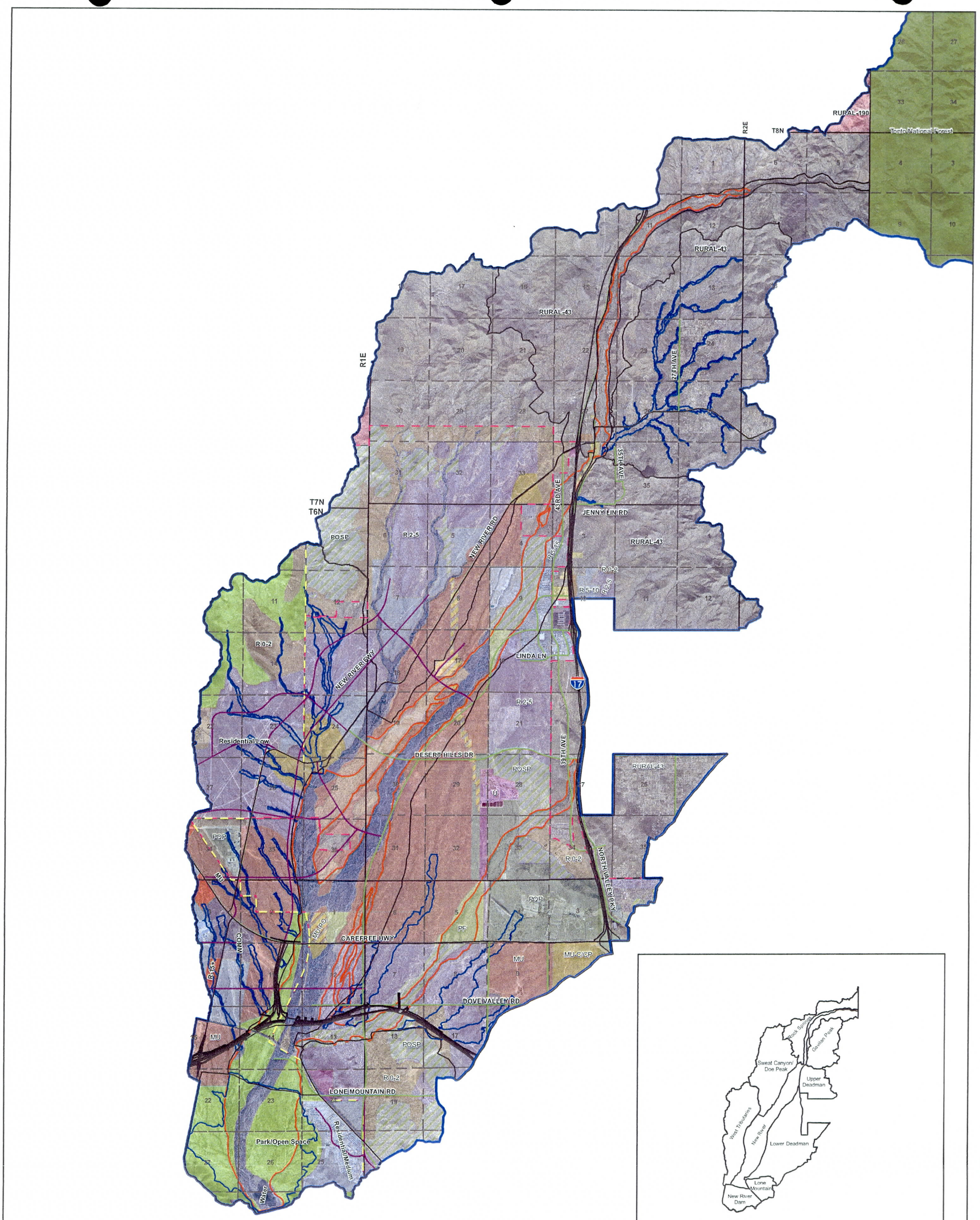
- Potential Breakout Area
- Dip Section
- Structure within the Floodplain
- Bridges
- Culvert with Sedimentation
- Culvert
- Siphon
- Spillway
- Stock Tank
- Gasline
- Powerline
- Waterline
- Roadway
- Sand & Gravel Operation
- Floodplain
- Erosion Hazard
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range
- Section
- Bureau of Reclamation
- County Land
- Game and Fish
- BLM
- Forest
- Private
- State Trust

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

Upper New River ADMP
FCD 2005CO20
Sheet 2 of 2:
Land Ownership/ Utilities/Drainage Structures

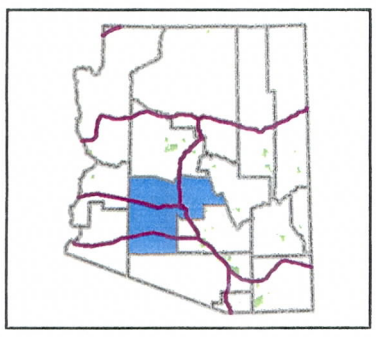
Stantec

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



N

Location Map:



Notes:

Sheet 1 of 1

Legend:

- Roadway
- Erosion Hazards
- Peoria Corporate Boundary
- Phoenix Corporate Boundary
- Township & Range Lines
- Sections
- Pending FEMA Floodplains
- Existing Floodplain
- RURAL 43 - 0 to 1 du/acre
- R 0-2 - Residential 0 to 2 du/acre
- R 2-5 - Residential 2 to 5 du/acre
- R 5-10 - Residential 5 to 10 du/acre
- R-15+ - Residential 15+ du/acre
- Residential/Low
- Residential/Medium
- MU - Mixed Use
- MU-NNF - Mixed Use North Gateway and Northwest Area/Floodplain
- COMM - Commercial
- MU-C/CP - Mixed Use Commercial/Commerce Park
- PQP - Public/Quasi-Public
- MU-PO - Preserves/Mixed Use
- PF - Preserves/Floodplain
- POSP - Parks & Open Space, Future 1 du/acre
- F - Floodplain
- Water - Portion of Floodplain
- U - Undesignated

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

Upper New River ADMP
FCD 2005CO20
Upper New River Planning Elements
Existing Floodplain

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

Project No.
182000418

Prepared By:
AMG
May 2008

W:\active\182000418\GIS\Project\MXDs\NEw_River_Existing_fp(11x17)MAIN.mxd

Appendix A

Culvert Database

Upper New River ADMP Culvert Data Base

FID = Culvert Identifier (refer to Existing Facility Exhibit)

FID	LENGTH	SIZE	MATERIAL	BARELLS	CONDITION	SCOUR	COMMENTS	Pict_NUM	FAC_OWNER
0	66 ft	48 inch	rcp	3	poor	at outlet	damaged		MCDOT
1									MCDOT
2									MCDOT
3	67.5ft	60inch	cmp	1	good	minor			MCDOT
4	65ft	24inch	cmp	3	good	yes	debris; apron undermined; erosion @ headwall		MCDOT
5	74ft	18inch	cmp	1	good	no			MCDOT
6	60ft	18inch	cmp	1	good		Sediment build-up		MCDOT
7	68ft	24inch	cmp	3	good				MCDOT
8		24inch	cmp	1	good	no			MCDOT
9	66ft	24inch	rcp	1	good	no	L-shaped headwall @ outlet		MCDOT
10	130ft	36inch	rcp	2	good	minor	L-shaped headwall @ outlet		MCDOT
11	118ft	42inch	rcp	3	poor		Debris build-up; no HW @ outlet		MCDOT
12	70ft	42/36	cmp/rcp	2\2 RCP	poor	minor	Debris @ inlet; 2 RCP @ inlet		MCDOT
13	96ft	30inch	rcp	3	good		Debris build-up		MCDOT
14	20ft	36inch	rcp	4	new	minor	Residential culvert		MCDOT
15	73ft	30inch	rcp	2	good	no	Debris build-up		MCDOT
16	72ft	36inch	rcp	3	1new 2poor		Rock n' Rail bank protection		MCDOT
17	61.7ft	36inch	rcp	1	good	no			MCDOT
18	61.7ft	36inch	rcp	1	good		Sediment deposits		MCDOT
19	62ft	30inch	rcp	1	poor	no	Half clogged with sediment		MCDOT
20	80ft	36inch	cmp	1	good		Headcutting around HW edges		MCDOT
21	61ft	24inch	cmp	1	poor		Inlet completely clogged		MCDOT
22	93ft	42inch	cmp	1	good		Debris build-up; inelt clogged		MCDOT
23	78ft	48inch	cmp	2	good		some debris @ inlet		MCDOT
24	73ft	10*5ft	cbc	2	good		Sediment deposits		MCDOT
25	80.5ft	24inch	cmp	1	poor	@ outlet			MCDOT
26	79ft	24inch	cmp	1	good	minor			MCDOT
27	101ft	12*5.5ft	cbc	3	good		Sediment deposits @ inlet		MCDOT
28									Private
29	86.6ft	72inch	cmp	2	good		headcutting along s. roadway edge		MCDOT
30		24inch	cmp	1			couln't find outlet; flows over top roadway		MCDOT
31	38ft	24inch	rcp	1	good				Private
32	114.8ft	24inch	cmp	1	good	no			MCDOT
33	112ft	36inch	cmp	1	good	minor	home for bum	IMG_0006.JPG-IMG_0008.JPG	MCDOT
34		36inch	cmp	2	good			IMG_0016.JPG-IMG_0017.JPG	Private
35		30inch	cmp	1	poor		water over road/ non-functioning	IMG_0018.JPG-IMG_0020.JPG	Private

Upper New River ADMP Culvert Data Base

FID = Culvert Identifier (refer to Existing Facility Exhibit)

FID	LENGTH	SIZE	MATERIAL	BARELLS	CONDITION	SCOUR	COMMENTS	Pict_NUM	FAC_OWNER
36			cmp/dip	2	good			IMG_0022.JPG-IMG_0023.JPG	Private
37		24inch	steel	2	good		earth birm recently constructed at low	24-26	Private
38		24inch	cmp	1	good		inlet hw partially blocked	28-29	MCDOT
39	81ft	60inch	cmp	1	good			30-31	MCDOT
40		42inch	cmp	1	good		swamp thing	32-34	MCDOT
41	95ft	24inch	rcp	2	new			37-38	MCDOT
42		30inch	cmp		good		w/trashgate	40-41	MCDOT
43		36inch	cmp	1	good		through levee w/trash rack	42	Private
44		36inch	rcp	2	good			43-45	MCDOT
45		18inch	cmp	2	good			46-47	MCDOT
46	25ft	36inch	steel	1	good			48-49	MCDOT
47		12inch	cmp	1	poor		flow over top road	50-52	MCDOT
48	66ft	7ft*6ft	cbc	2	good			62-63	MCDOT
49	12ft	6ft**5.5ft	cbc	2cbc	good			64-65	Private
50	39ft	36inch	cmp	1	good			66-67	MCDOT
51	70ft	36inch	rcp	1	good			68-69	MCDOT
52	23ft	18inch	rcp	1	good			70-71	MCDOT
53	23ft	30inch	cmp	1	poor			74-75	Private
54	34ft	36inch	rcp	1	good		large scour-road overtopping mcdot	76-78	MCDOT
55	32ft	24inch	pvc	1	good			81-82	Private
56	25ft	30inch	cmp	1	good			85-86	Private
57	85ft	36inch	cmp	1	good			90-91	MCDOT
58	101ft	5*5	cbc	cbc	good		under frontage road	gulley-92, box culvert 93-94	MCDOT
59	84ft	8*12	cbc	2	good			96-98	MCDOT
60	92ft	12*10	cbc	2	good		debris-upstream	99-100	MCDOT
61	136ft	36inch	rcp	4	good		trash racks/ concrete flaking		Private
62	70ft	4*12	cbc	3	good		rip rap basin at inlet		Private
63	101ft	4*10	cbc	3	good				Private
64	84ft	4*12	cbc	1	good				Private
65	88ft	60inch	cmp	1	good			1-3	ADOT
66	122ft	10*10	cbc	1	good		apron and basin	4-5	ADOT
67	115ft	48inch	cmp	2	good			8-9	MCDOT
68	75ft	40*27inch	cmp	2	good		road overtopping	14-15	MCDOT
69	88ft	42*27	cmp	2	good			16-17	MCDOT
70	79ft	42*27	cmp	2	good			18&21	MCDOT
71	77ft	42*27	cmp	1	good			22&24	MCDOT
72	96ft	36inch	cmp	2	new		under construction/ below existing sream level	25-27	MCDOT

Upper New River ADMP Culvert Data Base

FID = Culvert Identifier (refer to Existing Facility Exhibit)

FID	LENGTH	SIZE	MATERIAL	BARELLS	CONDITION	SCOUR	COMMENTS	Pict_NUM	FAC_OWNER
73	73ft	42*27	cmp	2	good			29-30	MCDOT
74	77ft	24inch	rcp	1	good			31-32	MCDOT
75	48ft	7*10	cbc	2	good		sed 2ft	42-43	MCDOT
76	202ft	10*7	cbc	2	good			45-47	ADOT
77	87ft	30inch	cmp	1	good		metal headwall	49-50	MCDOT
78	34ft	36inch	cmp	1	good	yes			MCDOT
79	119ft	4*10	cbc	3	good		swpp bales in place	62-63	Private
80			cbc	5	good		alot of water	75	Private
81	49ft	36inch	cmp	1	good		outlet-elliptical 27*42	84-85	Private
82	53ft	40*26	cmp	1	good			86-87	Private
83	54ft	6*7	cbc				From AS Built December 1983		ADOT
84	76ft	6*5	cbc				From AS Built December 1983		ADOT
85	109	30	csp				From AS Built December 1983		ADOT
86	6	24	csp				From AS Built December 1983		ADOT
87	172	30	csp				From AS Built December 1983		ADOT
88	176	30	csp				From AS Built December 1983		ADOT
89	122	30	csp				From AS Built December 1983		ADOT
90	6	24	csp				From AS Built December 1983		ADOT
91	106	42	csp				From As Built December 1983		ADOT
92	53	6*7	cbc				From As Built December 1983		ADOT
93	69	6*7	cbc				From AS Built December 1983		ADOT
94	90	36	csp				From AS Built December 1983		ADOT
95	63	24	csp				From AS Built December 1983		ADOT
96	86	24	csp				From AS Built December 1983		ADOT
97	66	36	csp				From AS Built December 1983		ADOT
98	94	36	csp				From AS Built December 1983		ADOT
99	68	30	csp				From AS Built December 1983		ADOT
100	96	30	csp				From AS Built December 1983		ADOT
101	64	36	csp				From AS Built December 1983		ADOT
102	57	36	csp				From AS Built December 1983		ADOT
103	61	36	csp				From AS Built December 1983		ADOT
104	122	24	csp				From AS Built December 1983		ADOT
105	56	8*6	cbc				From AS Built December 1983		ADOT
106	82	36	csp				From AS Built December 1983		ADOT
107	80	24	csp				From AS Built December 1983		ADOT
108	95	24	csp				From AS Built December 1983		ADOT
109	88.5	36	csp				From AS Built December 1983		ADOT
110	64	36	csp				From AS Built December 1983		ADOT
111	85	24	csp				From AS Built December 1983		ADOT
112	86	30	csp				From AS Built December 1983		ADOT

Upper New River ADMP Culvert Data Base

FID = Culvert Identifier (refer to Existing Facility Exhibit)

FID	LENGTH	SIZE	MATERIAL	BARELLS	CONDITION	SCOUR	COMMENTS	Pict_NUM	FAC_OWNER
113	90	30	csp				From AS Built December 1983		ADOT
114	78	30	csp				From AS Built December 1983		ADOT
115	61.5	6*5	cbc				From AS Built December 1983		ADOT
116	82	6*5	cbc				From AS Built December 1983		ADOT
117	52.5	6*4	cbc				From AS Built December 1983		ADOT
118	62	30	csp				From AS Built December 1983		ADOT
119	62.5	30	csp				From AS Built December 1983		ADOT
120	65	10*8	cbc				From AS Built December 1983		ADOT
121	58	10*7	cbc				From AS Built December 1983		ADOT
122	28	29*18	csp				From AS Built December 1983		ADOT
123							From AS Built December 1983		ADOT
124							From AS Built December 1983		ADOT
125	62	36	csp				From AS Built December 1983		ADOT
126	62	24	csp				From AS Built December 1983		ADOT
127	60	24	csp				From AS Built December 1983		ADOT
128	66	24	csp				From AS Built December 1983		ADOT
129	61	24	csp				From AS Built December 1983		ADOT
130	60	24	csp				From AS Built December 1983		ADOT
131	95	24	csp				From AS Built December 1983		ADOT
132	41	30	csp				From AS Built December 1983		ADOT
133	76	24	csp				From AS Built December 1983		ADOT
134	56	8*6	cbc				From inspection of Aerial dated 2006		ADOT
135							From inspection of Aerial dated 2006		ADOT
136							From inspection of Aerial dated 2006		ADOT
137							From inspection of Aerial dated 2006		ADOT
138							From inspection of Aerial dated 2006		ADOT
139							From inspection of Aerial dated 2006		ADOT
140							From inspection of Aerial dated 2006		ADOT
141							From inspection of Aerial dated 2006		ADOT
142							From inspection of Aerial dated 2006		ADOT
143							From inspection of Aerial dated 2006		ADOT
144							From inspection of Aerial dated 2006		ADOT
145							From inspection of Aerial dated 2006		ADOT
146							From inspection of Aerial dated 2006		ADOT
147							From inspection of Aerial dated 2006		ADOT
148							From inspection of Aerial dated 2006		ADOT
149							From inspection of Aerial dated 2006		ADOT
150		48"	cmp	1	good	no	Inspected during site visit 11/07/06		ADOT

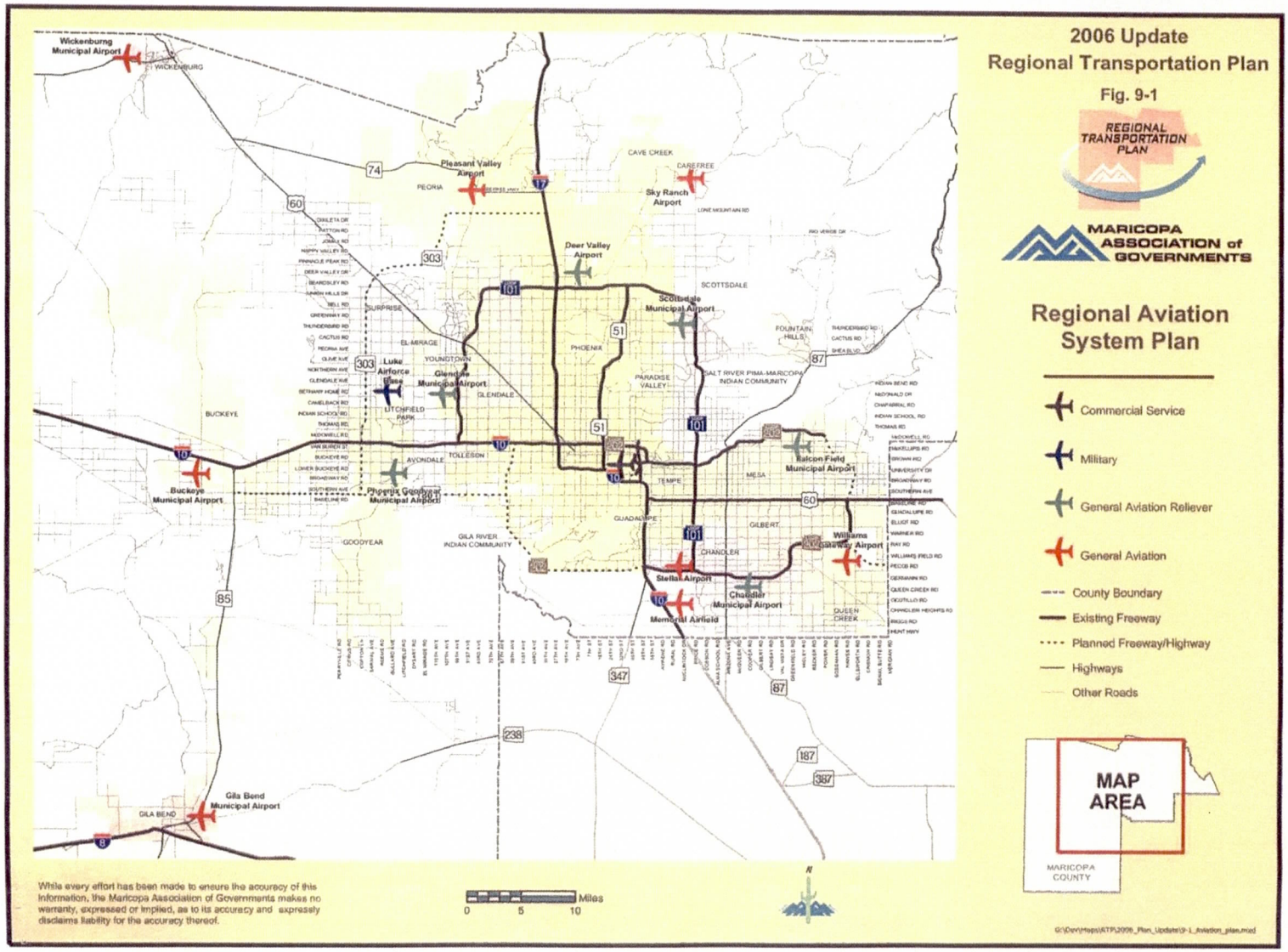
Upper New River ADMP Culvert Data Base

FID = Culvert Identifier (refer to Existing Facility Exhibit)

FID	LENGTH	SIZE	MATERIAL	BARELLS	CONDITION	SCOUR	COMMENTS	Pict_NUM	FAC_OWNER
151	100'	6' * 7'	cbc	1	good	no	Inspected 11/30/06- car at outlet	IMG_1643.JPG (u/s), IMG_1644.JPG (d/s)	Private
152	133'	54"	cmp	1	good	no	Inspected 11/30/06	IMG_1641.JPG (u/s), IMG_1642.JPG (d/s)	Private
153	129'	36"	cmp	1	good	no	Inspected 11/30/06	IMG_1645.JPG (u/s), IMG_1646.JPG (d/s)	Private
154	112	6' * 4'	cbc	2	good	no	Inspected 11/30/06	IMG_1647.JPG (u/s)	Private
155		72"	3rcp\1cmp	4	good	no	Inspected 11/30/06	IMG_1633.JPG	Private
156	197'	48"	rcp	1	good	no	Inspected 11/30/06	IMG_1639.JPG	CAP
157		30"	rcp	1	good	no	Inspected 11/30/06	IMG_1638.JPG	CAP
158		24"	rcp	1	good	no	Inspected 11/30/06	IMG_1637.JPG	CAP
159		24"	rcp	1	good	no	Inspected 11/30/06	IMG_1635.JPG	CAP
160		24"	rcp	1	good	minor	Inspected 11/30/06- flapgate	IMG_1640.JPG	Private
161									CAP
162		24	cmp	1	good		in hole no sed prob	14-16ish	ADOT

Appendix B

Figure from the MAG Regional Transportation Plan



Appendix C

Figures from Village Land Use Plans

NORTH GATEWAY VILLAGE

City of Phoenix

General Plan Categories

1 As appropriate, and when in the best interests of the City to protect and preserve mountains and ridges as open space, densities adjacent to mountains or ridges may be greater than the General Plan category depicted on this plan.

2 Readers of this map are cautioned to refer to the adopted General Plan text and maps in the full document and other Adopted refinements - Special Planning Districts, Redevelopment Plans or Specific Plans for further guidance.

3 "R" depicts location of resorts. Those with an underlying commercial designation have corresponding zoning that permits resort hotel use. All other depictions are for existing resorts that are nonconforming, general locations for future resort sites, or indicate resort district zoning.

4 For special formats of this publication call 602-262-4368 or 602-534-5500 TDD.

5 For questions concerning this publication call the Phoenix Planning Department, 602-262-6882

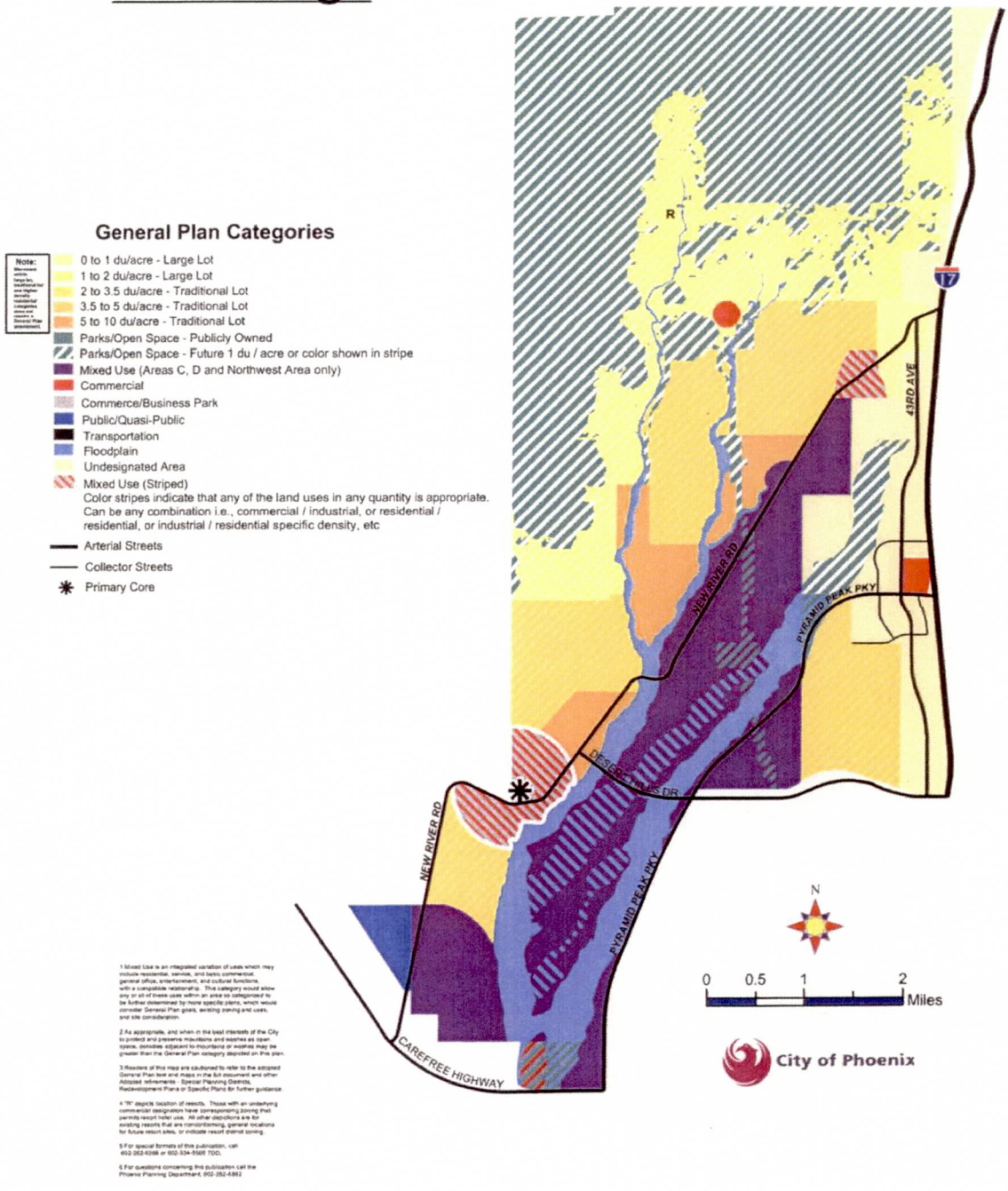
Note: Development within large lot, traditional lot and higher density residential categories does not require a General Plan amendment.

- 0 to 1 du/acre - Large Lot
- 1 to 2 du/acre - Large Lot
- 2 to 3.5 du/acre - Traditional Lot
- 3.5 to 5 du/acre - Traditional Lot
- 5 to 10 du/acre - Traditional Lot
- 10 to 15 du/acre - Higher density attached townhouses, condos, or apartments
- 15+ du/acre - Higher density attached townhouses, condos, or apartments
- Parks/Open Space - Publicly Owned
- Parks / Open Space - Future / 1 du/ acre or color shown in stripe
- Mixed Use (MU) Striped

Two color stripes indicate that either land use in any quantity is appropriate. Can be any combination i.e., commercial/industrial, or residential/ residential, or industrial/ residential specific density, etc.

- Mixed Use (Area C and D only)
- Commercial
- Public/Quasi-Public
- Transportation
- Floodplain
- Undesignated Area
- Arterial Streets
- Collector Streets
- Canals
- Infrastructure Limit line (North Black Canyon)
- Primary Core
- R Resort (See Note # 3)

New Village



1 Mixed Use is an integrated variation of uses which may include residential, service, and basic commercial, general office, entertainment, and cultural functions, with a compatible relationship. This category would allow any or all of these uses within an area so categorized to be further determined by more specific plans, which would consider General Plan goals, existing zoning and uses, and site consideration.

2 As appropriate, and when in the best interests of the City to protect and preserve mountains and washes as open space, densities adjacent to mountains or washes may be greater than the General Plan category depicted on this plan.

3 Readers of this map are cautioned to refer to the adopted General Plan text and maps in the full document and other Adopted refinements - Special Planning Districts, Redevelopment Plans or Specific Plans for further guidance.

4 "R" depicts location of resorts. Those with an underlying commercial designation have corresponding zoning that permits resort hotel use. All other depictions are for existing resorts that are nonconforming, general locations for future resort sites, or indicate resort district zoning.

5 For special formats of this publication, call 602-262-6396 or 602-534-5500 TDD.

6 For questions concerning this publication call the Phoenix Planning Department, 602-262-6882

GENERAL PLAN AMENDMENT

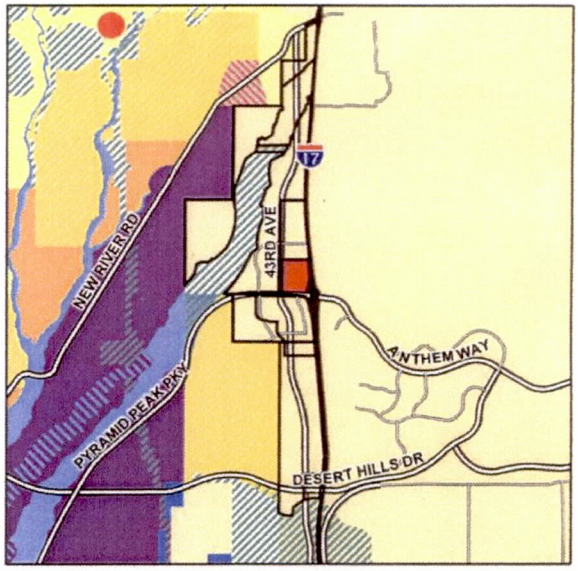
CITY OF PHOENIX ♦ PLANNING DEPARTMENT ♦ 200 W WASHINGTON ST ♦ PHOENIX, AZ ♦ 85003 ♦ (602) 262-6882

APPLICATION NO: GPA-NWPA-1-05-1	ACRES: 1794.92 +/-
VILLAGE: New Village / North Gateway	COUNCIL DISTRICT: 1
APPLICANT: City of Phoenix Planning Commission	

EXISTING:

Undesignated Area (1780.1 Acres)
Preserves / Undesignated (14.84 Acres)

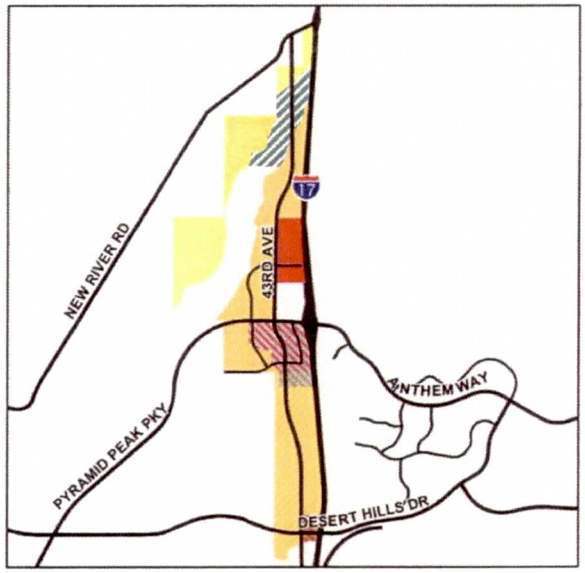
- Residential 0 to 1 du/acre
- Mixed Use (Residential 0 to 1 du/acre / Residential 1 to 2 du/acre
- Mixed Use (Residential 2 to 3.5 du/acre / Residential 3.5 to 5 du/acre)
- Residential 5 to 10 du/acre
- Mixed Use (Commercial / Commerce Business Park)
- Parks/Open Space - Future 1 du/acre
- Commercial
- Public/Quasi-Public
- Floodplain
- Mixed Use (Preserves/ Residential 2 to 3.5 du/acre / Residential 3.5 to 5 du/acre)
- Mixed Use (Preserves/ Floodplain)
- Mixed Use (Preserves / Undesignated)
- Mixed Use (Areas C, D and Northwest Area only)
- Mixed Use (Areas C, D and Northwest Area only / Floodplain)
- Mixed Use (Commerce Business Park, Industrial, Commercial, Public/Quasi-Public / Parks/Open Space)
- Transportation
- Undesignated Area



PROPOSED CHANGE:

Residential 1-2 du/ac (272.83 Acres)
Residential 2-3.5 du/ac (149.84 Acres)
Residential 3.5-5 du/ac (481.64 Acres)
Mixed Use (Residential 2-3.5 du/ac / Residential 3.5-5 du/ac) (417.88 Acres)
Parks/Open Space - Future 1 du/ac (152.02 Acres)
Commercial (110.82 Acres)
Mixed Use (Commercial / Commerce Business Park) (149.77 Acres)
Mixed Use (Commercial / Residential 10 to 15 du/ac) (30.10 Acres)
Mixed Use (Commerce Business Park / Residential 10 to 15 du/ac) (30.02 Acres)

- Residential 1 to 2 du/acre
- Residential 2 to 3.5 du/acre
- Residential 3.5 to 5 du/acre
- Mixed Use (Residential 2 to 3.5 du/acre / Residential 3.5 to 5 du/acre)
- Mixed Use (Commercial / Commerce Business Park)
- Mixed Use (Commercial / Residential 10 to 15 du/acre)
- Mixed Use (Commerce Business Park / Residential 10 to 15 du/acre)
- Commercial
- Parks/Open Space - Future 1 du/acre



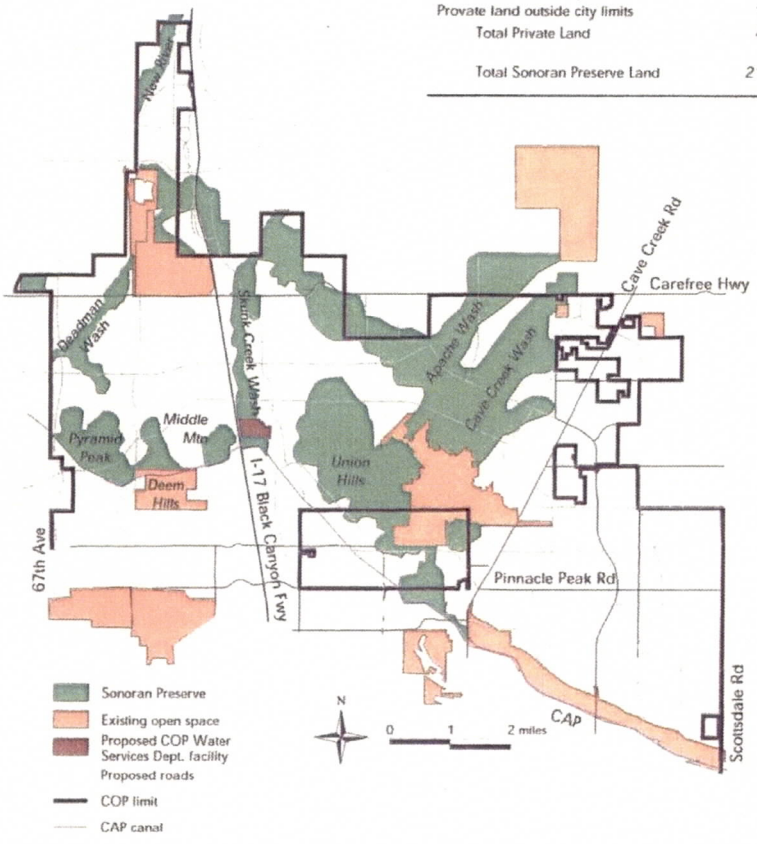
Revised Date = "09/27/2005"

Appendix D

Sonoran Preserve Land Ownership and Location

Sonoran Preserve Land Ownership and Location

	In Acres
State land within city limits	14,800
State land outside city limits	2,000
Total State Land	*16,800*
Private land within city limits	2,800
Provate land outside city limits	1,900
Total Private Land	*4,700*
Total Sonoran Preserve Land	*21,500*



3.5 Sonoran Preserve Master Plan

The deserts should never be reclaimed. They are the breathing-spaces of the west and should be preserved forever.

John Van Dyke
The Desert, 1901

Appendix E

Reference Database

Upper New River References

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
All Disciplines	1 Dead, 1 Lost in Flash Floods	Article	10-Aug-05	Brent Whiting	Arizona Republic		Stantec	Newspaper account of the flooding that caused a fatality in the watershed (at I-17 frontage road dip crossing)
All Disciplines	2006 SID Imaging	Aerial Photo	00-Xxx-06		FCD		Stantec	Aerial Photos of the watershed in SID format
All Disciplines	Aerial Phtoography for the Upper New River Study Area in Yavapai County in TIF Format	Aerial Photo	20-Sep-06	FCD	FCD		Stantec	DVD
All Disciplines	An Archeological Assessment of the Upper New River ADMP Project Area, Northern Maricopa	Report	29-Jun-07	James B. Rodg	FCD	Archaeology	Stantec	PDF available as well.
All Disciplines	Computer Aided Drafting and Design Data Delivery Specifications: REV 1.0	Manual	01-Jan-00	FCD	FCD		Stantec	Includes specifications for Survey, Mapping, Hydrology/Hydraulics, and Planning
All Disciplines	Flood Insurance Rate Maps, Maricopa County, Arizona and Incorporated Areas	FIRM Panel	30-Sep-05	FEMA	FEMA		Stantec	Map Numbers 04013C0360G,04013C0365G, 04013C0370G, 04013C0390G, 04013C0400H, 04013C0755G, 04013C0760G, 04013C0765G, 04013C0770F, 04013C0780H, 04013C1180G, 04013C1190H

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
All Disciplines	GIS Data and FY 05/06 Orthophotography Tiles for the Upper New River Study Project Area in Various	Aerial Photo/	20-Sep-06	FCD	FCD		Stantec	DVD- Date of Photography- Between January 8th and February 11t 2006.
All Disciplines	GIS data for the Upper New River Study Area in Various Formats	GIS file	08-Sep-06	FCD	FCD		Stantec	DVD- Shape Files of all projects in and around the Upper New River project area. Includes
All Disciplines	Historic Flooding Photos	Photo	1931-1993	Various	FCD		Stantec	Historic photos of flooding in the project area in 1931, 1965,1973, 1993. New River Dam, 1984, 1993.
All Disciplines	Public Involvement and Public Information Guidelines	Manual	00-Xxx-00	FCDMC Publi	FCD		Stantec	Describes FCD policy on methods and formatting for public information.
All Disciplines	Sand and Gravel Mining Floodplain Use Permit Application Guidelines	Manual	2 -May-03	FCD	FCD		Stantec	
All Disciplines	Sand and Gravel Reclamation Guidelines	Manual	12-Dec-04	EDAW	FCD	Mitigation	Stantec	
All Disciplines	Upper New River DTM (DXF's, PF's, LF's)	Digital Inform	30-Aug-06	FCD	FCD		Stantec	Breaklines and Point files for topography in Upper New River Watershed
Engineering	12" Waterline, New River Crossing for Anthem (Unit 81)	As Builts	23-May-06	Stanley Consul	Anthem by Del Webb	Engineering	Stantec	Unit 81, 12" Waterline New River Crossing From Barko Lane to 43rd Avenue (North Crossing) From Magellan Drive to Challenger Trail (South Crossing)

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Engineering	78" Lake Pleasant Waterline Lake Pleasant Water Treatment Plant to the 54" Tramonto Waterline	As Builts	27-Apr-07	Stanley Consul	City of Phoenix	Engineering	Stantec	City of Phoenix Water Services Department Distribution and Collection Engineering Division, 78" Lake Pleasant Water Treatment Plant to the 54" Tramonto Waterline, WS85500156, Volume 3 of 3, September 2004
Engineering	basin_a_24hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin A - 100-Year 24-Hour Storm Event
Engineering	basin_a_6hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin A - 100-Year 6-Hour Storm Event
Engineering	basin_b_24hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin B - 100-Year 24-Hour Storm Event
Engineering	basin_b_6hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin B - 100-Year 6-Hour Storm Event
Engineering	basin_c_24hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin C - 100-Year 24-Hour Storm Event
Engineering	basin_c_6hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin C - 100-Year 6-Hour Storm Event

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Engineering	basin_d_24hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin D - 100-Year 24-Hour Storm Event
Engineering	basin_d_6hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin D - 100-Year 6-Hour Storm Event
Engineering	basin_e_24hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin E - 100-Year 24-Hour Storm Event
Engineering	basin_e_6hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin E - 100-Year 6-Hour Storm Event
Engineering	basin_f_24hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin F - 100-Year 24-Hour Storm Event
Engineering	basin_f_6hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin F - 100-Year 6-Hour Storm Event
Engineering	basin_g_24hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin G - 100-Year 24-Hour Storm Event
Engineering	basin_g_6hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin G - 100-Year 6-Hour Storm Event

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Engineering	basin_h_24hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin H - 100-Year 24-Hour Storm Event
Engineering	basin_h_6hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin H - 100-Year 6-Hour Storm Event
Engineering	basin_i_24hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin I - 100-Year 24-Hour Storm Event
Engineering	basin_i_6hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin I - 100-Year 6-Hour Storm Event
Engineering	basin_j_24hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin J - 100-Year 24-Hour Storm Event
Engineering	basin_j_6hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin J - 100-Year 6-Hour Storm Event
Engineering	basin_k_24hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin K - 100-Year 6-Hour Storm Event
Engineering	basin_k_6hr.hc1	Model	00-Apr-04	URS	FCD	Hydrology	Stantec	HEC-1 Analysis using WMS New River West Tributaries FDS - FCD 2003 C057 Basin K - 100-Year 6-Hour Storm Event

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Engineering	County Highway, Maricopa County RS-571(6)P	As Builts	07-Apr-92	ADOT Highw	ADOT	Engineering	Stantec	Carefree Highway Bridge over New River
Engineering	Data Delivery Specifications: The Hydrologic Information System Rev. 3.1	Manual	01-Jun-98	FCD	FCD	Hydrology / H	Stantec	HIS specification Manual- for GIS, DTM and CADD data
Engineering	Deadman Wash FDS FCD 90-65 Technical Data Notebook, Hydraulic Analysis, Volume 1 of 2	Report	01-Apr-95	Howard Needl	FCD	Hydraulics	Stantec	
Engineering	Deadman Wash Floodplain Delineation Study Technical Data Notebook, Hydrology Volume 1 of 2	Report	01-Dec-92	Howard Needl	FCD	Hydrology	FCD	Includes correspondence relating to the project, mapping and survey information, hydrologic method description, erosion and final results, and drainage sub-basin maps for land use, soils, flowpaths and flood routing.
Engineering	Deadman Wash Floodplain Delineation Study Technical Data Notebook, Hydraulic Analysis	Report	01-May-91	Howard Needl	FCD	Hydraulics	FCD	Rough maps showing n-values, section on special problems including Snodgrass Tank Levee, Split flow issues, roadway overtopping and Joy Ranch Rd, and the I-17 bridges
Engineering	Estrella Freeway (SR303L) Happy Valley Road - I-17 (Interim) Initial Drainage Report Stage II Design 30%	Report	00-Sep-06	Parsons Brinck	ADOT	Hydraulics	Stantec	Hydraulic Calculations for: Twin Buttes Wash Box Culvert Crossing, Caterpillar Tank Wash Box Culvert Crossing, Agua Fria River Bridges Crossing, New River Bridges Crossing, Deadman Wash Bridges Crossing, Unnamed Wash 4 Box Culvert Crossing, and Unnamed Wa
Engineering	Estrella Freeway (SR303L) Happy Valley Road to I-17	Roadway Plan	28-Sep-06	Parsons Brinck	ADOT	Engineering	Stantec	Project No. 303 MA 325 H5946 01C

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Engineering	Estrella Freeway (SR303L) Happy Valley Road to I-17; 30% Cross Sections	Project Plans	28-Sep-06	Parsons Brinck	ADOT	Hydraulics	Stantec	Project No. 303 MA 325 H 5946 01C
Engineering	Exhibit 2, Elevation Reference Marks for FIS New River from New River Dam to Rock Springs,	Report	01-Dec-87	CVL	FCDMC	Survey	FCDMC	Contains a figure showing Elevation reference mark locations on top of contours, as well as descriptions of the marks themselves. May be useful for location stock tanks
Engineering	FIS New River from New River Dam to Rock Springs HEC-2	Report	00-Xxx-87	CVL	FCDMC	Hydraulics	FCDMC	Printed Input and Output for the HEC-2 model
Engineering	FIS New River from new River Dam to Rock Springs, Maricopa County, Arizona	Report	01-Dec-87	CVL	FCD	Hydrology / H	FCD	Includes Correspondence with FEMA, County Submittal, floodplain maps and elevation exhibits
Engineering	Flood Insurance Study New River From New River Dan to Rock Springs, Maricopa County, AZ	Report	01-Dec-87	CVL	FCD	Hydrology / H	FCD	Overview Document for 1987 study, including project summary, river profiles, correspondence with FEMA and work maps.
Engineering	Gavilan Peak Flood Plain Study FCD 98-02	Report	30-Jun-99	Morrison-Maie	FCD	Hydraulics	Stantec	Inventory of culverts in the New River area- includes overview map, plan and profile drawings and photos of u/s and d/s conditions
Engineering	Gavilan Peak Flood Plain Study FCD Contract No. 2002C032	Report	01-Mar-05	Baker	FCD	Hydrology / H	Stantec	Delineates 19.5 linear miles of floodplain and floodway along Gavilan Peak Wash and its tributaries. Hydrology and Reference sections appear to be missing, not available at FCD library. A call has been placed to Tim Murphy at FCD

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Engineering	Gavilan Peak Wash Floodplain Delineation Study, Technical Data Notebook Section 4:	Report	28-Oct-98	Bing Zhao, FC	FCD	Hydrology	Stantec	Copy received by email from Tim Murphy via Theresa Pinto. The report is labeled "Draft" and does not include Appendices 7 and 8.
Engineering	Granite Reef Aqueduct and Hayden/Rhodes Aqueduct	As Builts	00-Xxx-79	Bureau of Recl	Central Arizona Project		Stantec	Various sheets, containing plan and profiles of the aqueducts as well as details on drainage structures. Dates from 1973 to 1989.
Engineering	HEC1.REV	Model	05-Dec-85		FCD	Hydrology	Stantec	HEC-1 model- New River 500 year modeling
Engineering	Hydrology Report Including Approval Letters for Flood Insurance Study New River from New River Dam to	Report	01-Oct-87	CVL	FCDMC	Hydrology	FCDMC	Contains an explanation of previous studies, the methods used by CVL, a print out of the HEC-1 model and a figure showing basin delineations
Engineering	I-17 Frontage Rd Bridge at New River, Record Drawing, Oct 1997	As Builts	29-Apr-97	MCDOT	MCDOT	Hydraulics	Stantec	Includes grouting and rip-rap plans, plan and profile and structural details
Engineering	Initial Drainage Report Stage II Design (30%); Estrellay Freeway (SR303L) Happy Valley Road -- I-17 (Interim)	Report	00-Sep-06	Parsons Brinck	ADOT	Engineering	Stantec	2 Volumes
Engineering	New River above I-17 Floodplain Delineation Study Technical Data Notebook	Report	01-Mar-02	Primatech, LL	FCDMC	Engineering	FCDMC	Contains sections on Mapping and Survey, Hydrology, Hydraulics, Erosion and Sedimentation. Includes figure showing basin delineations, among toher things.
Engineering	New River Road Bridge Levee Update	Report	02-Dec-05	Hoskin-Ryan	Flood Control District of Maricopa County	Hydraulics	Stantec	Technical Data Notebook (PDF format), Work Maps, HEC-2 Models (Effective and Revised), AS-BUILT copy, and DXF file

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Engineering	New River West Tributaries FDS Volume I of III Draft	Report	01-Sep-05	URS	FCDMC	Engineering	FCDMC	Contains sections on Survey, Hydrology, Hydraulics, Erosion and Sediment Transport. Includes As-builts of the CAP Granite Reef Aqueduct
Engineering	NEWRIVER.DAT	Model	00-Xxx-87	CVL	FCD	Hydraulics	Stantec	HEC-2 file prepared for original FIS study
Engineering	NRW10.prj	Model	29-Apr-05	URS	FCD	Hydraulics	Stantec	New River West Tributaries FDS, HEC-RAS Analysis stream associated with Basin B
Engineering	NRW15.prj	Model	29-Apr-05	URS	FCD	Hydraulics	Stantec	New River West Tributaries FDS, HEC-RAS Analysis stream associated with Basin C
Engineering	NRW20.prj	Model	29-Apr-05	URS	FCD	Hydraulics	Stantec	New River West Tributaries FDS, HEC-RAS Analysis stream associated with Basin D
Engineering	NRW25.prj	Model	29-Apr-05	URS	FCD	Hydraulics	Stantec	New River West Tributaries FDS, HEC-RAS Analysis stream associated with Basin E
Engineering	NRW30.prj	Model	29-Apr-05	URS	FCD	Hydraulics	Stantec	New River West Tributaries FDS, HEC-RAS Analysis stream associated with Basin F
Engineering	NRW35.prj	Model	29-Apr-05	URS	FCD	Hydraulics	Stantec	New River West Tributaries FDS, HEC-RAS Analysis stream associated with Basin G

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Engineering	NRW40.prj	Model	29-Apr-05	URS	FCD	Hydraulics	Stantec	New River West Tributaries FDS, HEC-RAS Analysis stream associated with Basin H
Engineering	NRW45.prj	Model	29-Apr-05	URS	FCD	Hydraulics	Stantec	New River West Tributaries FDS, HEC-RAS Analysis stream associated with Basin I
Engineering	NRW5.prj	Model	23-Sep-05	URS	FCD	Hydraulics	Stantec	New River West Tributaries FDS, HEC-RAS Analysis stream associated with Basin A
Engineering	NRW50.prj	Model	29-Apr-05	URS	FCD	Hydraulics	Stantec	New River West Tributaries FDS, HEC-RAS Analysis stream associated with Basin J
Engineering	NRW55.prj	Model	29-Apr-05	URS	FCD	Hydraulics	Stantec	New River West Tributaries FDS, HEC-RAS Analysis stream associated with Basin K
Engineering	Phoenix-Cordes Junction Highway (I-17) Initial Drainage Report Stage II Design 30%	Report	26-Apr-06	Parsons Brinck	ADOT	Engineering	Stantec	SR 303L/I-17 TI Phase I Tracs No. H6882 01D SR 101L – SR74 Tracs No. H6882 xxD Volume 2 of 2
Engineering	Plan and Profile of Proposed County Highway Maricopa County	As Builts	26-Mar-92	ADOT	ADOT	Hydraulics	Stantec	Carefree Highway Bridge over New River
Engineering	Plan and Profile of Proposed State Highway Phoenix-Cordes Junction Maricopa County I-17-1-994	As Builts	14-May-80	ADOT Highw	ADOT	Engineering	Stantec	New River Bridge Scour Protection Details

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Engineering	Plan and Profile of Proposed State highway Phoenix-Rock Springs, Maricopa County FAS39 (1948) A,B,C	As Builts	29-Apr-53	State of Arizon	ADOT	Engineering	Stantec	As- Builts- excerpts of original New River Bridge plans showing bridge in plan and profile.
Engineering	Plan and Profile of State Highway Morristown - New River Hwy (SR 74)	As Builts	20-May-01	ADOT	ADOT	Engineering	Stantec	Plan and Profile of State Highway Morristown - New River Hwy (SR 74) STP-434(6) P. 99th Ave to the Interstate 17. This is a PDF file found at: V:\52820\active\182000418\Data Collection\PDF SR 74 (99thAve - I-17)\074-MA-022 H3340-01C.pdf
Engineering	Plans for the Construction of New River Road Box Culverts	As Builts	19-Apr-89	MCDOT	MCDOT	Hydraulics	Stantec	
Engineering	Plans for the Constuction of New River Road Bridge at New River Project No. 68738	As Builts	01-Oct-97	MCDOT	MCDOT	Hydraulics	Stantec	
Engineering	REVSB.DAT	Model	20-Oct-86		FCD	Hydraulics	Stantec	HEC-2 file used as starting WSEL for New River FIS FCDMC NEW RIVER FLOODWAY ANALYSIS 100-YEAR FLOWS NEW RIVER-A.F.R. TO S.C.
Engineering	RZON.DAT	Model	20-Oct-86		FCD	Hydraulics	Stantec	HEC-2 FCDMC NEW RIVER FLOODWAY ANALYSIS 10-YEAR FLOWS NEW RIVER-A.F.R. TO S.C.
Engineering	SCFLD	Model	09-Dec-89	CVL	FCD	Hydraulics	Stantec	HEC-2 SKUNK CREEK - CVL# 1090-040 (FCDMC) - F.C.D. 89-30 - DECEMBER 9,1989 NEW RIVER TO ACDC 00 YEAR SCFLD

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Engineering	State Highway Phoenix-Cordes Junction Maricopa County I-17-1(136)	As Builts	04-Apr-84	ADOT Highw	ADOT	Engineering	Stantec	I-17 Culverts, Deadman Wash and New River bridge widening details
Engineering	State Highway Phoenix-Cordes Junction Maricopa County I-17-1-993	As Builts	14-May-80	ADOT Highw	ADOT	Engineering	Stantec	Deadman Wash Bridges Scour Protection Details
Engineering	SWCANYON.IN	Model	00-Xxx-87	CVL	FCD	Hydraulics	Stantec	HEC-2 FCDMC NEW RIVER FLOODPLAIN ANALYSIS 100-YEAR FLOWS NEW RIVER-SWEAT CANYON WASH TRIBUTARY
Engineering	Technical Data Notebook Volume IV, Hydraulic Analysis for Sweat Canyon Wash Flood Insurance Study	Report	01-Jan-99	David Evans a	FCD	Hydraulics	FCD	Includes Work maps, write up of parameter estimation, n-value photos, cross section description and print outs
Engineering	Technical Data Notebook, Volume III Hydrologic Analysis for Sweat Canyon Wash Flood Insurance Study	Report	01-Jan-99	David Evans a	FCDMC	Hydrology	FCDMC	Sections include Method description, Parameter estimation, Problems encountered during the study, Calibration, and Final results
Engineering	Utility Quarter Sections (Sewer and Water)	CAD Drawing	16-Nov-06	Water Services	City of Phoenix	Engineering	Stantec	Map No. & Location: 49-12 SE SEC36 T5N R1E | 51-13 SW SEC30 T5N R2E | 60-21 NW SEC2 T5N R2E | 68-18 NE SEC16 T6N R2E | 68-19 NW SEC15 T6N R2E | 69-18 SE SEC9 T6N R2E | 69-19 SW SEC10 T6N R2E | 70-18 NE SEC9 T6N R2E | 70-19 NW SEC10 T6N R2E
Engineering	WSPLIT.IN	Model	00-Xxx-87	CVL	FCD	Hydraulics	Stantec	HEC-2 FCDMC NEW RIVER FLOODPLAIN ANALYSIS 100-YEAR FLOWS NEW RIVER-WEST SPLIT

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Environmental	Preliminary Existing Landscape Character Assesment for Maricopa County	Report	02-Oct-03	EPG	FCD	Biological Res	EDAW	A baseline study of existing landscape character
Environmental	WITTMANN AREA DRAINAGE MASTER PLAN LEVEL 1 SCENERY AND	Report	01-Jun-06	EPG	FCD	Biological Res	EDAW	The purpose of this study is to provide a preliminary assessment of the scenery and recreation resources that will serve as the starting point for a more detailed assessment that will be carried out as a part of the Wittmann ADMP contract
Planning	Agua Fria National Monument and Bradshaw Harquahala Draft RMP/DEIS Maps	Report	01-Oct-05	BLM	BLM		Stantec	Maps of the Agua Fria National Monument and Bradshaw Harquahala planning area
Planning	Agua Fria National Monument/Bradshaw-Harquahala DRMP/DEIS	Report		BLM	BLM		https://www.blm.gov/eplanning/az_pn/builds/build217/index.htm	
Planning	Agua Fria Natl Monument and Bradshaw Harquahala Draft Resource Management Plan and Environmental	Report	01-Oct-05	BLM	BLM		Stantec	Two volumes, includes analysis of resource management, people management, cultural resources, etc.
Planning	Airport Feasibility Study, City of Peoria, Phase 1	Report	00-Xxx-97	Coffman Asso	ADOT		Stantec	A feasibility report for the proposed reliever aiport at the site of the existing glider port. Various airport configurations are evaluated and ranked.
Planning	City of Peoria City Code	Manual	00-Xxx-92	Office of the C	City of Peoria		http://www.peoriaaz.com/citycode/	Complete organized set of laws enacted by the City. The City has separate codes from the City Code for Zoning and Sales Tax. The City Code is published in hard copy and electronically by the Office of the City Attorney- Updates for council actions effecti

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Planning	City of Peoria's Zoning Ordinance	Manual	24-Apr-06	City Of Peoria	City Of Peoria Planning Division		http://www.peoriaaz.com/zoning/ZONE_TABLE.asp	Online version of City of Peoria's Zoning Ordinances- Link to recent updates
Planning	City of Phoenix Site Selection Third Reliever Airport	Report	01-Apr-88	Turner Collie	City of Phoenix-Skyharbor		Stantec	Evaluation of possible reliever airport at intersection of lake Pleasant road and Carefree Highway (existing glider port)
Planning	Drainage Regulations for Maricopa County	Manual	01-Sep-04	Maricopa Cou	Maricopa County Planning and Development Dept		http://www.maricopa.gov/Planning/drainage/pdf/Drainage_Regs.pdf	Drainage guidelines for developments in unincorporated Maricopa County.
Planning	Loop 303 Specific Area Plan	Report	13-Dec-05	URS	City of Peoria		http://www.peoriaaz.com/planning/Docs/Loop303/FinalLoop303_Report.pdf	
Planning	Maricopa County New River Area Plan	Report	07-Apr-99	Maricopa Cou	Maricopa County		http://www.maricopa.gov/planning/compln/newriver/tblcon.asp	
Planning	Maricopa County Zoning Ordinance	Manual	00-Apr-05	Maricopa Cou	Maricopa County Planning & Development Department		http://www.maricopa.gov/planning/pdf/reform_ordinance/mczo1.pdf	Development Regulations for unincorporated Maricopa County, Hillside
Planning	Peoria General Plan	Report	01-Dec-05	City of Peoria	City of Peoria		http://www.peoriaaz.com/GenPlan/Default.htm	
Planning	Regional Transportation Plan 2006 Update - DRAFT	Report	01-May-06	MAG	Maricopa Association of Governments		http://www.mag.maricopa.gov/detail.cms?item=5836	Discusses 303 alignment

Discipline Use	Reference	Reference Type	Reference Date	Author	Owner	Sub Discipline	Location	Description
Planning	Sonoran Preserve Master Plan	Report	17-Feb-98	Herberger Cen	City of Phoenix		http://phoenix.gov/PARKS/sonoran.html	Gives general guidelines for open space management and preserves
Planning	State Route 74 Scenic Corridor Guidelines Final Draft	Report	08-Jun-06	Maricopa Cou	Maricopa County		http://www.maricopa.gov/planning/compln/sr74_FINAL_DRAFT.pdf	Describes the policies for development along SR 74 in un-incorporated areas of MC and City of Peoria.
Planning	The Code of the City of Phoenix, Arizona	Manual	01-Dec-06	Municipal Cod	City of Phoenix		http://www.municode.com/Resources/gateway.asp?pid=13485&sid=3	The Charter and The General Ordinances of the City- The Charter of the City of Phoenix, the City Code, the Zoning Ordinance and the Index constitute what is ordinarily referred to as the Phoenix City Code.
Planning	Tonto National Forest Plan	Report	01-Oct-85	Forest Service,	USDA Forest Service		http://www.fs.fed.us/r3/tonto/projects/tonto-plan-index.shtml	
Planning	Zoning Ordinance Of The City Of Phoenix, Arizona	Manual	04-Aug-06	City Council	City of Phoenix		http://www.municode.com/Resources/gateway.asp?pid=13534&sid=3	Codified through Ord. No. G-4817 (TA-27-05), adopted July 5, 2006, effective Aug. 4, 2006. (Supplement No. 8)

Appendix F

Shape File Database

Upper New River Shape Files

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
	bridge-1007	18-Sep-06	FCD		Also 1023, 1034, 1036, 1050, 1055, 1063, 1111, 1191, 1218, 1225 Show the locations of various bridges in and around the UNR project area
	cnl-1023	18-Sep-06	FCD		Also 1034, 1076, 1118, 1225. Show the location of various canals in and around the UNR project area
	culvert-1007	18-Sep-06	FCD		Also, 1063,1088,1111,1225
	drnbsn-1042	18-Sep-06	FCD		Also, 1088--- Drainage basin polygons
	drnbsn-NRWT	18-Sep-06	FCD		New River West Tributaries- drainage basin polygons
	drnpthln-1042	18-Sep-06	FCD		Flow path lines; also, 1088

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
	drnpthln-NWRT	18-Sep-06	FCD		New River West Tributaries- flowpath lines
	drnpthpt-1042	18-Sep-06	FCD		Hydrology information; also, 1088
	drnpthpt-NWRT	18-Sep-06	FCD		Hydrology information for the New River West Tributaries
	fpbln-NWRT	18-Sep-06	FCD		Floodplain baseline route system for the New River West Tributaries
	fpsrffcd	18-Sep-06	FCD		Floodplain FCD Water Surface Elevation for the New River West Tributaries
	fpxfcd	18-Sep-06	FCD		Floodplain Cross Section Route System for the New River West Tributaries
	fpznfcd	18-Sep-06	FCD		Floodplain FCD Zone for the New River West Tributaries
	fpznfcd-1244	18-Sep-06	FCD		Floodplain FCD Zone; also for 1225- old (which was superseeded by NRWT)

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
	river-1007	18-Sep-06	FCD		River lines; also for 1042,1063,1111,1208, and 1225
All Disciplines	1218-index	21-Aug-07	State lands		10 foot index contours; small portion of the southern area of Upper New River
All Disciplines	1218-inter	21-Aug-07	State lands		intermediate contours; small portion of the southern area of Upper New River
All Disciplines	1225-index	21-Aug-07	State lands		10 foot index contours; small portion of the southern area of Upper New River
All Disciplines	1225-inter	21-Aug-07	State Lands		intermediate contours; small portion of the southern area of Upper New River
All Disciplines	1257-index	21-Aug-07	State Lands		10 foot index contours; small portion of the southern area of Upper New River
All Disciplines	1257-inter	21-Aug-07	State Lands		intermediate contours; small portion of the southern area of Upper New River

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
All Disciplines	6001010	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (West Tributaries Planning Area)
All Disciplines	6001015	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (West Tributaries Planning Area)
All Disciplines	6001020	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (West Tributaries Planning Area).
All Disciplines	6051010	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (New Rvier Planning Planning Area, West Tributaries Planning Area)
All Disciplines	6051015	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (West Tributaries Planning Area and New River Planning Area)
All Disciplines	6051020	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (West Tributaries Planning Area)
All Disciplines	6101005	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lone Mtn Planning Area, New River Dam Planning Area)
All Disciplines	6101010	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lone Mtn Planning Area, Lower Deadman Planning Area, New River Planning Area)

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
All Disciplines	6101015	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (New River Planning Area, Lower Deadman Planning Area)
All Disciplines	6101020	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (New River Planning Area)
All Disciplines	6151000	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lone Mtn Planning Area, New River Dam Planning Area)
All Disciplines	6151005	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lone Mtn Planning Area)
All Disciplines	6151010	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lone Mt Planning Area, Lower Deadman Planning Area)
All Disciplines	6151015	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lower Deadman Planning Area, New River Planning Area)
All Disciplines	6151020	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (New River Planning Area, Lower Deadman Planning Area)
All Disciplines	615995	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
All Disciplines	6201000	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lone Mtn Planning Area)
All Disciplines	6201005	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lone Mtn Planning Area)
All Disciplines	6201010	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lone Mtn Planning Area, Lower Deadman Planning Area)
All Disciplines	6201015	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lower Deadman Planning Area)
All Disciplines	6201020	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lower Deadman Planning Area)
All Disciplines	620995	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River
All Disciplines	6251000	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River
All Disciplines	6251005	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
All Disciplines	6251010	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lower Deadman Planning Area)
All Disciplines	6251015	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lower Deadman Planning Area)
All Disciplines	6251020	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lower Deadman Planning Area)
All Disciplines	625995	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River
All Disciplines	6301000	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River
All Disciplines	6301005	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River
All Disciplines	6301010	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River
All Disciplines	6301015	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lower Deadman Planning Area)

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
All Disciplines	6301020	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lower Deadman Planning Area)
All Disciplines	630995	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River
All Disciplines	6351000	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River
All Disciplines	6351005	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River
All Disciplines	6351010	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River
All Disciplines	6351015	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (small piece of Lower Deadman Planning Area)
All Disciplines	6351020	21-Aug-07	State Lands		Aerial photo; southern portion of Upper New River (Lower Deadman Planning Area)
All Disciplines	635995	21-Aug-07	State Lands		Aerial photo; just outside of Upper New River

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
All Disciplines	anthem_way	14-Dec-06	Stantec		Anthem way (road)
All Disciplines	archaeological_sites_lines	21-Aug-07	FCD		Archaeological sites within Upper New River; polylines
All Disciplines	archaeological_sites_poly	21-Aug-07	FCD		Archaeological sites within Upper New River; polygons
All Disciplines	Biological Info	21-Aug-07	State Lands		Vegetation for southern portion (Lower Deadman Planning Area) of Upper New River
All Disciplines	Boundary-NAD83-AZ-Ce	21-Aug-07	State Lands		APR area boundary polygon; APIArea-Bndy.shp is contained inside this boundary
All Disciplines	braided_stream	14-Dec-06	Stantec		Braided stream within Upper New River; flood hazard
All Disciplines	CANAL	14-Dec-06	Stantec		CAP canal
All Disciplines	ConventionalWash	21-Aug-07	State Lands		Washes outside of Upper New River

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
All Disciplines	dam_poly	14-Dec-06	Stantec		New River dam
All Disciplines	desktopwash	21-Aug-07	State Lands		Interm, major and minor washes in lower portion of Upper New River
All Disciplines	dip_sections	28-Sep-06	Stantec		dip sections collected in the field with Trimble GPS unit
All Disciplines	Distributary	14-Dec-06	Stantec		Distributary within Upper New River; flood hazard
All Disciplines	Drainage_complaints_UN	14-Dec-06	Stantec		Drainage complaints within UNR_study_bounds;
All Disciplines	floodplain_fcd_unr.shp	28-Aug-06	FCD		Shows limits of floodplain for Gavilan wash and west tributaries
All Disciplines	floodplainfema_unr	28-Aug-06	FCD		Shows the limits of the FEMA floodplain, not including the West tributaries and Gavilan Peak wash
All Disciplines	fpznfcd_1244	14-Dec-06	FCD		Floodplain zones for Gavalin Peak subwatershed

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
All Disciplines	fpznfcd_NRWT	14-Dec-06	FCD		Floodplain zones for New River West Tributaries subwatershed
All Disciplines	GeoChar	21-Aug-07	State Lands		Geological information for southern portion (Lower Deadman Planning Area) of Upper New River
All Disciplines	major_hwys	14-Dec-06	Stantec		All major hwys within UNR_study_bounds; includes I-17, I-40, I-10, I-8, I-15, I-19
All Disciplines	parcels	15-Dec-06	FCD		Parcels within UNR_study_bounds; containing APN #'s, owner address, land use code, and more…
All Disciplines	pebble_count	14-Dec-06	Stantec		Pebble counts collected in the field
All Disciplines	Powerlines	28-Sep-06	Stantec		powerlines layer
All Disciplines	ris_roads	25-Sep-06	MCDOT		MCDOT maintained roads
All Disciplines	sand_gravel	28-Sep-06	Stantec		Sand and gravel operations locations

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
All Disciplines	sand_gravel_polygon	14-Dec-06	Stantec		Sand and gravel operation within UNR_study_bounds
All Disciplines	Split Flow	14-Dec-06	Stantec		Split Flow within Upper New River; flood hazard
All Disciplines	sruct_alt_reach	28-Aug-06	Stantec		Shows the limits of the potential structural alternative portion of the river.
All Disciplines	stock_tanks	28-Sep-06	Stantec		Stock Tank locations
All Disciplines	streets	14-Dec-06	FCD		Streets in Maricopa County
All Disciplines	Structures	14-Dec-06	Stantec		Structures within the floodplain of Upper New River; flood hazard
All Disciplines	UNR_DISPLAY_ONLY	14-Dec-06	Stantec		Upper New River watershed boundary for display purposes only- excludes Anthem
All Disciplines	UNR_streets	14-Dec-06	Stantec		For display purposes; includes I-17, Carefree hwy and New River Road

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
All Disciplines	UNR_study_bounds	28-Sep-06	Stantec		Upper New River watershed boundary
All Disciplines	upper_newriver_admp2	28-Aug-06	FCD		Shows limits of study area (stops at Forest boundary
All Disciplines	USGS_gages	14-Dec-06	Stantec		USGS gages verified in the field
Engineering	Bank protection	28-Sep-06	Field work- Ruth and Natalie	Hydraulics	Bank protection points taken with the Trimble GPS unit.
Engineering	bridges	28-Sep-06	Stantec		bridge layer
Engineering	culverts	28-Sep-06	Field Work- Ruth & Natalie	Hydraulics	Culverts taken with the Trimble GPS unit out in the Field- Ruth and Natalie
Engineering	dam	28-Sep-06	Stantec	Hydraulics	Dam location

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
Engineering	Misc_points	28-Sep-06	Field work- Ruth and Natalie	Hydraulics	Grade control, rock and rail structure, and other misc. points taken out in the field
Engineering	river centerline	28-Sep-06	Stantec	Hydraulics	River centerline
Engineering	siphon	28-Sep-06	Stantec	Hydraulics	Siphon locations
Engineering	spillway	28-Sep-06	Stantec		Spillway locations
Engineering	xs_lines	28-Sep-06	Stantec	Hydraulics	Cross Section lines
Planning	alris_own	28-Sep-06	FCD	Land Ownership	land ownership shapefile: BLM, USFS, NPS, Private, Federal....
Planning	APIArea-Bndy	21-Aug-07	State Lands		Parks / Open Space - Future 1 du; lower portion of Upper New River

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
Planning	areaplan	13-Oct-06	Maricopa County Planning & Development		polygons showing specific planning areas
Planning	areaplanlanduse	13-Oct-06	Maricopa County Planning & Development		Land use information (low level)
Planning	casemap	13-Oct-06	Maricopa County Planning & Development		Applications for planning/zoning changes- both adopted and denied
Planning	dmp	13-Oct-06	Maricopa County Planning & Development		Development Master Plans in Maricopa County
Planning	FutureWater	07-Sep-06	City of Phoenix		Locations of new and proposed water lines in the City of phoenix, including Lake Pleasant line at 74, includes project details in attribute tables
Planning	gaslines	28-Sep-06	Stantec		gaslines layer
Planning	generalpln2000	13-Oct-06	Maricopa County Planning & Development		City boundaries in Maricopa County (Phoenix is incorrect)
Planning	GP2006north	17-Jan-07	City of Phoenix		City of Phoenix General Plan land use file clipped to show area northof I-17.

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
Planning	Gpnorth	07-Sep-06	City of Phoenix		Section of the phoenix General Plan that includes New River. Parcels broken out with zoning
Planning	landuse_cases	13-Oct-06	Maricopa County Planning & Development		Includes mining exemptions, hillslopes, etc.
Planning	mpa2005	13-Oct-06	Maricopa County Planning & Development		Master planning areas for cities in Maricopa County as of 2005
Planning	mpa96	13-Oct-06	Maricopa County Planning & Development		Master planning areas for cities in Maricopa County as of 1996
Planning	North_Utilities_Corridor	07-Sep-06	City of Phoenix		Outline of corridor that runs along 74 and south
Planning	overlay	13-Oct-06	Maricopa County Planning & Development		Zoning Overlays
Planning	parcels_unr_amp	28-Aug-06	FCD		Shows private land parcels in the project area, as well as some public land holdings
Planning	peoria_future_roads	14-Dec-06	City of Peoria		Future road plans for City of Peoria

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
Planning	peoria_landuse	14-Dec-06	City of Peoria		Zoning for City of Peoria
Planning	Power_Corridor_Line	07-Sep-06	City of Phoenix		location of power corridor along 74 alignment
Planning	scenic	13-Oct-06	Maricopa County Planning & Development		Scenic Corridors in Maricopa County
Planning	Scenic_Corridor	07-Sep-06	City of Phoenix		Location of Scenic corridors in Upper New River study area, includes attribute information
Planning	specuse	13-Oct-06	Maricopa County Planning & Development		Special use areas
Planning	StreetClassNorth	07-Sep-06	City of Phoenix		Locations and designations of existing and proposed roads
Planning	subs	13-Oct-06	Maricopa County Planning & Development		Subdivisions in Maricopa County
Planning	trailhead	28-Sep-06	Stantec		Trailhead locations

Discipline	File Name	Date Recieved/Created	Source	Sub-Discipline	Description
Planning	waterlines	28-Sep-06	Stantec		Waterlines layer
Planning	zoning	13-Oct-06	Maricopa County Planning & Development		Zoning for Maricopa County