

**VOLUME III**  
**APPENDICES**

**Reata Wash  
Flood Control Improvement Study**

Contract No. 2014-168-COS

**Design Concept Report  
Volume III - Appendices  
November 2, 2016**

Prepared for:



Capital Project Management  
7447 East Indian School Road, Suite 205  
Scottsdale, AZ. 85251

Prepared By:

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In Association with:



EXPIRES 12-31-16

**THE DESIGN CONCEPT REPORT FOR THE REATA WASH FLOOD CONTROL IMPROVEMENT STUDY IS COMPOSED OF THREE SEPARATE VOLUMES:**

**VOLUME I – REPORT**

**VOLUME II – EXHIBITS**

**VOLUME III – APPENDICES**



EXPIRES 12-31-16

**VOLUME III**  
**APPENDICES**

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**APPENDIX A**  
**MEMORANDUM: DATA COLLECTION**

**Reata Wash  
Flood Control Improvement Study**

Contract No. 2014-168-COS

**Memorandum: Data Collection**

August 31, 2016

Prepared for:



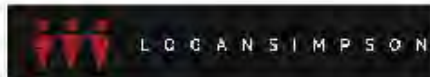
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EXPIRES: 9-30-17

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APPENDIX A Data Collection Documents



EXPIRES: 9-30-17

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## **1. Introduction**

This memorandum is prepared for the City of Scottsdale, Arizona (City) as part of the Reata Wash Flood Control Improvement Study. It summarizes the data collection efforts regarding hydrologic and hydraulic data, infrastructure design plans, geotechnical data, Federal Emergency Management Agency (FEMA) floodplain related data and environmental documents in and around the Reata Wash Study area and upper Reata Wash watershed.

The purpose of the data collection and documentation is to help establish a baseline understanding of the existing conditions within the Reata Wash Study area and upper Reata Wash watershed.

## **2. Study Area**

The Reata Wash Flood Control Improvement Study area is located within the city limits of Scottsdale, Arizona along the western flank of the McDowell Mountains, and northeast of the Loop 101 Freeway and the Central Arizona Project (CAP) Canal (Figure 2-1).





Figure 2-1 General Study Area Location

### 3. Data Sources

Primary data sources include the City, the Flood Control District of Maricopa County (FCDMC), and Wood, Patel & Associates, Inc. (WPA).

### 4. Focus of Collected Data

The primary focus of the data collection task included:

- Hydrologic and hydraulic studies and models.
- FEMA-approved floodplain delineation studies and maps, Letters of Map Amendments and/ or Revisions, and elevation certificates in the regulatory floodplain, flooding and drainage complaints from the City, FCDMC, and other sources.
- As-built plans and other data on existing flood control structures and drainage infrastructure.
- Agency land use plans, transportation plans, preservation plans, and drainage plans.
- Historical aerial photographs.
- Collection of most current available topographic and aerial photography for the study area.
- Collection of available existing utility, land ownership, right-of-way, and easement mapping from the City and Maricopa County within the study area.

### 5. Data Collection Results

Table 5–1 is a listing of the data collected as part of the Reata Wash Flood Control Improvement Study.

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0001	FCD A027.326	City of Scottsdale Desert Greenbelt Pima Road Three Basins Project Tract 21 Drainage Improvements, Drainage Design Report	Pentacore Arizona	05/24/99	RW0001_A027_326_CityofScottsdaleDesertGreenbeltPimaRoadThreeBasinsProject_Tract21DrainageImprovements_Dra.pdf
RW0002	FCD A027.607 28900051	Desert Greenbelt Pima Road Three Basins Project, 10% Design Report (Draft)	Stantec Consulting Inc.	11/01/97	RW0002_A027_607_DesertGreenbeltPimaRoadThreeBasinsProject_10_DesignReport_Draft.pdf
RW0003	FCD A027.611	Pima Road Detention Basin Feasibility Study, Preliminary Design Report	PACE	09/23/95	RW0003_A027_611_PimaRoadDetentionBasinFeasibilityStudy_PreliminaryDesignReport_DraftReportforADWRRReviewOnly.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0004	FCD A027.612	Pima Road Desert Greenbelt Channel and Detention Basin, Preliminary Design Report	PACE	09/15/95	RW0004_A027_612_PimaRoadDesertGreenbeltChannelandDetentionBasin_PreliminaryDesignReport.pdf
RW0005	FCD A027.707 28900051	Desert Greenbelt Pima Road Three Basins Project, Watershed Hydrology and Concept Design Report	Stantec Consulting Inc.	11/01/97	RW0005_A027_707_DesertGreenbeltPimaRoadThreeBasinsProjectWatershedHydrologyandConceptDesignReport.pdf
RW0006	FCD A027.711 28900082	Desert Greenbelt Pima Road Three Basins Project, Ultimate Condition Design Hydrology Report	Stantec Consulting Inc.	03/01/99	RW0006_A027_711_DesertGreenbeltPimaRoad_ThreeBasinsProjectUltimateCondition_DesignHydrologyReport.pdf
RW0007	FCD A027.713 04856-02-74	Hydrologic Analysis of Scottsdale Alluvial Fans 1-6, Maricopa County, AZ	Cella Barr Associates	09/04/88	RW0007_A027_713_HydrologicAnalysisofScottsdaleAlluvialFans1_6_Marico.pdf
RW0008	FCD A027.716	Hydrologic Analysis of Scottsdale Alluvial Fan Area	FCDMC	05/01/91	RW0008_A027_716_HydrologicAnalysisofScottsdaleAlluvialFanArea.pdf
RW0009	FCD A027.902	Appeal to Preliminary Firms for FEMA Designated Fans 1-6, North Scottsdale Flood Insurance Study	FCDMC	02/26/92	RW0009_A027_902_AppealtoScottsdaleAlluvialFans5and6_February_26_1992.pdf
RW0010	FCD A027.930	Hydrological Analyses for FEMA Designated Washes 5, 6A, 6B & 6C	Coe & Van Loo Consultants, Inc.	11/11/91	RW0010_A027_930_HydrologicalAnalysesforFEMADesignatedWashes_5_6A_6Band6C_RevisedNovember_11_1991_Scottsda.pdf
RW0011	FCD A027.933 93-12	Review of Current FEMA Methodology and Appeal Data for Fans 5 and 6 of the Scottsdale Flood Insurance Study	Hjalmar W. Hjalmarson, P.E.	09/18/93	RW0011_A027_933_ReviewofCurrentFEMA_MethodologyandAppealDataforFans_5_and_6_oftheScottsdaleFloodInsuranc.pdf
RW0012	FCD A294.014.001 2003C008	Technical Data Notebook for North Scottsdale Floodplain Delineation Study, Volume 1 of 4	DEI Professional Services, LLC	04/15/05	RW0012_A294_014_001_NorthScottsdaleFloodplainDelineationStudy_ReportandTechnicalDataNotebook_MainReport_V.pdf
RW0013	FCD A294.014.002 2003C008	Technical Data Notebook for North Scottsdale Floodplain Delineation Study, Volume 2 of 4	DEI Professional Services, LLC	04/15/05	RW0013_A294_014_002_NorthScottsdaleFloodplainDelineationStudy_ReportandTechnicalDataNotebook_MainReport_V.pdf
RW0014	FCD A294.014.003 003C008	Technical Data Notebook for North Scottsdale Floodplain Delineation Study, Volume 3 of 4	DEI Professional Services, LLC	04/15/05	RW0014_A294_014_003_NorthScottsdaleFloodplainDelineationStudy_ReportandTechnicalDataNotebook_MainReport_V.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0015	FCD A294.014.004	Technical Data Notebook for North Scottsdale Floodplain Delineation Study, Volume 4 of 4	DEI Professional Services, LLC	04/15/05	RW0015_A294_014_004_NorthScottsdaleFloodplainDelineationStudy_ReportandTechnicalDataNotebook_MainReport_V.pdf
RW0016	FCD A450.918	Final Survey Report, Pinnacle Peak Mapping ADMS/P	David Evans and Associates Inc.	01/18/11	RW0016_A450_918_FinalSurveyReport_PinnaclePeakMappingADMS.PDF
RW0017	FCD A608.301	North Scottsdale Drainage Area, Arizona, Reconnaissance Study Flood Control and Related Purposes, R-4 Package, Appendix A, B, and C.	U.S. Army Corps of Engineers (USACE)	02/01/96	RW0017_A680_301_NorthScottsdaleDrainageArea_ArizonaReconnaissanceStudyFloodControl_and_RelatedPurposes_Dr.pdf
RW0018	FCD A680.302R.4	North Scottsdale Drainage Area, Arizona, Reconnaissance Study Flood Control and Related Purposes, R-4 Package	USACE	05/01/96	RW0018_A680_302R_4_Package_NorthScottsdaleDrainageArea_Arizona_ReconnaissanceStudy_FloodControlandRelated.pdf
RW0019	FCD A680.704	Scottsdale Desert Greenbelt Rawhide Wash Hydrologic Report	Greiner, Inc.	06/30/94	RW0019_A680_704_ScottsdaleDesertGreenbeltProject_RawhideWashHydrologicReport.pdf
RW0020	FCD A680.921	Rawhide/Pinnacle Peak Wash Alignment Study	City	11/17/92	RW0020_A680_921_Rawhide_PinnaclePeakWashAlignmentStudy_AlluvialFanTaskForce.pdf
RW0021	FCD A680.927	City of Scottsdale Desert Greenbelt Project Rawhide Wash Preferred Alternative Report	Greiner, Inc.	05/08/95	RW0021_A680_927_CityofScottsdaleDesertGreenbeltProject_RawhideWashPreferredAlternative.pdf
RW0022	P-07-013.D	Final Report Drainage Analysis for State Trust Lands, Outer Loop Highway Scottsdale Road to Pima Road	Simons, Li & Associates, Inc. (SLA)	06/24/87	RW0022_Final Report Drainage Analysis for State Trust Lands Outer Loop Highway Scottsdale RD to Pima RD.pdf
RW0023	No Data Available	Geomorphological Description & Hydraulic Analyses for FEMA Designated Washes 5, 6A, 6B & 6C	Coe & Van Loo Consultants, Inc.	02/25/92	RW0023_Geomorphological Description & Hydraulic Analyses for FEMA Designated Washes 5, 6A, 6B & 6C by CV.pdf
RW0024	No Data Available	Homeowner Flood Insurance Affordability Act	FEMA	04/03/14	RW0024_HFIAA_Overview_FINAL_03282014.pdf
RW0025	No Data Available	Scottsdale Flood Insurance Study Alluvial Fans 1 to 6	Cella Barr Associates	02/14/89	RW0025_Map Scottsdale AF_CBA1988.pdf
RW0026	No Data Available	North Scottsdale Drainage Area, Arizona, Reconnaissance Study Flood Control and Related Purposes	USACE	05/01/96	RW0026_PPW0006_NorthScottsdaleDrainageArea_ArizonaReconnaissanceStudyFloodControlandRelatedPurposes.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0027	No Data Available	Resolution of Appeal of Preliminary Flood Insurance Rate Map and Flood Insurance Study Report	FEMA	04/12/93	RW0027_SKMBT_C35312051812010.pdf
RW0028	04856-02-30	Geomorphic Analysis of Alluvial Fan Activity on the Scottsdale Piedmont	Cella Barr Associates	09/08/88	RW0028_SKMBT_C35312051812210.pdf
RW0029	92-8	Geomorphic Analysis of Flood Hazards on the Northern McDowell Mountains Piedmont, Maricopa County	P.A. Pearthree and W.G. Wellendorf	09/01/92	RW0029_SKMBT_C35312051812220.pdf
RW0030	No Data Available	Clarification regarding Alluvial Fan Methodology	FCDMC	02/01/91	RW0030_SKMBT_C35312051812350.pdf
RW0031	FCD A608.014.003 FCD 98-12	Upper Rawhide Wash Floodplain Delineation Study Technical Data Notebook, Volume 1 of 4	Kimley-Horn and Associates, Inc. (KHA)	03/11/02	RW0031_A680_014_003_UpperRawhideWashFloodplainDelineationStudy_TechnicalDataNotebook_Vol_1_of_4_FDS_TDN.pdf
RW0032	FCD A608.014.004 FCD 98-12	Upper Rawhide Wash Floodplain Delineation Study Technical Data Notebook, Volume 2 of 4	KHA	03/11/02	RW0032_A680_014_004_UpperRawhideWashFloodplainDelineationStudy_TechnicalDataNotebook_Section3_Survey_Vol_2of4.pdf
RW0033	FCD A608.014.005 FCD 98-12	Upper Rawhide Wash Floodplain Delineation Study Technical Data Notebook, Volume 3 of 4	KHA	03/11/02	RW0033_A680_014_005_UpperRawhideWashFloodplainDelineationStudy_TechnicalDataNotebook_Section_4_HydrologicAnalysis_Vol_3_of_4_FDS_TDN.pdf
RW0034	FCD A608.014.006 FCD 98-12	Upper Rawhide Wash Floodplain Delineation Study Technical Data Notebook, Volume 4 of 4	KHA	03/11/02	RW0034_A680_014_006_UpperRawhideWashFloodplainDelineationStudy_TechnicalDataNotebook_Section_5_HydraulicAnalysis_Vol_4_of_4_FDS_TDN.pdf
RW0035	No Data Available	City of Scottsdale Desert Greenbelt Pima Road Three Basins Project Tract 21 Drainage Improvements HEC-1 folder	No Data Available	No Data Available	RW0035_CityofScottsdaleDesertGreenbeltPimaRoadThreeBasinsProjectHEC-1 folder
RW0036	No Data Available	City of Scottsdale Desert Greenbelt Pima Road Three Basins Project Tract 21 Drainage Improvements HEC-RAS folder	No Data Available	No Data Available	RW0036_City of Scottsdale Desert Greenbelt Pima Road Three Basins Project HEC-RAS
RW0037	No Data Available	City of Scottsdale Desert Greenbelt Project Aerial folder	No Data Available	No Data Available	RW0037_City of Scottsdale Desert Greenbelt Aerial folder

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0038	No Data Available	Control of Alluvial Fan Flooding Reata Pass Channel, City of Scottsdale, Arizona	Lan Weber, P.E., Ph.D., M.ASCE, Mark Landsiedel, P.E., and John Rodriguez, P.E.	No Data Available	RW0038_Control of Alluvial Fan Flooding Reata Pass Channel, City of Scottsdale, Arizona.pdf
RW0039	No Data Available	City of Scottsdale Desert Greenbelt Project Article folder	No Data Available	No Data Available	RW0039_City of Scottsdale Desert Greenbelt Project Article folder
RW0040	No Data Available	City of Scottsdale Desert Greenbelt Project Video folder	No Data Available	No Data Available	RW0040_City of Scottsdale Desert Greenbelt ProjectVideo folder
RW0041	No Data Available	FEMA/Baker Concerns about the design of the Reata Pass Desert Greenbelt Project	Collis Lovely	04/01/97	RW0041_DGBBF.doc
RW0042	No Data Available	Letter regarding Conditional Letter of Map Revision for the Reata Pass/Beardsley Wash Desert Greenbelt Project	Alex McLaren, Floodplain Administrator	02/19/97	RW0042_FEMA#2.DOC
RW0043	No Data Available	Greenbelt file	No Data Available	No Data Available	RW0043_GRNBLT.doc
RW0044	No Data Available	Design Issues Raised in Review of 90% Plans for Reata Pass Wash letter	Collis Lovely, Public Works Planner	12/01/97	RW0044_Mem2.doc
RW0045	No Data Available	Min020498 file	No Data Available	02/04/98	RW0045_MIN020498.doc
RW0046	No Data Available	Miscel DGB Notes from Tech Expert Interviews	No Data Available	No Data Available	RW0046_MISCDGB.DOC
RW0047	No Data Available	Reata Pass Wash Desert Greenbelt Project Design Issues	Collis Lovely	08/11/96	RW0047_Reata Pass DGB Design Issues 1996.DOC
RW0048	No Data Available	Channel Geomorphic Characteristics of Reata Pass Wash along the Proposed Desert Greenbelt Channel Alignment	Collis Lovely	03/18/96	RW0048_REATGEOM.DOC
RW0049	No Data Available	Concerns/Questions	SLA	No Data Available	RW0049_SLA1.DOC
RW0050	No Data Available	Response Letter to Ted Yang regarding Sediment Transport Equation	Collis Lovely	07/12/96	RW0050_YANGLTR.DOC
RW0051	No Data Available	Revalidated Letters of Map Change for City of Scottsdale, AZ	Luis Rodriguez, P.E., Chief, FEMA	08/09/13	RW0051_10-09-0832V-045012.pdf
RW0052	No Data Available	Letter of Map Revision Determination Document	FEMA	12/26/13	RW0052_13-09-2519P-045012.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0053	No Data Available	Letter of Map Revision Determination Document	FEMA	01/02/14	RW0053_13-09-2520P-045012.pdf
RW0054	No Data Available	Data Collection Firms folder	No Data Available	No Data Available	RW0054_Data Collection Firms folder
RW0055	No Data Available	Data Collection Firms Old folder	No Data Available	No Data Available	RW0055_Data Collection Firms old folder
RW0056	No Data Available	City of Scottsdale Pinnacle Peak South ADMS Significant Corridors Community Context	FCDMC and City	No Data Available	RW0056_Community_Context_Corridors.pdf
RW0057	No Data Available	City of Scottsdale Pinnacle Peak ADMS Landscape Character Types Community Context	FCDMC and City	No Data Available	RW0057_Community_Context_CO S_Character_Types.pdf
RW0058	No Data Available	City of Scottsdale Pinnacle Peak South ADMS Parks & Open Space Community Context	FCDMC and City	No Data Available	RW0058_Community_Context_Parks_OpenSpace.pdf
RW0059	No Data Available	City of Scottsdale Pinnacle Peak South ADMS Scenic Corridors Community Context	FCDMC and City	No Data Available	RW0059_Community_Context_Scenic_Corridors.pdf
RW0060	No Data Available	Pinnacle Peak South ADMS-Community Context Acceptability Analysis	No Data Available	No Data Available	RW0060_Draft - Inventory Figures Definitions.docx
RW0061	No Data Available	Pinnacle Peak South ADMS-Community Context Flood Protection Structural Methods Acceptability Matrix	No Data Available	No Data Available	RW0061_Draft -Acceptability Matrix.xlsx
RW0062	No Data Available	Summary of City of Scottsdale Planning Policy Cards	No Data Available	No Data Available	RW0062_Draft -APDX A Policy Cards Key Points.docx
RW0063	No Data Available	Pinnacle Peak South ADMS Context Sensitive Flood Hazard Mitigation Inventory and Analysis	No Data Available	10/01/11	RW0063_Rough Draft - Pinnacle Peak South LA Narrative.docx
RW0064	No Data Available	Pinnacle Peak South Area Drainage Master Study, Hydrology and Hydraulics Report- Volume 1	TY Lin International	4/26/12	RW0064_95% PPS ADMS H&H Report Vol 1 & Vol 2.pdf
RW0065	No Data Available	Reclamation- Managing Water in the West, Hydrologic Hazard Rainfall-Runoff Study, Hayden Rhodes Aqueduct, Arizona, Reach 11, Dikes 1, 2, 3, and 4	U.S. Department of the Interior, Bureau of Reclamation (USBR)	12/01/06	RW0065_CAPReach11DikesHydrologicStudy_Dec2006.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0066	No Data Available	City of Scottsdale Desert Greenbelt Project Pima Road Channel Specific Option	The Greiner Team	9/01/94	No Data Available
RW0067	No Data Available	City of Scottsdale Desert Greenbelt Project Appendix Volume I in Support of a 404 Permit Application, Reata Pass/Beardsley Wash, Pima Floodplain, Volume 3 of 5	SLA	06/01/99	RW0067_COS_DGP_AppendixV1_InSupportofa404PermitAppReataPass_BeardsleyWashPimaFloodplainVol3of5_June1999.pdf
RW0068	No Data Available	City of Scottsdale Desert Greenbelt Project Appendix Volume II in Support of a 404 Permit Application, Reata Pass/Beardsley Wash, Pima Floodplain, Volume 4 of 5	SLA	06/01/99	RW0068_COS_DGP_AppendixV2_InSupportofa404PermitAppReataPass_BeardsleyWashPimaFloodplainVol4of5_June1999.pdf
RW0069	No Data Available	City of Scottsdale Desert Greenbelt Project Appendix Volume III in Support of a 404 Permit Application, Reata Pass/Beardsley Wash, Pima Floodplain, Volume 5 of 5	SLA	06/01/99	RW0069_A680_939_CityofScottsdaleDesertGreenbeltProjectAppendixVol_III_inSupportofa404PermitApp_ReataPassBeardsleyWashPimaFloodplainMainReportVol5of5.pdf
RW0070	No Data Available	Desert Greenbelt Funding, Financing & Assessment Methodology Report	City	07/01/95	RW0070_DesertGreenbeltCityofScottsdale_FundingFinancingAndAssessmentMethodologyReport_June1995.pdf
RW0071	No Data Available	City of Scottsdale Desert Greenbelt Project Reata/Beardsley Washes Specific Option	The Greiner Team	01/01/95	RW0071_COS_DGP_Reata_BeardsleyWashSpecificOption_January1995.pdf
RW0072	No Data Available	Scottsdale Desert Greenbelt Phase One Design Reata Pass Wash Supplemental CLOMR Report	Greiner, Inc.	05/01/96	RW0072_ScottsdaleDesertGreenbelt_PhaseOneDesignReataWashPass_SupplementalCLOMRReport_May1996.pdf
RW0073	A680.617S	City of Scottsdale Desert Greenbelt Project Reata Pass/Beardsley Wash CLOMR, Volume I, Preliminary Design and Analysis	Greiner, Inc.	05/01/95	RW0073_COS_DGP_ReataPass_BeardsleyWashCLOMR_May1995.pdf
RW0074	A680.618S	City of Scottsdale Desert Greenbelt Project Reata Pass/Beardsley Wash CLOMR, Volume II, Preliminary Design and Analysis	Greiner, Inc.	05/01/95	RW0074_A680_618CityofScottsdaleDesertGreenbeltProject_ReataPass_BeardsleyWashCLOMR_Vol_II_PreliminaryDesignandAnalysis.pdf



Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0075	A680.619S	City of Scottsdale Desert Greenbelt Project Reata Pass/Beardsley Wash CLOMR, Volume III, Preliminary Design and Analysis	Greiner, Inc.	05/01/95	RW0075_A680_619CityofScottsdaleDesertGreenbeltProject_ReataPass_BeardsleyWashCLOMR_Vol_III_PreliminaryDesignandAnalysis.pdf
RW0076	A680.621S	City of Scottsdale Desert Greenbelt Project Reata Pass/Beardsley Wash CLOMR, Volume V, Preliminary Design and Analysis	Greiner, Inc.	05/01/95	RW0076_A680_621CityofScottsdaleDesertGreenbeltProject_ReataPass_BeardsleyWashCLOMR_Vol_V_PreliminaryDesignandAnalysis.pdf
RW0077	A680.622S	City of Scottsdale Desert Greenbelt Project Reata Pass/Beardsley Wash CLOMR, Volume VI, Preliminary Design and Analysis	Greiner, Inc.	05/01/95	RW0077_A680_622CityofScottsdaleDesertGreenbeltProject_ReataPass_BeardsleyWashCLOMR_Vol_VI_PreliminaryDesignandAnalysis.pdf
RW0078	A680.623S	City of Scottsdale Desert Greenbelt Project Reata Pass/Beardsley Wash CLOMR, Volume VII, Preliminary Design and Analysis	Greiner, Inc.	05/01/95	RW0078_A680_623CityofScottsdaleDesertGreenbeltProject_ReataPass_BeardsleyWashCLOMR_Vol_VII_PreliminaryDesignandAnalysis.pdf
RW0079	No Data Available	City of Scottsdale Desert Greenbelt Project Final Report Volume 1 Project Overview Specific Options	Greiner, Inc.	06/01/95	RW0079_COS_DGP_FinalReport_Volume1ProjectOverviewSpecificOptions_June1995.pdf
RW0080	No Data Available	City of Scottsdale Desert Greenbelt Project Upper Reata Pass Wash Specific Option	Greiner, Inc.	09/01/94	RW0080_COS_DGP_UpperReataPassWashSpecificOption_September1994.pdf
RW0081	No Data Available	Reata Pass/Beardsley Wash Alignment Study Alluvial Fan Task Force	City	11/01/92	RW0081_A680_920ReataPass_BeardsleyWashAlignmentStudy_AlluvialFanTaskForce.pdf
RW0082	No Data Available	City of Scottsdale Desert Greenbelt Project 404 Permit Application and Draft Public Notice	SLA	10/01/99	RW0082_COS_DGP_404PermitApplicationAndDraftPublicNotice_October1999.pdf
RW0083	No Data Available	City of Scottsdale, Public Improvements, Scottsdale Desert Greenbelt, Reata Pass Wash	SLA	6/1/98	RW0083_SLA_Design.pdf
RW0084	No Data Available	Pinnacle Peak South Area Drainage Master Study, Draft Hydrology and Hydraulics Report- Volume 1	TY Lin	07/26/13	RW0084_A122_109PinnaclePeakSouthAreaDrainageMasterStudyDraftHydrologyandHydraulicsRptVol1ADMS.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0085	No Data Available	Pinnacle Peak South Area Drainage Master Study, Draft Hydrology and Hydraulics Report- Volume 2	TY Lin	07/26/13	RW0085_A122_110PinnaclePeakSouthAreaDrainageMasterStudyDraftHydrologyandHydraulicsRptVol2.pdf
RW0086	No Data Available	City of Scottsdale Desert Greenbelt Project Reata Pass/Beardsley Wash CLOMR, Volume IV, Preliminary Design and Analysis	Greiner, Inc.	05/01/95	RW0086_A680_620CityofScottsdaleDesertGreenbeltProject_ReataPass_BeardsleyWashCLOMR_Vol_IV_PreliminaryDesignandAnalysis.pdf
RW0087	FCD A680.936	City of Scottsdale Desert Greenbelt Project Executive Summary and Baseline Conditions Report in Support of a 404 Permit Application Reata Pass/Beardsley Wash Pima Floodplain	SLA	06/01/99	RW0087_A680_936CityofScottsdaleDesertGreenbeltProjectExecutiveSummaryandBaselineConditionsReportofa404PermitApplicationReataPassBeardsleyWashPimaFloodplainMainReportVol1of5.pdf
RW0088	FCD A680.937	City of Scottsdale Desert Greenbelt Project Alternatives Analysis Report in Support of a 404 Permit Application Reata Pass/Beardsley Wash Pima Floodplain	SLA	06/01/99	RW0088_A680_937_CityofScottsdaleDesertGreenbeltProjectAlternativesAnalysisReportinSupportofa404PermitApplicationReataPassBeardsleyWashPimaFloodplainMainReportVol2of5.pdf
RW0089	FCD A680.921	Rawhide/Pinnacle Peak Wash Alignment Study Alluvial Fan Task Force	City	11/17/92	RW0089_A680_921Rawhide_PinnaclePeakWashAlignmentStudy_AlluvialFanTaskForce.pdf
RW0090	FCD A680.926	Scottsdale Desert Greenbelt Reata Pass/Beardsley Washes Supplemental CLOMR Report Draft	Greiner, Inc.	04/01/96	RW0090_A680_926ScottsdaleDesertGreenbeltReataPassBeardsleyWashesSupplementalCLOMRReportDraft.pdf
RW0091	FCD A027.608	City of Scottsdale Desert Greenbelt Project Pima Road Channel Design Hydrology Memorandum Final Draft	George V. Sabol Consulting Engineers, Inc.	01/01/97	RW0091_A027_608DesertGreenbeltProject_PimaRoadChannel_DesignHydrologyMemorandumFinalDraft.pdf
RW0092	FCD A027.708	City of Scottsdale Desert Greenbelt Pima Road Three Basins Project Interim Design Hydrology Memorandum	Stantec Consulting Inc.	04/01/98	RW0092_A027_708DesertGreenbeltPimaRoadThreeBasinsProjectInterimDesignHydrologyMemorandum.pdf
RW0093	FCD A 027.709	City of Scottsdale Desert Greenbelt Pima Road Three Basins Project Interim Condition Design Hydrology Report	Stantec Consulting Inc.	03/01/99	RW0093_A027_709DesertGreenbeltPimaRoadThreeBasinsProjectInterimConditionDesignHydrologyReport.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0094	FCD A027.710	City of Scottsdale Desert Greenbelt Pima Road Three Basins Project Ultimate Design Hydrology Memo	Stantec Consulting Inc.	03/01/98	RW0094_A027_710DesertGreenbeltPimaRoadThreeBasinsProjectUltimateDesignHydrologyMemo.pdf
RW0095	FCD A027.718	City of Scottsdale Desert Greenbelt Project Pima Road Channel Hydrology Report	Greiner, Inc.	02/01/95	RW0095_A027_718CityofScottsdaleDesertGreenbeltProjectPimaRoadChannelHydrologyReport.pdf
RW0096	FCD A027.919	City of Scottsdale Desert Greenbelt Pima Road Three Basins Project Design Sediment Report	Stantec Consulting Inc.	03/01/99	RW0096_A027_919DesertGreenbeltPimaRoadThreeBasinsProjectDesignSedimentReport.pdf
RW0097	FCD A027.927	Draft Environmental Assessment Golf Course, Thompson Peak Parkway and Desert Greenbelt Flood Control Facilities, City of Scottsdale	USBR	09/01/97	RW0097_A027_927DraftEnvironmentalAssessment_GolfCourse_ThompsonPeakParkwayandDesertGreenbeltFloodControlFacilities_CityofScottsdale.pdf
RW0098	FCD A680.511	Invitation for Bid- Pinnacle Peak Rd. at Reata Pass Wash	City	11/20/95	RW0098_A680_511InvitationforBid_PinnaclePeakRoadCrossingatReataPassWash.pdf
RW0099	FCD A680.614	Design Analysis and Calculations Soil Cement Levees and Grade Control Additional Investigation-Desert Greenbelt Reata Pass Wash Channelization between Pinnacle Peak Road and Extension of Deer Valley Road Scottsdale, Arizona	AGRA Earth & Environmental, Inc.	05/12/98	RW0099_A680_614DesignAnalysisandCalculations_SoilCementLeveesandGradeControls_AdditionalInvestigation_DesertGreenbelt.pdf
RW0100	FCD A680.624	Desert Greenbelt Project PR3B-System Design & Operation	George Sabol	10/09/98	RW0100_A680_624DesertGreenbeltProjectPR3B_SystemDesignandOperation.pdf
RW0101	FCD A680.706	Scottsdale Desert Greenbelt Reata Pass/Beardsley Wash Hydrology Report	Greiner, Inc. and City	02/01/95	RW0101_A680_706ScottsdaleDesertGreenbeltReataPassBeardsleyWashHydrologyReport.pdf
RW0102	FCD A680.925	City of Scottsdale Desert Greenbelt Project Reata Pass Wash Photos	No Data Available	No Data Available	RW0102_A680_925CityofScottsdaleDesertGreenbeltProject_ReataPassWashPhotos.pdf
RW0103	FCD A680.928	City of Scottsdale Desert Greenbelt Project Pima Road Channel Preferred Alternative	Greiner, Inc.	04/01/95	RW0103_A680_928CityofScottsdaleDesertGreenbeltProject_PimaRoadChannelPreferredAlternative.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0104	FCD A680.929	City of Scottsdale Desert Greenbelt Project Volume I: Reata Pass/Beardsley Wash Channel Response Analysis with Ultimate Levee Encroachment	SLA	02/01/97	RW0104_A680_929CityofScottsdaleDesertGreenbeltProject_Vol_I_ReataPass_BeardsleyWashChannelResponseAnalysiswithUltimateLeveeEncroachment.pdf
RW0105	FCD A680.930	City of Scottsdale Desert Greenbelt Project Volume II: Technical Addendum Reata Pass/Beardsley Wash Channel Response Analysis with Ultimate Levee Encroachment	SLA	01/01/97	RW0105_A680_930CityofScottsdaleDesertGreenbeltProject_Vol_II_TechnicalAddendum_ReataPass_BeardsleyWashChannelResponseAnalysiswithUltimateLeveeEncroachment.pdf
RW0106	FCD A680.932	City of Scottsdale Desert Greenbelt Project Volume IV: Technical Addendum Part 1 of 2 Reata Pass/Beardsley Wash Erosion Sedimentation Control and Channel Improvement Design	SLA	09/01/97	RW0106_A680_932_CityofScottsdaleDesertGreenbeltProjectReataPassBeardsleyWashErosionSedimentationControlandChannelImprovementDesignVol_IV_TechAddendumPRT_1of2.pdf
RW0107	FCD A680.933	City of Scottsdale Desert Greenbelt Project Volume IV: Technical Addendum Part 2 of 2 Reata Pass/Beardsley Wash Erosion Sedimentation Control and Channel Improvement Design	SLA	09/01/97	RW0107_A680_933_CityofScottsdaleDesertGreenbeltProjectReataPassBeardsleyWashErosionSedimentationControlandChannelImprovementDesignVol_IV_TechnicalAddendumPart2of2.pdf
RW0108	FCD A680.940	A Limited Appraisal of the Fair Market Value of the Fee Simple Estate in a 2.5 Gross Acre Vacant Land Parcel Being Acquired for the Desert Greenbelt Project (Reata Pass Wash)	Johnson & Zaddack, Inc.	11/14/97	RW0108_A680_940_A_LimitedAppraisaloftheFairMarketValueofaFeeSimpleEstateina2_5GrossAcreVacantLandParcelBeingAcquiredfortheDesertGreenbeltProject.pdf
RW0109	FCD A680.941	Preliminary Draft Sensitivity Analysis of Reata Pass Hydrology Scottsdale, Arizona	Water Resources Associates, Inc. (WRA)	11/01/91	RW0109_A680_941PreliminaryDraftSensitivityAnalysisofReataPassHydrology_Scottsdale_Arizona.pdf
RW0110	FCD A680.949	City of Scottsdale Desert Greenbelt Project Volume III: Reata Pass/Beardsley Wash Erosion Sedimentation Control and Channel Improvement Design	SLA	09/01/97	RW0110_A680_949CityofScottsdaleDesertGreenbeltProject_Vol_III_ReataPass_BeardsleyWashErosionSedimentationControlandChannelImprovementDesign.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0111	FCD A680.950	City of Scottsdale Desert Greenbelt Project Upper Reata Pass Wash Preferred Alternative	Greiner, Inc.	03/01/95	RW0111_A680_950CityofScottsdaleDesertGreenbeltProject_UpperReataPassWashPreferredAlternatives.pdf
RW0112	FCD A680.951	City of Scottsdale Desert Greenbelt Project Reata Pass/Beardsley Wash Preferred Alternative Report	Greiner, Inc.	05/01/95	RW0112_A680_951CityofScottsdaleDesertGreenbeltProject_ReataPass_BeardsleyWashPreferredAlternativesReport.pdf
RW0113	FCD A680.613	Soil Cement Mix Designs Additional Investigation- Desert Greenbelt Reata Pass Wash Channelization between Pinnacle Peak Road & Extension of Deer Valley Road Scottsdale, Arizona	AGRA Earth & Environmental, Inc.	12/30/97	RW0113_A680_613SoilCementMixDesignsAdditionalInvestigationDesertGreenbeltReataPassWashChannelizationbetweenPinnaclePeakRdandExtensionofDeerValleyRdScottsdaleAZReportNo4.pdf
RW0114	FCD A680.918	Geologic Survey & Seismic Refraction Investigation Report Supplemental Investigation- Desert Greenbelt Upper Reata Pass Wash Channelization between Pinnacle Peak Road & Extension of Deer Valley Road	AGRA Earth & Environmental, Inc.	04/06/98	RW0114_A680_918GeologicSurveyandSeismicRefractionInvestigationReportDesertGreenbeltUpperReataPassWashChannelizationbetweenPinnaclePeakRdandExtensionofDeerValleyRd.pdf
RW0115	FCD A680.952	Additional Soil-Cement Compressive Strength and Abrasion Testing, Assignment No. 7- Reata Pass Abrasion Testing, Scottsdale Desert Greenbelt- Reata Pass Wash, Scottsdale, Arizona	AGRA Earth & Environmental, Inc.	09/25/98	RW0115_A680_952_AdditionalSoilCementCompressiveStrengthandAbrasionTestingAssignmentNo7ReataPassAbrasionTestingScottsdaleDesertGreenbeltReataPassWashScottsdaleAZ.pdf
RW0116	No Data Available	DC Ranch Parcel 4.17 Improvement Plans Phase I & II	WPA	10/12/00	RW0116_Cross Canyon.pdf
RW0117	No Data Available	DC Ranch Community Facility District Union Hills Drive Infrastructure Planning Unit 1	WPA	12/16/03	RW0117_Legacy (Union Hills Drive Infrastructure).pdf
RW0118	No Data Available	DC Ranch Infrastructure Sewer Horseshoe Canyon Drive to Pima Road Sewer Plans	WPA	06/12/03	RW0118_Sewer at Legacy.pdf
RW0119	No Data Available	DC Ranch Thompson Peak Parkway Infrastructure Improvement Plan	WPA	5/26/99	RW0119_Thompson Peak.pdf
RW0120	No Data Available	DC Ranch Zone Five Reservoir Water System Connections	WPA	09/09/97	RW0120_Water_Sewer at Thompson Peak Pkwy.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0121	No Data Available	Sierra Pinta Outfall Channel and Stormdrain Analysis Memorandum	Entellus	10/16/08	RW0121_MEMSierra Pinta Channel - Hydrology and Hydraulics.pdf
RW0122	No Data Available	Sierra Pinta Drainage Improvements Memorandum	Entellus	12/23/08	RW0122_Memo Drainage Report Review_Sierra Pinta Channel.pdf
RW0123	No Data Available	Pinnacle Peak South Area Drainage Master Study/Plan Data Collection Report	TY Lin	09/12/11	RW0123_PinnaclePeak South_ADMS_Data Collection Report.pdf
RW0124	No Data Available	Review of Pima Road DCR, AZ101 to Thompson Peak Parkway, Final Hydrology & Preliminary Design Report	Robert L. Ward, P.E.	06/19/04	RW0124_Bob_Ward_Letter_pdf.PDF
RW0125	No Data Available	Hydrology Map	No Data Available	No Data Available	RW0125_Hydrology Map.pdf
RW0126	No Data Available	Addendum to Master Plan for DC Ranch PU III, V, & VI Addendum to Part 4 Drainage Plan Study (10-27-04) folder	WPA	10/24/04	RW0126_Addendum to Master Plan for DC Ranch PU III, V, & VI Addendum to Part 4 Drainage Plan Study (10-27-04)
RW0127	No Data Available	Council Action Reports (five total)	City	1998	RW0127_CouncilActionReports
RW0128	No Data Available	2007 Aerials	City	2007	No Data Available
RW0129	No Data Available	2013 Aerials	City	2013	No Data Available
RW0130	No Data Available	GIS files	City	12/01/14	Folder RW0130
RW0131	No Data Available	City of Scottsdale, Public Improvements, Reata Pass Wash at Pinnacle Peak Road	Post, Buckley, Schuh & Jernigon Consulting Engineers	10/30/95	RW0131_Pinnacle Peak wash culvert as-builts 1995.pdf
RW0132	No Data Available	PPS- Contract_scoping documents and other related documents	Various	No Data Available	RW0132_PPS- Contract_scoping documents and other related documents.zip
RW0133	No Data Available	Electronic Data From TY Lin	TY Lin	No Data Available	Folder RW0133
RW0134	No Data Available	Desert Greenbelt Funding Phasing and Assessment Report	Unknown	04/01/95	RW0134_DesertGreenbelt_FundingPhasingAndAssessmentReport_1995.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0135	No Data Available	The Desert Greenbelt, Upper Reata Pass Channel, Reata/Beardsley Wash Phase I, Rawhide Wash Channel, Insurance Assessment.	Unknown	No Data Available	RW0135_DesertGreenbelt_InsuranceAssessment.pdf
RW0136	No Data Available	USBR and ASLD documents 1990-1991	Various	1990-1991	Folder RW0136
RW0137	No Data Available	FEMA CLOMR Response letter	FEMA	01/30/98	RW0137_FEMA CLOMR Response letter_Des-GB_1-30-98.pdf
RW0138	No Data Available	Report on Geotechnical Engineering Services, Pinnacle Peak Road Drainage Structure, F2711, Over Reata Pass Wash, Scottsdale, Arizona	Hendrich, Eberhart & Associates, Inc.	02/14/94	RW0138_Geotechnical Engineering Svcs 14 Feb 1994.pdf
RW0139	No Data Available	Reata LLC	Various	No Data Available	Folder RW0139
RW0140	No Data Available	Sensitivity Analysis of Reata Pass Hydrology, Scottsdale, Arizona	WRA	11/08/91	RW0140_Sensitivity Analysis Nov 8 1991.pdf
RW0141	No Data Available	HEC-2 Water Surface Analysis for Reata Pass Wash	Hendrich, Eberhart & Associates, Inc.	05/01/95	RW0141_HEC-2 Water Surface Analysis May 1995.pdf
RW0142	No Data Available	Archived Floodpool Analysis West World	Various	No Data Available	RW0143_Reata_MULT documents_Archived Floodpool Analysis Scanned 1.22.2015.pdf
RW0143	No Data Available	Desert Greenbelt Funding	Various	No Data Available	RW0143_desert green belt funding - design correspondence 1990s.pdf
RW0144	No Data Available	Desert Greenbelt Technical Letters	Various	No Data Available	RW0144_desert green belt technical letters-assessments 1990s.pdf
RW0145	No Data Available	Cross Roads Mapping (FDC)	No Data Available	No Data Available	Folder RW0145
RW0146	No Data Available	Preliminary Design Report, Basis of Design for Reata Drainage Corridor Between Union Hills Drive and Bell Road.	WPA	09/27/03	RW0146_021690.01 Prelim Des Rpt BOD for Reata Dr Corr Between Union Hills Drive-Bell Road Rev. 09-19-03.pdf
RW0147	No Data Available	Reata Pass Wash	WPA	No Data Available	Folder RW0147
RW0148	No Data Available	Desert Greenbelt Project PowerPoint	No Data Available	01/02/01	RW0148_1-9-01 Public Hearing.ppt

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0149	No Data Available	Pinnacle Peak South Area Drainage Master Study, Draft Hydrology and Hydraulics Report Vol1 and 2.	TY Lin	07/26/13	RW0149_DM_#11835345-v1-PPS_ADMS_H&H_Report_Vol_1_&Vol_2.pdf
RW0150	No Data Available	FEMA CLOMR Letter	FEMA	12/04/94	RW0150_1995FEMACLOMRLetter.pdf
RW0151	No Data Available	Bell Road Levee	WPA	12/21/07	RW0151_Bell Rd Levee 12-21-07.pdf
RW0152	No Data Available	Bell Road Widening, 94th street to 98th Street, Final Drainage Report	WPA	06/01/06	RW0152_052406 Final Drainage report part 1.pdf
RW0153	No Data Available	Bell Road Widening, 94th street to 98th Street, Final Drainage Report, Appendix	WPA	06/01/06	RW0153_052406 Final drainage report part 2.pdf
RW0154	No Data Available	Bell Road Widening, 94th street to 98th Street, Draft grade control detail	WPA	No Data Available	RW0154_Draft grade control conflict detail.pdf
RW0155	No Data Available	Bell Road Widening, 94th street to 98th Street, Draft grade control detail, Revised	WPA	No Data Available	RW0155_Draft Grade Control Revision 2-27-08.pdf
RW0156	No Data Available	Settlement/Final Release of Former Reata Pass/Beardsley Wash Channel Project	No Data Available	06/06/08	RW0156_Des GreenB_FCDMC Settlement 6-6-08.pdf
RW0157	No Data Available	City of Scottsdale, Council Report	City	12/11/07	RW0157_Des GreenB_CCR_12-11-07.pdf
RW0158	No Data Available	Habitat Mitigation and Monitoring Proposal, Scottsdale Desert Greenbelt	LSA Associates, Inc.	03/03/00	RW0158_des GB_habitat mitigation and monitoring report March 2000.pdf
RW0159	No Data Available	Grading and Drainage Plans for Reata Wash Training Berm ( 17 of 35 sheets)	Gilbertson Associates, Inc	06/05/06	RW0159_Reata Wash Training Berm.pdf
RW0160	No Data Available	Encroachment Permit Request History (Wingate Ranch, Phase 1)	City	10/25/12	RW0160_COS Inspections_Reata Wash @ WR.pdf
RW0161	No Data Available	Flood Control District of Maricopa County - GIS Data for PPS	FCDMC	02/25/15	Folder RW0161
RW0162	No Data Available	Desert Greenbelt Washes Report	Unknown	02/10/95	RW0162_Desert Greenbelt washes report - 02-10-1995.pdf
RW0163	No Data Available	Desert Greenbelt Upper Reata Pass Channel	Greiner, Inc.	02/01/95	RW0163_Desert Greenbelt Upper Reata Pass Channel report - 02-01-199.pdf



Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0164	No Data Available	Desert Greenbelt Right of Way summary	No Data Available	02/06/95	RW0164_Desert Greenbelt Right of Way summary - 02-06-1995.pdf
RW0165	No Data Available	Desert Greenbelt Reata-Beardsley Washes report	Greiner, Inc.	02/06/95	RW0165_Desert Greenbelt Reata-Beardsley Washes report - 02-06-1995.pdf
RW0166	No Data Available	Desert Greenbelt Upper Reata Pass Channel	Greiner, Inc.	02/06/95	RW0166_Desert Greenbelt Reata Wash Channel report - 02-06-1995.pdf
RW0167	No Data Available	Desert Greenbelt Public Hearing minutes	A.A. Nichols Certified Court Reporters	03/16/00	RW0167_Desert Greenbelt Public Hearing minutes - 03-16-2000.pdf
RW0168	No Data Available	Desert Greenbelt Project Cost Estimates	Greiner, Inc.	03/01/95	RW0168_Desert Greenbelt Project Cost Estimates - 03-1995.pdf
RW0169	No Data Available	Desert Greenbelt Pima Road Channel report	Greiner, Inc.	02/06/95	RW0169_Desert Greenbelt Pima Road Channel report - 02-01-1995.pdf
RW0170	No Data Available	Desert Greenbelt Drainage Construction Estimates	Greiner, Inc.	02/06/95	RW0170_Desert Greenbelt Drainage Construction Estimates - 2-06-199.pdf
RW0171	No Data Available	Final Environmental Assessment Golf Course, Thompson Peak Parkway and Desert Greenbelt Flood Control Facilities, City of Scottsdale	USBR	09/01/97	RW0171_Reata Wash and other adjacent areas_Final Environmental Assessment Jan 1998.pdf
RW0172	No Data Available	Survey Report Manual for Scottsdale Pinnacle South	A Team	09/01/10	RW0172_2022 SURVEY REPORT MANUAL.pdf
RW0173	No Data Available	DC Ranch, Parcel T7, Reata Wash LOMR	WPA	09/31/12	No Data Available
RW0174	No Data Available	Drainage Report for DC Ranch Parcel T7	WPA	12/08/04	Referenced as part of RW0173
RW0175	No Data Available	Drainage Report for DC Ranch Planning Unit 1 - North Flood Protection	WPA	11/23/03	Referenced as part of RW0173
RW0176	No Data Available	Drainage Report for DC Ranch Planning Unit 1 - South Flood Protection	WPA	10/02/03	Referenced as part of RW0173
RW0177	No Data Available	DC Ranch Planning Unit III, V & VI Addendum to Part 4 Drainage Plan Study	WPA	12/25/01	Referenced as part of RW0173
RW0178	No Data Available	Addendum to Master Plan for DC Ranch Planning Unit III, V & VI Addendum to Part 4 Drainage Plan Study	WPA	10/27/04	Referenced as part of RW0173

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0179	No Data Available	Flood Insurance Study, Maricopa County, Arizona and Unincorporated Areas, FEMA	FEMA	9/30/50	Referenced as part of RW0173
RW0180	A901_706	Final Hydrology Report Outer Loop Freeway, North of the CAP Aqueduct	SLA	04/01/87	RW0180_A901_706FinalHydrology Report_OuterLoopFreewayNorthoftheCAPAqueduct.pdf
RW0181	A680_922	Reata Pass Wash Channel I Hydraulic Model Data Report Draft	Engineering Research Center	10/01/97	RW0182_A680_922ReataPassWashChannelHydraulicModelDataReport_Draft.pdf
RW0182	A680_620	City of Scottsdale Desert Greenbelt Project, Reata Pass Beardsley Wash CLOMR Vol IV Preliminary Design and Analysis	Greiner, Inc.	05/01/95	RW0183_A680_620CityofScottsdaleDesertGreenbeltProject_ReataPass_BeardsleyWashCLOMR_Vol_IV_PreliminaryDesignandAnalysis.pdf
RW0183	A680_316	North Scottsdale Drainage Area Arizona Reconnaissance Study Flood Control and Related Purposes	USACE	05/01/95	RW0183_A680_316NorthScottsdaleDrainageArea_Arizona_ReconnaissanceStudy_FloodControlandRelatedPurposes.pdf
RW0184	A680_315	North Scottsdale Drainage Area Arizona Draft Feasibility Cost sharing Agreement Project Study Plan	USACE	05/01/95	RW0184_A680_315NorthScottsdaleDrainageArea_Arizona_DraftFeasibilityCostSharingAgreementProjectStudyPlan.pdf
RW0185	A680_314	HEC_1 InputOutputData_Upper IndianBendWash_RegionalDrainageandFloodControlPlan_Vol_II_IBW	WRA	07/06/92	RW0185_A680_314HEC_1_InputOutputData_UpperIndianBendWash_RegionalDrainageandFloodControlPlan_Vol_II_IBW.pdf
RW0186	A680_313	Final Report, Upper Indian Bend Wash Regional Drainage and Flood Control Plan Volume I	WRA	07/06/92	RW0186_A680_313Final Report_UpperIndianBendWash_RegionalDrainage_and_FloodControlPlan_Vol_I.pdf
RW0187	A027_325	Draft General Drainage Plan for North Scottsdale, Arizona	WRA	09/02/88	RW0187_A027_325DraftGeneralDrainagePlanforNorthScottsdale_Arizona.pdf
RW0188	No Data Available	DC Ranch Scottsdale, DC Ranch Parcel 4.19 Final Plat	WPA	11/11/99	RW0188_DCR Pcl 4.19 plat-522PLAT0104.tiff
RW0189	No Data Available	DC Ranch Scottsdale, DC Ranch Parcel 4.19 Grading Plan	WPA	11/23/99	RW0189_Grading DC Ranch Parcel 4.19 north.pdf
RW0190	No Data Available	DC Ranch Scottsdale, Parcel 6.1 Improvement Plan	WPA	09/15/06	RW0190_Water XING-DC Ranch Parcel 6.1 Improvement Plan As-Builts.pdf
RW0191	No Data Available	Exhibit B, DC Ranch Golf Easement Areas	WPA	No Data Available	RW0191_DCR Irrig at Pcl 4.15.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0192	No Data Available	FEMA CLOMR Response letter	FEMA	1/30/98	RW0192_Attachments to Memo #1.pdf
RW0193	No Data Available	Electronic Data From FEMA	FEMA	Varies	Folder RW0193
RW0194	No Data Available	Various letters and documents pertaining to USACE 404 Permit Application/File No. 984-0138-SDM	Various	Varies	Folder RW0194
RW0195	No Data Available	Bell Road Widening, 94th Street to 98th Street, Final Drainage Report, Part 1	WPA	06/01/06	RW0195_052406 Final Drainage report part 1.pdf
RW0196	No Data Available	Bell Road Widening, 94th Street to 98th Street, Final Drainage Report, Part 2	WPA	06/01/06	RW0196_052406 Final drainage report part 2.pdf
RW0197	No Data Available	Bell Road Widening, 94th Street to 98th Street, Final Drainage Report, Levee Design Plans	WPA	12/21/07	RW0197_Bell Rd Levee 12-21-07.pdf
RW0198	No Data Available	Bell Road Widening, 94th Street to 98th Street, Final Drainage Report, Grade Control Design Plan	WPA	12/21/07	RW0198_Draft grade control conflict detail.pdf
RW0199	No Data Available	Bell Road Widening, 94th Street to 98th Street, Final Drainage Report, Grade Control Design Plan	WPA	12/21/07	RW0199_Draft Grade Control Revision 2-27-08.pdf
RW0200	No Data Available	DC Ranch Various Reports and Design Plans	WPA	Varies	Folder RW0200_DC Ranch Projects
RW0201	No Data Available	City of Scottsdale Desert Greenbelt Project Appendix Volume I in Support of a 404 Permit Application, Reata Pass/Beardsley Wash, Pima Floodplain, Volume 1 of 5	SLA	06/01/99	RW0201_Volume 1 of 5 DGB Ex Summary and Baseline Conditions Report.pdf

Table 5-1 Data Collection Summary

<sup>(1)</sup> Study Document Number	<sup>(2)</sup> Reference Number	Title	Author	Date	File/folder name
RW0202	No Data Available	City of Scottsdale Desert Greenbelt Project Appendix Volume I in Support of a 404 Permit Application, Reata Pass/Beardsley Wash, Pima Floodplain, Volume 2 of 5	SLA	06/01/99	RW0202_Volume 2 of 5 DGB Alt Analysis in Support of Section 404 Permit.pdf
RW0203	No Data Available	Reclamation- Managing Water in the West, Hydrologic Hazard Rainfall-Runoff Study, Hayden Rhodes Aqueduct, Arizona, Reach 11, Dikes 1, 2, 3, and 4	USBR	12/01/06	RW0065_CAPReach11DikesHydrologicStudy_Dec2006.pdf

Notes:

- (1) **RW####** = Study document number for Reata Wash Flood Control Improvement Study. RW for Reata Wash with 4 digits assigned to document. Documents collected as part of the Reata Wash Flood Control Improvement Study included on attached usb drive (Appendix A).
- (2) Reference number pertaining to the original document.

**Abbreviation Descriptions-**

ADMS = Area Drainage Master Study  
ASLD = Arizona State Land Department  
CAP = Central Arizona Project  
CLOMR = Conditional Letter of Map Revision  
DCR = Design Concept Report  
FCD or FCDMC = Flood Control District of Maricopa County  
FEMA = Federal Emergency Management Agency

GIS = Geographic Information System  
H&H = Hydrology and Hydraulics  
LLC = Limited Liability Company  
LOMR = Letter of Map Revision  
PPS = Pinnacle Peak South  
USACE = United States Army Corps of Engineers  
USBR = United States Bureau of Reclamation

**APPENDIX A      Data Collection Documents**

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Documents on Electronic Media

**APPENDIX B**  
**MEMORANDUM: FEMA COORDINATION**

**Reata Wash  
Flood Control Improvement Study**

Contract No. 2014-168-COS

**Memorandum: FEMA Coordination**

August 31, 2016

Prepared for:



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**WOOD/PATEL**  
MISSION: CLIENT SERVICE™



**Technical Solutions**



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## 1. Executive Summary

Coordination with Federal Emergency Management Agency (FEMA) Region 9 was conducted to assess the feasibility of implementing the Reata Wash Flood Control Improvement Study and to establish guidelines for a future Conditional Letter of Map Revision (CLOMR) and post-construction Letter of Map Revision (LOMR). Coordination meetings with FEMA Region 9 staff were held on February 9, 2015 and September 9, 2015 to discuss the project objectives and desired outcome, and the likely structural engineering methods to be used to achieve those objectives and outcomes. FEMA staff, as well as representatives from their Region 9 technical review contractor for CLOMR's and LOMR's, did not identify any fatal flaws in the design concept or proposed analytical approaches for the Reata Wash Flood Control Improvement Study.

Key concerns on the part of FEMA:

- All effective National Flood Insurance Program (NFIP) regulations and FEMA mapping policies must be followed in order to receive approval of a CLOMR application.
- Any proposed structural measures must address flow path uncertainty, impacts of sedimentation and erosion, and all sources of flooding on active portions of the Reata Pass Alluvial Fan landform.

## 2. Overview

The Reata Wash Flood Control Improvement Study proposes to revise the effective floodplain delineations for the Reata Pass Alluvial Fan located in north Scottsdale, Arizona using a combination of structural flood control measures and analytical engineering and floodplain mapping tools. The Reata Pass Alluvial Fan includes both active and inactive alluvial fan surfaces, as well as riverine, distributary, and sheet flooding areas. The proposed structural flood control measures will vary depending on the flooding source and type, but will likely include channelization of Reata Wash from the alluvial fan apex to the toe of the alluvial fan landform near the Central Arizona Project (CAP) Reach 11 flood storage basins.

## 3. FEMA Coordination Meetings

Coordination meetings between FEMA Region 9 staff, FEMA Region 9 technical review contractor staff, City of Scottsdale (City) staff, and the Reata Wash Flood Control Improvement Study project team were held on February 9, 2015 and September 9, 2015 (see Table 3-1). At the February 9, 2015 meeting, the overall study objectives and schedule were introduced and discussed to familiarize FEMA staff with the study. FEMA staff were familiar with the study area, having conducted field trips to the area previously with JE Fuller staff in 2014. The September 9, 2015 meeting was held in Rancho Mirage, California at the Floodplain Management Conference Annual Meeting in order to include local, regional and national representatives from Atkins Global, FEMA Region 9's current technical contractor for CLOMR's and LOMR's.

Table 3-1 Coordination Meetings Details

<p>Date: February 9, 2015          Location: Tempe, AZ (JE Fuller)</p> <p>Attendance:</p> <ul style="list-style-type: none"> <li>• Bob Bezek, FEMA Region 9</li> <li>• Scott Mars, City of Scottsdale</li> <li>• Greg Toth, City of Scottsdale</li> <li>• Ash Patel, Wood, Patel</li> <li>• Jon Ahern, JE Fuller</li> <li>• Jon Fuller, JE Fuller</li> </ul>	<p>Date: September 9, 2015          Location: Rancho Mirage, CA          Floodplain Management Association (FMA) Conference</p> <p>Attendance:</p> <ul style="list-style-type: none"> <li>• Bob Bezek, FEMA Region 9</li> <li>• Tom Sweitzer, Atkins Global</li> <li>• Seth Ahrens, Atkins Global</li> <li>• Brian Schalk, Atkins Global</li> <li>• Jon Fuller, JE Fuller</li> </ul>
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The following meeting summary was prepared for the September 9, 2015 meeting:

Key Issues Discussed:

1. The main topic discussed was the City’s proposed Reata Wash Flood Control Improvement Study; specifically, the Dobson Wash Diversion Structure. The City is exploring the option of releasing some of the 100-year peak discharge at the fan apex from the proposed flood control channel (hereafter, “the release structure”). The release would be from the main Reata Wash channel into “Dobson Wash,” the local name for one of the natural flow paths on the Reata Alluvial Fan landform below the hydrographic apex. The release structure would divert a portion of the flood runoff out of the Reata Wash Channel and into Dobson Wash. The diversion would reduce the design discharge for the proposed Reata Wash Channel downstream of the release structure. The diversion would also mitigate potential concerns that the United States Army Corps of Engineers (USACE) may have over impacts to jurisdictional washes (i.e., Dobson Wash) that could have been cut off by a full channelization structure. The general consensus of the meeting attendees regarding the proposed channelization and release structure was that, after construction, the Reata Pass Alluvial Fan would no longer have active alluvial fan flood hazard characteristics due to the following:
  - a. The majority of the full apex flow and sediment load would be contained within the proposed channel.
  - b. The flow diverted down-fan along the Dobson Wash alignment by the release structure would not be sufficient to cause active alluvial fan flooding or active alluvial fan landform processes.
  - c. The flow diverted down-fan along the Dobson Wash alignment by the release structure would result in a significant reduction of any flood hazard sole caused by flow path uncertainty along the Dobson Wash alignment.
2. FEMA has no objection in principle to the proposed release structure. However, there are certain analyses and mapping activities that would be necessary if the release structure alternative is used, including the following:
  - a. The Reata Wash channelization must prevent flow path uncertainty for the flow contained within the proposed channel.

- b. A hydraulic analysis will be required to evaluate the depth, extent and nature of any floodplains created by flooding along Dobson Wash originating at the release structure. If the 100-year flow depths along the Dobson Wash corridor exceed 1.0 foot, a regulatory floodplain delineation for flow released from the release structure will be required when a LOMR for the Reata Wash Alluvial Fan floodplain is submitted. If the flow depths along the Dobson Wash corridor are determined to be less than 1.0 feet, then it is likely that a Shaded Zone X delineation would be required as part of the Reata Wash Alluvial Fan LOMR. The floodplain delineation along Dobson Wash downstream of the release structure should consider on-fan rainfall/runoff sources of flooding in addition to the flow released from release structure. The Dobson Wash alignment floodplain could be modeling using a two-dimensional model such as FLO-2D.
  - c. Hydraulic and geomorphic analyses would be required by FEMA as part of the Reata Wash Alluvial Fan LOMR to demonstrate that the flow released into Dobson Wash from the release structure are not subject to active alluvial fan flooding, i.e., uncertain flow paths, avulsions, etc. If any flow path uncertainty or avulsion potential exists along the Dobson Wash alignment, then the floodplain delineation would be required to address this uncertainty using modeling procedures approved in advance by FEMA Region 9 staff.
3. FEMA has no official opinion on whether the Reata Wash/Dobson Wash diversion structure should be designed to take flow from the “bottom” or “top” of the flood hydrograph, as long as the conditions listed above are met.

The following meeting summary was prepared for the February 9, 2015 meeting:

1. FEMA cannot formally comment on conceptual projects. An official FEMA response is contingent on a CLOMR or LOMR submittal to FEMA for technical and administrative review.
2. FEMA Submittal Format. FEMA submittals require a specific format, as well as specific types of documentation that are unique to the FEMA review process. Some of documentation prepared as part of the Draft Pinnacle Peak South (PPS) Area Drainage Master Study (ADMS) Hydrology and Hydraulics (H&H) Report by TY Lin International (TY Lin) would be useful for a CLOMR submittal, but would require supplemental information and reformatting to meet FEMA standards.
3. FEMA Technical Requirements. The Reata Pass Alluvial Fan floodplain is shown as subject to active alluvial fan flooding on the effective FEMA maps. Alluvial fan floodplain delineation submittals have further documentation requirements that are more complex and detailed than riverine floodplain delineation submittals. FEMA requires that their three-stage method of analysis be used, that flow path uncertainty be addressed, and that the impact of sedimentation on flood risk be assessed in detail, among other requirements. The FEMA submittal would include a detailed, three-stage geomorphic, hydrologic, and hydraulic assessment as indicated by current FEMA guidelines at the time of the submittal.
4. Hydrology. The hydrologic modeling conducted for the Flood Control District of Maricopa County’s Draft PPS ADMS H&H Report was done for future (build-out) conditions. FEMA requires that existing conditions be modeled – future conditions modeling is not accepted. For Task 3 of the Reata Wash Flood Control Improvement Study, the hydrology model was updated and will be prepared in a format

required for submittal to FEMA. The updated model included modifications to the Draft PPS ADMS H&H Report hydrology to remove future land use conditions and a future regional drainage basin upstream of the Reata Pass Alluvial Fan Apex.

5. FLO2D Model. FEMA will accept FLO2D modeling as a basis for active alluvial fan floodplain delineations, as long as the flow path uncertainty is adequately addressed on the active portions of the alluvial fan landform. It is recommended that the actual modeling approach be vetted with the FEMA Region 9 Engineer and the FEMA technical review team prior to submittal to assure that the approach used addresses FEMA's concerns. It is likely that some modifications, including the model version and level of detail, will be required prior to FEMA submittal.
6. Floodplain Delineation Type. FEMA has not yet established guidelines for how active alluvial fan floodplain zones be depicted on Flood Insurance Rate Map (FIRM) panels. Flood zones on the FIRM could be shown as unnumbered A zones, AO zones with depths and velocities, or AE zones with flood elevations. It is recommended that the City determine what type of zones they desire in advance and coordinate that decision with the FEMA Region 9 Engineer prior to submittal.
7. Public Notice. As with all FEMA floodplain delineation studies, public advertisement and notification of affected property owners needs to occur prior to finalizing revision of regulatory floodplains.
8. As-Built Plans. Any structures relied on (culverts, roads, walls, channels, etc.) in the floodplain delineation require as-built plans prior to FEMA submittal. Therefore, as-built plans for existing structures will be required as part of a CLOMR submittal. For new flood control structures proposed as part of the Reata Wash Flood Control Improvement Study, the CLOMR would be based on design drawings. After the CLOMR is approved by FEMA, and the structures are constructed, as-built drawings for the new structures would be included in the LOMR submittal to FEMA.
9. In general, FEMA staff did not believe that there are any fatal flaws with the proposed Reata Wash Flood Control Improvement Study.

**APPENDIX C**  
**MEMORANDUM: FLOODPLAIN FACT**

**Reata Wash  
Flood Control Improvement Study**

Contract No. 2014-168-COS

**Memorandum: Floodplain Fact**

August 31, 2016

Prepared for:



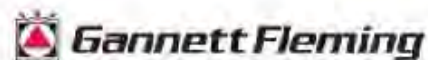
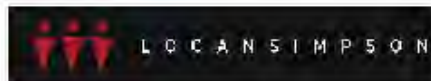
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EXPIRES: 9-30-17

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EXPIRES: 9-30-17

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## **1. Overview**

This memorandum documents the findings of the floodplain fact review and assessment conducted in support of the City of Scottsdale's (City) Reata Wash Flood Control Improvement Study. The assessment was performed by staff from JE Fuller/Hydrology & Geomorphology, Inc. (JE Fuller), as a subconsultant to Wood, Patel & Associates (WPA), under Task 2 of City Contract # 2014-168-COS. The scope of services for Task 2B calls for identification of the following within the study area:

1. Total acreage of public and private land
2. Total commercial and residential structures
3. Estimated annual flood insurance premiums
4. Total public roadway centerline miles

The principal focus will be summarizing data sources and a full breakdown of categories listed above.

## **2. Study Area**

The Reata Wash Flood Control Improvement Study area is located within the city limits of Scottsdale, Arizona along the western flank of the McDowell Mountains, and northeast of the Loop 101 Freeway and the Central Arizona Project (CAP) Canal (Figure 2-1).





### 3. Data Sources

Primary data sources include the City, the Flood Control District of Maricopa County (FCDMC) and the Federal Emergency Management Agency (FEMA).

#### 3.1 Parcel Data

The first set of data requested was the total acreage of public and private parcels within the study area. The City provided this land ownership information in a geographic information system (GIS) shapefile format. This shapefile was then clipped to show only those parcels within the study area. The acreage totals associated with public and private ownership are summarized in Table 3–1 along with the total number of parcels. Refer to Exhibit A for a depiction of the public and private parcels within the study area.

Land Ownership	Area (acres)	Number of Parcels
Private	4,015	6,215
Public	1,055	92
Total	5,070	6,307

#### 3.2 Structure Data

Assessment of structure data is another important exercise within the current study area. This information can be utilized to determine risk associated with specific types of structures located within the designated floodplains. To that end, the City provided a GIS shapefile of Roof Tops polygons that was compared to 2014 aerial photography provided by the FCDMC to identify and classify structures within the study area. Table 3–2 provides a summary of the results. Refer to Exhibit B for a depiction of the structures identified throughout the study area.

Type of Structure	Number of Structures
Commercial	206
Covered Parking	466
Detached Garage/Shed	48
Multi-Family	229
Municipal Building	59
<sup>(1)</sup> Other	312
Parking Garage	2
Residential	3,212
Resort	40
Secondary Dwelling	94
Total	4,668

Notes:

- (1) Includes miscellaneous structure types identified as “other” in the City’s Geographic Information System (GIS) roof top shapefile. Type includes structures at WestWorld, common area pavilions, power line base structures and structures not included in other categories.

### 3.3 Flood Insurance Data

To estimate the annual flood insurance premiums within the study area, the number of structures in Table 3–2 and general Flood Insurance Policy Data collected from the FCDMC combined to estimate the annual flood insurance premiums provided in Table 3–3. The following assumptions were used to arrive at the estimates presented in Table 3–3.

- **Single Family, Primary Residence**, Zone AO, with Elevation Certificate showing compliance, building and contents deductible of \$1,250, and a Community Rating System (CRS) discount of 20%. Using \$250,000 for building coverage and \$100,000 for contents coverage, the total annual premium should be approximately \$537.
- **Other Residential, Non-Primary Residence**, Zone AO, with Elevation Certificate showing compliance, building and contents deductible of \$1,250, and a CRS discount of 20%. Using \$250,000 for building coverage and \$100,000 for contents coverage, the total annual premium should be approximately \$891.
- **Non-Residential, Non-Primary Residence**, Zone AO, with Elevation Certificate showing compliance, building and contents deductible of \$1,250, and a CRS discount of 20%. Using \$500,000 for building coverage and \$500,000 for contents coverage, the total annual premium should be approximately \$1,618.

Table 3–3 FEMA Flood Insurance Estimates

Type of Structure	FEMA Designated Zone	Number of Structures	Estimated Annual Premium (\$)	Estimated Total Annual Premium (\$)
Commercial	A/AO	206	1,618	333,308
Multi-Family	A/AO	229	891	204,039
Municipal Building	A/AO	59	1,618	95,462
<sup>(1)</sup> Residential	A/AO	2,248	537	1,207,176
Resort	A/AO	40	1,618	64,720
Total		2,782		1,904,705

Notes:

(1) Number represents an estimate that 70% of residential structures have flood insurance.

### 3.4 Public Roadway Data

Data was collected from the City to calculate the total number of miles of roadways within the study area. Table 3–4 summarizes the roadway data and Exhibit C shows the location of the roadways within the study area.

Table 3–4 Roadway Data	
Type of Roadway	<sup>(1)</sup> Roadway Centerline Miles
Freeway	4.83
Freeway Access	3.64
Frontage Road	2.39
Major Arterial	3.51
Major Collector	2.83
Minor Arterial	8.94
Minor Collector	1.84
Neighborhood Arterial	2.58
Private	30.62
Residential	32.83
<b>Total</b>	<b>94.01</b>

Note:

- (1) Roadway centerline miles obtained directly from City GIS shapefiles. Length of roadway determined along the centerline of the roadway regardless of the number of lanes. Divided roads and freeways are measured separately.

## **Appendix A      Exhibits**

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Exhibit A – Public and Private Lands within Study Area

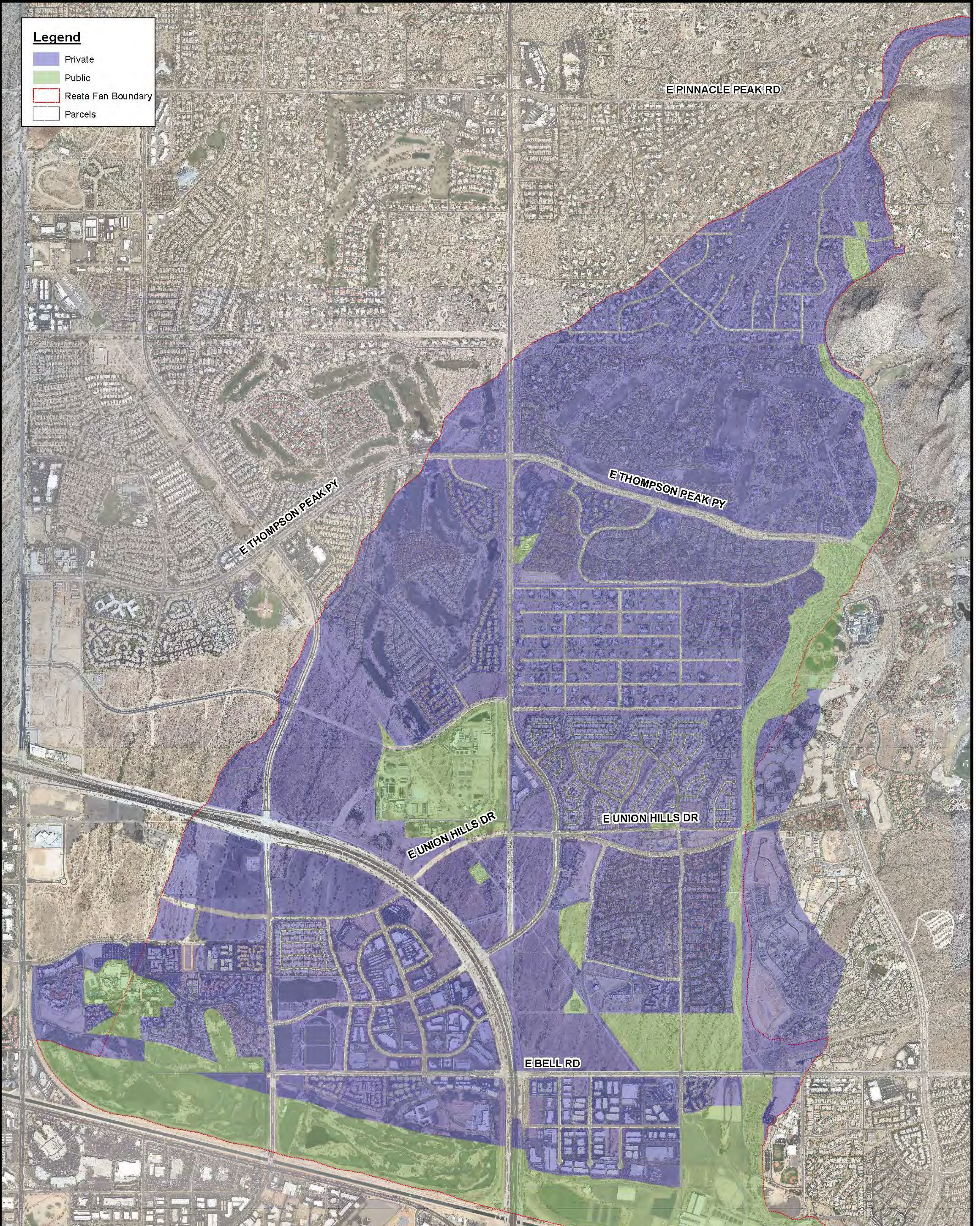
Exhibit B – Structures within Study Area

Exhibit C – Roadways within Study Area


# REATA WASH FLOOD CONTROL IMPROVEMENT STUDY

**Legend**

- Private
- Public
- Reata Fan Boundary
- Parcels





**Disclaimer:**  
 JE Fuller assumes no responsibility arising from the use of this study by any private entity or any public agency for design, engineering, development, planning, building or permitting. The sole purpose of this study is for regional flood hazard identification and regional flood hazard planning for the Reata Wash Flood Control Improvement Study.



**EXHIBIT A**  
 Public/Private Lands  
 within Reata Fan  
 August 2016

0 1,000 2,000 3,000  
 Feet

# REATA WASH FLOOD CONTROL IMPROVEMENT STUDY

## Legend

### Type\_Reata

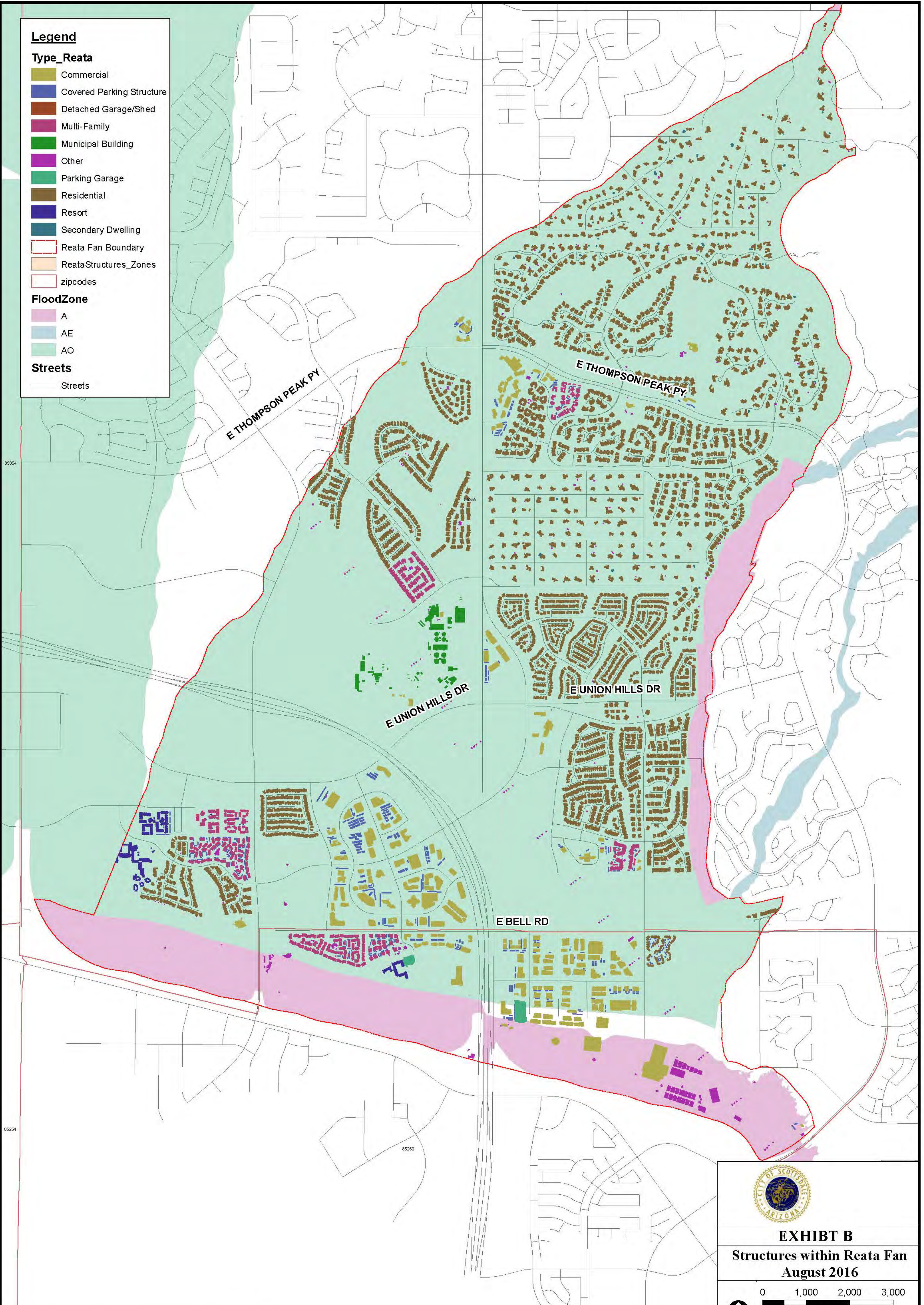
- Commercial
- Covered Parking Structure
- Detached Garage/Shed
- Multi-Family
- Municipal Building
- Other
- Parking Garage
- Residential
- Resort
- Secondary Dwelling
- Reata Fan Boundary
- ReataStructures\_Zones
- zipcodes

### FloodZone


- A
- AE
- AO

### Streets

- Streets





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**EXHIBT B**  
**Structures within Reata Fan**  
**August 2016**

0 1,000 2,000 3,000  
 Feet

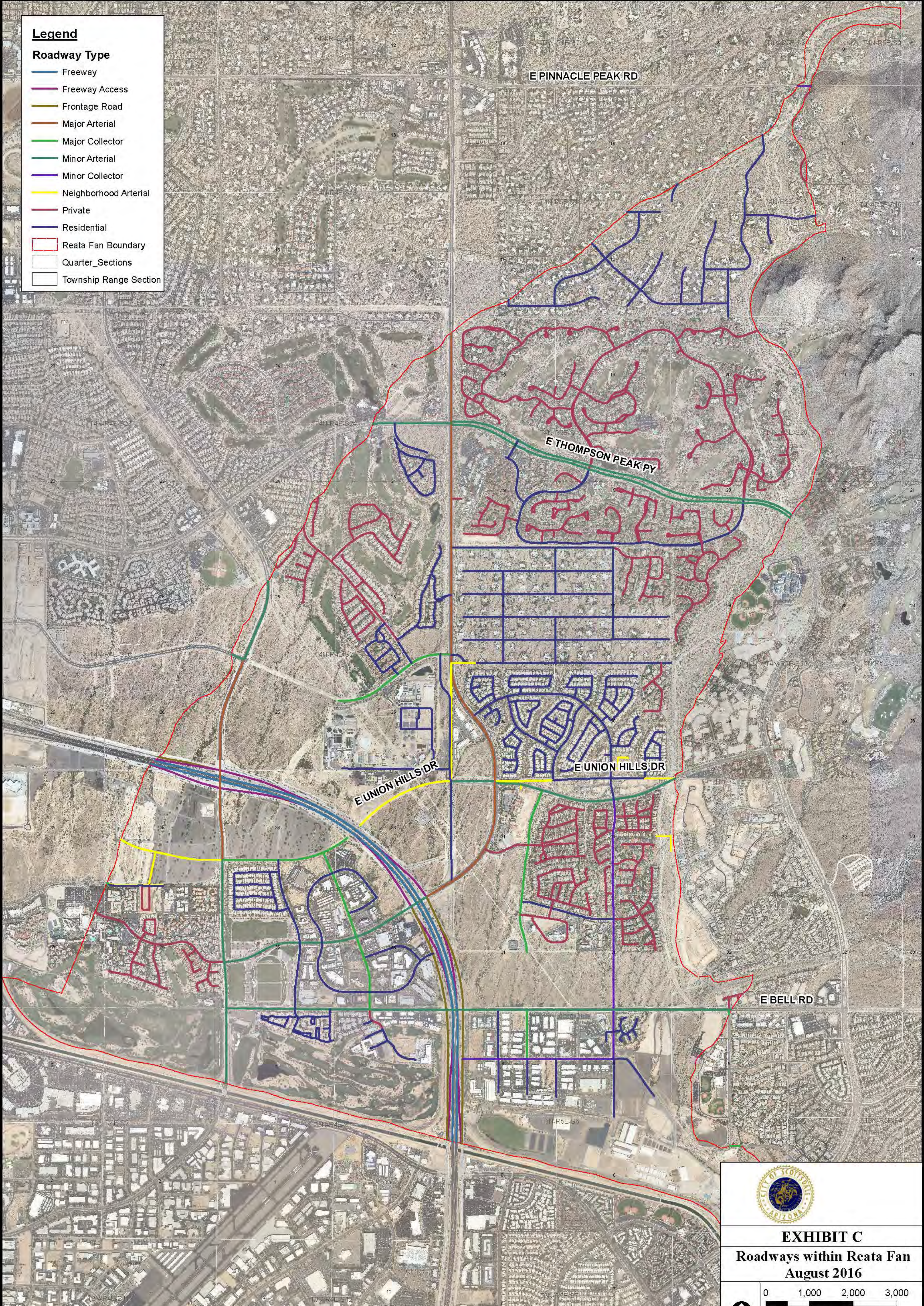



# REATA WASH FLOOD CONTROL IMPROVEMENT STUDY

**Legend**

**Roadway Type**

- Freeway
- Freeway Access
- Frontage Road
- Major Arterial
- Major Collector
- Minor Arterial
- Minor Collector
- Neighborhood Arterial
- Private
- Residential
- Reata Fan Boundary
- Quarter\_Sections
- Township Range Section



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**EXHIBIT C**  
**Roadways within Reata Fan**  
**August 2016**

0 1,000 2,000 3,000  
 Feet