



RIVER AND SHANNON CLASS A OFFICE

In addition, the upstream undeveloped portion of the parcel will deliver 7.5 CFS to the east boundary of the proposed developed portion of the site. Total flows, using simple summation, expected to exit the west rezoning site boundary are 49 CFS.

It is estimated that approximately 30,000 cubic feet of detention volume should be provided to reduce the developed conditions peak discharge to the level of existing conditions. The required First Flush Retention volume for the new impervious area is expected to be 8,000 cubic feet and can be used to meet the detention requirement as well.

Maximizing use of shallow retention, 9 inches in depth or less, within the bufferyards and landscape areas will provide a significant reduction in peak discharges. The design should direct roof drainage to landscape areas surrounding the building. East of the development site, shallow retention basins can be sized to collect and retain flows from the undeveloped portion of the site and a portion of the parking lot. The remaining pavement drainage should be directed to shallow retention areas in the bufferyard area to the north, in landscape islands and toward Shannon Road. Site design should consider use of cascading basins with check dams to encourage infiltration for supplemental irrigation. Use of shallow retention to attenuate flows most likely will accomplish peak discharge reduction for this project. An estimate of retention volume available in the bufferyards and landscape areas shown on the site plan is anticipated to be approximately 30,000 cubic feet. The concept map provided has been annotated to reflect how this layout might occur. As the design progresses, providing this amount of shallow retention should provide sufficient flood attenuation to reduce flood peaks as well as provide suitable location for riparian habitat mitigation.

Site design will also include evaluation of flows across the new sidewalk adjacent to Shannon Road and a possible driveway culvert to convey the developed site flows to the existing storm drain inlet. (Appendix C: RFCD River and Shannon Office Concept Drainage Summary)

There is Regulated Riparian Habitat that is designated MMBCLS Important Riparian Area (about 3.6 acres total). Approximately 2.5 acres of this habitat will be disturbed by the development. On-site mitigation will be provided within the site and other Shaded Zone X area to closely resemble habitat that is disturbed. Mitigation plantings will enhance the north and south landscape buffers and the largely disturbed area east of the development. About half of the required mitigation plantings can be provided in the landscape buffers. The additional plantings east of the project will provide enhanced vegetated buffer between Meadowbrook Subdivision and River Road.

2. Preliminary Integrated Management Plan (PIWMP)

- a. The site is adjacent to the Metropolitan (Metro) Water District Service Area – Metro Water provides Renewable and Potable Water.
- b. The site is within the Tucson Active Management Area and depth to groundwater is projected to be relatively stable.
- c. The site is not in an area impacted by regulatory subsidence.
- d. The nearest Groundwater Dependent Ecosystem, the perennial section of the Santa Cruz River, is just over 1 mile away.
- e. The site is not in an isolated basin and the depth to bedrock ranges from 1,600-3,200 feet.

- f. The site is not expected to impact shallow groundwater dependent ecosystems.
- g. At the time of development the owner shall be required to identify water conservation measures sufficient to obtain 15 points per the Site Analysis Requirements in effect at the time.

3. Proposed Hydrology

The eastern portion impacted by a regulatory watercourse conveyed within drainage infrastructure is to remain natural and/or be enhanced with riparian mitigation and water harvesting. Offsite flows shall remain at the current location, volume and rate.

New impervious areas, including building and parking lots will be designed to direct flows to water harvesting basins to sustain landscape and riparian mitigation plants.

II-E. BIOLOGICAL RESOURCES

1. Impacts to Biological Resources

- a. MMBCLS Multiple Use Management Area: the required 2:1 open space mitigation for the approx. 0.25 acres of Multiple Use Management Area on the site should be met (and exceeded) by the open space area being left undeveloped on the east side of the site.
- b. No saguaro cacti were found on the rezoning site.
- c. No ironwood trees were found on the rezoning site.
- d. The rezoning site is outside of the PCA for Pima pineapple cactus.
- e. The rezoning site is outside of the PCA for needle-spined pineapple cactus.

II-F. LANDSCAPE AND BUFFER PLAN

1. Bufferyards

The PDP shows a 20-foot Landscape Bufferyard 'D' on the south and west sides of the rezoning site. There is also displayed a 40-foot enhanced landscape bufferyard on the north side of the site (which includes an intermittently landscaped 10-foot bufferyard dedicated by the Meadowbrook Subdivision plat) – the density of this bufferyard shall be no less than that prescribed in a 10-foot Bufferyard 'D', shall be installed in harmony with the existing 10-foot landscape buffer and shall incorporate water harvesting features. The remainder of the site to the east remaining in its undeveloped state.

2. Bufferyard Conflicts

There are no bufferyard conflicts.

3. Transplanting Vegetation Impacts

On-site vegetation will be inventoried during development review. Inventoried plants in good health and capable of being successfully transplanted will be relocated or mitigated for according to the Native Plant Preservation Ordinance.

4. Mitigation of Visual Impacts

During the rezoning process, the developer shall work with the Meadowbrook Subdivision neighbors to address enhancements to the existing patio wall and/or additional screening elements. Also, parking lots shall be landscaped with groupings of shade trees supported by storm water harvesting to screen the parking and reduce urban heat-island effect.

5. Significant Vegetation

There is a 20-foot-wide irrigated landscape buffer with established vegetation on W. River and N. Shannon Roads (the status of the irrigation system is unknown) – this area should be kept or enhanced.

II-G. TRANSPORTATION

1. Proposed Ingress/Egress points

The vehicular ingress/egress points for the proposed commercial development were located to provide circulation within the site and help distribute traffic on the adjacent public right-of-way. One full access driveway is located off of Shannon Road, while a second driveway is located off of River Road and it will be restricted to right in/right out turning movements. The final design and location of both driveways will be evaluated during the permitting process.

2. Distance to access points

The proposed driveway off of Shannon Road is located approximately 100 feet from the intersection of River Road and Shannon Road. The secondary access point of River Road is located approximately 300 feet from the intersection.

3. Off-site Road Improvements

There are no immediate off-site improvements that will be required for this proposed development. Both adjacent roads, River and Shannon were improved with a joint City of Tucson/Pima County Capital Improvement Project 4TRCTT. Any necessary off-site improvements will be identified with the subsequent traffic impact study during the permitting process.

4. ADT and Level of Service

The trip generation calculation for this Site Analysis was made using the accepted Institute of Transportation Engineers Manual (ITE), the trip generation for this proposed commercial development can be summarized as a 40,000 sq. ft. general office building will generate 655 daily trips to and from the site as shown in Exhibit II-G.1, below.

Exhibit II-G.1

Trip Generation Rates										
Land Use	ITE Code	Units	# Units	Daily	AM			PM		
				Trips/Unit	Trips/Unit	In	Out	Trips/Unit	In	Out
General Office Building	710	1000 SF	40	See Eq. 1	See Eq. 2	88%	12%	See Eq. 3	17%	83%

Eq. 1: $\ln(T) = 0.76\ln(X) + 3.68$

Eq. 2: $\ln(T) = 0.80\ln(x) + 1.57$

Eq. 3: $T = 1.12(X) + 78.45$

T = Average Vehicle Trip Ends

X = 1000 SF Gross Floor Area

Site Trip Generation										
Land Use	ITE Code	Units	# Units	Daily	AM			PM		
				Trips	Trips	In	Out	Trips	In	Out
General Office Building	710	1000 SF	40	655	92	81	11	124	21	103

Level of Service

A preliminary Synchro simulation was conducted utilizing the above AM and PM peak hour trips for the site. The analysis showed that the proposed development had next to no impact on existing traffic. Both driveways had acceptable levels of service (D) existing and with the proposed development. The signalized intersection LOS turning movements were unchanged as well. The Synchro simulation is shown below in Exhibit II-G.2.

Exhibit II-G.2

Existing Conditions								
River Road and Shannon Road Delay (LOS)								
Peak Period	Overall Intersection	Eastbound		Westbound			Southbound	
		↶	↷	↶	↷	↷	↶↷	
		EBL	EBT	WBU	WBT	WBR	SBL	SBR
AM Peak	15.2 (B)	4.8 (A)	6.7 (A)	NA	5.1 (A)	4.8 (A)	52.4 (D)	
PM Peak	10.0 (B)	5.2 (A)	4.1 (A)	NA	4.5 (A)	3.9 (A)	53.3 (D)	

Alternative 3: Shannon Road and River Road Development Access																								
River Road and Shannon Road Delay (LOS)								River Road and East Development Driveway Delay (LOS)								Shannon Road and Development Driveway Delay (LOS)								
Peak Period	Overall Intersection	Eastbound		Westbound			Southbound		Peak Period	Overall Intersection	Eastbound		Westbound		Southbound	Peak Period	Overall Intersection	Westbound		Northbound		Southbound		
		↶	↷	↶	↷	↶	↷	↶			↷	↶	↷	↷	↶			↷	↶	↷	↶	↷	↶	↷
		EBL	EBT	WBW	WBT	WBR	SBL	SBR			EBL	EBT	WBT	WBR	SBR			WBL	WBR	NBT	NBR	SBL	SBR	
AM Peak	15.1 (B)	5.3 (A)	6.8 (A)	4.5 (A)	5.2 (A)	4.8 (A)	52.2 (D)	AM Peak	0.1 (A)	0.1 (A)	0.0	0.0	0.0	10.2 (B)	AM Peak	0.3 (A)	10.8 (B)		0.0	0.3 (A)	0.0			
PM Peak	11.2 (B)	6.0 (A)	4.6 (A)	3.6 (A)	5.0 (A)	4.3 (A)	53.2 (D)	PM Peak	0.3 (A)	11.7 (B)	0.0	0.0	0.0	14.5 (B)	PM Peak	1.3 (A)	13.7 (B)		0.0	0.1 (A)	0.0			

5. Conformance with Pima County Concurrency Requirements

Both River Rd. existing ADT of 10,186 and Shannon Rd existing ADT of 6,476 adjacent to the site are operating below capacity. The existing ADT with the addition of traffic from this proposed development will continue to operate below capacity as River Rd has a total capacity of 37,200 ADT and Shannon Rd. 14,300 ADT respectively. This project is not projected to contribute to the over capacity of the adjacent roadway network and there are no Transportation Concurrency Concerns to be met on river

6. Proposed Bicycle & Pedestrian Pathways

The proposed development will provide internal sidewalk connectivity from the building entrance to the existing sidewalk located along River Rd. The sidewalk will also be built to provide access to Shannon Rd. from the building entrance, however there is no existing sidewalk located along Shannon Rd. and will be provided with this development along the eastern side to allow for the development to have connectivity with neighborhoods to the north as well as access to the signalized intersection of River Rd. and Shannon Rd. Since both adjacent roads have either a paved shoulder or designated bicycle lane there no new bicycle pathways will be provided with this development.

7. Proposed On-Site Rights-of-way

No new public street right-of-way will be required on-site for the proposed commercial development. Site vehicular will be confined to driveways, service drives, parking areas, and parking area access lanes (PAAL's).

8. Applicability and Timing of Traffic Impact Study (TIS)

The average daily trips generated by the proposed development are less than 10,000 ADT, therefore a TIS will be submitted during the permitting process and will identify any offsite improvements that are necessary to accommodate this rezoning as well as safety and traffic related issues on the adjacent roadway network.

II-H. ON-SITE WASTEWATER TREATMENT AND DISPOSAL

1. Reasons for Not Connecting to Sewer

Not applicable. No on-site wastewater treatment and disposal is anticipated on the property. The property will connect via a sewer extension to the existing public sewer located a little over 200 feet to the northwest in Shannon Road.

2. Soils Evaluations

Not applicable. This development will not utilize a septic disposal system, therefore no evaluation of soil conditions is required.

3. Primary/Reserve Disposal Areas

Not applicable. No septic disposal systems are expected to be utilized.

II-I. SEWERS

1. Capacity Response Letter

The Pima County RWRD Capacity Response Letter indicates the capacity for this development is currently available within the 8" public sewer I-86-238, downstream from manhole 4729-00. The subject property is tributary to the Tres Rios Water Reclamation Facility via the North Rillito Interceptor (*Appendix D*).

2. Method of Providing Sewer

The subject property could connect by gravity into the existing sewer system in Shannon Road.

3. Sewer Easements

All off-site connection points to the public sewer are expected to be inside of the existing Shannon Road rights-of-way. If a public sewer is proposed on-site, a public sewer easement(s) will be granted to Pima County for the installation, maintenance, and access of public sewer.

4. Mitigation of Site Constraints

All sewers are anticipated to have gravity flow. No site constraints were identified at the time of this review.

(Exhibit I-F: Existing Public Sewers)

II-J. WATER

The rezoning site abuts the Metropolitan Water District service area to the north (Meadowbrook Subdivision) and the Tucson Water Obligated service area to the west, though the site is not within either service area. A 'Will-Serve' letter 2 2019 from Metropolitan Water District is attached (*Appendix E*).

II-K. SCHOOLS

The proposed rezoning to TR Transitional and proposed professional / semi-professional office will have no effect on capacity of access to or capacity of local schools.

II-L. RECREATION

1. On-site Recreation

There are no recreation areas proposed for the rezoning site as part of the proposed office development.

2. Ownership of Recreation Areas

n/a

3. Proposed Trails On or Off-site

There are no trails proposed for the rezoning site as part of the proposed development. The Chuck Huckelberry Loop Trail is located along the Rillito River, just south of the site and there is a designated trailhead located just west of the site off River Rd.

II-M. CULTURAL RESOURCES

An archaeological records search resulted in the finding that no physical remnants of a previously identified archaeological site (recorded in 1938) currently exists on the subject property.

In the event that human remains, including human skeletal remains, cremations, and/or ceremonial objects and funerary objects are found during excavation or construction, ground disturbing activities must cease in the immediate vicinity of the discovery. State Laws ARS 41-865 and/or ARS 41-844 require that the Arizona State Museum be notified of the discovery at (520) 621-4795 so that appropriate arrangements can be made for the repatriation and reburial of the remains by cultural groups who claim cultural or religious affinity to them. The human remains will be removed from the site by a professional archaeologist pending consultation and review by the Arizona State Museum and the concerned cultural groups.

II-N. ENVIRONMENTAL QUALITY

Dust control will be accomplished by any of the environmental quality standards. Stormwater Pollution Prevention Plan (SWPPP) measures will be used as needed to prevent sediment from leaving the site. Upon completion of the grading operations all graded areas will be stabilized by pavement, concrete, or ground cover per landscape requirements.

II-O. AGREEMENTS

No agreements have been made as part of this project.

APPENDICES

RESOLUTION 2019-_____

A RESOLUTION OF THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA; RELATING TO PLANNING; AMENDING THE PIMA COUNTY COMPREHENSIVE PLAN LAND USE MAP FOR APPROXIMATELY 8.64 ACRES LOCATED AT THE NORTHEAST CORNER OF THE INTERSECTION OF W. RIVER ROAD AND N. SHANNON ROAD, SECTIONS 9 AND 16, TOWNSHIP 13 SOUTH, RANGE 13 EAST, IN THE CATALINA FOOTHILLS PLANNING AREA FROM RESOURCE SENSITIVE (RS) TO MEDIUM INTENSITY URBAN (MIU).

IT IS RESOLVED BY THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA AS FOLLOWS:

Section 1. The Pima County Comprehensive Plan Land Use Map, Catalina Foothills Planning Area, is hereby amended to change the planned land use intensity category for approximately 8.64 acres, as referenced in P18CA00007 Pima County - West River Road Plan Amendment, located at the northeast corner of the intersection of W. River Road and N. Shannon Road, in Sections 9 and 16, Township 13 South, Range 13 East, as shown on the map attached to this Resolution as Exhibit A and incorporated by this reference, from Resource Sensitive (RS) to Medium Intensity Urban (MIU).

Section 2. The Pima County Comprehensive Plan Rezoning Policies are amended to include the following Rezoning Policies for the site described in Section 1 of this Resolution:

- A. All future rezonings shall be limited to **TR Transitional Zone**, and restricted to professional and semi-professional office uses only.
- B. Maximum height is restricted to 24 feet and one story to highest point of structure.
- C. Planning and design of development shall minimize appearance of traditional "strip" commercial development and promote four-sided architecture on perimeter buildings, with uniform architecture throughout the development.
- D. All lighting shall be subject to the Pima County Outdoor Lighting Code (Chapter 15.12) and shall be designed to minimize light trespass on adjacent residential lots.
- E. A minimum 40-foot-wide enhanced landscape bufferyard shall be placed along boundary of the Meadowbrook Subdivision. Although 40 feet wide, the plant density shall be no less than that prescribed in a 10-foot Bufferyard D (Pima County Landscape Design Manual). This bufferyard shall be installed in harmony with the existing 10-foot private landscape buffer depicted on the Meadowbrook Subdivision Plat. The bufferyard shall incorporate

storm water harvesting features.

- F. Parking lots shall be landscaped with groupings of shade trees supported by storm water harvesting to reduce heat-island effect.
- G. Drainage will be reviewed and approved during the rezoning and development process. The site will be required to meet all Regional Flood Control District development standards including retention and detention basins and water harvesting.
- H. Traffic volume and access will be reviewed and approved during the rezoning and development process. The site will be required to meet all Transportation development standards.
- I. Development shall promote safe use and connectivity for pedestrians and bicyclists in addition to automobiles to, from and within the site.
- J. The balance of the site (eastern portion of property) shall remain in its undeveloped / natural state.
- K. Prior to issuance of a Certificate of Occupancy for any structure, a dedicated right-turn lane shall be constructed on southbound Shannon Road at the River Road intersection.
- L. During the rezoning process, applicant shall work with abutting Meadowbrook Subdivision neighbors to address existing patio wall enhancements and/or additional screening options.
- M. Substantial adherence to the conceptual site plan as presented at public hearing.

Section 3. The various County officers and employees are authorized and directed to perform all acts necessary to give effect to this Resolution.

Section 4. This Resolution shall become effective on the date of adoption.

Passed and adopted, this _____ day of _____, 2019.

Chair, Pima County Board of Supervisors

ATTEST:

Clerk of the Board

APPROVED:

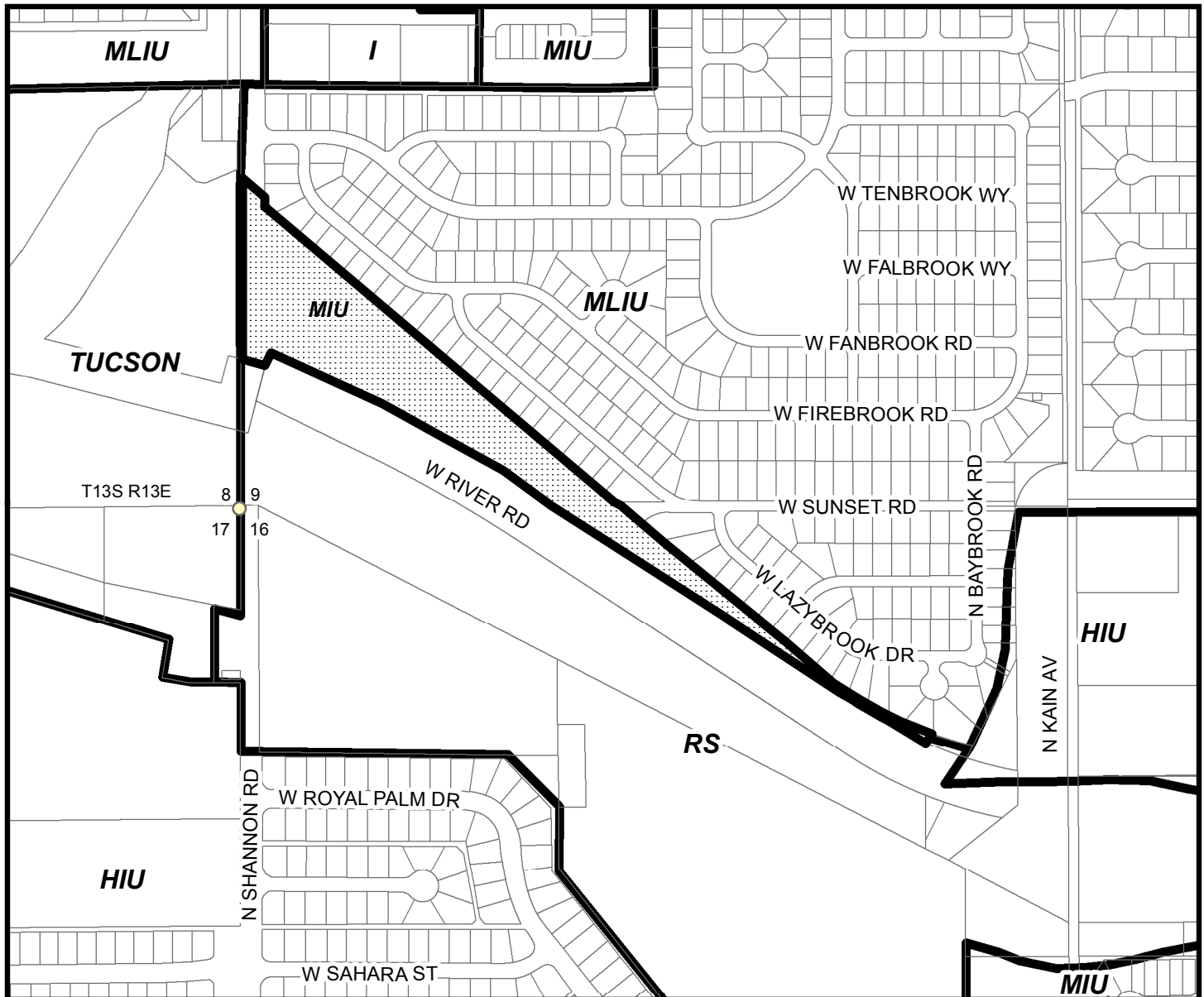
Executive Secretary
Planning and Zoning Commission

APPROVED AS TO FORM:


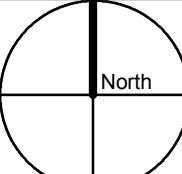
Deputy County Attorney

COMPREHENSIVE PLAN AMENDMENT

Planned Land Use Exhibit A



0 220 440 880 Feet

<p>Taxcode: 101-14-3620 101-11-7360</p>	<p>P18CA00007 PIMA COUNTY - W RIVER ROAD PLAN AMENDMENT</p> <p>Resource Sensitive (RS) to Multiple Intensity Urban (MIU) 8.64 Acres +/-</p>	<p>Districts 1 Location: Northeast corner of the intersection of W. River Road and N. Shannon Road</p>
	<p>Catalina Foothills Planning Area under Pima Prospers Sections 9 & 16, Township 13 South, Range 13 East</p> <p>Planning and Zoning Commission Hearing: November 28, 2018 Board of Supervisors Hearing: May 21, 2019</p> <p>Map Scale: 1:6,000 Map Date: June 12, 2019 / dms</p>	

Appendix B.

P19RZ00006 Pima County – W. River Road Rezoning
Site Major Plant List – site surveyed June 12, 2019

<i>Acacia greggii</i>	Cat's Claw Acacia
<i>Ambrosia deltoidea</i>	Triangle-Leaf Bursage
<i>Ambrosia salsola</i>	Cheesebush
<i>Aristida</i> spp.	Three-Awn Grass species
<i>Atriplex canescens</i>	Four-Wing Saltbush
<i>Baccharis sarothroides</i>	Desert Broom
<i>Celtis pallida</i>	Desert Hackberry
<i>Chilopsis linearis</i>	Desert Willow
<i>Dasyllirion wheeleri</i>	Desert Spoon
<i>Datura meteloides</i>	Sacred Datura
<i>Encilia farinosa</i>	Brittlebush
<i>Ericameria laricifolia</i>	Turpentine Bush
<i>Larrea tridentata</i>	Creosote bush
<i>Lycium</i> spp.	Wolfberry
<i>Opuntia</i> spp.	Cholla Cactus species
<i>Parkinsonia florida</i>	Blue Palo Verde
<i>Parkinsonia praecox</i>	Palo Brea
<i>Prosopis</i> spp.	Mesquite
<i>Senna covesii</i>	Desert Senna
<i>Simmondsia chinensis</i>	Jojoba
<i>Sphaeralcea ambigua</i>	Globe Mallow
<i>Vachellia constricta</i>	Whitethorn Acacia
<i>Vachellia farnesiana</i>	Sweet Ball Acacia

Invasive Non-Native Plants

<i>Cynodon dactylon</i>	Bermuda Grass
<i>Pennisetum ciliare</i>	Buffelgrass
<i>Rhus lancea</i>	African Sumac
<i>Salsola tragus</i>	Russian Thistle (Tumbleweed)

Appendix C.



Date: April 22, 2019
To: Eric Shepp
From: Ann Moynihan
Subject: River and Shannon Office Concept Drainage Summary

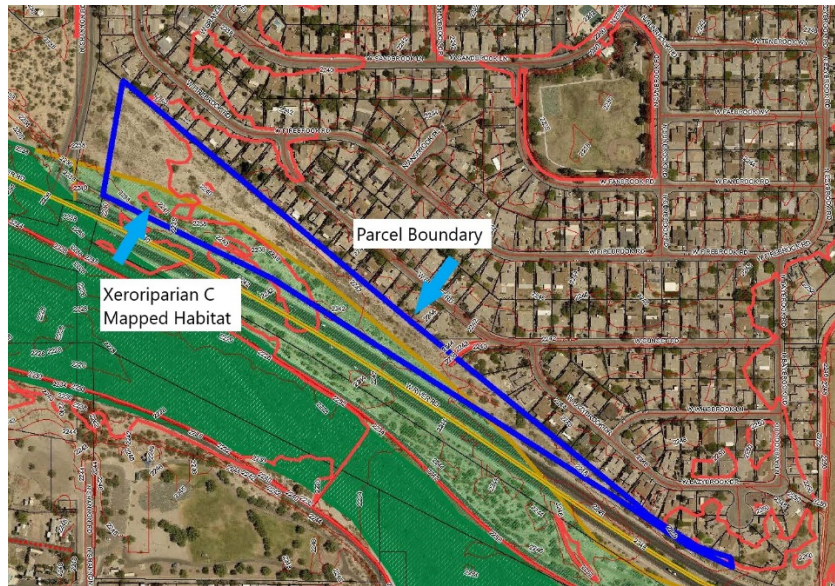
BACKGROUND:

The Planning Center has developed a Preliminary Conceptual Site Plan for a 40,000 square foot office building with parking, landscape buffers and patios for a Pima County owned parcel (Tax ID 101-14-3620) at the northeast corner of the intersection of Shannon Road and River Road. Meadowbrook subdivision, to the north, does not drain to the site, except for a storm drain connection to the Rillito River, installed by the Army Corps of Engineers, which is about 600 feet to the east of the concept site.

Drainage complaints on record with the Regional Flood Control District (District) from 1994 to 2015 do not include any complaints related to the drainage from or within this parcel. Complaints were generally requests for maintenance in Pegler Wash with one instance of lot flooding on the north side of Sandbrook Lane 650 feet north of the concept site.

EXISTING SITE FEATURES:

The parcel is a remnant parcel created with the realignment of the River Road right-of-way in 2007 and is undeveloped. The slope of the parcel is generally less than 1% from southeast to northwest parallel to River Road. At Shannon Road, flows concentrate and flow from north to south along the east side of the Shannon Road alignment. The site soils are generally well-draining. Vegetative cover is disturbed on much of the parcel although 3.6 acres of the parcel are mapped as Xeroriparian C habitat as shown below. Approximately the same area within the concept site is mapped as a Federal Emergency Management Agency 500-year Shaded Zone X Special Flood Hazard Area associated with the Rillito River, and 500-year Shaded Zone X is also mapped about 400 feet east of the concept site. The District does not have floodplain use permitting requirements in a 500-year Shaded Zone X floodplain.



An inlet at the northeast corner of the intersection was constructed with the River Road Thornydale Road to Shannon Road project, Department of Transportation number 4TRCTT. The Final Design Drainage Report for 4TRCTT indicates that this inlet was designed for a 1% chance peak discharge of 48 cfs. The inlet connects to a storm drain system which outlets at the Pegler Wash box culvert.

SITE HYDROLOGY:

The District used PC-Hydro to calculate expected stormwater runoff for this site. The concept site is 7.5 acres in extent, and an additional .8 acres downstream of the parcel immediately adjacent to Shannon Road drains to the inlet at the intersection. The anticipated 1% chance peak discharge at the inlet is 21 cfs in existing conditions. The difference between this value and the roadway design value appears to result from analysis of a larger watershed area than what currently drains to the inlet. There is additional capacity at the inlet to allow additional flows, if necessary.

To evaluate developed conditions runoff, the District assessed the building roof drainage and the drainage from the remainder of the site. The building is expected to generate a peak discharge of 10 cfs in a 1% chance storm, and the parking area and bufferyards are expected to generate 31.5 cfs. In addition, the upstream undeveloped portion of the parcel will deliver 7.5 cfs to the east concept site boundary. Total flows, using simple summation, expected to exit the west concept site boundary are 49 cfs.

The PC-Hydro Datasheets are attached.

Using a quick estimator for detention volume, it is expected that approximately 20,000 cubic feet of detention volume should be provided to reduce the developed conditions peak discharge to the existing conditions level. The required First Flush Retention volume for the new impervious area is expected to be 8,000 cubic feet and can be used to meet the detention requirement as well.

Maximizing use of shallow retention 9" deep or less within the bufferyards and landscape areas will provide a significant reduction in peak discharges. The design should direct roof drainage to landscape areas surrounding the building. East of the development site, shallow retention basins can be sized to collect and retain flows from the undeveloped portion of the site and a portion of the parking lot. The remaining pavement drainage should be directed to shallow retention areas in the bufferyard area to the north, in landscape islands and toward Shannon Road. Site design should consider use of cascading basins with check dams to encourage infiltration for supplemental irrigation. Use of shallow retention to attenuate flows most likely will accomplish peak discharge reduction for this project. An estimate of retention volume available in the bufferyards and landscape areas shown on the site plan is anticipated to be approximately 30,000 cubic feet. The concept map provided has been annotated to reflect how this layout might occur. As the design progresses, providing this amount of shallow retention should provide sufficient flood attenuation to reduce flood peaks as well as provide suitable location for riparian habitat mitigation.

Site design should also include evaluation of flows across the new sidewalk adjacent to Shannon Road and a possible driveway culvert to convey the developed site flows to the existing storm drain inlet.

Attachments: PC-Hydro Datasheets
Annotated Site Plan



HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Generated using methods provided by Pima County Regional Flood Control District

Client:		Prepared by:	Ann Moynihan
Project Name:	NE Corner Shannon and River	Date:	04/16/2019
Concentration Point:	CB722 Existing	Job #	
Watershed Area:	8.3 Acres	Watershed Type	Undeveloped-Valley

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	10	2011	0.005	0.03

Length of Watercourse (Lc):	2011	feet	Mean Slope:	0.005
Length to Cen. of Gravity (Lca):	1637	feet	Weighted Basin Fac:	0.03
Veg. Cover Type(s):	Desert Brush		Veg. Cover Density:	30

RETURN PERIOD: 100-years NOAA Data Obtained: 2019-04-16 12:39:13 PM

Rainfall Depths:	NOAA Atlas 14 (90% UCL) @				Latitude: 32.3099	Longitude: -111.0271				
Duration:	5-min	10-min	15-min	30-min	1-hr	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in):	0.85	1.29	1.6	2.16	2.67	2.96	3.11	3.36	3.6	4.38

Soil Type	Percent	Curve # (CN)	Runoff Coef. (C)
B	100	81.9	0.399
C	-	-	-
D	-	-	-
Imp.	10	99	0.956

Weighted Runoff Coef. (Cw):	0.45
Time of Concentration:	18.7 min
Rainfall Intensity (i) @ Tc:	5.58 in/hr
Runoff Supply Rate (q) @ Tc:	2.54 in/hr
PEAK DISCHARGE:	21.2 cfs



HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Generated using methods provided by Pima County Regional Flood Control District

Client:		Prepared by:	Ann Moynihan
Project Name:	NE Corner Shannon and River	Date:	04/16/2019
Concentration Point:	Proposed Roof Drainage Estimate	Job #	
Watershed Area:	1 Acres	Watershed Type	High Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	1	50	0.02	0.018

Length of Watercourse (Lc):	50	feet	Mean Slope:	0.02
Length to Cen. of Gravity (Lca):	25	feet	Weighted Basin Fac:	0.018
Veg. Cover Type(s):	Desert Brush		Veg. Cover Density:	20

RETURN PERIOD: 100-years NOAA Data Obtained: 2019-04-16 12:39:13 PM

Rainfall Depths:	NOAA Atlas 14 (90% UCL) @					Latitude: 32.3099		Longitude: -111.0271		
Duration:	5-min	10-min	15-min	30-min	1-hr	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in):	0.85	1.29	1.6	2.16	2.67	2.96	3.11	3.36	3.6	4.38

Soil Type	Percent	Curve # (CN)	Runoff Coef. (C)
B	100	82.6	0.421
C	-	-	-
D	-	-	-
Imp.	100	99	0.956

Weighted Runoff Coef. (Cw):	0.96
Time of Concentration:	5 min
Rainfall Intensity (i) @ Tc:	10.2 in/hr
Runoff Supply Rate (q) @ Tc:	9.75 in/hr
PEAK DISCHARGE:	9.8 cfs



HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Generated using methods provided by Pima County Regional Flood Control District

Client:		Prepared by:	Ann Moynihan
Project Name:	NE Corner Shannon and River	Date:	04/16/2019
Concentration Point:	Proposed Site	Job #	
Watershed Area:	3.5 Acres	Watershed Type	High Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	7	720	0.0097	0.018

Length of Watercourse (Lc):	720	feet	Mean Slope:	0.0097
Length to Cen. of Gravity (Lca):	200	feet	Weighted Basin Fac:	0.018
Veg. Cover Type(s):	Desert Brush		Veg. Cover Density:	20

RETURN PERIOD: 100-years NOAA Data Obtained: 2019-04-16 12:39:13 PM

Rainfall Depths:	NOAA Atlas 14 (90% UCL) @				Latitude: 32.3099	Longitude: -111.0271				
Duration:	5-min	10-min	15-min	30-min	1-hr	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in):	0.85	1.29	1.6	2.16	2.67	2.96	3.11	3.36	3.6	4.38

Soil Type	Percent	Curve # (CN)	Runoff Coef. (C)
B	100	82.6	0.421
C	-	-	-
D	-	-	-
Imp.	85	99	0.956

Weighted Runoff Coef. (Cw):	0.88
Time of Concentration:	5 min
Rainfall Intensity (i) @ Tc:	10.2 in/hr
Runoff Supply Rate (q) @ Tc:	8.93 in/hr
PEAK DISCHARGE:	31.5 cfs



HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Generated using methods provided by Pima County Regional Flood Control District

Client:		Prepared by:	Ann Moynihan
Project Name:	NE Corner Shannon and River	Date:	04/16/2019
Concentration Point:	Upstream CP	Job #	
Watershed Area:	2.2 Acres	Watershed Type	Undeveloped-Valley

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	6	1321	0.0045	0.03

Length of Watercourse (Lc):	1321	feet	Mean Slope:	0.0045
Length to Cen. of Gravity (Lca):	700	feet	Weighted Basin Fac:	0.03
Veg. Cover Type(s):	Desert Brush		Veg. Cover Density:	20

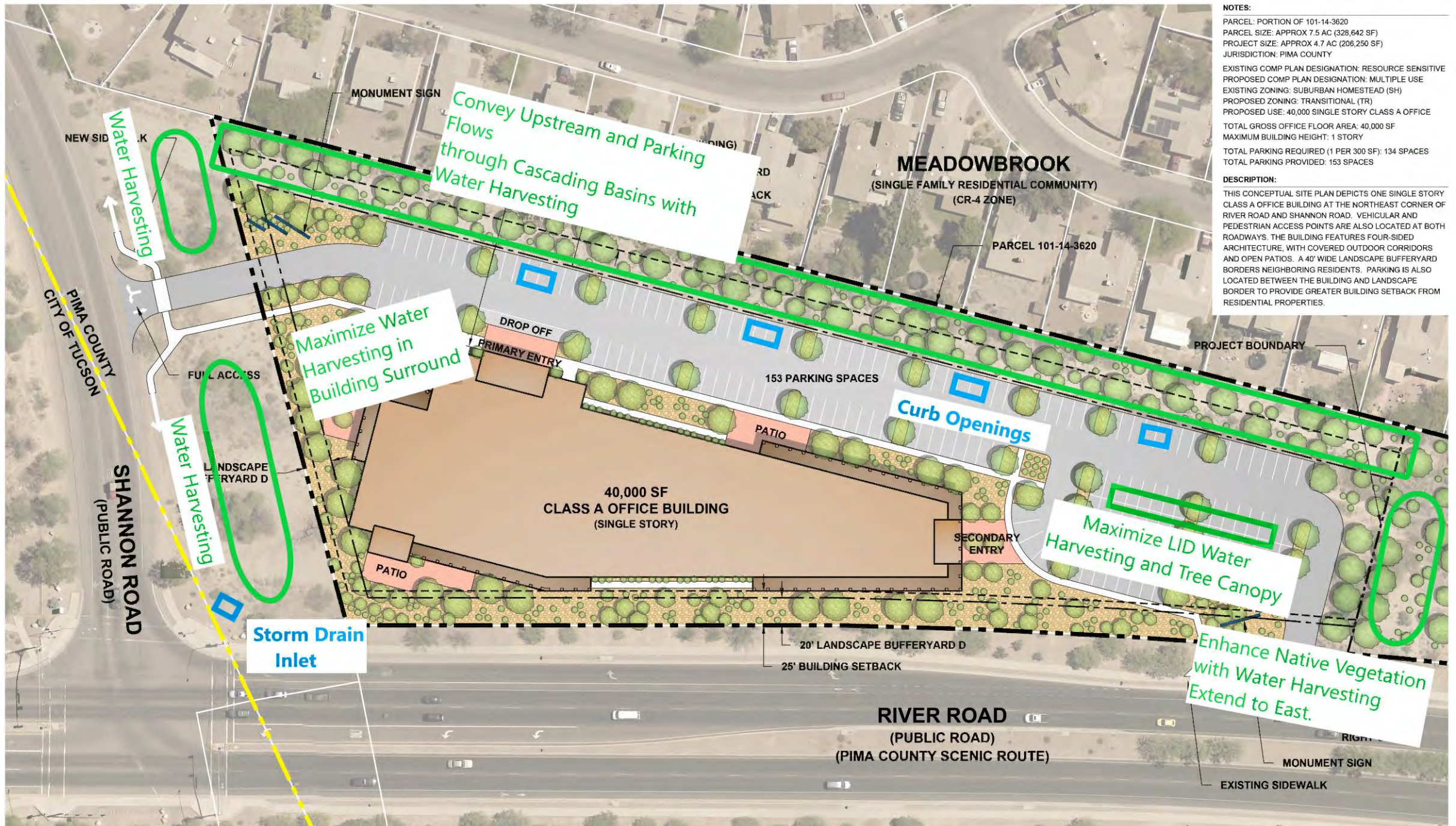
RETURN PERIOD: 100-years NOAA Data Obtained: 2019-04-16 12:39:13 PM

Rainfall Depths:	NOAA Atlas 14 (90% UCL) @				Latitude: 32.3099	Longitude: -111.0271				
Duration:	5-min	10-min	15-min	30-min	1-hr	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in):	0.85	1.29	1.6	2.16	2.67	2.96	3.11	3.36	3.6	4.38

Soil Type	Percent	Curve # (CN)	Runoff Coef. (C)
B	100	82.6	0.421
C	-	-	-
D	-	-	-
Imp.	10	99	0.956

Weighted Runoff Coef. (Cw):	0.47
Time of Concentration:	11.8 min
Rainfall Intensity (i) @ Tc:	7.13 in/hr
Runoff Supply Rate (q) @ Tc:	3.38 in/hr
PEAK DISCHARGE:	7.5 cfs

PRELIMINARY CONCEPTUAL SITE PLAN



RIVER AND SHANNON CLASS A OFFICE

Appendix D.

JACKSON JENKINS
DIRECTOR



PH: (520) 724-6500
FAX: (520) 724-9635

June 14, 2019

Mirela Hromatka
RWRD
201 N Stone Avenue, 3rd floor
Tucson, Arizona 85701

Sewerage Capacity Investigation No. 2019-126 Type I

**RE: Pima County - River Road / Shannon Road Office, Parcels 101143620, 101117360
Estimated Flow 4,600 gpd (ADWF).
P19WC00126**

Greetings:

The above referenced project is tributary to the Tres Rios Wastewater Reclamation Facility via the North Rillito Interceptor.

Capacity is currently available for a project size in the public sewer I-86-238, downstream from manhole 4729-00.

This letter is not a reservation or commitment of treatment or conveyance capacity for this project. It is not an approval of point and method of connection. It is an analysis of the system as of this date. Allocation of capacity is made by the Type III Capacity Response.

If further information is needed, please feel free to contact us at (520) 724-6642.

Reviewed by: Kurt Stemm, CEA Sr.



July 25, 2019

Mark Holden, AICP
Pima County Development Services
201 N. Stone Ave, 1st Floor
Tucson, AZ 85701-1207

**Re: ±8.16 Acres at NE Corner of River Road and Shannon Road (APN 101-14-3620)
P18CA00007 Pima Co. – W. River Road Plan Amendment
CAP19-04**

Dear Mr. Holden,

The subject property lies adjacent to service area of the Metropolitan Domestic Water Improvement District (District) certified to provide water and designated as having a 100-year assured water supply. This letter is to formally state our willingness to serve the property as an extension of our existing Metro – Main service area.

Any onsite or offsite requirements deemed necessary to provide the domestic and fire flow water supply will be determined at the time of improvement plan submittal or whenever application for water service is received, and will be the financial responsibility of the owner or those developing the property. Pipe sizing and system augmentation, if necessary, will be based on calculated demand for both domestic and fire flows as needed to adequately supply this area. The District will also require our legal boundary to be formally amended to include this property.

If an improvement plan has not been submitted within 2 years after the date of this letter, a reevaluation and reissuance of this will-serve letter will be necessary.

Please let me know if you have any questions or concerns at 575-8100.

Sincerely,

A handwritten signature in blue ink, appearing to read "Timothy Dinkel".

Timothy Dinkel, P.E.
Civil Engineer

Enclosure

c: Project File