

NORTHERN STAR COMMUNITY ACTIVITY CENTER PLANNED AREA DEVELOPMENT



CITY OF TUCSON

FEBRUARY 2014



Northern Star Community Activity Center Planned Area Development

Houghton Road and Golf Links Road
Tucson, Arizona

Submitted to:

City of Tucson
Planning & Development Services Department
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Part I Introduction	5
A. Overview.....	6
B. Rationale and Benefits for Use of a PAD.....	8
C. Conformance with the General Plan and City Land Use Plans	8
1. City of Tucson General Plan	9
2. Pantano East Area Plan.....	9
Part II Site Analysis.....	14
A. Existing On-Site Development.....	15
B. Existing Zoning and Land Uses	17
1. Existing Zoning.....	17
2. Land Uses	17
C. Public, Educational and Community Facilities	19
1. Public Facilities and Services.....	19
2. Schools.....	19
D. Existing Transportation and Circulation	21
1. Adjacent Roadways.....	21
2. Right-of-Way and Major Streets & Routes	21
3. Traffic Volumes	21
4. Intersections & Level of Service.....	22
5. Access Points.....	22
6. Alternate Modes of Transportation	22
E. Existing Hydrology	27
1. Off-Site Watersheds within One-Quarter mile	27
2. Off-Site Natural or Man-Made Features	27
3. On-Site Hydrology	27
F. Vegetation & Wildlife.....	31
1. Vegetative Communities	31
2. Wildlife.....	31
G. Off-Site Views	34
1. Views onto the Site.....	34
2. Views across the Site	34
H. Cultural Resources	37
1. Arizona State Museum Letter	37
2. Field Surveys.....	37
I. Existing Infrastructure	39
1. Water.....	39
2. Wastewater	39
Part III PAD District Proposal.....	43
A. PAD Overview	44
B. Planning Considerations.....	49
C. Permitted and Excluded Uses	49
1. Development Area 1 Permitted Uses	49
2. Development Area 1 Prohibited Uses	52



3.	Development Area 2 Permitted Uses	53
4.	Development Area 2 Prohibited Uses	56
5.	Development Area 3 Permitted Uses	56
6.	Development Area 3 Prohibited Uses	58
7.	Development Area 4 Permitted Uses	59
8.	Development Area 4 Prohibited Uses	61
9.	Development Area 5 Permitted Uses	62
10.	Development Area 5 Prohibited Uses	64
D.	Landscape Border/Drainage Open Space Permitted Uses	65
E.	Accessory Land Uses	65
F.	Excluded Land Uses	65
G.	Development Standards	66
1.	Site Development	66
H.	Gateway Overlay Zone	69
I.	Scenic Corridor Zone	69
1.	Preservation and Reestablishment of Vegetation	69
2.	Structure Height	71
3.	Viewshed Corridor	71
4.	Screening	71
J.	Landscape and Screening Program	71
1.	Streetscape	71
2.	Internal Landscape	71
3.	Landscape/Screening borders adjacent to residential uses	72
K.	Hydrology	75
1.	Response to Hydrologic Characteristics	75
2.	Encroachment	75
3.	Post-Development Water Discharge	75
4.	Engineering and Design Features	76
5.	Basin Management Policies	76
L.	Circulation Plan	78
1.	Vehicular Parking	78
2.	Sidewalks	78
3.	Proposed Circulation	78
4.	Traffic Volumes	80
5.	Proposed Level of Service	80
6.	Houghton Road Improvements	81
7.	Neighborhood Access	81
8.	Alternate Modes of Transportation	81
M.	Pedestrian Connections and Bike Routes	85
N.	Infrastructure Phasing	88
1.	City of Tucson/RTA Transportation Improvements	88
2.	Initial PAD improvements	88
3.	Mid-term PAD improvements	89
4.	Full Build-out PAD improvements	89
O.	Biological Resources	89
1.	Sonoran Desert	89



2.	Riparian Resources.....	90
P.	Cultural Resources	94
Q.	Conservation Standards	94
1.	Low Water Use Plants.....	94
2.	Irrigation	94
3.	Rainwater Harvesting.....	94
4.	Heat Island Mitigation.....	95
R.	Solid Waste & Recycling Material Disposal & Storage	95
S.	Wastewater.....	95
T.	Signage.....	96
U.	Northern Star Properties Master Association	96
V.	Design Review.....	96
W.	Design Standards	96
X.	Interpretations and Amendments.....	97
1.	Interpretation	97
2.	Amendments	97
	Definitions	99
	Bibliography	100
Appendix A: Conceptual Site Plan		101
Appendix B: UDC Code References for Use Specific Standards		102
Appendix C: Traffic Impact Analysis.....		109
List of Exhibits		
	Exhibit I.A: Location Map	7
	Exhibit I.C: Primary Trade Area Map	13
	Exhibit II.A: Existing Development	16
	Exhibit II.B: Zoning and Land Use	18
	Exhibit II.C: Community Facilities	20
	Exhibit II.D.1: Transportation and Circulation	24
	Exhibit II.D.2: Existing Rights-of-Way	25
	Exhibit II.D.3: Existing Access Points	26
	Exhibit II.E.1: Off-Site Watershed Map	29
	Exhibit II.E.2: On-Site Hydrology	30
	Exhibit II.F.1: Vegetative Communities	32
	Exhibit II.F.2: Arizona Game & Fish Letter.....	33
	Exhibit II.G.1: Photo Key Map.....	35
	Exhibit II.G.2: Site Photos	36
	Exhibit II.H.1: Arizona State Museum Letter	38
	Exhibit II.I.1: Tucson Water Letter.....	40
	Exhibit II.I.2: Sewer Map	41
	Exhibit II.I.3: PCRWRD Capacity Letter	42
	Exhibit III.A: Development Areas	48
	Exhibit III.D.1: Building Heights.....	67



Exhibit III.D.2: Building Setbacks	68
Exhibit III.F.2.a: Houghton Road Future Cross Section	70
Exhibit III.G: Landscape Border Plan	74
Exhibit III.H: Hydrology Concept	77
Exhibit III.I.1: Circulation Concept.....	83
Exhibit III.I.2 : Primary Access Lane Cross Section	84
Exhibit III.J: Bicycle and Pedestrian Connections	87
Exhibit III.L.1: Riparian Areas	91
Exhibit III.L.2: Robb Wash	92
Exhibit III.L.3: Eastview Wash.....	93

List of Tables

Table II.A: Building Inventory	15
Table II.B.1: Existing Zoning	17
Table II.B.2: Existing Land Uses	17
Table II.D.1: Traffic Volumes	21
Table II.D.2: Level of Service-Intersections	22
Table II.D.3: Level of Service-Streets	22
Table II.E.1: Existing Peak Discharges	28
Table III.D.1: Development Area Standards	66
Table III.H.1: Hydrologic Data for Developed Condition Watersheds	75
Table III.H.2: Preliminary Detention/Retention requirements.....	76
Table III.I.1: Traffic Volumes-Projected 2030 Daily Volumes.....	80
Table III.I.2: Proposed Use-Trip Generation	80
Table III.I.3: Future Level of Service-Intersections	80
Table III.I.4: Future Level of Service-Streets	81



NORTHERN STAR COMMUNITY ACTIVITY CENTER PLANNED AREA DEVELOPMENT



I. INTRODUCTION

Introduction

A. Overview

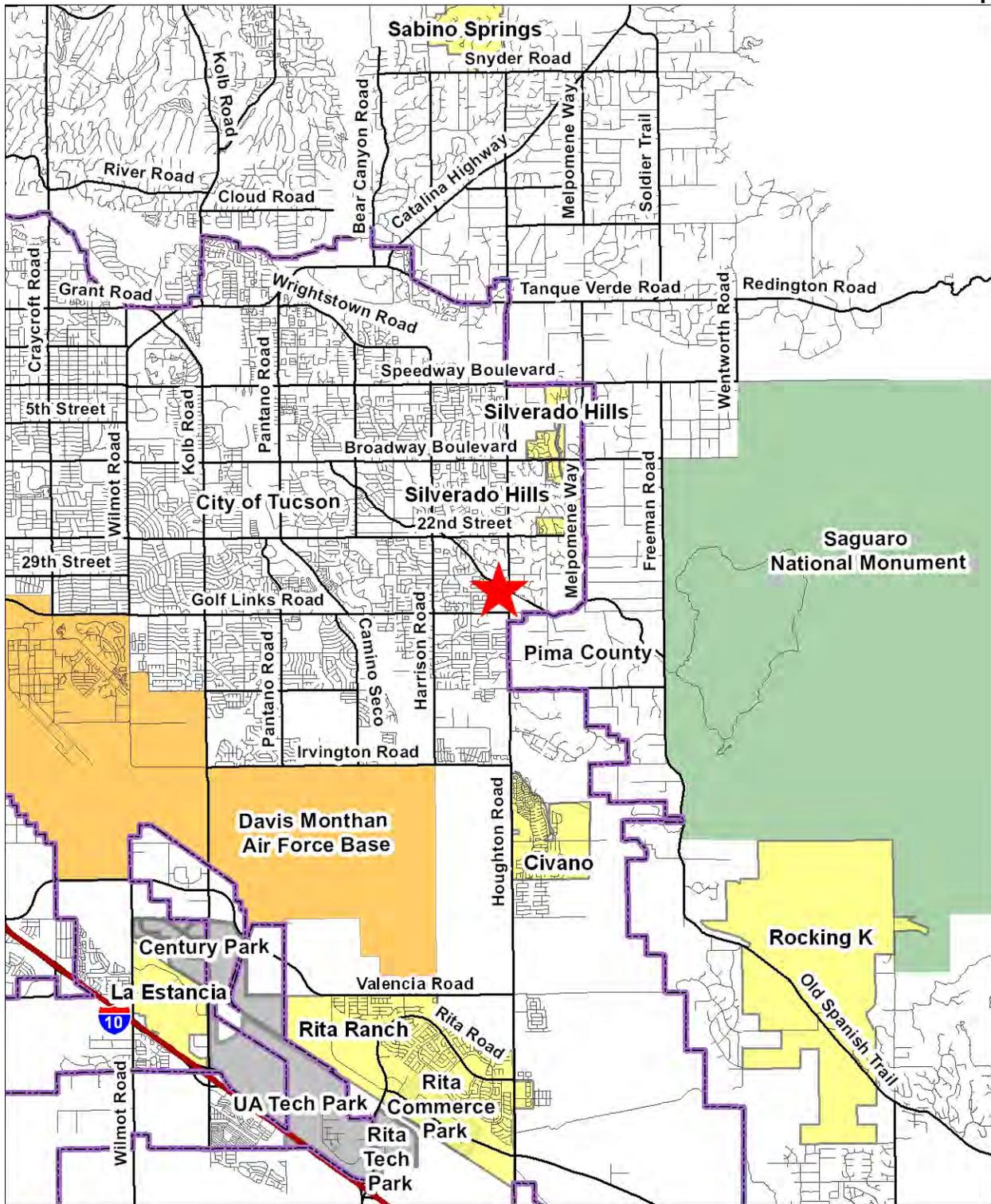
The purpose of the document is to identify factors directly or indirectly influencing the creation of a planned area development. The PAD document is organized into three sections: Introduction, Site Analysis and the PAD District Proposal.

The Northern Star Planned Area Development (PAD) is an infill property located along three major arterial roadways: Houghton Road, a scenic route, Old Spanish Trail, a scenic route, and Golf Links Road, a gateway route, on the eastern edge of the City of Tucson approximately 2.5 miles west from the Saguaro National Monument East (see *Exhibit I: Location Map*, page 7). The site is approximately 60 acres across six parcels of land (parcel identification numbers: 136-08-029A, 136-08-028A, 136-08-0310, 136-08-032A, 136-08-0330, and 136-08-034A). The subject property is currently zoned SR (Suburban Ranch) surrounded by low- to medium-density single-family residential subdivisions, churches and minimal commercial services.

Over the past several years, Eastern Tucson has flourished with development. New residential subdivisions and large industrial parks (along Interstate 10) constitute the majority of development in this evolving edge growth area of the City of Tucson. The Houghton Road Corridor located along the eastern boundary of the site was designated by the Pima Association of Governments (PAG) as State Route 983 and has a long-term regional freeway/expressway plan. This regional freeway, known as the Houghton Road Corridor Study, is planned for improvements funded by the Regional Transportation Authority (RTA) for a regional multipath corridor with a total of 6 travel lanes. The Houghton Road Corridor Study as well as the Major Streets and Routes Plan have allowed for future development along Houghton Road by increasing the capacities of major roadways.



Exhibit I.A: Location Map



LEGEND

-  PAD Site
-  Township, Range & Section
-  Jurisdictional Limits
-  Industrial Parks
-  Master Planned Communities
-  Davis Monthan Air Force Base
-  Saguaro National Monument

Notes:

Project Site is located at:
Township 14S, Range 15E, and Section 23
PAD Acreage: Approx. 60 AC.
Parcel ID #s:
136-08-029A, 136-08-028A, 136-08-0310,
136-08-032A, 136-08-0330 & 13608034A



FILE NAME: NSP-01_location.mxd
SOURCE: Pima County DOT GIS, 2010



B. Rationale and Benefits for Use of a PAD

The City of Tucson's Planned Area Development Zone designation allows owners of large tracts of land to comprehensively develop the land with mixes of land uses and development standards that are not available through the traditional Unified Development Code (UDC) zoning classifications. The City's current UDC is structured for a more traditional separation of residential, commercial and industrial development land uses.

The Northern Star Planned Area Development will allow for the comprehensive planning of a mixed use development center that encourages residents to live, work and play on Tucson's East Side. This will benefit the community by enhancing residents' quality of life and creating sustainable commercial and residential choices within one development.

The Northern Star PAD provides guidance for the comprehensive and integrated planning of a mixed use development on the site. The following factors are important to the success of this development:

- Develop a mixed use center that creates a more livable, pedestrian-friendly community;
- Cluster work places and shopping developments with convenient access to residential communities to contribute to the quality of life and employment opportunities for the local workforce;
- Take advantage of flexible phasing plans to accommodate future market demands;
- Utilize existing infrastructure in proximity to the development of Northern Star property; and
- Advance the economic sustainability of the area through the creation of additional tax revenues and employment.

This PAD shall serve as the primary mechanism for controlling the development of Northern Star property. In accordance with Section 3.5.5 of the Unified Development Code (UDC), the PAD standards herein supersede the standards of the UDC. Where specific references to UDC standards are provided, those reference the UDC standards in existence on the date this PAD is approved by the Mayor and Council.

C. Conformance with the General Plan and City Land Use Plans

The PAD District is consistent with policy recommendations in the City's General Plan and the Pantano East Area Plan. Both stress the compatibility between uses, promote commercial development along arterials corridors and protection of established neighborhoods.



1. City of Tucson General Plan

a. Evolving Edge Growth Area

The PAD is located within the Evolving Edge of the General Plan. The Evolving Edge Growth Area supports a mix of housing types and opportunities throughout the area to meet the diverse needs of the residents. The goal of the Northern Star PAD is to promote the major intersection of Golf Links Road and Houghton Road as a commercial corner in an area where the prevailing uses are residential and there is a lack of nearby local commercial services.

b. Land Use

The General Plan encourages commercial businesses to meet the needs of residents for goods and services in an efficient manner. The PAD allows for a sustainable mixed use development center within or near suburban residential neighborhoods for day to day living needs. The PAD development regulations and design standards protect the established residential neighborhoods by orienting new development to protect the privacy of surrounding residential land uses and ensuring compatibility with existing Southwestern architectural styles and building materials of adjacent land uses.

c. Access and Circulation

In accordance with the Livable Tucson Goals, the alternatives to automobile transportation include improvement of public transportation, improvement of roadways (lighting, landscaping, sidewalks and bus stops), and promotion of alternatives to the automobile. The proposed development will improve access to commercial services and retail along a major corridor.

d. Community Character and Design

The Community Character and Design element supports infill projects that reflect sensitivity to the site and neighborhood conditions and adhere to site and architectural design guidelines. The PAD supports the policies of the Community Character element of the General Plan and the Pantano Area Plan to ensure new development is compatible with the commercial and single-family residential design character of the surrounding neighborhoods.

e. Economic Development

The Economic Development element promotes continued economic viability of existing neighborhoods and commercial districts by promoting safety and maintenance programs and encouraging appropriate new development. The PAD promotes this major intersection as a local commercial district boosting the local economy, City tax revenues, and the local job market.

2. Pantano East Area Plan

The Pantano East Area Plan (PEAP) has experienced rapid development in the past several years but still retains a substantial amount of vacant land that covers over 1/3 of the plan area. The overall goal of the plan is to address the existing conditions of the area and guide future development to ensure the compatibility of land uses,



the necessity and timing of infrastructure improvement and capital expenditures and support efficient mass transit. Much of the commercially zoned land is vacant and located along arterial streets. The subject property is located along two major intersections of Houghton Road and Old Spanish Trail, and Houghton and Golf Links Roads but does not currently have zoning to accommodate higher density development. The PAD will address land use compatibility, circulation, buffering and integration with these highly trafficked commercial intersections. More specifically, the Northern Star PAD plans to comply with all the policies of the PEAP, including:

- Preserve the integrity of established neighborhoods adjacent to the site.
- Locate regional, community and neighborhood level commercial uses at the intersection of major streets.
- Promote residential infill of vacant land where adequate provisions of streets and utilities are available.
- Ensure the compatibility of new development with existing land uses.
- Allow for appropriate design element buffers between adjacent non-residential and residential uses.
- Promote a comprehensive mix of land uses discouraging redundant strip-commercial development.
- Require pedestrian access and bikeways in and around commercial centers.
- Locate residential development outside the 100-year floodplain and erosion setback areas unless mitigated in accordance with the requirements of the Unified Development Code.
- Comply with the City of Tucson Floodplain Ordinance.

a. Commercial Uses

The PEAP states that all rezonings to commercial uses should be based on all of the following:

- the site is located on an arterial street;
- the demonstrated need for commercial zoned land in the area;
- the proposed use is integrated with other adjacent commercial uses; and
- the adjacent uses are adequately buffered.

The site is located on three sides by arterial streets: Houghton Road, Golf Links Road and Old Spanish Trail. Several important transportation projects are in process, which will improve critical transportation corridors that will be necessary to handle growth. Houghton Road is planned for improvements to a 6-lane roadway. Also, the Golf Links/Houghton Road intersection and the Houghton/Old Spanish Trail intersection are planned for improvements.

In accordance with a study performed by Commercial Retail Advisors, LLC, the primary trade area for the subject site is located within the Southeast Tucson submarket as shown on Exhibit I.C: Primary Trade Area Map. Currently in the primary trade area there are no memberships/wholesale clubs, no department stores, no movie theaters, only 1 soft goods junior anchor (Ross), only 3 discount stores (1 Target, 1 Super Wal-Mart planned and 1 traditional Wal-Mart planned).



Several grocery chains are not represented in the primary trade area. The same kind of statements can be made for restaurants and smaller retailers¹.

The Southeast Submarket has only 1,043,204 square feet of retail space with a 5.5% vacancy rate², while the City of Tucson has about 51,238,586 square feet of retail space with a vacancy rate of only 8.5%. The Southeast Tucson submarket has the requisite elements to make it one of the most important commercial submarkets for Tucson for the next several development cycles for the following reasons:

- Some of Tucson's largest employers are located within this submarket, including but not limited to, Raytheon, IBM and Target Distribution Center and several new companies locating here within the past few years.
- The primary trade area has a 2010 population of 134,050 residents with an average household income of \$66,919. The primary trade area has 20 master planned communities with 38,103 acres and 77,756 homes and lots.
- The Southland area is projected to reach a population of 250,000 residents by the year 2030, an increase of 327.7% from 2004³. This is an annual growth rate of 13.1% compared to 2.8% for the City and 2.4% of the County.
- The City of Tucson has been annexing large tracks of land in this area and recognizes the importance of this area in Tucson's future growth and development.
- The State Land Department has 9,000 acres in this region, which is expected to be placed on the market and sold to private developers in the next few years.
- The Tucson International Airport is located nearby and Interstate 10 bisects this submarket.

Shoppers coming into Tucson from the large, underserved areas to the east and south of Houghton and Golf Links Roads will likely travel through the Houghton and Golf Links intersection to do their shopping for goods and services.

This proposed PAD along with adjacent existing and future commercial developments will attract additional new commercial users to this major intersection(s). The following uses (existing and proposed) are located adjacent the boundaries of the PAD:

- Southeast corner of Golf Links and Houghton -an existing CVS store and a Super Walmart is under construction.

¹ Commercial Retail Advisors marketing brochure 3.1.12.

² Commercial Retail Advisors marketing brochure 3.1.12. Source ESRI, CCIM Institute Site To Do Business 2011, U.S. Census Bureau.

³ Growth and Development in Southeast Tucson, Department of Urban Planning & Design, City of Tucson, August 2004, Source Pima Association of Governments (PAG).

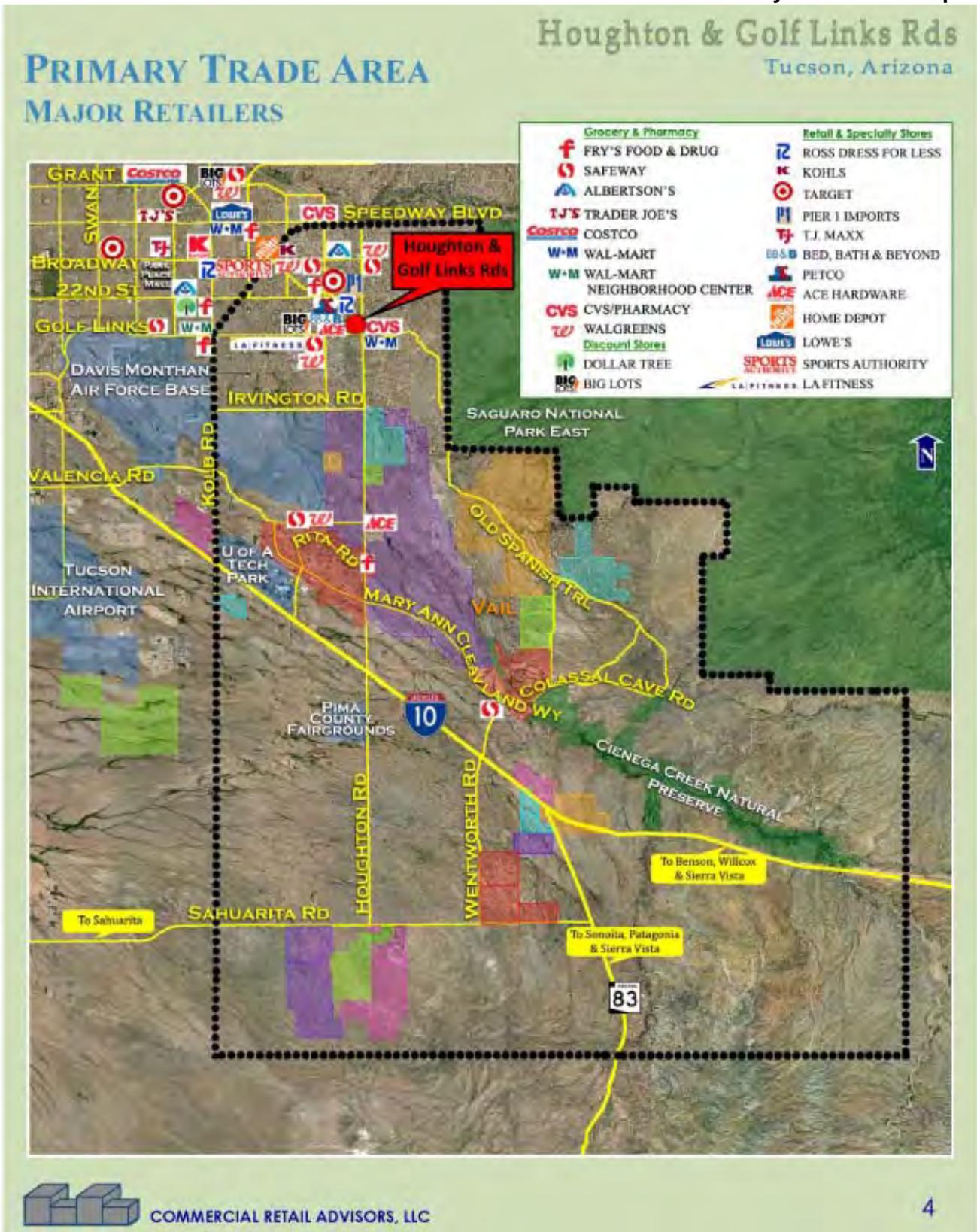


- East Houghton Road – this property was recently rezoned and ordinance (C9-08-10, Ordinance # 10774) and developed as under C-2 zoning for City Water Department construction service use
- Southwest corner of Golf Links and Houghton- this _ acre site was rezoned and ordinance (C9-06-03, Ordinance # 10626). A QuikTrip convenience store and gas station was built on a portion of the property and remainder of the property remains undeveloped. A time extension was recently approved to extend the C-1 zoning for a 5-year period (Ordinance 11018). The Preliminary Development plan proposal allows for administrative and professional offices, financial services, food service, personal service, food and beverage sales and general merchandise.

In summary, the development and design standards of this document provide suitable setbacks and landscape borders to the existing neighborhoods. Meetings with neighborhood input have defined these borders and have been outlined in Section III to ensure privacy for the surrounding neighborhoods.



Exhibit I.C: Primary Trade Area Map



NORTHERN STAR COMMUNITY ACTIVITY CENTER PLANNED AREA DEVELOPMENT



II. SITE ANALYSIS

A. Existing On-Site Development

The Northern Star PAD includes six parcels of land (totaling 60 acres) consisting of low density residential and storage uses. Among these parcels, one residential structure exists within parcel 136-08-029A (Building A); one residential structure exists within parcel 136-08-028A (Building B), one storage facility exists within parcel 136-08-0310 (Building C), and one residential structure exists within parcel 136-080032A (Building D). The existing conditions of the project site, with building labels, are depicted in *Exhibit II.A*, page 16 and described in *Table II.A*, below.

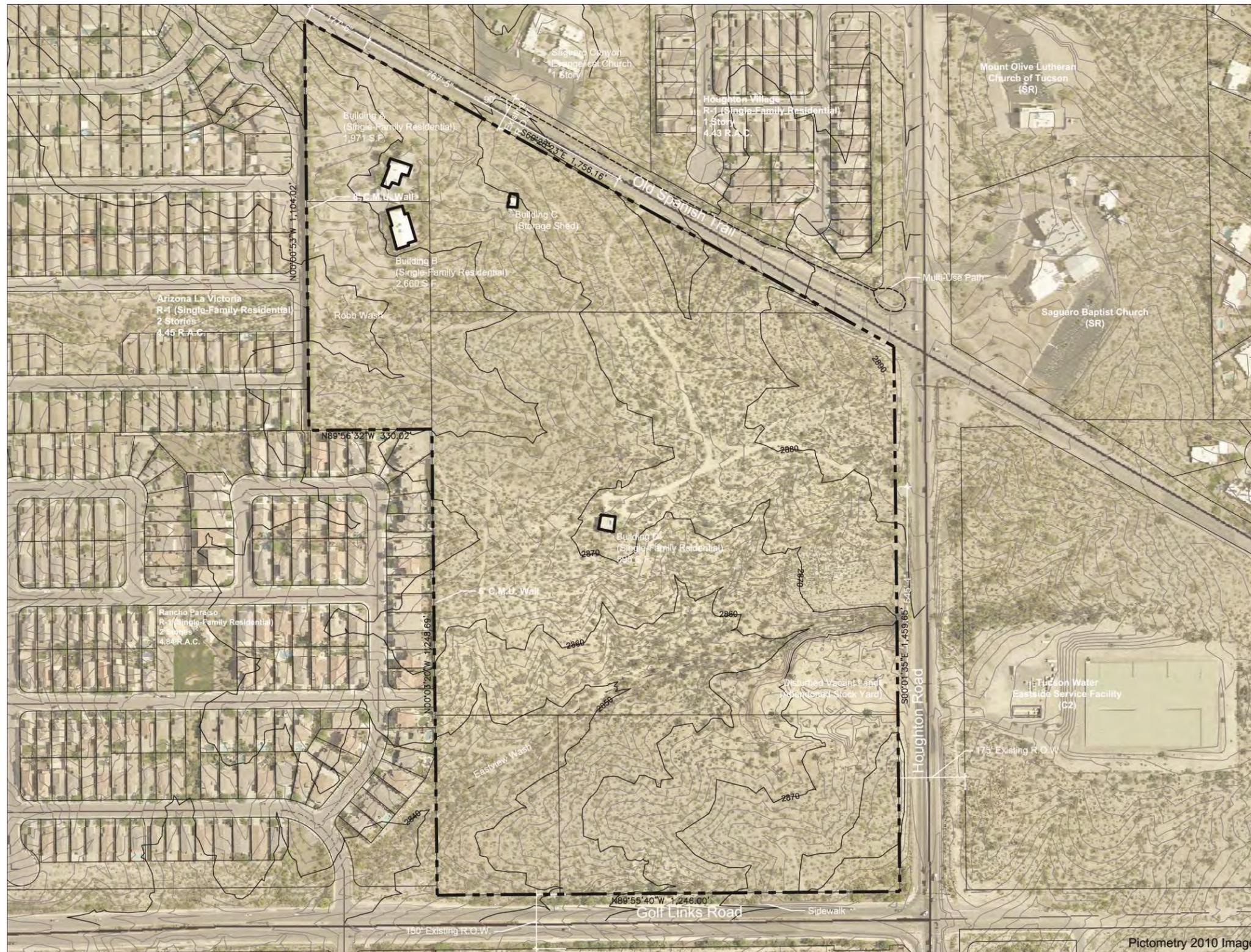
A web of unpaved roads connects each of the built structures and provides access to and from Old Spanish Trail and Houghton Road. There are two access points onto Old Spanish Trail and two access points onto Houghton Road. One of the access points onto Houghton consists of a Goodwill drop-off facility (abandoned stockyard).

Table II.A: Building Inventory

Existing Building	Current Square Footage	Building Height (feet)	Building Setback from Closest Existing Property Line (feet)
Building A Single Family Residential 10080 East Old Spanish Trail	1,971	13'6"	180' (perpendicular) from Old Spanish Trail
Building B Single Family Residential 10090 East Old Spanish Trail	2,660	13'6"	230' (perpendicular) from western property line
Building C Storage Shed	745	9'6"	160' (perpendicular) from Old Spanish Trail
Building D Single Family Residential 2200 South Houghton Road	595	11'	450' (perpendicular) from western property line
Total On-Site	5,971		



Exhibit II.A: Existing Development



Notes

Property Acreage: 60 Acres
 Existing Zoning: SR (Suburban Ranch)
 Proposed Zoning: PAD
 Existing Square Footage:
 Building A: 1,971
 Building B: 2,660
 Building C: Storage 745
 Building D: 595

Legend

- Property Boundary
- Existing Structures
- Parcels
- 2' Topographic Contours
- Multi-use Path



FILE NAME: NSP-01 EXHIBITS_DOC E.DWG/Existing cond



B. Existing Zoning and Land Uses

The Northern Star subject property is mainly surrounded by a mixture of low- to medium-density residential uses, church sites and a Tucson Water Eastside Service Facility, as shown in *Exhibit II.A: Existing Development*, page 16. The Arizona La Victoria and Rancho Paraiso subdivisions border the western property boundary and Houghton Village subdivision is located across Old Spanish Trail north of the subject property. The closest existing commercial use is QuikTrip located at the southwestern corner of Golf Link and Houghton Road and a CVS Pharmacy, located on the southeastern corner of Houghton Road and Golf Links Road.

1. Existing Zoning

Table II.B.1: Existing Zoning

Project Site	SR (Suburban Ranch)
North	SR (Suburban Ranch), RX-2 (Suburban Low Density Residential), and R-1 (Single-Family Residential)
South	C-1 (Rezoning Case # C9-06-03, Ordinance 10626), C-2 (Commercial)
East	C-2 (Commercial, Rezoning Case # C9-08-10, Ordinance 10774)
West	R-1 (Single-Family Residential)

(See *Exhibit II.B: Zoning and Land Use*, page 18.)

2. Land Uses

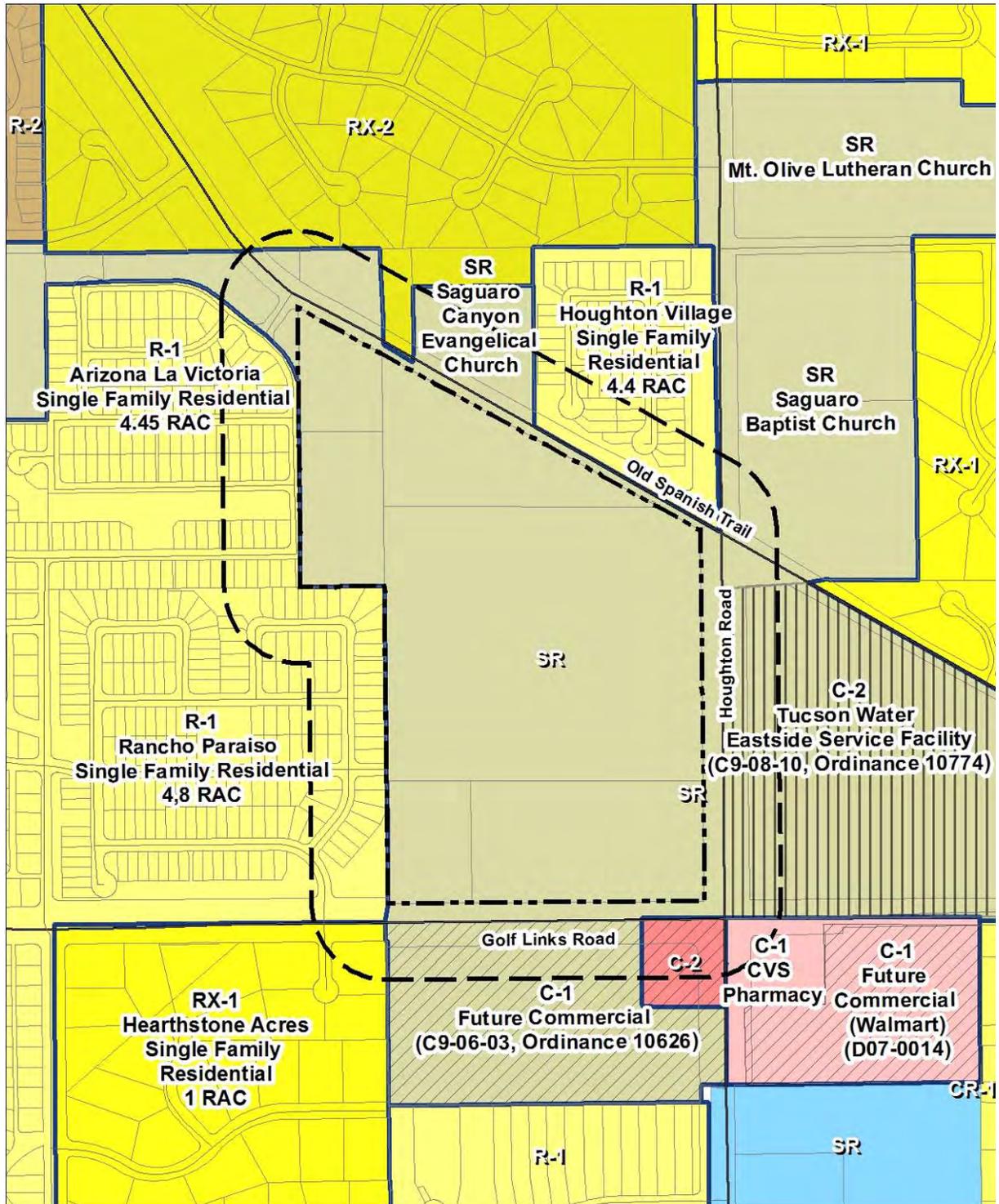
Table II.B.2: Existing Land Uses

Project Site	Single-Family Residential, Storage, Vacant Land
North	Single-Family Residential, Religious Uses
South	QuikTrip Gas Station & Convenience Store, Vacant Land (proposed for commercial uses including but not limited to: administrative & professional offices, financial services, food service, personal service, food & beverage sales and general merchandise), Retail Uses
East	Tucson Water Eastside Service Facility (facility/warehouse/office), Religious Uses
West	Single-Family Residential

(See *Exhibit II.B: Zoning and Land Use*, page 18.)



Exhibit II.B: Zoning and Land Use



LEGEND PAD Boundary 300 Foot Radius Recently Approved Rezoning/Development Plans	City of Tucson Zoning R-1 R-2 C-1 RX-1 RX-2		Pima County Zoning SR SR	
	C-2 C-1 C-1 C-1 C-1		C-2 C-1 C-1 C-1	
	C-1 C-1 C-1 C-1		C-2 C-1 C-1 C-1	

NORTH

FILE NAME: NSP-01_zoning.mxd
SOURCE: Pima County DOT GIS, 2012



C. Public, Educational and Community Facilities

1. Public Facilities and Services

a. Parks

As shown within *Exhibit II.C* (page 20), Case Park is located approximately one mile to the north of the Northern Star PAD.

b. Libraries

The Miller-Golf Links Pima County Public Library is located approximately two-thirds of a mile to the southwest of the subject property.

c. Fire Stations

The nearest fire station is located at 250 South Harrison Road, approximately 1 1/3 mile northwest of the project site, above Case Park.

d. Police Stations

There is one police station located within the vicinity of the PAD. The City of Tucson Rincon Substation is located at 9670 East Golf Links Road, approximately two-thirds of a mile southwest of the project site.

e. Hospitals

The nearest hospital is St Joseph's Hospital, located at 350 North Wilmot Road, approximately five and a half miles northwest of the PAD.

2. Schools

The Northern Star PAD is located within the Tucson Unified School District. As indicated in *Exhibit II.C: Community Facilities* (page 20), two public schools are situated within one mile of the project site: Dunham Elementary School and Secrist Middle School. One public school is located just beyond a one-mile radius of the PAD District: Soleng Tom Elementary School. In addition to the public schools in the area, the Academy of Tucson High School is located within a mile of the project site.



Exhibit II.C: Community Facilities



LEGEND



D. Existing Transportation and Circulation

1. Adjacent Roadways

As shown on *Exhibit II.D.1* on page 24, the PAD District is bordered by three major roadways: Houghton Road on the east, Old Spanish Trail on the north, and Golf Links Road on the south. Houghton Road is currently a 2-lane uncurbed roadway with a center two-way left turn lane, with a posted speed limit of 45 mph. Old Spanish Trail is a 2-lane rural roadway with paved shoulders in the vicinity of the PAD site and a multi-use path on the north side of the road. The posted speed limit is 40 mph daytime and 35 mph night. Golf Links Road is a 4-lane median-divided roadway with curbs, multi-use lane and sidewalks on both sides of the road. The posted speed limit is 40 mph. All of the above mentioned roadways contain a bicycle route directly adjacent to the PAD District with a striped shoulder.

2. Right-of-Way and Major Streets & Routes

Houghton Road currently has a 175 foot right-of-way, with a 200-foot future right-of-way. Houghton Road is classified as an Arterial Street and Scenic Route in the City of Tucson Major Streets and Routes Plan (2007). The existing rights-of-way are shown on *Exhibit II.D.2* on page 25.

Old Spanish Trail currently comprises a 90-foot right of way, with a future right-of-way of 100 feet. Old Spanish Trail is classified as an Arterial Street and Scenic Route in the City of Tucson Major Streets and Routes Plan (2007). The MS&RP right-of-way width for Old Spanish Trail at the Houghton Road intersection is 130-feet.

Golf Links Road currently comprises a 175-foot right of way, with a future right-of-way of 200 feet. Golf Links Road is classified as an Arterial Street and Gateway Route in the City of Tucson Major Streets and Routes Plan (2007).

3. Traffic Volumes

Average Daily Traffic (ADT) volumes were derived from the Traffic Engineering Report, Houghton Road, 22nd Street to Valencia Road, by Psomas, July 2008 as shown on Table II.D.1.

Table II.D.1: Traffic Volumes

Road	Segment	ADT
Houghton Road	Old Spanish Trail-Golf Links Road	20,836
Old Spanish Trail	Harrison Road-Houghton Road	9,324
Golf Links Road	Harrison Road-Houghton Road	13,595



4. Intersections & Level of Service

Major intersections affecting the Northern Star Planned Area Development site are at Old Spanish Trail/Houghton Road and Houghton Road/Golf Links Road. Both intersections are signalized. The existing condition Level of Service for the intersections from the Traffic Engineering Report, Houghton Road, 22nd Street to Valencia Road, by Psomas, July 2008 is shown on Table II.D.2. The individual turning movement LOS for the intersections are shown on *Exhibit II.D.2* (page 25)

Table II.D.2: Level of Service-Intersections

Intersection	Peak	Level of Service
Old Spanish Trail/Houghton Road	AM	C
Old Spanish Trail/Houghton Road	PM	C
Golf Links Road/Houghton Road	AM	D
Golf Links Road/Houghton Road	PM	C

The Level of Service (LOS) for the roadways was derived from the Traffic Engineering Report, Houghton Road, 22nd Street to Valencia Road, by Psomas, July 2008 as shown on Table II.D.3, and shown on Exhibit II.D.2 (page 25).

Table II.D.3: Level of Service-Streets

Roadway	Segment	# Lanes	ADT	LOS
Houghton Rd	Old Spanish Trail-Golf Links	2	20,836	F
Old Spanish Trail	West of Houghton Rd	2	9,324	C
Old Spanish Trail	East of Houghton Rd	2	5,187	C
Golf Links Rd	West of Houghton Rd	4	13,595	B

5. Access Points

There are five vehicular access points into the site as shown on *Exhibit II.D.3* (page 26). Two entrances enable vehicles to access the on-site single-family residences from Old Spanish Trail. Another Old Spanish Trail vehicle entry point accesses the interior of the site. One of the Houghton Road entrances allows vehicles to access the interior of the site. The remaining Houghton Road entrance allows vehicles to access a large patch of disturbed vacant land (remnants of material stockpile) presently being used as a Goodwill drop-off facility from Houghton Road.

6. Alternate Modes of Transportation

Sun Tran Route #7 provides service on Harrison Road. Golf Links Road and 22nd Street also have Sun Tran Bus Service as shown on Exhibit II.D.1 on page 24. Route 7 on 22nd Street and Route 17 on Golf Links Road operate on 30-minute cycles on weekdays and 1-hour cycles on weekends. Route 101X runs an Express Route on Golf Links Road with one bus in the morning and one bus in the afternoon on weekdays. Hours of operation range from 6:00 am to 11:25 pm weekdays and 7:00 am to 8:00 pm on weekends.



The multi-use path on the north side of Old Spanish Trail varies in width and is part of the Dan Yersavich Memorial Bikeway that extends along Old Spanish Trail between Broadway and Saguaro National Park East, as shown in the Tucson Metro Bike Map.



Exhibit II.D.1: Transportation and Circulation

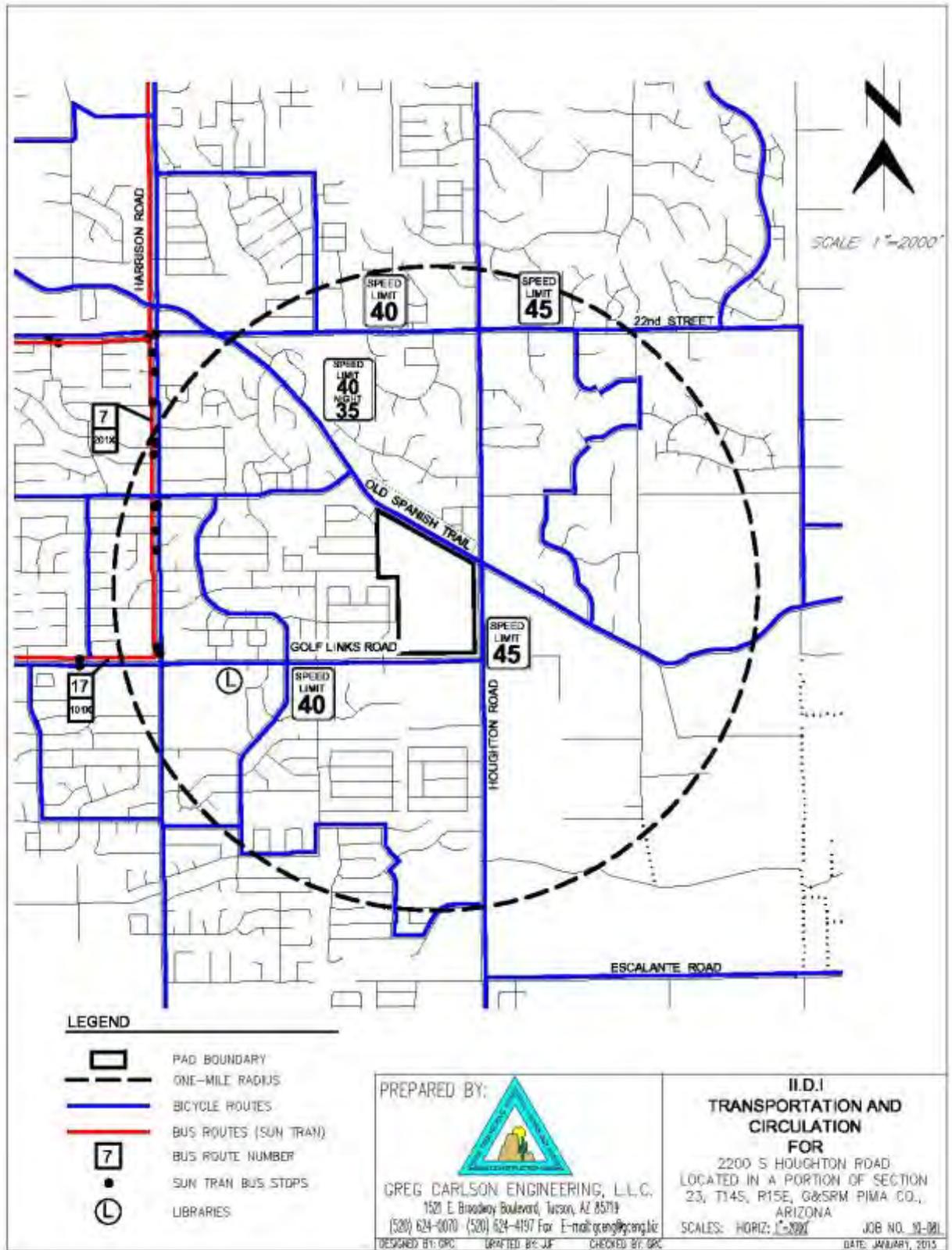


Exhibit II.D.2: Existing Rights-of-Way

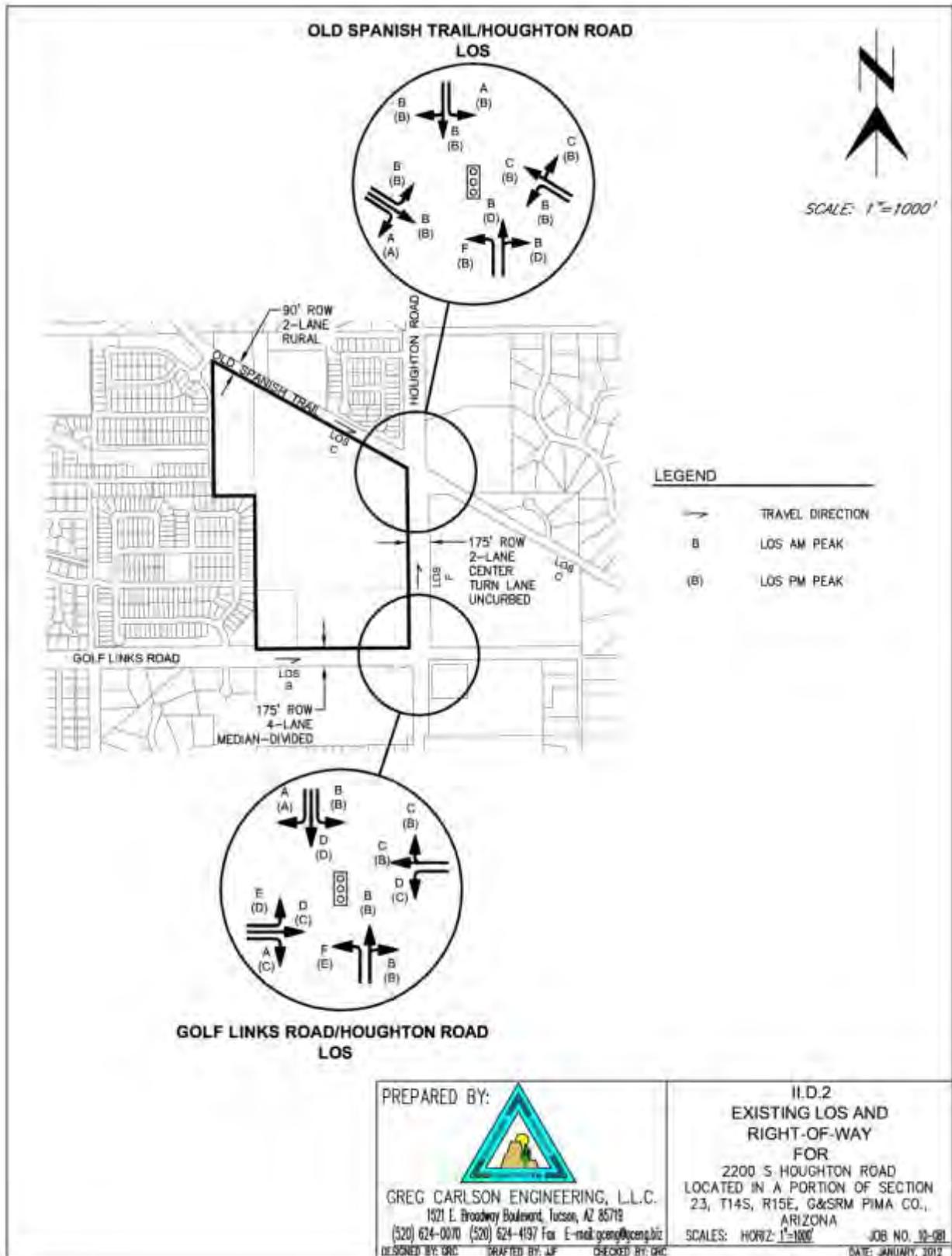
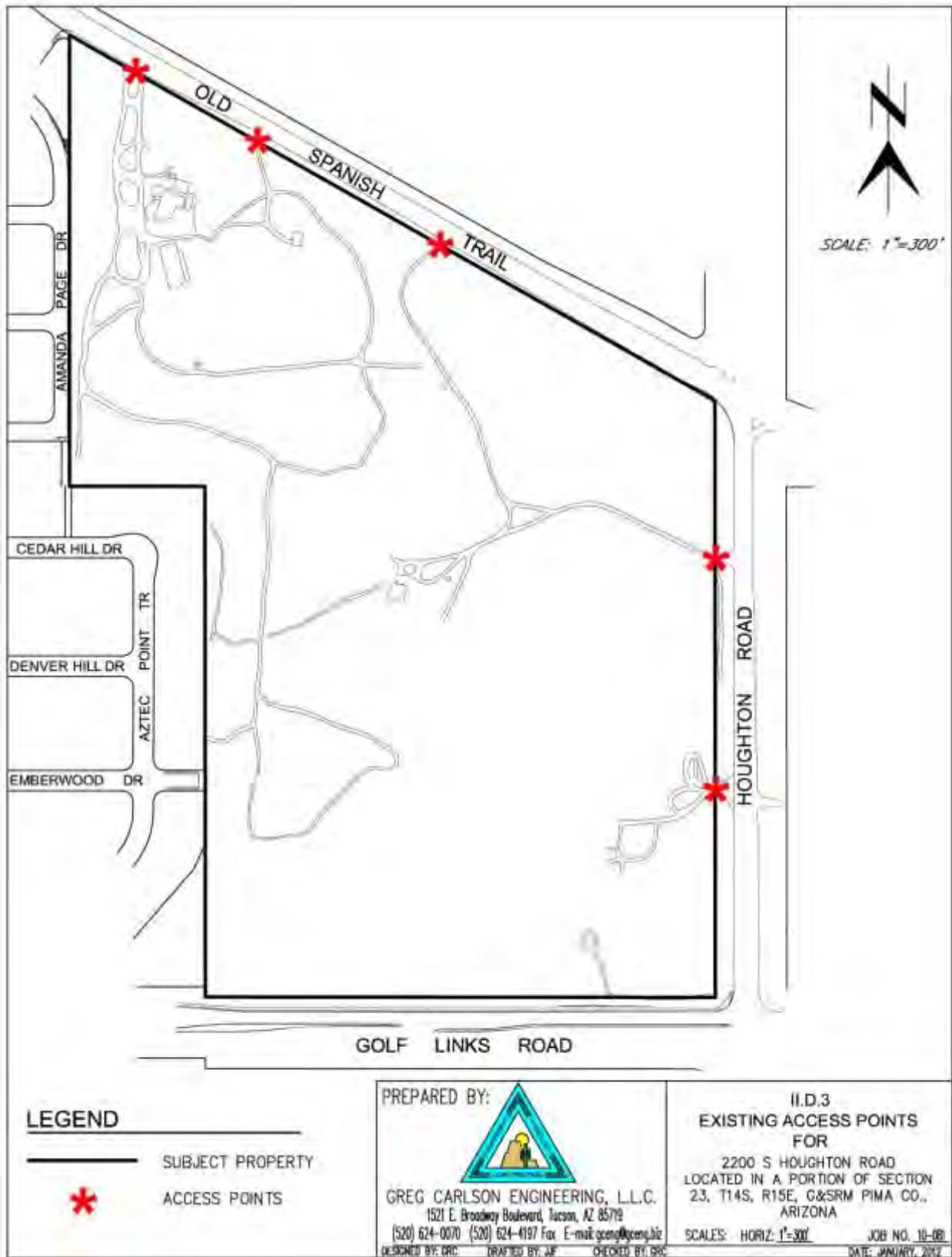


Exhibit II.D.3: Existing Access Points



E. Existing Hydrology

1. Off-Site Watersheds within One-Quarter mile

The Northern Star Planned Area Development is located within the upper reaches of the Robb Wash, Rolling Hills Wash, and Eastview Wash watersheds, which are all non-designated washes and labeled as MW, UC & TW respectively on the Tucson Stormwater Management System (TSMS) “Balanced and Critical Basins Map”. Exhibit II.E.1 (page 29) shows the location of the washes, as well as, the City of Tucson classified Flood Hazard zone for the washes.

The Robb Wash is classified as a WASH Ordinance watercourse on-site and downstream of the PAD boundaries as shown on Exhibit II E.1. on page 29.

The upper reach of the Eastview Wash, which originates east of the site, on the east side of Houghton Road, discharges under Houghton Road and onto the property through a 2 barrel-30 inch CMP culvert with mitered end sections. The Q100 discharge onto the property from the culvert is 95 cfs. The Q100 discharge for the Eastview Wash exceeds 100 cfs as it progressed downstream on the PAD site.

The Hidden Hills Wash (MR) watershed is located northeast of the site on the opposite side of Old Spanish Trail, with a small tributary originating on-site. The Hidden Hills Wash is also a non-designated basin according to TSMS.

2. Off-Site Natural or Man-Made Features

As mentioned in Section II.E.1. a 2 barrel-30-inch CMP drainage culvert under Houghton Road allows a Q_{100} discharge of 95 cfs from the City of Tucson property onto the site as shown on Exhibit II.E.1 on page 29. The existing 2 barrel-30-inch culvert is planned to be replaced with a culvert of similar size and capacity when Houghton Road is widened and improved.

3. On-Site Hydrology

The Northern Star Planned Area Development site contains eight (8) watersheds under existing conditions. The watershed delineations are shown on Exhibit II.E.2 (page 30).

a. 100-Year Floodplains:

Portions of the 100-year floodplain for the upper reach of the Eastview Wash are located within the PAD boundaries as shown on Exhibit II.E.2 (page 30)

b. Sheet Flooding Areas:

No sheet flooding zones have been identified on the Northern Star Planned Area Development.

c. Federally Mapped Floodways and Floodplains:

No federally mapped floodways or floodplains are located on the Northern Star Planned Area Development.



d. Peak Discharges

The hydrologic data for the eight on-site watersheds are provided on Table II.E.1.

Table II.E.1: Existing Peak Discharges

Watershed	Area (ac)	Soil	L (ft)	H (ft)	Q ₁₀₀ (cfs)
1	3.8	100% C	600	22	26
2	6.0	100% C	800	26	39
3	7.7	100% C	850	30	51
4	10.0	100% C	1,050	44	57
5	2.7	100% C	650	18	18
6	25.2	100% C	1,320	30	146
7	3.3	100% C	1,050	38	21
8	0.8	100% C	100	7	5

e. Existing Drainage Infrastructure

The existing drainage infrastructure consists of the culverts in Houghton Road and Golf Links Road for the upper reach of the East View Wash. No other drainage infrastructure exists on the site.

f. Perennial Surface Water

There is no perennial surface water on the PAD site.

g. Erosion Hazard Setbacks

An erosion hazard setback will be required for the upper reach of the Eastview Wash, which is the only identifiable wash on the site. The location of the erosion hazard setback shall be determined in the Drainage Reports that will be submitted with the proposed developments.



Exhibit II.E.1: Off-Site Watershed Map

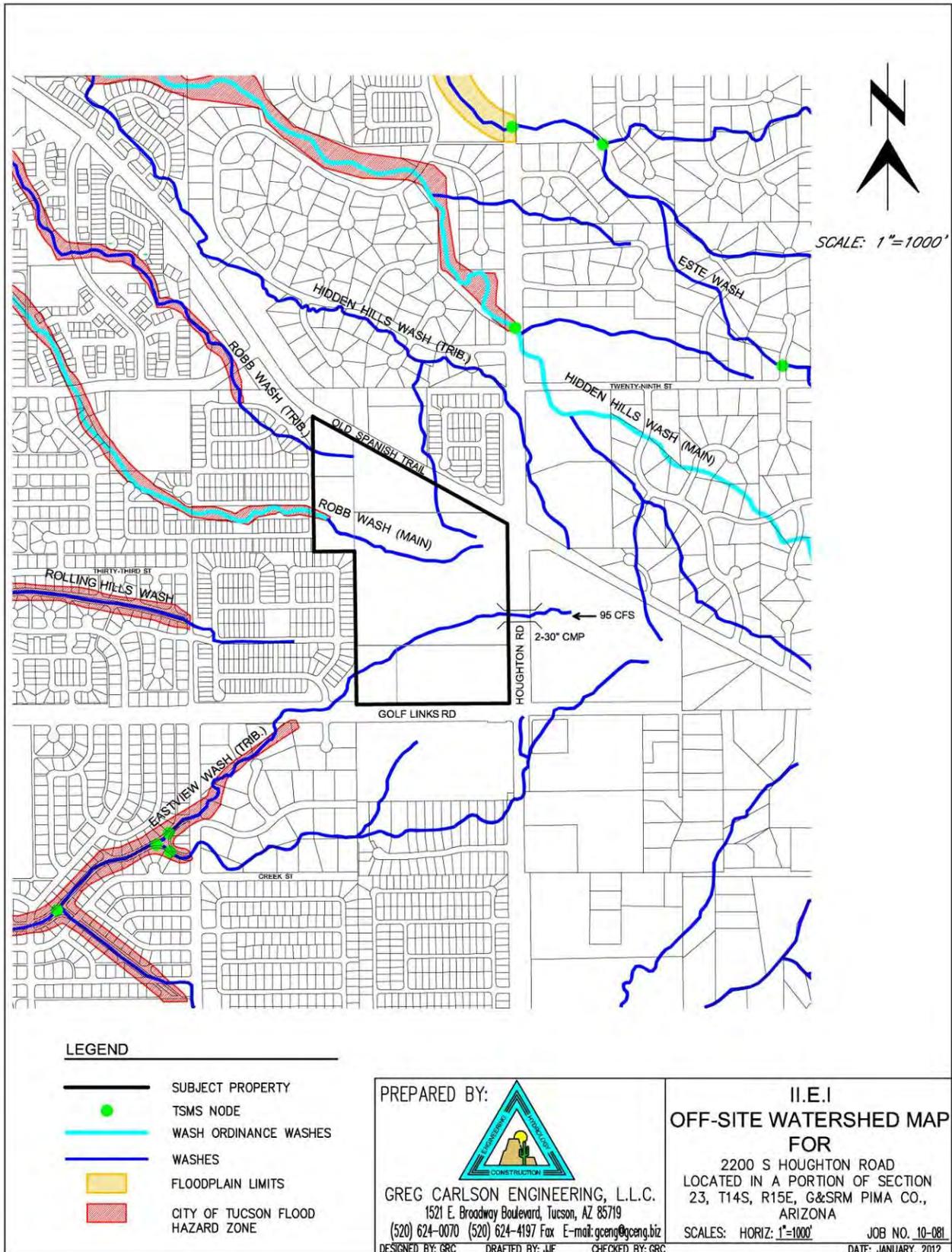
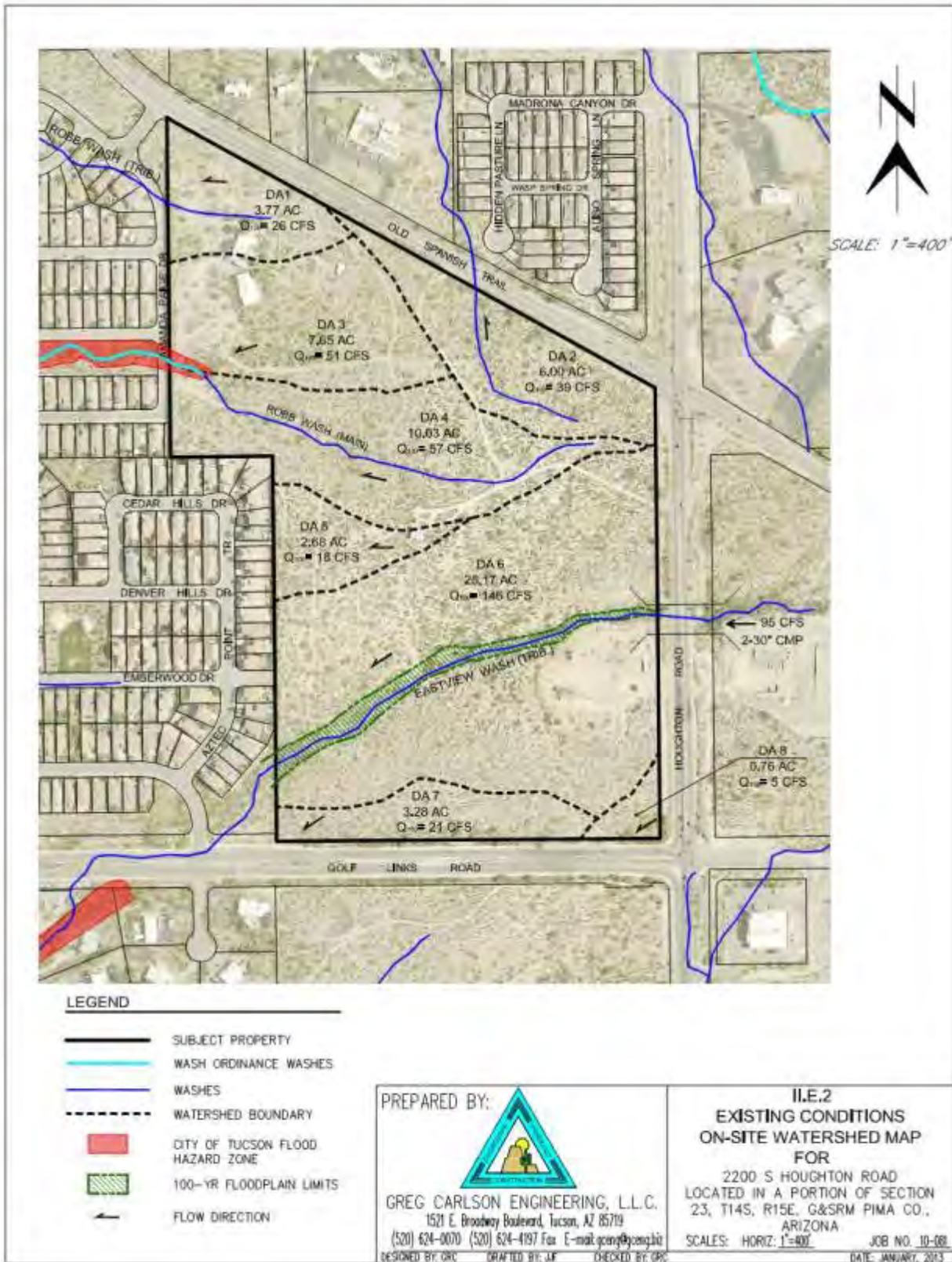


Exhibit II.E.2: On-Site Hydrology



<p>PREPARED BY:</p> <p>GREG CARLSON ENGINEERING, L.L.C. 1521 E. Broadway Boulevard, Tucson, AZ 85719 (520) 624-0070 (520) 624-4197 Fax E-mail: gcec@gregcarlson.com</p> <p>DESIGNED BY: GRC DRAFTED BY: JAF CHECKED BY: GRC</p>	<p>II.E.2 EXISTING CONDITIONS ON-SITE WATERSHED MAP FOR 2200 S HOUGHTON ROAD LOCATED IN A PORTION OF SECTION 23, T14S, R15E, G&SRM PIMA CO., ARIZONA</p> <p>SCALES: HORIZ: 1"=400'</p> <p>JOB NO. 10-088 DATE: JANUARY, 2013</p>
---	--



F. Vegetation & Wildlife

1. Vegetative Communities

As shown on *Exhibit II.F.1* on page 32, there are two vegetative communities and/or plant associations located on the site: Sonoran Desert Scrub and Xeroriparian Habitat. Outside of these vegetative communities, there are two areas that have been previously graded as well as the edges of land adjacent to major roadways.

a. Sonoran Desert Scrub

The Sonoran Desert Scrub community occupies approximately 46 acres of the site. The predominate plants species on site are Creosote Bush (*Larrea tridentate*). The site contains large numbers of Prickly Pear Cacti (*Opuntia Engelmannii*) and various Cholla species. Smaller numbers of Fish Hook Barrel Cacti (*Ferocactus wicklizenii*), Blue Palo Verdes (*Cercidium floridum*), Velvet Mesquites (*Prosopis velutina*), and Saguaros (*Carnegie gigantean*) are located on site.

b. Xeroriparian Habitat

According to Pima County Habitat mapping, Xeroriparian Habitat “C” exists in conjunction with the Robb Wash located in the northwest boundary of the site and the Eastview Wash running east/west through the southern portion of the site. The Xeroriparian Habitat “C” community occupies approximately 7 acres of the site. The Xeroriparian “C” habitat consists of Whitethorn Acacia (*Acacia constricta*), Blue Palo Verde (*Cercidium floridum*), Desert Hackberry (*Celtis pallida*), and Velvet Mesquite (*Prosopis velutina*). A number of Fish Hook Barrel Cacti (*Ferocactus wicklizenii*) occur in or near the Xeroriparian habitat.

c. Disturbed Areas

Approximately 7 acres of the site has been previously disturbed. Disturbed areas consist of existing residential homes, utilities, access roads, and a storage structure, an abandoned stock yard and areas adjacent to existing major roadways.

2. Wildlife

As shown on *Exhibit II.F.2* on page 33, the Arizona Game and Fish Department's Online Environmental Review Tool indicates there are eight special status species that have been documented within a three mile radius of the project area: Bat Colony, Mexican Long-Tongued Bat, Yellow-billed Cuckoo, Sonoran Desert Tortoise, Lesser Long-nosed Bat, Stag-horn Cholla, Lowland Leopard Frog, and Tumamoc Globeberry.



Exhibit II.F.1: Vegetative Communities



LEGEND

Site Boundary
 2' Contour

Pima County Xeroriparian Habitat

Class 'C'

Vegetative Communities

Sonoran Desertscrub

NORTH



FILE NAME: nsp-01_xeroriparian.mxd
 SOURCE: Pima County DOT GIS, 2012



Exhibit II.F.2: Arizona Game & Fish Letter

Arizona's On-line Environmental Review Tool

Search ID: 20120306017324

Project Name: NSP-01

Date: 3/6/2012 8:25:37 AM

Project Location



The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:

Name	Common Name	FWS	USFS	BLM	State
Bat Colony					
<i>Cheronyx mexicanus</i>	Mexican Long-tongued Bat		S	S	WSC
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo (Western U.S. DPS)	PS,C	S		WSC
<i>Gopherus agassizii</i> (Sonoran Population)	Sonoran Desert Tortoise	C	S		WSC
<i>Leptonyx curasoae yerebuenae</i>	Lesser Long-nosed Bat	LE			WSC
<i>Opuntia versicolor</i>	Stag-horn Cholla				SR
<i>Rana yavapaiensis</i>	Lowland Leopard Frog		S	S	WSC
<i>Tumamoc madrogalii</i>	Tumamoc Globeberry		S	S	SR

Project Name: NSP-01

Submitted By: Kelly Lee

On behalf of: CONSULTING

Project Search ID: 20120306017324

Date: 3/6/2012 8:25:33 AM

Project Category: Development Within Municipalities (Urban Growth), Commercial/Industrial (mall) and associated infrastructure New construction

Project Coordinates (UTM Zone 12-NAD 83): 521173.241, 3562033.596 meter

Project Area: 64.766 acres

Project Perimeter: 2245.988 meter

County: PIMA

USGS 7.5 Minute Quadrangle ID: 1768

Quadrangle Name: TUCSON EAST

Project locality is currently being scoped

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.



G. Off-Site Views

The proposed PAD District is located in a semi-developed area, surrounded by single family housing, various church buildings, and vacant land. Suburban density along the western project boundary largely impedes distant westward views from that border; however, westward views from the elevated eastern border are largely unimpeded. Northern, eastern and southern views off of the site are all largely unimpeded. The Catalina, Rincon and Santa Rita mountains are all largely visible throughout most of the site. Photos of the project site are shown on page 36 in *Exhibit II.G.2: Site Photos*. *Exhibit II.G.1: Photo Key Map* (page 35) indicates the locations from which the photos were taken.

1. Views onto the Site

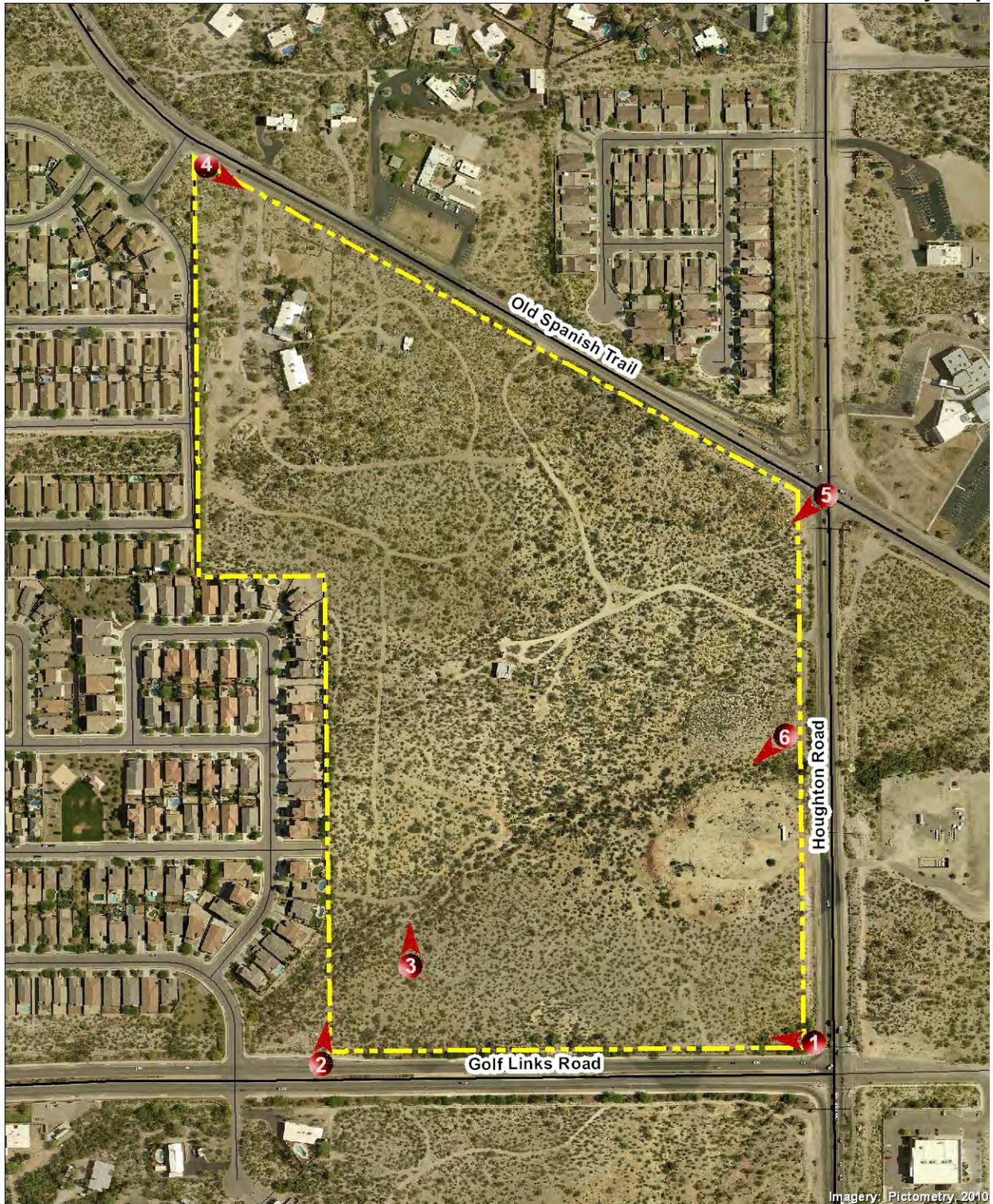
The Northern Star project site is primarily visible along Houghton Road and Golf Links Road. The largest vista of the property opens up along the middle of the eastern property boundary. Intermittent berms along the property boundary, however, do impede views into site at numerous points along these roads. Suburban density along the western boundaries of the property largely impedes views onto the site, while berms along the northern boundary also restrict visual access onto the site.

2. Views across the Site

The PAD District is located in a semi-developed area of the city surrounded by a range of single and multiple story housing and church buildings, as well as open space. Views across the site to surrounding mountain ranges are predominantly unobstructed.



Exhibit II.G.1: Photo Key Map



LEGEND

-  Site Boundary
-  10' Contour
-  Photo ID & location photo was taken



FILE NAME: NSP-01_photokeymap.mxd
SOURCE: Pima County DOT GIS, 2010



Exhibit II.G.2: Site Photos



Photo 1: Southeastern corner of the property boundary at the Golf Links/Houghton Road intersection. Looking west along Golf Links Road.



Photo 2: Southwestern corner of the property boundary. Looking north along Rancho Paraiso.



Photo 3: Eastview Wash (southwestern section of property). Looking northeast.



Photo 4: Northwestern corner of property boundary. Looking east along Old Spanish Trail.



Photo 5: Northeastern corner of the site boundary at the corner of the Old Spanish Trail and Houghton Road intersection.



Photo 6: View of the site interior from the middle of the eastern property boundary. Looking southwest.

H. Cultural Resources

1. Arizona State Museum Letter

As shown on *Exhibit II.H.1* on page 38, the results of the Arizona State Museum Archaeological records search show there has been no history of a cultural resources survey of the subject site. Nine cultural resource surveys have been completed within a mile of the project area; however, the site was not identified as having any known cultural resources. One archaeological site, a historic road, was identified within a mile of the project area.

2. Field Surveys

Professional Archaeological Services of Tucson (PAST) was hired to conduct an on-the-ground cultural resources survey of the subject site. Based on the archival information, field methods, the observable surface indications and because none of the materials observed on the subject property have potential to provide important prehistoric archaeological information beyond what was obtained for this project, PAST supports approving the sponsor's application. Ground disturbing activities on the property should not commence without authorization by the appropriate agency official.



I. Existing Infrastructure

1. Water

The site is served by Tucson Water, which has been designated by the State of Arizona Department of Water Resources, as having an assured water supply. The project site also lies within Tucson Water Company's planned 100-year service area; therefore, water supply is assured (See *Exhibit II.I.1: Tucson Water Letter*, page 40)

2. Wastewater

The owner/developer shall obtain written documentation from the Pima County Regional Wastewater Reclamation District (PCRWRD) that treatment and conveyance capacity is available for any new development within the rezoning area, no more than 90 days before submitting any tentative plat, development plan, sewer improvement plan or request for building permit for review. Should treatment and/or conveyance capacity not be available at that time, the owner/developer shall have the option of funding, designing and constructing the necessary improvements to Pima County's public sewerage system at his or her sole expense or cooperatively with other affected parties. All such improvements shall be designed and constructed as directed by the PCRWRD.

a. PCRWRD Capacity Letter

Currently, there are two 8-inch lines: G-2003-116 and G-99-133 distributed downstream from manholes 4834-15, 4834-24. The site is tributary to Roger Road Water Reclamation Facility via the Pantano Interceptor, the South Rillito Central Interceptor, The Tucson Blvd. Flow Control Facility and the South Rillito West Interceptor (Central Line). (See *Exhibit II.I.3: PCRWRD Capacity Letter*, page 42.)

b. Locations of Existing Public Sewers in Relation of the Project Site

As indicated in *Exhibit II.I.2: Sewer Map* on page 41, there are two 8-inch (G-2003-116 and G-99-133) public sewer lines adjacent to the PAD Boundary. The sewer lines are located west of the site within Rancho Paraiso and Arizona La Victoria Single Family Residential Subdivisions.



Exhibit II.I.1: Tucson Water Letter

NSPDI

February 1, 2012



The Planning Center
110 S. Church., Ste 6320
Tucson, AZ 85701

Attn: Kelly Lee

CITY OF
TUCSON
TUCSON WATER
DEPARTMENT

SUBJECT: Water Availability for project: Golf Links Road & Houghton Road Development, APN: Multiple Parcels, Case #: N/A, T-14, R-15, SEC-23, Lots: 9999, Location Code: TUC, Total Area: 59.31ac, Zoning: SR

WATER SUPPLY

Tucson Water will provide water service to this project based on the subject zoning of the above parcels. Tucson Water has an assured water supply (AWS) designation from the State of Arizona Department of Water Resources (ADWR). An AWS designation means Tucson Water has met the criteria established by ADWR for demonstration of a 100-year water supply – it does not mean that water service is currently available to the subject project.

WATER SERVICE

The approval of water meter applications is subject to the current availability of water service at the time an application is received. The developer shall be required to submit a water master plan identifying, but not limited to: 1) Water Use; 2) Fire Flow Requirements; 3) Offsite/Onsite Water Facilities; 4) Loops and Proposed Connection Points to Existing Water System; and 5) Easements/Common Areas.

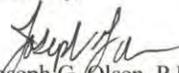
Any specific area plan fees, protected main/facility fees and/or other needed facilities' cost, are to be paid by the developer. *If the existing water system is not capable of meeting the requirements of the proposed development, the developer shall be financially responsible for modifying or enhancing the existing water system to meet those needs.*

This letter shall be null and void two years from the date of issuance.

Issuance of this letter is not to be construed as agency approval of a water plan or as containing construction review comments relative to conflicts with existing water lines and the proposed development.

If you have any questions, please call New Development at 791-4718.

Sincerely,


Joseph G. Olsen, P.E.
Interim Deputy Director
Tucson Water Department

JGO:bjp
CC:File



NEW DEVELOPMENT • P.O. BOX 27210 • TUCSON, AZ 85726-7210
(520) 791-4718 • FAX (520) 791-5288 • TTY (520) 791-2639 • www.cityoftucson.org



Exhibit II.1.2: Sewer Map



LEGEND

- PAD Boundary
- Manhole Covers
- Sewer Network with Pipe Diameter and As-Built Identification Number



FILE NAME: nsp-01_sewer.mxd
SOURCE: Pima County DOF GIS, 2012



Exhibit II.I.3: PCRWRD Capacity Letter



**Pima County
Regional Wastewater Reclamation Department**

Jackson Jenkins
Director

201 N. Stone Ave., 8th Floor
Tucson, Arizona 85701
(520) 740-6500

Visit our website:
<http://www.pima.gov/wwm>

February 28, 2012

Kelly Lee
The Planning Center
110 S. Church, Ste. 6320
Tucson, AZ 85701

Capacity Response No. 12-006 Type I

**RE: Northern Star PAD, Parcels 136-08-029A, -028A, -0310, -032A, -0330 & 136-08-034A
Estimated Flow 60,000 gpd (ADWF).**

Greetings:

The above referenced project is tributary to the Roger Road Wastewater Reclamation Facility, via the Pantano Interceptor, the South Rillito Central Interceptor, the Tucson Blvd. Flow Control Facility, and the South Rillito West Interceptor (Central Line).

Capacity is currently available for this project distributed downstream from manholes 3891-24 in the 8-inch public sewer G-2003-116 and 4834-15 and 4834-24 in the 8-inch public sewer G-99-133.

This letter is not a reservation or commitment of treatment or conveyance capacity for this project. It is an analysis of the system as of this date and valid for one year.

Note: Conditions within the public sewer system constantly change. An update to this letter must be obtained to verify that capacity exists in the downstream public sewer system just prior to submitting the development plan or subdivision plat for review and approval.

If further information is needed, please feel free to contact us at (520) 740-6534.

Respectfully,

A handwritten signature in black ink, appearing to read "Mary Hamilton".

Mary Hamilton, P.E.
PCRWRD Planning Section Manager

MH:ks

c: T14, R15, Sec. 23



NORTHERN STAR COMMUNITY ACTIVITY CENTER PLANNED AREA DEVELOPMENT



III. LAND USE PROPOSAL

A. PAD Overview

The Northern Star property has been carefully held intact by the current owner for several decades resisting offers to piecemeal the property for a variety of uses. The owner's vision is to create a quality activity center similar to others in the metropolitan community such as Williams Center, La Encantada and The Tucson Spectrum. With the pending improvements to Houghton Road soon to become a reality, the timing for this vision approaches.

A preliminary conceptual site plan is included in Appendix A. This site plan is for illustrative purposes only. There are a great number of variations of that plan that could ultimately be utilized on this site. The plan is intended to show the overall concept for the site in order to provide direction for traffic and civil engineering studies, relationship of possible structures to surrounding neighborhoods, the ratio of necessary parking and possible on-site traffic circulation. It is not to be considered an actual proposed development plan.

As shown on *Exhibit III.A: Development Area* (page 48), there are five development areas and an open space area planned for the site. The development area consists of a large buffer adjacent to the western boundary and buffer area along the 100-year floodplain of the Eastview Wash. The developable areas of the site are envisioned to complement adjacent land uses by providing a mix of retail, entertainment, office and residential uses. The location is ideal to cater to nearby residents with neighborhood-level uses as well as serving the regional market due to its location at the intersection of three major arterials. This future power activity center is appropriate due to its positioning in relation to major employment centers, its location on the important transportation corridors, its proximity to the existing population centers and to future residential growth.





Illustration A: View from Houghton Road looking onto typical commercial uses envisioned for Development Area 1

However, this strategically located gateway intersection deserves and demands an identity that sets it apart from other commercial or mixed use development. Integrated design features and development standards will be enforced throughout the project's life. This will become a jewel of eastside development that the entire community will appreciate. The following renderings showing concepts of future development illustrate the intended quality of development.





Illustration B: Graphic illustrating the vision of higher intensity uses of the corner of Golf Links Road and Houghton Road within Development Area 2

A cornerstone of the project will be a multi-story building at the southeast corner of the site promoting employment generating uses. Other land uses envisioned within the project site include large scale mixed use development integrating office tenants and other compatible uses such as dining establishments, retail shops and convenience uses. Higher density residential uses in the western portion of the site will promote access to transit services along Houghton Road while taking advantage of existing infrastructure in this urban infill area. The Houghton Road Corridor plans include bus pullouts and bus shelter pads at the major intersections, including Golf Links and Old Spanish Trail. These improvements will be constructed as part of the Houghton Road corridor project. Some additional bus stops may be installed as development occurs along the corridor. The project will also provide convenient shopping, entertainment and employment opportunities to the existing surrounding residential communities.

Open space elements of the plan will be designed to be incorporated into the project as amenities while also accommodating drainage facilities and providing separation between land uses. Where appropriate, multi-use trails will be integral parts of these areas providing connections to the overall pedestrian circulation system of the project.



Illustration C: View of the typical neighborhood commercial uses located along the Eastview Wash within Development Area 3

Development in the western portion of the site is envisioned to complement adjacent land uses with a mixed use concept consisting of a blend of multi-family residential, retail, entertainment and office space. Commercial uses envisioned within this PAD include a movie theatre, an assortment of dining establishments, retail shops, a hotel and office tenants. This location is ideal to cater to nearby residents with neighborhood-level uses such as a grocery store, pharmacy, post office or bank, as well as residents of outlying areas. Houghton Road will make the commercial uses easily accessible to residents in the immediate vicinity and commuters ranging from areas west, northeast, southeast of Tucson, and Vail.

The illustrations shown above are merely artist's conceptions based upon potential land uses. They are intended to serve as a general guide illustrating the quality and intent of the proposed development and do not imply a completed proposed site plan. These illustrations are not to scale and should not be relied upon to establish the relative locations of, or distances between, any depicted facilities. The renderings are not based on any engineering or hydrology studies and final development must be in accordance with the rules and regulations of this PAD.



Exhibit III.A: Development Areas

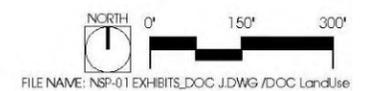


LEGEND

- Project Boundary
- Development Areas
- Preliminary Spine Road Location
- Major Access Point
- Minor Access Point
- Open Space/Landscape Border area: 9 acres

- Development Area #1
- Development Area #2
- Development Area #3
- Development Area #4
- Development Area #5

Development area boundaries will be determined by the interior spine roads and are subject to change.



B. Planning Considerations

The Northern Star Planned Area Development proposes a single zoning district based on a modified C-2 Zone to allow for the development of a mixed-use commercial retail center. (See *Exhibit III.A: Development Area*, page 48.) This zoning document provides regulations relating to uses, physical character and intensity of development on the site. All construction within the PAD shall complement adjacent land uses. Where the PAD varies from the Unified Development Code (UDC) or other relevant City standards, the PAD shall control. Where the PAD is silent, the UDC provisions for the C-2 zone and other relevant city standards shall control. All development on the site must be in compliance with the PAD by the end of construction of the total PAD area.

C. Permitted and Excluded Uses

Exhibit III.A, page 48, identifies the five development areas and a landscape border/drainage open space area subject to the following permitted uses throughout the PAD District. All development within the PAD shall conform to the regulations and standards set forth in this PAD. Where these regulations and standards vary from the UDC or other City standards, the PAD regulations and standards shall control.

1. Development Area 1 Permitted Uses

The Northern Star PAD Development Area shall include the following permitted uses. All related use specific standards are found in Appendix B:

- a. Commercial Services Use Group
 1. Administrative and Professional Office, subject to: Sec. 4.9.13.P
 2. Alcoholic Beverage Service, Large Bar, subject to: Sec. 4.9.4C.2 and 4.9.13.P
 3. Animal Service, subject to: Sec 4.9.4.D.1, 2, 3, & 4 and 4.9.13.P
 4. Artisan Residence, subject to: Sec. 4.9.4.E.1, .2, .3, .4, & .5 and 4.9.13.P
 5. Automotive – Service and Repair, subject to: Sec 4.9.13.E
 6. Building and Grounds Maintenance
 7. Communications, subject to: 4.9.13.P and one of the following groups: 4.9.4.I.1 & 4.9.4.13.E or 4.9.4.I.1.3 & 4a or 4b
 - o Shall not exceed building heights restrictions as shown on page 67.
 8. Construction Service
 9. Day Care
 10. Entertainment, subject to: Sec 4.9.4K.1, 2, 3, 4, 4.9.4.C.3 and 4.9.13E and 4.9.13.P
 11. Financial Service, subject to: Sec. 4.9.4.L.3, 4.9.4.13.E and 4.9.4.13.P
 12. Food Service with a Microbrewery as an accessory use to a Food Service, subject to: Sec 4.9.4.M.1 and 4.9.4.13.P
 13. Medical Service – Extended Health Care
 14. Medical Service – Major



15. Medical Service – Outpatient, subject to: Sec 4.9.4.O.2 & 4.9.13.P
 16. Parking
 17. Personal Service, subject to: Sec 4.9.13.P
 18. Research and Product Development
 19. Technical Service, subject to: Sec 4.9.W.2 and 4.9.13.P
 20. Trade Service and Repair, Minor, subject to: Sec 4.9.13.P
 21. Traveler’s Accommodation, Lodging with Alcoholic Beverage Service as an accessory use
- b. Retail Trade Use Group
1. Food and Beverage Sales, subject to: Sec 4.9.9.D
 2. General Merchandise Sales, subject to: Sec 4.9.9.B.1
- Notwithstanding any specific provisions of such Section or of the UDC to the contrary, the following provisions shall govern Large Retail Establishments and no further public process is required:
- o All proposed Large Retail Establishments shall be reviewed and approved in accordance with the Development Package Review process. Because the PAD District is established through the Zoning Examiner Legislative Procedure, no separate or additional approval through Special Exception Land Use, Zoning Examiner Legislative Procedure or otherwise, will be required for any Large Retail Establishment other than approval of the Planning and Development Services Department Director.
 - o Permitted Sales- General Merchandise Sales with Food and Beverage Sales may be combined within a single establishment with no limitation on gross floor area allocated to either one of the land use classes. No individual Large Scale Retail Establishment shall exceed a maximum of 225,000 square feet building space. Any additional floor space shall be approved by the Northern Star Design Review Committee. May also have Automotive Minor Service and Repair as an accessory use to automotive fuel sales.
 - o Buffers- The project shall provide visual and noise buffers where the site is adjacent to a residential use or residentially zoned property outside of the PAD boundaries. This can be accomplished by providing a minimum building setback of two hundred (200) feet. To avoid isolating large scale retail from rest of the PAD Development, the screen walls and landscape buffers requirements in UDC 4.9.9.D.1.b are inapplicable. Screen walls and landscape buffers for other permitted land uses are set forth in Section III.G: Landscape Program (pages 71-73).



- o Outdoor Storage- The project shall mitigate visual and noise impact on residential uses and residentially zoned properties by locating these areas on-site and two hundred (200) feet from any residential use or residentially zoned property outside of the PAD boundaries. In addition, a 6-foot screen wall is required adjacent to any residential use or residentially zoned property outside the PAD boundaries, and adjacent public roadways unless the outdoor storage is already screened by buildings or other landscaping.
- o Outdoor Sales Display - The minimum setback shall be two hundred (200) feet from any residential use or residentially zoned property that is adjacent to the PAD boundaries, provided it is no closer than the allowable building setback. Setbacks shall provide a noise buffer between any residential use or residentially zoned properties and the outdoor sales uses. Screen walls and landscape buffers for commercial sub-areas are set forth in Section III.G. Landscape Program (pages 71-73).
- 3. Seasonal Sales and Farmers Markets
- 4. Vehicle Rental and Sales, subject to: 4.9.9.G.1& .2
- c. Civic Use Group
 - 1. Civic Assembly
 - 2. Cultural Use (Government Owned and Operated Only)
 - 3. Educational Use: Elementary and Secondary Schools, subject to: Sec. 4.9.3.D.1 – 7
 - 4. Educational Use: Postsecondary Institution, subject to: Sec. 4.9.3.E
 - 5. Educational Use: Instructional School
 - 6. Membership Organization
 - Postal Service (government owned and operated only)
 - 7. Protective Service (government owned and operated only)
 - 8. Religious Use
- d. Recreation Use Group
 - 1. Neighborhood Recreation
 - 2. Recreation
 - 3. Open Space
- e. Storage Use Group
 - 1. Commercial Storage, subject to: Sec. 4.9.10.A
 - 2. Personal Storage, subject to: Sec. 4.9.10.C.3 & .6
- f. Utilities Use Group
 - 1. Distribution System, subject to: Sec. 4.9.11.A.1, .5, & .9
- g. Retail Trade Use Group:

Outdoor activities, including but not limited to patio dining, merchandise displays and farmer’s markets, shall be permitted.
- h. Residential Use Group



1. Family Dwelling:
 - Duplex
 - Multifamily Development
 - Single Family Detached
 - Home Occupation as an accessory use to any permitted Family Dwelling, subject to: Sec. 4.9.7.E, F and G
 - Flexible Lot Development
 - Group Dwelling
 - Residential Care Services, Adult Care: Unlimited # of Residents, subject to: Sec. 4.9.7.J.3.d, .4,
 - Residential Care Services, Rehabilitation Service - Children's Facility (maximum 10 residents), subject to: Sec. 4.9.7.J.1 & 4
- i. Wholesaling Use Group
 1. Business Equipment Supply and Wholesaling, subject to: Sec 4.9.13.P
 2. Food and Beverage Wholesaling subject to: Sec 4.9.13.P
- j. Industrial Use Group
 1. Household goods donation center, subject to: C-2: 4.9.5.G.2, 7, 10, 11 and 12.

2. Development Area 1 Prohibited Uses

a. Prohibited Primary Uses

The following primary land uses shall be prohibited within Development Area 1 of the Northern Star PAD.

1. X-rated adult entertainment, tattoo shop, smoke shop or adult book store.
2. Correctional Use
3. Salvaging and Recycling (Note: Household goods donation centers are permitted.)
4. Billboard
5. Transportation Services, Land Carrier
6. Residential Care Services,
 - a. Physical and Behavioral Health
 - b. Adult Rehabilitation
 - c. Shelter Care
7. Medical marijuana uses.
8. Swap meets or outdoor auctions.
9. Hazardous material storage
10. Renewable energy generation
11. Hazard Material Wholesaling
12. Construction/Heavy Equipment Wholesaling
13. Animal Production



3. Development Area 2 Permitted Uses

The Northern Star PAD Development Area shall include the following permitted uses. All related use specific standards are found in Appendix B:

- a. Commercial Services Use Group
 1. Administrative and Professional Office, subject to: Sec. 4.9.13.P
 2. Alcoholic Beverage Service, Large Bar, subject to: Sec. 4.9.4C.2 and 4.9.13.P
 3. Animal Service, subject to: Sec 4.9.4.D.1, 2, 3, & 4 and 4.9.13.P
 4. Artisan Residence, subject to: Sec. 4.9.4.E.1, .2, .3, .4, & .5 and 4.9.13.P
 5. Automotive – Service and Repair, subject to: Sec 4.9.13.E
 6. Building and Grounds Maintenance
 7. Communications, subject to: 4.9.13.P and one of the following groups: 4.9.4.I.1 & 4.9.4.13.E or 4.9.4.I.1.3 & 4a or 4b
 8. Shall not exceed building heights restrictions as shown on page 67
 9. Construction Service
 10. Day Care
 11. Entertainment, subject to: Sec 4.9.4K.1, 2, 3, 4, 4.9.4.C.3 and 4.9.13E and 4.9.13.P
 12. Financial Service, subject to: Sec. 4.9.4.L.3, 4.9.4.13.E and 4.9.4.13.P
 13. Food Service with a Microbrewery as an accessory use to a Food Service, subject to: Sec 4.9.4.M.1 and 4.9.4.13.P
 14. Medical Service – Extended Health Care
 15. Medical Service – Major
 16. Medical Service – Outpatient, subject to: Sec 4.9.4.O.2 & 4.9.13.P
 17. Parking
 18. Personal Service, subject to: Sec 4.9.13.P
 19. Research and Product Development
 20. Technical Service, subject to: Sec 4.9.W.2 and 4.9.13.P
 21. Trade Service and Repair, Minor, subject to: Sec 4.9.13.P
 22. Traveler’s Accommodation, Lodging with Alcoholic Beverage Service as an accessory use
- b. Retail Trade Use Group
 1. Food and Beverage Sales, subject to: Sec 4.9.9.D
 2. General Merchandise Sales, subject to: Sec 4.9.9.B.1
Notwithstanding any specific provisions of such Section or of the UDC to the contrary, the following provisions shall govern Large Retail Establishments and no further public process is required:
 - o All proposed Large Retail Establishments shall be reviewed and approved in accordance with the Development Package Review process. Because the PAD District is established through the Zoning Examiner Legislative Procedure, no separate or additional approval through Special Exception Land Use, Zoning Examiner Legislative Procedure or otherwise, will be required for



any Large Retail Establishment other than approval of the Planning and Development Services Department Director.

- Permitted Sales- General Merchandise Sales with Food and Beverage Sales may be combined within a single establishment with no limitation on gross floor area allocated to either one of the land use classes. No individual Large Scale Retail Establishment shall exceed a maximum of 225,000 square feet building space. Any additional floor space shall be approved by the Northern Star Design Review Committee. May also have Automotive Minor Service and Repair as an accessory use to automotive fuel sales.
- Buffers- The project shall provide visual and noise buffers where the site is adjacent to a residential use or residentially zoned property outside of the PAD boundaries. This can be accomplished by providing a minimum building setback of two hundred (200) feet. To avoid isolating large scale retail from rest of the PAD Development, the screen walls and landscape buffers requirements in UDC 4.9.9.D.1.b are inapplicable. Screen walls and landscape buffers for other permitted land uses are set forth in Section III.G: Landscape Program (pages 71-73).
- Outdoor Storage- The project shall mitigate visual and noise impact on residential uses and residentially zoned properties by locating these areas on-site and two hundred (200) feet from any residential use or residentially zoned property outside of the PAD boundaries. In addition, a 6-foot screen wall is required adjacent to any residential use or residentially zoned property outside the PAD boundaries, and adjacent public roadways unless the outdoor storage is already screened by buildings or other landscaping.
- Outdoor Sales Display - The minimum setback shall be two hundred (200) feet from any residential use or residentially zoned property that is adjacent to the PAD boundaries, provided it is no closer than the allowable building setback. Setbacks shall provide a noise buffer between any residential use or residentially zoned properties and the outdoor sales uses. Screen walls and landscape buffers for commercial sub-areas are set forth in Section III.G. Landscape Program (pages 71-73).

3. Seasonal Sales and Farmers Markets

4. Vehicle Rental and Sales, subject to: 4.9.9.G.1& .2

k. Civic Use Group



1. Civic Assembly
2. Cultural Use (Government Owned and Operated Only)
3. Educational Use: Elementary and Secondary Schools, subject to: Sec. 4.9.3.D.1 – 7
4. Educational Use: Postsecondary Institution, subject to: Sec. 4.9.3.E
5. Educational Use: Instructional School
6. Membership Organization
 - Postal Service (government owned and operated only)
7. Protective Service (government owned and operated only)
8. Religious Use
- i. Recreation Use Group
 1. Neighborhood Recreation
 2. Recreation
 3. Open Space
- m. Storage Use Group
 1. Commercial Storage, subject to: Sec. 4.9.10.A
 2. Personal Storage, subject to: Sec. 4.9.10.C.3 & .6
- n. Utilities Use Group
 1. Distribution System, subject to: Sec. 4.9.11.A.1, .5, & .9
- o. Retail Trade Use Group:

Outdoor activities, including but not limited to patio dining, merchandise displays and farmer’s markets, shall be permitted.
- p. Residential Use Group
 1. Family Dwelling:
 - Duplex
 - Multifamily Development
 - Single Family Detached
 - Home Occupation as an accessory use to any permitted Family Dwelling, subject to: Sec. 4.9.7.E, F and G
 - Flexible Lot Development
 - Group Dwelling
 - Residential Care Services, Adult Care: Unlimited # of Residents, subject to: Sec. 4.9.7.J.3.d, .4,
 - Residential Care Services, Rehabilitation Service - Children’s Facility (maximum 10 residents), subject to: Sec. 4.9.7.J.1 & 4
- q. Wholesaling Use Group
 1. Business Equipment Supply and Wholesaling, subject to: Sec 4.9.13.P
 2. Food and Beverage Wholesaling subject to: Sec 4.9.13.P
- r. Industrial Use Group
 1. Household goods donation center, subject to: C-2: 4.9.5.G.2, 7, 10, 11 and 12.



4. Development Area 2 Prohibited Uses

a. Prohibited Primary Uses

The following primary land uses shall be prohibited within Development Area 2 of the Northern Star PAD.

1. X-rated adult entertainment, tattoo shop, smoke shop or adult book store.
2. Correctional Use
3. Salvaging and Recycling Note: Household goods donation centers are permitted.
4. Billboard
5. Transportation Services, Land Carrier Transportation Services, Land Carrier
6. Residential Care Services
 - a. Physical and Behavioral Health
 - b. Adult Rehabilitation
 - c. Shelter Care
7. Medical marijuana uses.
8. Swap meets or outdoor auctions.
9. Hazardous material storage
10. Renewable energy generation
11. Hazard Material Wholesaling
12. Construction/Heavy Equipment Wholesaling
13. Animal Production

5. Development Area 3 Permitted Uses

The Northern Star PAD Development Area shall include the following permitted uses. All related use specific standards are found in Appendix B:

- a. Commercial Services Use Group
 1. Administrative and Professional Office, subject to: Sec. 4.9.13.P
 2. Alcoholic Beverage Service, Large Bar, subject to: Sec. 4.9.4.C.2 and 4.9.13.P
 3. Animal Service, subject to: Sec 4.9.4.D.1, 2, 3, & 4 and 4.9.13.P
 4. Artisan Residence, subject to: Sec. 4.9.4.E.1, .2, .3, .4, & .5 and 4.9.13.P
 5. Building and Grounds Maintenance
 6. Communications, subject to: 4.9.13.P and one of the following groups: 4.9.4.I.1 & 4.9.4.13.E or 4.9.4.I.1.3 & 4a or 4b
 - Shall not exceed building heights restrictions as shown on page 67
 7. Construction Service
 8. Day Care
 9. Entertainment, subject to: Sec 4.9.4K.1, 2, 3, 4, 4.9.4.C.3 and 4.9.13E and 4.9.13.P
 10. Financial Service, subject to: Sec. 4.9.4.L.3, 4.9.4.13.E and 4.9.4.13.P
 11. Food Service with a Microbrewery as an accessory use to a Food Service, subject to: Sec 4.9.4.M.1 and 4.9.4.13.P



12. Medical Service – Extended Health Care
13. Medical Service – Major
14. Medical Service – Outpatient, subject to: Sec 4.9.4.O.2 & 4.9.13.P
15. Parking
16. Personal Service, subject to: Sec 4.9.13.P
17. Research and Product Development
18. Technical Service, subject to: Sec 4.9.W.2 and 4.9.13.P
19. Trade Service and Repair, Minor, subject to: Sec 4.9.13.P
- b. Retail Trade Use Group
 1. Food and Beverage Sales, subject to: Sec 4.9.9.D
 2. General Merchandise Sales excluding large retail establishment, subject to: Sec 4.9.9.B.1
 3. Seasonal Sales and Farmers Markets
- c. Civic Use Group
 1. Civic Assembly
 2. Cultural Use (Government Owned and Operated Only)
 3. Educational Use: Elementary and Secondary Schools, subject to: Sec. 4.9.3.D.1 – 7
 4. Educational Use: Postsecondary Institution, subject to: Sec. 4.9.3.E
 5. Educational Use: Instructional School
 6. Membership Organization
 - Postal Service (government owned and operated only)
 7. Protective Service (government owned and operated only)
 8. Religious Use
- d. Recreation Use Group
 1. Neighborhood Recreation
 2. Recreation
 3. Open Space
- e. Storage Use Group
 1. Commercial Storage, subject to: Sec. 4.9.10.A
 2. Personal Storage, subject to: Sec. 4.9.10.C.3 & .6
- f. Utilities Use Group
 1. Distribution System, subject to: Sec. 4.9.11.A.1, .5, & .9I
- g. Retail Trade Use Group:

Outdoor activities, including but not limited to patio dining, merchandise displays and farmer’s markets, shall be permitted.
- h. Residential Use Group
 1. Family Dwelling:
 - Duplex
 - Multifamily Development
 - Single Family Detached
 - Home Occupation as an accessory use to any permitted Family Dwelling, subject to: Sec. 4.9.7.E, F and G
 - Flexible Lot Development
 - Group Dwelling



- Residential Care Services, Adult Care: Unlimited # of Residents, subject to: Sec. 4.9.7.J.3.d, .4,
 - Residential Care Services, Rehabilitation Service - Children's Facility (maximum 10 residents), subject to: Sec. 4.9.7.J.1 & 4
- i. Wholesaling Use Group
 1. Business Equipment Supply and Wholesaling, subject to: Sec 4.9.13.P
 2. Food and Beverage Wholesaling subject to: Sec 4.9.13.P
 - j. Industrial Use Group
 1. Household goods donation center, subject to: C-2: 4.9.5.G.2, 7, 10, 11 and 12.

6. Development Area 3 Prohibited Uses

a. Prohibited Primary Uses

The following primary land uses shall be prohibited within Development Area 3 of the Northern Star PAD.

1. X-rated adult entertainment, tattoo shop, smoke shop or adult book store.
2. Correctional Use
3. Salvaging and Recycling Note: Household goods donation centers are permitted.
4. Billboard
5. Transportation Services, Land Carrier
6. Manufactured Housing
7. Residential Care Services,
 - a. Physical and Behavioral Health
 - b. Adult Rehabilitation
 - c. Shelter Care
8. Medical marijuana uses.
9. Swap meets or outdoor auctions.
10. Hazardous material storage
11. Renewable energy generation
12. Automotive Service and Repair
13. Hazard Material Wholesaling
14. Construction/Heavy Equipment Wholesaling
15. Animal Production
16. Travelers Accommodation, Lodging
17. Trade Service and Repair, Major
18. Large Bar or Nightclub (without food service)
19. Vehicle Rental and Sales
20. Large Retail Establishment



7. Development Area 4 Permitted Uses

The Northern Star PAD Development Area shall include the following permitted uses. All related use specific standards are found in Appendix B:

- a. Commercial Services Use Group
 1. Administrative and Professional Office, subject to: Sec. 4.9.13.P
 2. Alcoholic Beverage Service, Large Bar, subject to: Sec. 4.9.4C.2 and 4.9.13.P
 3. Animal Service, subject to: Sec 4.9.4.D.1, 2, 3, & 4 and 4.9.13.P
 4. Artisan Residence, subject to: Sec. 4.9.4.E.1, .2, .3, .4, & .5 and 4.9.13.P
 5. Building and Grounds Maintenance
 6. Communications, subject to: 4.9.13.P and one of the following groups: 4.9.4.I.1 & 4.9.4.13.E or 4.9.4.I.1.3 & 4a or 4b
 - o Shall not exceed building heights restrictions as shown on page 67
 7. Construction Service
 8. Day Care
 9. Entertainment, subject to: Sec 4.9.4K.1, 2, 3, 4, 4.9.4.C.3 and 4.9.13E and 4.9.13.P
 10. Financial Service, subject to: Sec. 4.9.4.L.3, 4.9.4.13.E and 4.9.4.13.P
 11. Food Service with a Microbrewery as an accessory use to a Food Service, subject to: Sec 4.9.4.M.1 and 4.9.4.13.P
 12. Medical Service – Extended Health Care
 13. Medical Service – Major
 14. Medical Service – Outpatient, subject to: Sec 4.9.4.O.2 & 4.9.13.P
 15. Parking
 16. Personal Service, subject to: Sec 4.9.13.P
 17. Research and Product Development
 18. Technical Service, subject to: Sec 4.9.W.2 and 4.9.13.P
 19. Trade Service and Repair, Minor, subject to: Sec 4.9.13.P
 20. Traveler’s Accommodation, Lodging with Alcoholic Beverage Service as an accessory use
- b. Retail Trade Use Group
 1. Food and Beverage Sales, subject to: Sec 4.9.9.D
 2. General Merchandise Sales, subject to: Sec 4.9.9.B.1 Notwithstanding any specific provisions of such Section or of the UDC to the contrary, the following provisions shall govern Large Retail Establishments and no further public process is required:
 - o All proposed Large Retail Establishments shall be reviewed and approved in accordance with the Development Package Review process. Because the PAD District is established through the Zoning Examiner Legislative Procedure, no separate or additional approval through Special Exception Land Use, Zoning Examiner Legislative Procedure or otherwise, will be required for



any Large Retail Establishment other than approval of the Planning and Development Services Department Director.

- Permitted Sales- General Merchandise Sales with Food and Beverage Sales may be combined within a single establishment with no limitation on gross floor area allocated to either one of the land use classes. No individual Large Scale Retail Establishment shall exceed a maximum of 225,000 square feet building space. Any additional floor space shall be approved by the Northern Star Design Review Committee. May also have Automotive Minor Service and Repair as an accessory use to automotive fuel sales.
- Buffers- The project shall provide visual and noise buffers where the site is adjacent to a residential use or residentially zoned property outside of the PAD boundaries. This can be accomplished by providing a minimum building setback of two hundred (200) feet. To avoid isolating large scale retail from rest of the PAD Development, the screen walls and landscape buffers requirements in UDC 4.9.9.D.1.b are inapplicable. Screen walls and landscape buffers for other permitted land uses are set forth in Section III.G: Landscape Program (pages 71-73).
- Outdoor Storage- The project shall mitigate visual and noise impact on residential uses and residentially zoned properties by locating these areas on-site and two hundred (200) feet from any residential use or residentially zoned property outside of the PAD boundaries. In addition, a 6-foot screen wall is required adjacent to any residential use or residentially zoned property outside the PAD boundaries, and adjacent public roadways unless the outdoor storage is already screened by buildings or other landscaping.
- Outdoor Sales Display - The minimum setback shall be two hundred (200) feet from any residential use or residentially zoned property that is adjacent to the PAD boundaries, provided it is no closer than the allowable building setback. Setbacks shall provide a noise buffer between any residential use or residentially zoned properties and the outdoor sales uses. Screen walls and landscape buffers for commercial sub-areas are set forth in Section III.G. Landscape Program (pages 71-73).

3. Seasonal Sales and Farmers Markets

c. Civic Use Group

1. Civic Assembly



2. Cultural Use (Government Owned and Operated Only)
3. Educational Use: Elementary and Secondary Schools, subject to: Sec. 4.9.3.D.1 – 7
4. Educational Use: Postsecondary Institution, subject to: Sec. 4.9.3.E
5. Educational Use: Instructional School
6. Membership Organization
 - Postal Service (government owned and operated only)
7. Protective Service (government owned and operated only)
8. Religious Use
- d. Recreation Use Group
 1. Neighborhood Recreation
 2. Recreation
 3. Open Space
- e. Storage Use Group
 1. Commercial Storage, subject to: Sec. 4.9.10.A
 2. Personal Storage, subject to: Sec. 4.9.10.C.3 & .6
- f. Utilities Use Group
 1. Distribution System, subject to: Sec. 4.9.11.A.1, .5, & .9
- g. Retail Trade Use Group:

Outdoor activities, including but not limited to patio dining, merchandise displays and farmer's markets, shall be permitted.
- h. Residential Use Group
 1. Family Dwelling:
 - Duplex
 - Multifamily Development
 - Single Family Detached
 - Home Occupation as an accessory use to any permitted Family Dwelling, subject to: Sec. 4.9.7.E, F and G
 - Flexible Lot Development
 - Group Dwelling
 - Residential Care Services, Adult Care: Unlimited # of Residents, subject to: Sec. 4.9.7.J.3.d, .4,
 - Residential Care Services, Rehabilitation Service - Children's Facility (maximum 10 residents), subject to: Sec. 4.9.7.J.1 & 4
- i. Wholesaling Use Group
 1. Business Equipment Supply and Wholesaling, subject to: Sec 4.9.13.P
 2. Food and Beverage Wholesaling subject to: Sec 4.9.13.P
- j. Industrial Use Group
 1. Household goods donation center, subject to: C-2: 4.9.5.G.2, 7, 10, 11 and 12.

8. Development Area 4 Prohibited Uses

- a. Prohibited Primary Uses



The following primary land uses shall be prohibited within Development Area 4 of the Northern Star PAD.

1. X-rated adult entertainment, tattoo shop, smoke shop or adult book store.
2. Correctional Use
3. Salvaging and Recycling Note: Household goods donation centers are permitted.
4. Billboard
5. Transportation Services, Land Carrier
6. Manufactured Housing
7. Residential Care Services,
 - a. Physical and Behavioral Health
 - b. Adult Rehabilitation
 - c. Shelter Care
8. Medical marijuana uses.
9. Swap meets or outdoor auctions.
10. Hazardous material storage
11. Renewable energy generation
12. Automotive Service and Repair
13. Hazard Material Wholesaling
14. Construction/Heavy Equipment Wholesaling
15. Animal Production
16. Trade Service and Repair
17. Large Bar or Nightclub (without food service)
18. Vehicle Rental and Sales

9. Development Area 5 Permitted Uses

The Northern Star PAD Development Area shall include the following permitted uses. All related use specific standards are found in Appendix B:

- a. Commercial Services Use Group
 1. Administrative and Professional Office, subject to: Sec. 4.9.13.P
 2. Alcoholic Beverage Service, Large Bar, subject to: Sec. 4.9.4C.2 and 4.9.13.P
 3. Animal Service, subject to: Sec 4.9.4.D.1, 2, 3, & 4 and 4.9.13.P
 4. Artisan Residence, subject to: Sec. 4.9.4.E.1, .2, .3, .4, & .5 and 4.9.13.P
 5. Building and Grounds Maintenance
 6. Communications, subject to: 4.9.13.P and one of the following groups: 4.9.4.I.1 & 4.9.4.13.E or 4.9.4.I.1.3 & 4a or 4b
 - o Shall not exceed building heights restrictions as shown on page 67
 7. Construction Service
 8. Day Care
 9. Entertainment, subject to: Sec 4.9.4K.1, 2, 3, 4, 4.9.4.C.3 and 4.9.13E and 4.9.13.P



10. Financial Service, subject to: Sec. 4.9.4.L.3, 4.9.4.13.E and 4.9.4.13.P
 11. Food Service with a Microbrewery as an accessory use to a Food Service, subject to: Sec 4.9.4.M.1 and 4.9.4.13.P
 12. Medical Service – Extended Health Care
 13. Medical Service – Major
 14. Medical Service – Outpatient, subject to: Sec 4.9.4.O.2 & 4.9.13.P
 15. Parking
 16. Personal Service, subject to: Sec 4.9.13.P
 17. Research and Product Development
 18. Technical Service, subject to: Sec 4.9.W.2 and 4.9.13.P
 19. Trade Service and Repair, Minor, subject to: Sec 4.9.13.P
 20. Traveler’s Accommodation, Lodging with Alcoholic Beverage Service as an accessory use
- b. Retail Trade Use Group
 1. Food and Beverage Sales, subject to: Sec 4.9.9.D
 2. General Merchandise Sales, excluding Large Retail Establishments, subject to: Sec 4.9.9.B.1
 3. Seasonal Sales and Farmer’s Markets
 - k. Civic Use Group
 1. Civic Assembly
 2. Cultural Use (Government Owned and Operated Only)
 3. Educational Use: Elementary and Secondary Schools, subject to: Sec. 4.9.3.D.1 – 7
 4. Educational Use: Postsecondary Institution, subject to: Sec. 4.9.3.E
 5. Educational Use: Instructional School
 6. Membership Organization
 - Postal Service (government owned and operated only)
 7. Protective Service (government owned and operated only)
 8. Religious Use
 - l. Recreation Use Group
 1. Neighborhood Recreation
 2. Recreation
 3. Open Space
 - m. Storage Use Group
 1. Personal Storage, subject to: Sec. 4.9.10.C.3 & .6
 - n. Utilities Use Group
 2. Distribution System, subject to: Sec. 4.9.11.A.1, .5, & .9
 - o. Retail Trade Use Group:

Outdoor activities, including but not limited to patio dining, merchandise displays and farmer’s markets, shall be permitted.
 - p. Residential Use Group
 1. Family Dwelling:
 - Duplex
 - Multifamily Development



- Single Family Detached
 - Home Occupation as an accessory use to any permitted Family Dwelling, subject to: Sec. 4.9.7.E, F and G
 - Flexible Lot Development
 - Group Dwelling
 - Residential Care Services, Adult Care: Unlimited # of Residents, subject to: Sec. 4.9.7.J.3.d, .4,
 - Residential Care Services, Rehabilitation Service - Children's Facility (maximum 10 residents), subject to: Sec. 4.9.7.J.1 & 4
- q. Wholesaling Use Group
1. Business Equipment Supply and Wholesaling, subject to: Sec 4.9.13.P
 2. Food and Beverage Wholesaling subject to: Sec 4.9.13.P
- r. Industrial Use Group
1. Household goods donation center, subject to: C-2: 4.9.5.G.2, 7, 10, 11 and 12.

10. Development Area 5 Prohibited Uses

a. Prohibited Primary Uses

The following primary land uses shall be prohibited within Development Area 5 of the Northern Star PAD.

1. X-rated adult entertainment, tattoo shop, smoke shop or adult book store.
2. Correctional Use
3. Salvaging and Recycling Note: Household goods donation centers are permitted.
4. Billboard
5. Manufactured Housing
6. Residential Care Services,
 - a. Physical and Behavioral Health
 - b. Adult Rehabilitation
 - c. Shelter Care
7. Medical marijuana uses.
8. Swap meets or outdoor auctions.
9. Hazardous material storage
10. Renewable energy generation
11. Automotive Service and Repair
12. Hazard Material Wholesaling
13. Construction/Heavy Equipment Wholesaling
14. Animal Production
15. Trade Service and Repair, Major
16. Bar or Nightclub (without food service)
17. Vehicle Rental and Sales
18. Large Scale Retail Establishment
19. Storage Use. – Commercial



D. Landscape Border/Drainage Open Space Permitted Uses

The permitted uses may include but not limited to:

- Drainage Facilities
 - Typical uses include, but not limited to, flood control facilities, such as drainage structures, water harvesting basins and stormwater detention/retention dams and basins.
- Neighborhood Recreation
 - Typical uses include, but not limited to, park areas and park amenities (ramada, barbeques, and park benches).
- Open Space
 - Typical uses include, but not limited to, unimproved land, that is set aside, dedicated, or reserved in perpetuity for public or private enjoyment.
- Public Utilities
 - Typical uses include, but not limited to, utility generation, solar, transmission, and/or distribution of basic utility services for uses, such as sanitation, water, gas, and electrical services.
- Trails
 - Typical Uses include, but not limited to, unpaved or paved paths permitted for use only by pedestrians and non-motorized bicycles.

E. Accessory Land Uses

Land uses accessory to the Permitted Land Uses are allowed within the PAD, subject to compliance of UDC Section 4.3.3.

F. Excluded Land Uses

Land uses not listed as a Primary or Secondary use, or land uses that are not an accessory to the Primary or Secondary use, are prohibited within the Northern Star PAD.



G. Development Standards

The Northern Star PAD seeks to conform to the plan goals and policies established in the Pantano East Area Plan. In order to achieve those goals, the PAD will provide appropriate transitioning to surrounding development through the use of development standards. For the purpose of setback and buffer requirements and other similar development standards that would otherwise apply to separately owned lots or parcels under the UDC, the PAD shall be considered as a single parcel. All new development within the PAD shall conform to applicable building, fire and other life safety standards. These standards will supersede the standards in the Unified Development Code (including but not limited to Article 4, Section 4.8, 4.9, Article 5, Section 5.3) in accordance with Section 3.5.5 of the UDC, except where specific references to such standards are provided in this section of the document.

1. Site Development

Table III.D.1: Development Area Standards

	Non-Residential & Residential Development
Minimum Site Area	none
Maximum FAR	none
Maximum Lot Coverage	none
Maximum Building Height	<ul style="list-style-type: none"> • Development Areas 1 & 2 shall be a maximum of 50 feet. Development Areas 3, 4 and 5 shall be a maximum of 40 feet. The buffer areas are excluded from development and the dashed area allows for one (1) Building with (85'-100') Building Height*. A theater of 45' shall be permitted within the 40' Building Height Area. The dimensions shown on Exhibit III.D.1 for building height areas exclude all buffer areas.
Minimum Perimeter Yard (measured from future curb)	<ul style="list-style-type: none"> • 150-200 feet adjacent to western PAD boundary (200-foot for Large Scale Retail)(measured from property line) • 30 feet adjacent to Old Spanish Trail in addition to the height of the proposed building (measured from future curb) • 20 feet adjacent to Golf Links Road (measured from future curb) • 20 feet adjacent to Houghton Road (measured from future curb)
Minimum Building Separation	Per Building Code

- *85 to 100-foot tall multi-purpose building and parking garage shall not have reflective windows

See Exhibit III.D.1: Building Heights and Exhibit III.D.2: Building Setbacks (pages 67-68)



Exhibit III.D.1: Building Heights



LEGEND

- Project Boundary
- Preliminary Spine Road Location
- 50' Building Height
- 40' Building Height
- No Buildings
- (1) Building w/ 85'-100' Building Height permitted somewhere within this area of 6.3 acres. All other buildings limited to 50' Building Height. Final location to be determined by future development plan.
- ① Development Area #1
- ② Development Area #2
- ③ Development Area #3
- ④ Development Area #4
- ⑤ Development Area #5

Development area boundaries will be determined by the interior spine roads and are subject to change.

Note: Gateway Overlay Zone prevails over the Scenic Route for 700' along Houghton Road from the Houghton/Golf Links Intersection.

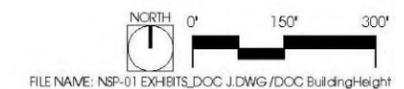


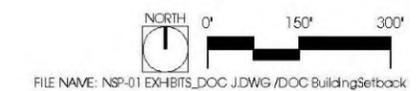
Exhibit III.D.2: Building Setbacks



LEGEND

- Project Boundary
- Development Areas
- Open Space/Landscape Border
- Preliminary Spine Road Location
- Major Access Point
- Minor Access Point
- Building Setback
- ① Development Area #1
- ② Development Area #2
- ③ Development Area #3
- ④ Development Area #4
- ⑤ Development Area #5

Development area boundaries will be determined by the interior spine roads and are subject to change.



H. Gateway Overlay Zone

According to the City of Tucson Unified Development Code, on-street intersections where a Scenic Route and Gateway Route intersect, development review and criteria provisions of the Gateway Route apply for seven hundred (700) feet along the Scenic Route from each side of the intersection. The seven hundred (700) feet is measured from the MS&R right-of-way line of the Gateway Route. Since Golf Links Road is designated as a Gateway Route, the regulations of the Gateway Overlay Zone shall apply to 700 feet along the Houghton Road Scenic Route from the Golf Links/Houghton Road intersection.

I. Scenic Corridor Zone

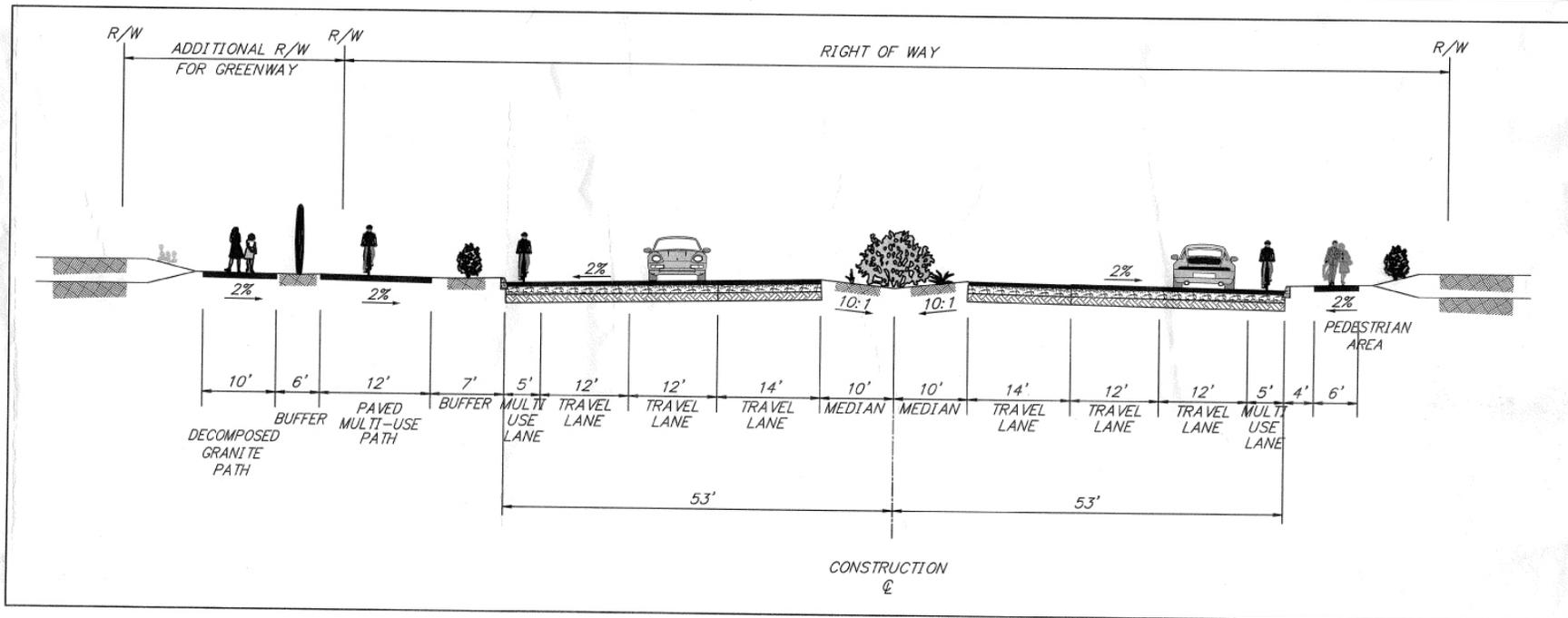
Old Spanish Trail and Houghton Road are designated as Scenic Routes. The following provisions of the Scenic Corridor Zone (SCZ) apply to any portion of all real properties or parcels which are within four hundred (400) feet of the future right-of-way line of any Scenic Route designated on the Major Streets and Routes (MS&R) Plan. These provisions and the provisions outlined in Section III.F page 65 of this document supersede the provisions identified in Article 5, Section 5.3 Scenic Corridor Zone of the Unified Development Code and Section 5.3.11.

1. Preservation and Reestablishment of Vegetation.

- a. A thirty (30) feet wide buffer adjacent to the MS&R right-of-way line of Old Spanish Trail is proposed for the purposes of this Scenic Corridor Zone. Existing natural vegetation shall be preserved within this buffer. Existing natural vegetation shall also be preserved within the twenty (20) foot wide buffer adjacent to the MS&R right-of-way line of Houghton Road. This (20) foot wide buffer is proposed in addition to the future Houghton Road improvements for a 6-foot pedestrian walk and a twenty-four and a half (24.5) foot buffer within the ROW with additional landscaping area as shown on Exhibit III.F.2.a on page 70. Note: the greenway is proposed on the east side of Houghton Road. Additional plants indigenous to the site and surrounding area may be added to supplement existing vegetation and barren areas.
- b. Modifications to drainageways within the SCZ may occur as shown in Section III.L: Biological Resources of this PAD. No alterations to the 100-year floodplain are proposed within the Scenic Corridor Zone.



Exhibit III.F.2.a: Houghton Road Future Cross Section



TYPICAL SECTION



2. Structure Height

The building heights transition from the existing one & two story residential subdivisions west of the PAD District to 40 feet outside of the 100-foot buffer adjacent to existing residential, 50 feet closer to the arterial roadways and the southeast corner of the site (furthest from existing residential) adjacent to the Golf Links/Houghton Road intersection will be a cornerstone of the project allowing for a one (1) multi-story building (85-100-feet) promoting employment generating uses. Refer to Table III.D.1 (page 66) and Exhibit III.D.1 (page 67) of this document for building height criteria.

3. Viewshed Corridor

The viewshed corridors will be in conformance with the UDC, Section 5.3.6: Siting and Viewshed Corridors. A site that has at least 200 feet of frontage along a Scenic Route must provide view corridors as follows:

1. The view corridor(s) shall have a combined width of at least 20 percent of that frontage; and,
2. There must be at least one view corridor from the Scenic Route into and through that portion of the project that lies within the SCZ.

4. Screening

Screening shall comply with Section III.G of this document.

J. Landscape and Screening Program

1. Streetscape

The site is surrounded by three major public roadways, two of which are scenic routes (Old Spanish Trail and Houghton Road). As shown on *Exhibit III.G: Landscape Border Plan* (page 74) 30-foot wide natural landscape borders will be provided adjacent to the Old Spanish Trail scenic route. Screening may be accomplished with existing vegetation, supplemental vegetation, berms, or walls. The 30-foot natural landscape border may be supplemented with additional native and low water use plants. A 20-foot wide landscape border will be provided along the entire length of Houghton Road. A 10-foot wide landscape border will be provided along the entire length of Golf Links Road. A 30-inch screen will be located along all parking areas.

2. Internal Landscape

The landscape within the PAD shall reflect the image of the Sonoran Desert. The overall plant palette shall consist of native and low water use plants consistent with the appearance of the Sonoran Desert. Landscaping along the Eastview Wash shall reflect attributes of local riparian habitat, while offering enhanced visual interest for pedestrians.

The landscape program for internal landscape shall adhere to the following requirements:



- Interior landscape borders and setbacks otherwise required by the Unified Development Code are not required between parcels within the PAD when developed under separate plats and/or development plans.
- Landscape Border and Screening requirement for all Large Scale Retail Development shall be subject to streetscape border requirements and border requirements adjacent to residential uses found in this section. All interior landscape borders and/or screening is inapplicable internally within the PAD to avoid isolating Large Retail from the remaining PAD development.
- Parking Areas
 - Tree Quantities: (1) tree shall be provided for every (4) parking spaces.
 - Tree Species: Medium size trees of native or low water use species, such as Palo Verdes, Mesquites, Hybrids or similar species shall be used.
- Loading Areas: Loading and delivery docks, outdoor storage areas, garbage and recycling areas and other similar exterior improvements facing residential uses or residentially zoned properties outside of the PAD boundaries and/or adjacent to public roadways will be screened (unless already substantially screened by buildings or other landscaping) with walls a minimum of 6-feet high.
- Trail within 100' landscape border
 - Plants shall be native or low water use species.
 - Planting design shall incorporate some colorful or flowering plant species.
 - Planting design shall incorporate some plants offering wildlife value as habitat or food.
 - Trees or awnings shall provide shade at trail nodes.
 - Trees shall be planted along both sides of the trail to provide shade.
- Eastview Wash
 - Majority of plants shall be native or low water use species.
 - Planting design may incorporate larger riparian tree species, such as Cottonwood, Ash, Sycamore, or similar species
 - Planting design shall incorporate some plants offering wildlife value as habitat or food.
 - Trees or awnings shall provide shade at trail nodes.

3. Landscape/Screening borders adjacent to residential uses

The PAD borders two existing residential subdivisions to the west of the site: Arizona La Victoria and Rancho Paraiso. The northern subdivision (Arizona La Victoria) is screened by an existing 8-foot masonry wall. A 100-foot landscape border will be provided along the boundary adjacent to this subdivision.



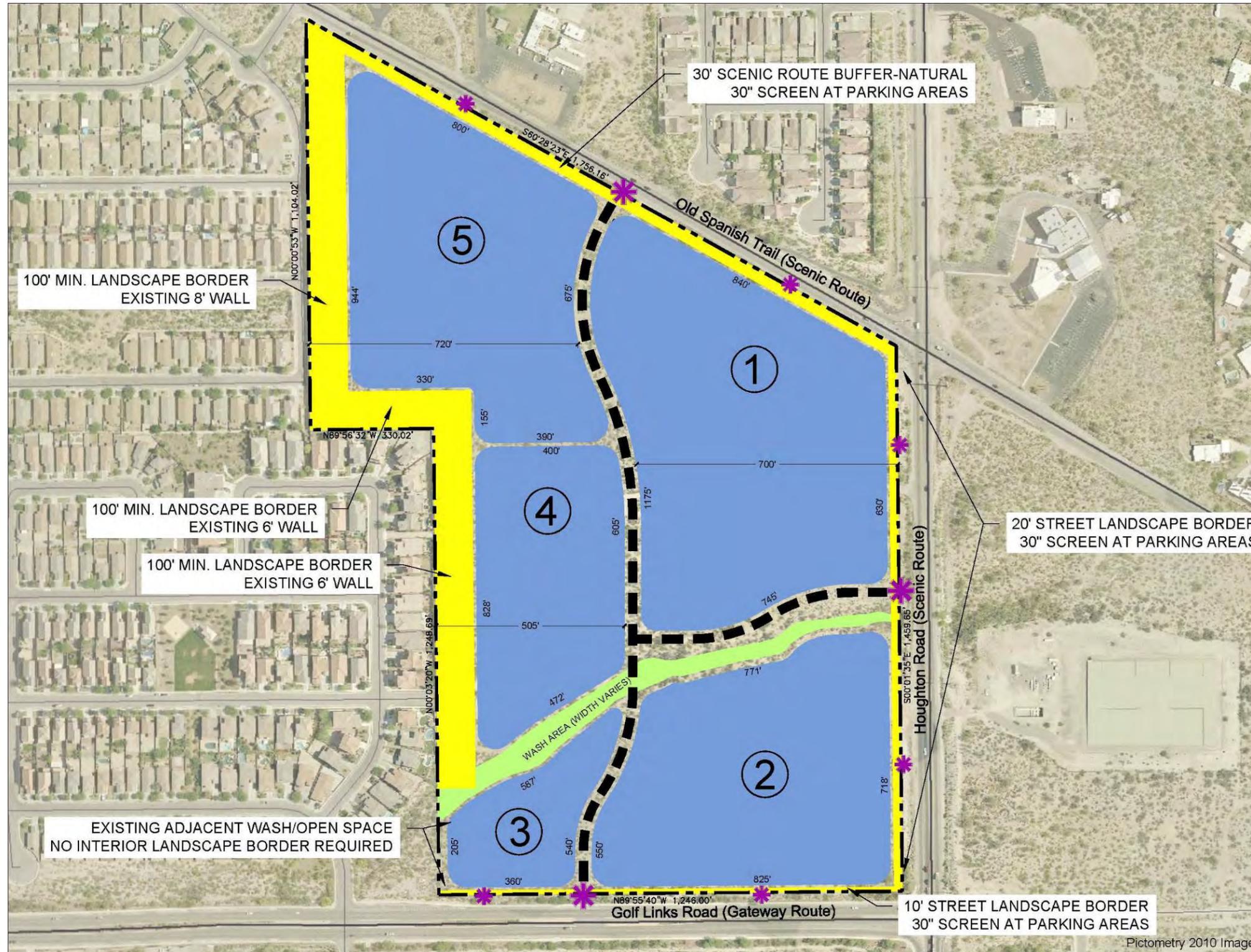
Most homes within the southern subdivision, Rancho Paraiso, are screened by an existing 6-foot masonry wall. A few homes along the south end of Rancho Paraiso adjacent to Northern Star PAD have wrought iron fencing. These Rancho Paraiso Property owners shall have the option to have such wrought iron fencing replaced by the developer with a standard block wall of like kind. In addition, a 100-foot landscape border will be provided along the boundary where residences are adjacent to the PAD. The Eastview Wash is located at the southern portion of the boundary between this subdivision and the PAD. Residences in this area are separated from the PAD by the existing wash/open space. This area of existing wash/open space will provide the screening and landscape border along this portion of the boundary.

Screening from existing residential areas will be accomplished with the existing screen walls at the property boundary and the 100-foot landscape border. The 100-foot landscape border will be planted with trees, shrubs, and accent plants. Parking areas that front the 100-foot landscape border will be screened with a 30-inch screen. Future grades of the building sites will not be known until the Development Plans are created.

Any graffiti that takes place on the east side of the wall belonging to Rancho Paraiso and Arizona La Victoria shall be removed and maintained in its original condition by the developer until such time as a site property manager oversees maintenance of the common areas.



Exhibit III.G: Landscape Border Plan

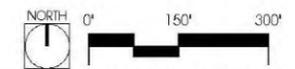


LEGEND

- Project Boundary
- Development Areas
- Open Space/Floodplain
- Major Access Point
- Minor Access Point
- Landscape Border
- Preliminary Spine Road Location
- ① Development Area #1
- ② Development Area #2
- ③ Development Area #3
- ④ Development Area #4
- ⑤ Development Area #5

Development area boundaries will be determined by the interior spine roads and are subject to change.

See Houghton Road Future Cross Section, Exhibit III.F.2.a



FILE NAME: NSP-01 EXHIBITS_DOC J.DWG /DOC LandscapeBorders (2)



K. Hydrology

1. Response to Hydrologic Characteristics

The proposed land use for the Northern Star PAD assumes impervious surfaces to generally cover approximately 60%, or greater, of the watershed area. The proposed land uses will include impervious surfaces associated with buildings, parking areas, and access lanes, while providing open space in the form of landscape areas, water harvesting basins, and natural areas. Since the site is over an acre in size and proposing a commercial use, both on-site detention and retention will be required to reduce the developed condition peak flows to at, or below, the existing condition rate for the design storms.

The portion of the upper reach of the Eastview Wash crossing Houghton Road has been proposed as jurisdictional by the City of Tucson Department of Transportation as part of their preliminary jurisdictional application to the US Army Corps of Engineers (USCOE) for the Houghton Road widening project. The on-site portion of the reach between Houghton Road and Golf Links Road has been evaluated by SWCA, and a preliminary jurisdictional application was submitted to the USCOE. However, the jurisdictional status of the wash has not been fully determined at this time. Exhibit III.H. on page 77 shows the location of the upper reach of the Eastview Wash.

2. Encroachment

The area associated with the ordinary high water mark for the upper reach of the Eastview Wash is expected to remain undisturbed within the PAD site, with some disturbance occurring to extend the culverts under Houghton Road onto the site to allow for access. Disturbance associated with culvert crossings at various locations along the wash length is also expected.

3. Post-Development Water Discharge

The hydrologic data for the eight on-site developed watersheds are provided on Table III.H.1: The watershed delineations are provided on Exhibit III.H on page 77.

Table III.H.1: Hydrologic Data for Developed Condition Watersheds

Watershed	Area (ac)	Soil	L (ft)	H (ft)	Q ₁₀₀ (cfs)
1	3.8	100% C	600	22	34
2	6.0	100% C	800	26	54
3	7.7	100% C	850	30	70
4	10.0	100% C	1,050	44	83
5	2.7	100% C	650	18	24
6	25.2	100% C	1,320	30	210
7	3.3	100% C	1,050	38	30
8	0.8	100% C	100	7	7



4. Engineering and Design Features

The Northern Star PAD is located within the Robb Wash, Rolling Hills Wash, and Eastview Wash watersheds. The Rolling Hills Wash and the East View Wash are both non-designated washes and labeled as MW, UC & TW respectively on the Tucson Stormwater Management System (TSMS) “Balanced and Critical Basins Map”. However, since the site is commercial and over an acre, both detention and retention are required. The detention requirement consists of reducing the developed peak flows to at, or below, existing condition peaks for the 100-, 10-, and 2-year storms. The retention requirement is the volumetric difference between the developed and existing 5-year run-off. Preliminary calculations for the proposed detention/retention basins are provided on Table III.H.2.

Table III.H.2: Preliminary Detention/Retention requirements

Basin	Volume, cubic feet
DA 1	9,546
DA 2	16,415
DA 3	21,300
DA 4	30,771
DA 5	7,095
DA 6	77,008
DA 7	9,574
DA 8	2,004

The general topography of the site slopes from east to west. All of the proposed basins should be located down gradient along the west side of the development.

5. Basin Management Policies

Water harvesting will be required for the Northern Star PAD. The water harvesting techniques will include: directing surface flow from the parking areas into the landscaping areas, using structures to capture runoff for later use, dispersing run-off into the soils by increasing the amount of exposed surface area and constructing French drains, utilizing mulch to maximum extent possible to reduce evaporation and retain moisture in the soil.



Exhibit III.H: Hydrology Concept



L. Circulation Plan

1. Vehicular Parking

The number of vehicular parking spaces provided within the Northern Star PAD will be in accordance with UDC requirements, Section 7.4.4. Required Number of Motor Vehicle Parking Spaces. Vehicular parking spaces are not required for patio square footage, such as outdoor seating, farmers markets and other outdoor retail displays.

Vehicle use areas shall be constructed utilizing materials and construction techniques in accordance with recommendations of the geotechnical engineer and concurrence from City of Tucson. The minimum PAAL width within the PAD shall be 20 feet.

Handicapped parking will be provided in accordance with ADA requirements from the 2006 IDC, Chapter 11 and ICC/ANSI 117.1, 2003 Edition. Accessible spaces and "Van Accessible" spaces will connect to the accessible route as required by the 2006 IDC, Chapter 11 and ICC/ANSI 117.1, 2003 Edition. Newly constructed and modified sidewalks, detectable warnings and curb ramps will comply with accessibility requirements as required.

2. Sidewalks

All sidewalks required for new development or redevelopment within the PAD shall:

- Comply with accessibility standards per 2006 IBC Chapter 11 and ICC/ANSI 117.1, 2003 Edition. Accessibility routes from buildings to the public right-of-way will be marked in compliance with the code, measure a minimum of five (5) feet in width, be designed and constructed per Technical Standards Section 7 Pedestrian Access, such as location requirements and materials that are acceptable for hardness, durability, smoothness and accessibility, Have a minimum separation of zero (0) feet between a sidewalk and a building is permitted.

3. Proposed Circulation

The interior proposed roadways within the boundaries of the Northern Star PAD will be in conformance with City of Tucson street standards. As shown on Exhibit III.I.1, the PAD District will have access onto Houghton Road, Old Spanish Trail and Golf Links at the locations shown on Exhibit III.I.1 on page 83. One primary access points and two secondary access points are proposed on all three arterial roadways. Infrastructure phasing for the primary access lanes is found in Section III.K.

Access to the Northern Star PAD property from Houghton Road is affected by an Arizona Superior Court Judgment recorded in Docket 13880, at page 1406 as follows: "That if some time in the future the Plaintiff (Pima County) or its successors (City of Tucson) or assigns builds a divided roadway with a median, said median shall be constructed as to provide one median break between Old Spanish Trail and



Golf Links Road. Further, that Houghton Road shall be constructed in such a manner as to provide the subject property with three (3) right turn in and right turn out access points, one of the said points to be aligned with the median break on Houghton Road. Further, that this condition touches and concerns the subject land and right-of-way and is to run with the land, there being privity of estate between the Plaintiff (Pima County) and the Defendant Yee”.

A proposed cross-section for the primary access lanes is provided within Exhibit III.I.2 on page 84. Each primary access lane may consist of three 12-foot travel lanes, and 5-foot bike lanes, 6-inch vertical curb, and 5-foot sidewalks on each side of the roadway. Exhibit III.I.1. on page 83 also shows the locations of the proposed right-of-way dedications.

Primary access to the site will be provided by Houghton Road, Golf Links Road and Old Spanish Trails. Details of these roadways include:

- Houghton Road currently has a 175-foot right-of-way, with a 200-foot future right-of-way. Houghton Road is classified as an Arterial Street and Scenic Route in the City of Tucson Major Streets and Routes Plan (2007). The Houghton Road Corridor Study (HRCS) was prepared for the Arizona Department of Transportation (ADOT) in 2004 to determine future demands on Houghton Road. The proposed interim period (prior to 2019) roadway section is an uncurbed 4-lane divided roadway, with a 40-foot median. The future (2030) design is for a curbed 6-lane divided roadway with a 20-foot median. Psomas has prepared 30% complete plans for the portion of roadway adjacent to the Northern Star PAD. The 30% plans indicate that the additional 25-feet of right-of-way dedication will be required on the Northern Star PAD property, with additional easements for slopes and drainage, for which the exact lengths have not been specified. Presently, City of Tucson Transportation staff has indicated that the interim condition and associated median will be by-passed and the final future design will be implemented.
- Old Spanish Trail currently comprises a 90-foot right of way, with a future right-of-way of 100 feet. Old Spanish Trail is classified as an Arterial Street and Scenic Route in the City of Tucson Major Streets and Routes Plan (2007). The 30% Houghton Road plans indicate that an additional 10-feet of right-of-way dedication will be required on the Northern Star PAD side of Old Spanish trail along with the intersection right-of-way dedication per the MS&R plan required dimensions.
- Golf Links Road currently comprises a 175-foot right of way, with a future right-of-way of 200 feet. Old Spanish Trail is classified as an Arterial Street and Gateway Route in the City of Tucson Major Streets and Routes Plan (2007). The 30% Houghton Road plans indicate an additional 25-foot of right-of-way dedication will be required on the Northern Star PAD side of Golf



Links Road along with the intersection right-of-way dedication per the MS&R plan required dimensions.

4. Traffic Volumes

The Traffic Engineering Report, Houghton Road, 22nd Street to Valencia Road, by Psomas, July 2008 used the horizon year of 2030 for the projected traffic volumes as shown on Table III.I.1

Table III.I.1: Traffic Volumes-Projected 2030 Daily Volumes

Road	Segment	ADT
Houghton Road	Old Spanish Trail-Golf Links Road	61,088
Old Spanish Trail	Harrison Road-Houghton Road	30,214
Golf Links Road	Harrison Road-Houghton Road	31,500

Due to the expected land uses, the site has been separated into 5 separate zones for the purpose of estimating trip generation. The ITE Manual was used to determine the projected Peak Hour Trips for the proposed Northern Star PAD as shown on Table III.I.2 and presented on Exhibit III.I.1 on page 83.

Table III.I.2: Proposed Use-Trip Generation

Location	ITE Land Use code	Type	GFA per 1000 ft ²	Peak AM-In	Peak AM-Out	Peak PM-In	Peak PM-Out
5	221	Apt 156 units	-	16	57	59	32
4	710 820	Office (3 story) Retail	63 56	122	36	121	188
3	820	Retail	9.6	6	4	18	19
1	862 820	Big Box Retail	129.2 48	123	90	236	253
2	820 710 710	Retail Office (4 story) Office (8 story)	51.6 76.8 238.0	462	82	177	490

5. Proposed Level of Service

The future (2030) Level of Service for the intersections from the Traffic Engineering Report, Houghton Road, 22nd Street to Valencia Road, by Psomas, July 2008 is shown on Table III.I.3.

Table III.I.3: Future Level of Service-Intersections

Intersection	Peak	Level of Service
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Old Spanish Trail/Houghton Road	AM	D
Old Spanish Trail/Houghton Road	PM	D
Golf Links Road/Houghton Road	AM	D
Golf Links Road/Houghton Road	PM	C

In conformance with the Psomas Traffic Engineering Report for Houghton Road, since the access points for the Northern Star PAD are not proposed to be signalized, the Level of Service for the intersections were not defined for the intersections. However, the turning movements and their impacts on the proposed roadway improvements were further analyzed by Mark Hickman, PhD, PE, and the results of his analysis is appended in this PAD document.

The future Level of Service (LOS) for the roadways was derived from the Traffic Engineering Report, Houghton Road, 22nd Street to Valencia Road, by Psomas, July 2008 as shown on Table III.I.4.

Table III.I.4: Future Level of Service-Streets

Roadway	Segment	# Lanes	ADT	LOS
Houghton Rd	Old Spanish Trail-Golf Links	6	61,088	oversaturated
Old Spanish Tr.	West of Houghton Rd	4	30,214	C
Old Spanish Tr.	East of Houghton Rd	2	9,476	C
Golf Links Rd	West of Houghton Rd	4	31,500	C

6. Houghton Road Improvements

Roadway plans for Houghton Road between 22nd Street and Irvington Road are presently in the 30% design stage. Completed design plans are anticipated for 2016 or later. Given recent commercial developments at Houghton and Golf Links Roads, the construction schedule may be accelerated. The PAD design team is working with the City of Tucson staff to develop access onto Houghton Road from the PAD site.

7. Neighborhood Access

Per discussions with adjoining neighborhood associations, the majority of adjacent neighbors prefer to block all pedestrian and vehicular access from their neighborhood to the subject site. Although there are a few neighbors that would like to keep some sort of pedestrian access. The applicant will address the issue per any agreement by the Homeowner's Associations at the direction of the City of Tucson.

8. Alternate Modes of Transportation

Currently, there are no bus stops or bus routes along the three arterials adjacent to the PAD District. The Houghton Road Corridor plans include bus pullouts and bus



shelter pads at the major intersections, including Golf Links and Old Spanish Trail. These improvements will be constructed as part of the corridor project. Some additional bus stops may be installed as development occurs along the corridor. Old Spanish Trail Rd. will not have any bus service in the near future. Therefore, no bus stop amenities will be needed as part of the PAD at this time.



Exhibit III.I.1: Circulation Concept

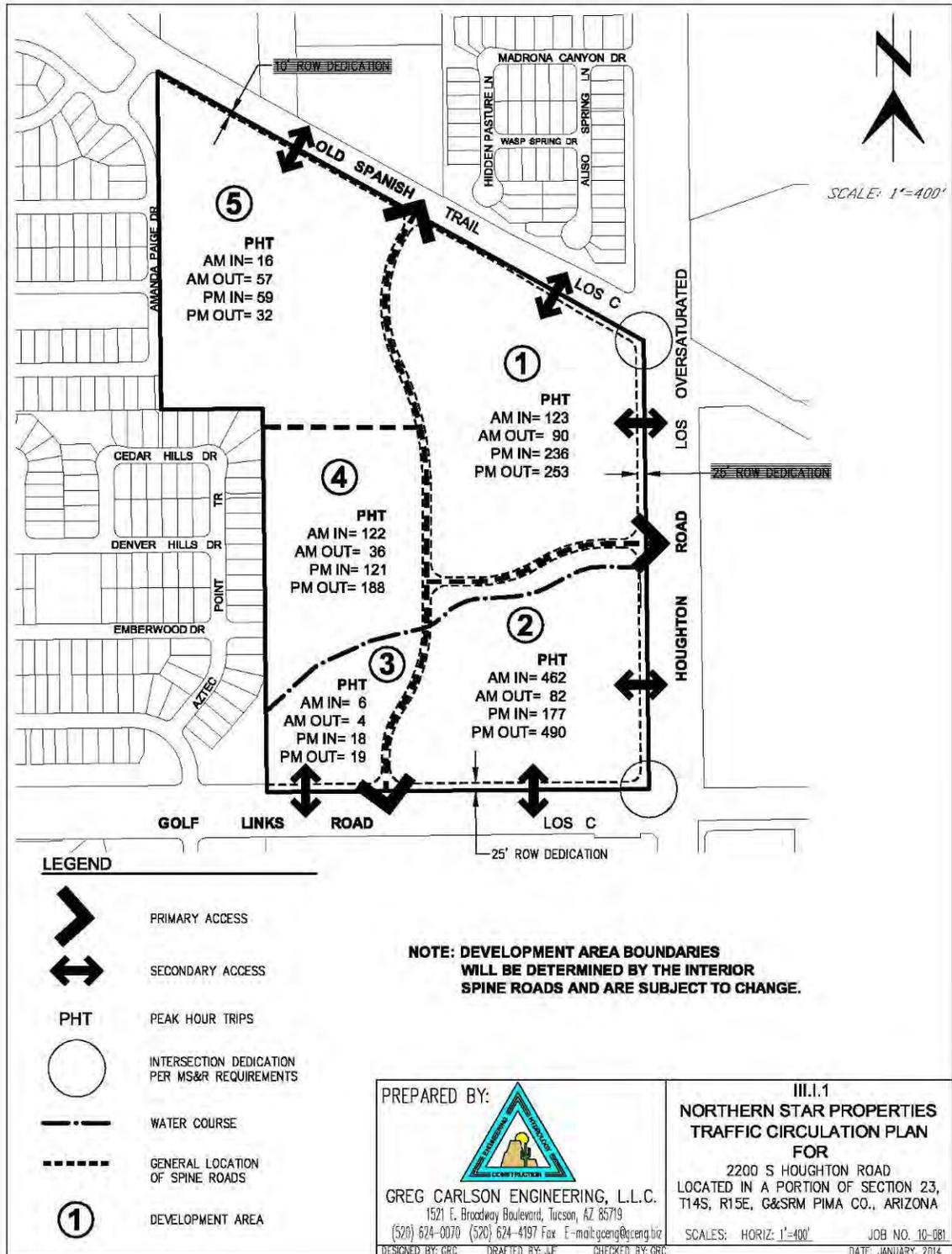
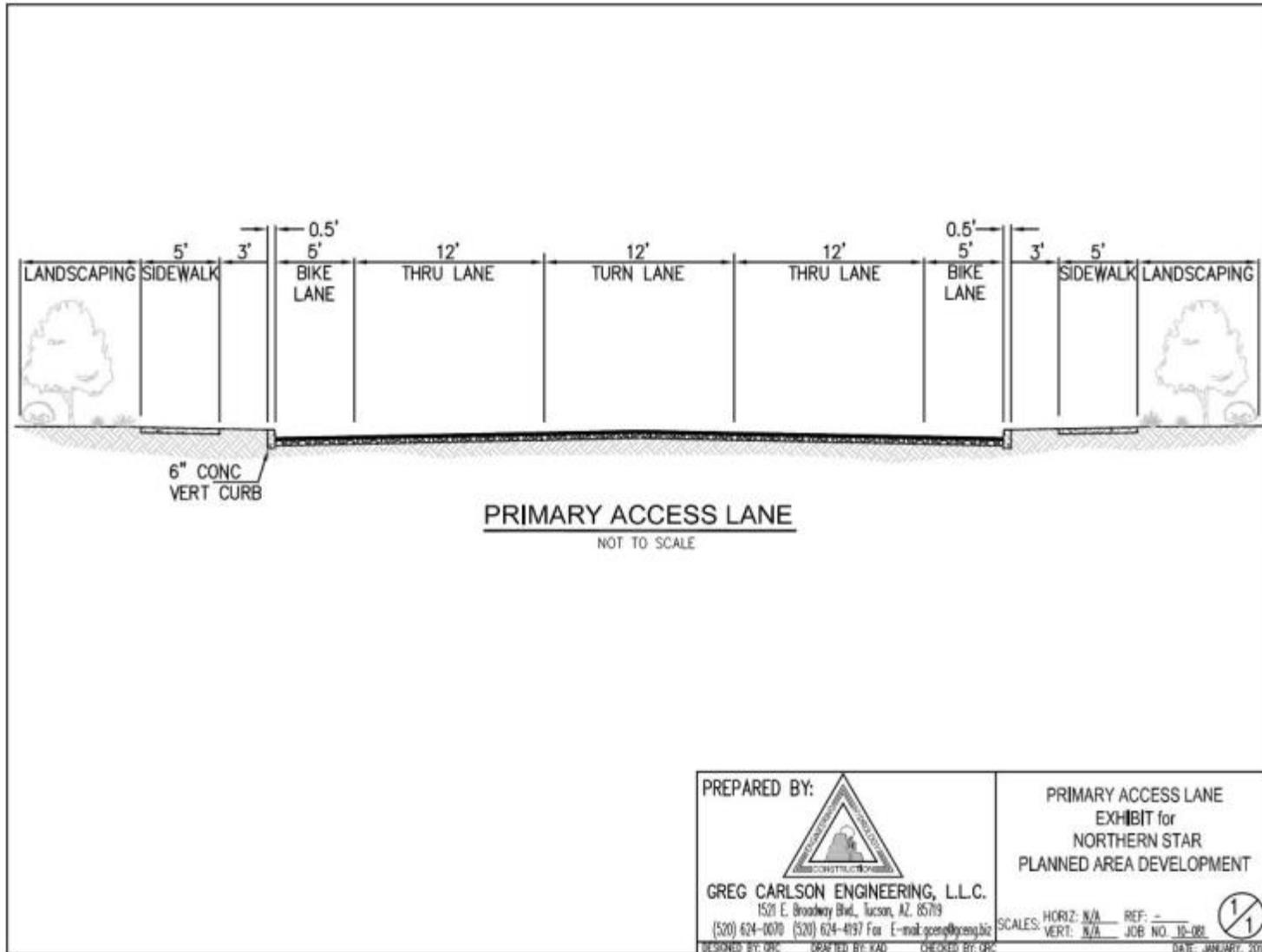


Exhibit III.I.2 : Primary Access Lane Cross Section



M. Pedestrian Connections and Bike Routes

As part of the platting and development review process, a proposed pedestrian plan will be submitted that describes the proposed trail system, proposed trail connections and any other recreational features to be provided as part of the PAD development. For infrastructure phasing, please see Section III.N on page 88-89.

The proposed on-site pedestrian connections provide an amenity for future users of the PAD District. Pedestrian multi-use trails, public sidewalks, bike routes and pedestrian walkways will create an interconnected system to the various uses within the site. The pedestrian multi-use trail system will include a 10-foot pedestrian and bicycle path surrounding by a 100-foot landscape border located along the western boundary of the site. Landscape buffer shall include trees for shade to accommodate the walking path which shall be no closer than 50 feet to the western Northern Star PAD property line. This trail will connect to the 10-foot multi-use pedestrian and bicycle path proposed along the north side of the Eastview Wash. As shown on Exhibit III.J on page 87, the pedestrian trail and bike route system will connect to the public sidewalks, main entrance roadways (location to be determined but will consists of bike lanes (See Exhibit III.I.2: Optional Cross Sections page 84) and bike routes along Old Spanish Trail along and Houghton Road. There is also an existing bike route along Golf Links Road. Any other interior connections will be determined during future site development.

The following standards will be applied to the PAD District to ensure safe pedestrian access within and throughout the site:

- Pedestrian walkways will be provided from proposed buildings to individual parking areas via pedestrian crosswalks.
- Connections will be made from parking lots to the closest public sidewalk adjacent to the site where possible (connections through washes/drainage ways may not be practical).
- At each point that a designated on-site pedestrian walkway crosses a parking lot, street or driveway, the walkway will be clearly visible to pedestrians and motorists through the use of one or more of the following methods:
 - A change in paving material, paving height or paving color;
 - A painted crosswalk;
 - Signage; or
 - Median walkway buffered by landscaping
 - Any other method approved by the City of Tucson which meet the intent of this section.
- New sidewalks will be constructed to City of Tucson Standards along Golf Links Road, Houghton Road and Old Spanish Trail adjacent to the site.
- A pedestrian connection will be provided along the western boundary near Emberwood Drive to provide for pedestrian access from the residential subdivisions to the PAD District (with neighboring HOA approval).
- On-site pedestrian paths (multi-use trail system only) may be constructed of concrete, stabilized decomposed granite, pervious concrete, permeable pavers, concrete pavers, reclaimed asphalt or other materials which meet the intent of this section.



- All pedestrian connections will be constructed to ADA (Americans with Disabilities Act) accessibility standards.
- Shading along pedestrian trails shall be provided.
- A Community Bike Ramada shall be installed by the developer within the right-of-way at the segment of Old Spanish Trail that runs along the northern edge of PAD Development Areas 1 and 5 or in another acceptable location along Old Spanish Trail approved by the Northern Star Design Review Committee and the City of Tucson Department of Transportation (TDOT). Maintenance requirements shall be determined in consultation with TDOT. Construction of the bike ramada shall commence upon the development of approximately 500,000 square feet of commercial/retail and/or 100,000 square feet of residential development, whichever has been developed first. Bike Ramada shall include a covered ramada structure with a drinking water fountain amenity. Ramada shall include a community art project utilizing the neighborhood schools similar to the bike ramada location by the Target Store west of Northern Star PAD. Suggestions to be presented to developer.



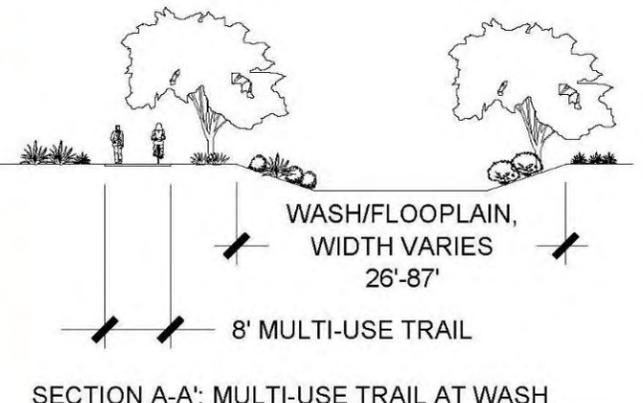
Exhibit III.J: Bicycle and Pedestrian Connections



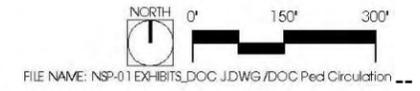
LEGEND

- Project Boundary
- Development Areas
- Open Space/Landscape Border
- Major Access Point (vehicular)
- Minor Access Point (vehicular)
- Preliminary Spine Road Location
- Multi-Use Trail
- Pedestrian Circulation
- Bicycle Route (within ROW)
- Future Houghton Greenway
- ① Development Area #1
- ② Development Area #2
- ③ Development Area #3
- ④ Development Area #4
- ⑤ Development Area #5

Development area boundaries will be determined by the interior spine roads and are subject to change.



Note: Not all internal pedestrian circulation (sidewalks) is shown on this exhibit. Complete internal pedestrian circulation will be determined during future site development.



N. Infrastructure Phasing

The following standards shall be applied to development of the site along with the infrastructure required to serve that portion of the PAD development in accordance with market demands and Traffic Study in Appendix C. The following is a conceptual phasing plan for PAD infrastructure improvements separated into four phases and three stages: initial improvements, mid-term improvements and full build-out improvements. The phasing plan is subject to change; however all necessary infrastructure will be provided to accommodate the phasing of the development. As a result of the traffic impact analysis, if any new public roadways are required, they will be built through DOT Private Improvement Agreement. Additionally, in accordance with City of Tucson Floodplain Ordinance requirements, proposed public roadways shall not be placed in an erosion hazard areas without meeting Floodplain Ordinance mitigation requirements.

1. City of Tucson/RTA Transportation Improvements

- The design concept for the entire Houghton Road corridor from Tanque Verde Road to Interstate 10 has been finished and 30% concept plans are complete. The segment of Houghton road from 22nd Street to Escalante Road (Segment 8) is scheduled for construction in 2016 according to the most recent Houghton Road Corridor Implementation Plan 2009-2019. The Houghton roadway for Segment 8 will be widened from 2 to 6 lanes with bike lanes and sidewalks.
- The traffic signals at Old Spanish Trail and Golf Links Road are to be improved as part of the Segment 8 improvements along with the Houghton Road widening.

2. Initial PAD improvements

- If any portion of the PAD District (Phase 1-4) Development commences prior to the Houghton Road RTA improvements, the developer of the area in question will work with City of Tucson Transportation and the Regional Transportation Authority to construct the required interim improvements as determined necessary by a Traffic Impact Analysis for the PAD to function.
- If development commences for Phase 1, the Golf Links main vehicular entry and the public sidewalk along Golf Links Road for the length of the southern PAD District boundary must be completed prior to any Certificate of Occupancy.
- If any portion of development for Phase 2 commences, the public sidewalk along the Houghton Road right-of-way for the length of the eastern PAD District boundary to the Eastview Wash must be completed prior to any Certificate of Occupancy (public sidewalk shall be required only if it has not been completed as part of the Houghton Road improvements).
- If development commences for Phase 3, the Houghton Road main vehicular entry, Houghton Road public sidewalk for the length of Houghton Road north of Eastview Wash and the pedestrian trail along the Eastview Wash must be completed prior to any Certificate of Occupancy (public sidewalk shall be required only if it has not been completed as part of the Houghton Road improvements).
- If any portion of development for Phase 4 commences, the Old Spanish Trail main vehicular entry, public sidewalk along the Old Spanish Trail right-of-way for



the length of the northern boundary of the PAD District, and the pedestrian trail along the western landscape border must be completed prior to any Certificate of Occupancy.

- Detention- Detention and Retention will be provided in accordance with the master hydrology/drainage report.
- Additional right-of-way will be processed at time of block plat approval or first phase development plan approval.

3. Mid-term PAD improvements

- If the PAD Development commences after the Houghton Road RTA improvements have been planned and construction plans completed, but not constructed, the developer of the area in question will finance and work with the City of Tucson Department of Transportation to modify the roadway and intersection plans as determined necessary by the Developer financed Traffic Impact Analysis for the proposed PAD design.
- Detention-Detention and Retention will be provided in accordance with the master hydrology/drainage report.

4. Full Build-out PAD improvements

- If the PAD Development commences after the Houghton Road RTA improvements have been completed, the developer of the area in question will hire an engineer to work with City of Tucson Transportation and the Regional Transportation Authority to prepare plans for additional roadway improvements determined necessary by the Developer finance traffic Impact Analysis for the proposed PAD improvements.
- Detention-Detention and Retention will be provided in accordance with the master hydrology/drainage report.

O. Biological Resources

1. Sonoran Desert

The PAD will conserve features of the Sonoran Desert while permitting appropriate and sensible development. Plant species native to the Sonoran Desert ecosystem and other low water species will be utilized throughout the development, including buffer yards, trails, parking lots, open space and the Eastview Wash. Native Sonoran Desert plants will be salvaged and transplanted on the site. Native plants will be preserved within the Scenic Corridor Zone buffer.

The Eastview Wash and native vegetation within the wash shall be preserved per Section III.K.2. Preservation of the wash will provide wildlife resources and habitat. Open space will be created along the wash to create a site amenity. A trail will run through open space within the 100' wide buffer on the site's west side and along the Eastview Wash. There are no hillsides located on the site. The preservation and salvaging of native vegetation will provide wildlife habitat and resources. The installation of additional native plants throughout the site will create additional wildlife habitat.



Existing soils will be conserved with the use of surface treatments. All areas of disturbed soils will be covered with organic ground covers, inorganic ground covers, or plants, where not otherwise covered by pavement or buildings. Ground covers and plant roots will stabilize and conserve soils in place, reducing any potential soil erosion or loss.

2. Riparian Resources

The site contains two (2) areas that have been mapped by Pima County as Pima County Xeroriparian “C” Habitat. The first area is located at the northwestern corner of the property and is separated from the Robb Wash by a 40’ road and 8’ masonry wall. The second much larger area encompasses portions of the Eastview Wash on site. A field inventory of riparian habitat was conducted within the Regulated Area. The site does not contain any washes that have been mapped by the City of Tucson as ERZ washes.

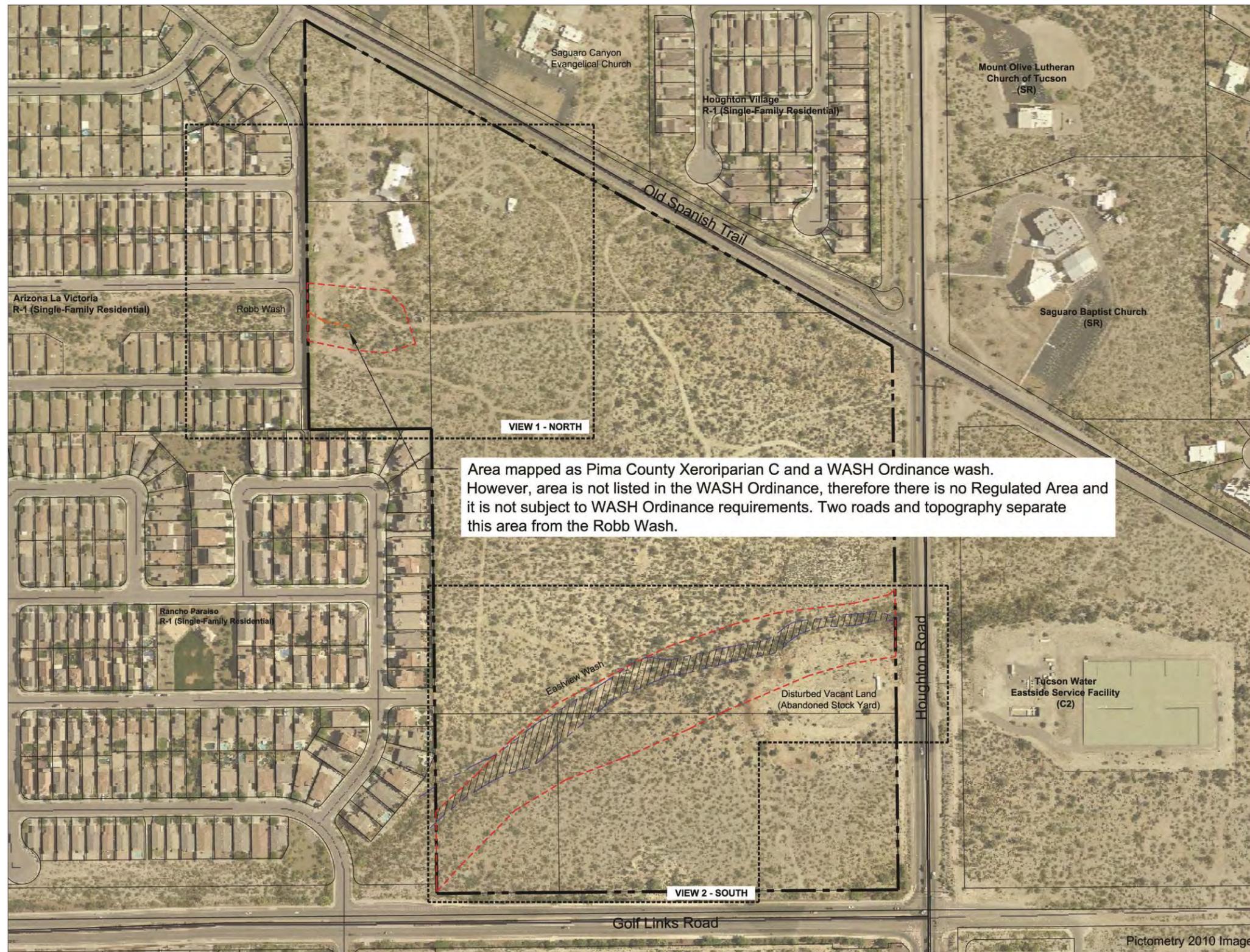
The areas mapped as Pima County Xeroriparian “C” are shown on *Exhibit III.L.1: Riparian Areas* on page 91. Detailed views of each area are shown on *Exhibit III.L.2* and *Exhibit III.L.3* on pages 92-93.

The area mapped in the northwestern corner as Xeroriparian “C” is located in an isolated depressed bowl. It is not connected to the Robb Wash by water flows or habitat. A culvert and headwall at the wall on the property line are higher in elevation than the remaining vegetation in the depressed bowl. Portions of the areas have been previously disturbed, including a paved road and dirt road, both higher in elevation than the Xeroriparian area, separate the area from the Robb Wash. This area is mapped as a WASH Ordinance wash on the City of Tucson Department of Transportation MapGuide site, however, the area is not included in the written description of the Robb Wash listed in the WASH Ordinance. Based upon this information and a meeting with John Beall and Laith Alshami on April 1, 2013, it has been determined that the area is not a WASH Ordinance wash and is not subject to the requirements of the WASH Ordinance. No Environmental Resource Report (ERR) is required as part of the WASH Ordinance for this area. However, an Environmental Resource Report may be required as part of a development plan for the Eastview Wash, located near the southern boundary of the site. The fact that this area is not a WASH Ordinance wash will be addressed in the ERR for the Eastview Wash during the development package review.

The Eastview Wash area mapped as Xeroriparian “C” consists of a broad flat area containing the wash channel and side slopes that rise quickly to much higher elevations as shown *Exhibit III.L.3* on page 93. The Regulated Area is defined by the Xeroriparian “C” boundary and the 100 year floodplain. The area within the 100 year floodplain shall be preserved and mitigated per the requirements of the Unified Development Code.



Exhibit III.L.1: Riparian Areas



LEGEND

-  Project Boundary
-  Parcel Line
-  Sheet View
-  Mapped Pima County XeroRiparian C Boundary
-  100 Year Floodplain
-  Mapped WASH Ordinance Wash
-  Regulated Area

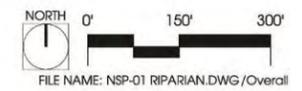


Exhibit III.L.2: Robb Wash



LEGEND

-  Project Boundary
-  Parcel Line
-  Existing Mapped Pima County XeroRiparian C Boundary
-  Mapped WASH Ordinance Wash

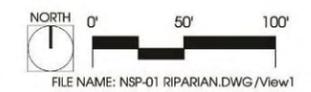
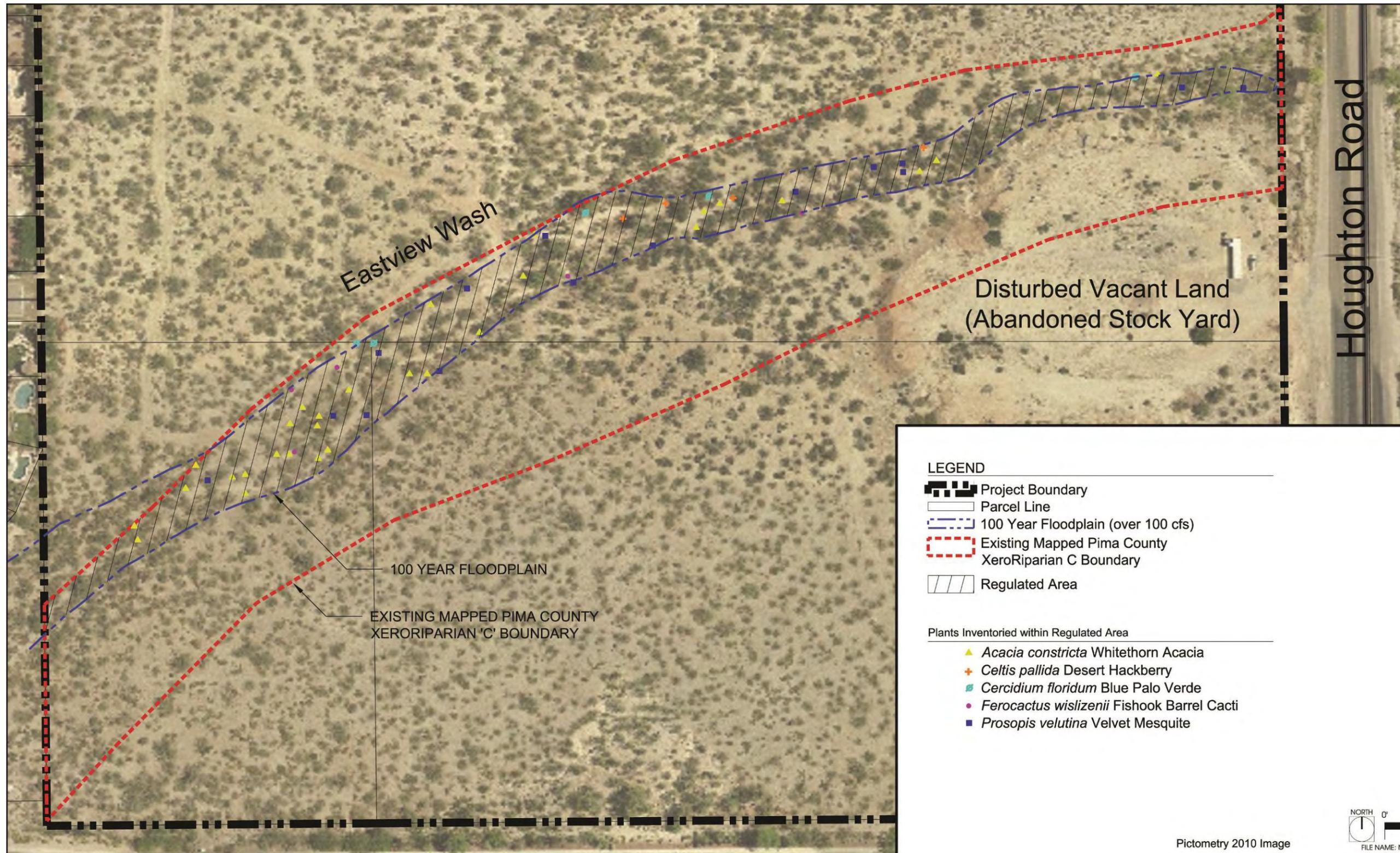


Exhibit III.L.3: Eastview Wash



P. Cultural Resources

A review of Arizona State Museum records revealed that the entire PAD site has not been previously surveyed for cultural resources. The entire site is designated to have Low Archaeological Sensitivity as defined in the Sonoran Desert Conservation Plan (SDCP). Historic or prehistoric features or artifacts discovered during future ground disturbing activities should be reported to the City of Tucson Historic Preservation Officer. Pursuant to A.R.S. 41-865 the discovery of human remains and associated objects found on private lands in Arizona must be reported to the Director of Arizona State Museum.

Q. Conservation Standards

Conservation standards will be accomplished via low water use plants, efficient irrigation and rainwater harvesting.

1. Low Water Use Plants

The plant palette at Northern Star will consist of predominately low water use, native and regionally adapted plants. The plants will be located relative to their functionality and the uses associated with the zones within which they are planted. The use of low water use plants in locations appropriate with their species characteristics provides for the conservation of potable water while assuring the survivability and long term health of such plant material.

2. Irrigation

Plants requiring irrigation shall be irrigated by means of an efficient underground drip irrigation system. Underground drip systems reduce water evaporation and waste, thereby conserving water. The irrigation system will be controlled by a programmable controller which can be used to adjust irrigation schedules. The use of different seasonal irrigation schedules reduces the amount of water applied during cooler and wetter periods. Irrigation systems shall be fitted with irrigation controllers and shall be capable of monitoring and responding to plant water needs through the use of soil moisture gauges, tensiometers, weather stations and/or evapotranspiration data. The technology chosen should be capable of preventing the irrigation system from running if sufficient soil moisture is present to support the vegetation. All systems shall include rain shut-off devices.

3. Rainwater Harvesting

A water harvesting plan will be prepared at time of development plan submittal in compliance with Development Standards 10-03 illustrating 50 percent of estimated landscape water budget is met by water harvesting techniques.



A number of passive rainwater harvesting techniques will be employed to direct surface water and capture rainfall for the benefit of the landscape: curb cuts, flush curbs, recessed planting areas, minimized compaction of planting areas and semi-pervious pavers.

4. Heat Island Mitigation

Several features within the PAD will be used to offset the heat island effect created by the Planned Area Development. A large portion of the site will be set aside as open space. Open space areas will contain large number of trees and vegetation and both organic and inorganic ground cover. Over 18 percent of the site will be designated as open space for landscape buffers and preservation of Eastview Wash 100-Year Floodplain. Interior landscaping is not included in this designation and will further reduce heat absorption and shade paved areas. Trees and vegetation will be installed at building perimeters. Parking areas will include (1) shade tree for every (4) parking stalls. Shade trees will be planted along the 10' multi-use trail running through the site. These trees will shade the trail pavement, reducing the heat island effect. Rainwater harvesting will be implemented as described in the section above, further reducing the heat island effect. The color palette for large areas with solar exposure will reduce the heat island effect. Roof tops, concrete sidewalks and areas of inorganic ground cover will be limited to light colors (white, light grey, beige, gold, and tan).

R. Solid Waste & Recycling Material Disposal & Storage

All required Solid Waste and Recycle materials collection and storage shall be located and screened, to allow for safe access and maneuverability within the development. Enclosures for the storage of waste containers shall be designed in accordance with the Unified Development Code, Section 7.15: for solid waste and recycle disposal collection and storage. The setback for these facilities from existing residential subdivision to the west of the site shall be a minimum of 200 feet from the western property line. Development Areas 1 and 2 are not limited in the hours of operation for delivery and trash pickup. Delivery and trash pickup for Development Areas 3, 4 and 5 shall be limited to between 7:00 a.m. and 7:00 p.m.

S. Wastewater

The owner/developer shall obtain written documentation from the Pima County Regional Wastewater Reclamation Department (PCRWRD) that treatment and conveyance capacity is available for any development within the rezoning area, no more than 90 days before submitting any tentative plat, site plan, sewer improvement plan or request for building permit for review. Should treatment and/or conveyance capacity not be available at that time, the owner/development shall have the option of funding, designing and constructing the necessary improvements to Pima County's public sewerage system at his or her sole expense or cooperatively with other affected parties. All such improvements shall be designed and constructed as directly by the PCRWRD.



T. Signage

All signage shall be in accordance with the Unified Development Code and Pima County Outdoor Lighting Code requirements. Illuminated signage facing west within 400 feet of the Northern Star Pad western property line shall not be permitted.

U. Northern Star Properties Master Association

The implementation of the Northern Star PAD is the responsibility of the Builder, the Northern Star Master Association and the City of Tucson. The Northern Star Master Association, or their successors and assigns, is responsible for providing the basic infrastructure needs including roads, sewer and water in a timely and efficient manner. The Northern Star Master Association is responsible for recording the Master Conditions Covenants and Restrictions (CC&R).

The Builder, residential or commercial, is the purchaser of a development area, or portions of a development area, which may or may not require additional infrastructure improvements, such as utility extensions or local streets. The Builder is responsible for all construction and lot improvements not made by the Master Association within their area(s) of ownership. Should the Builder purchase a development area without the infrastructure improvements generally provided by the Master Association, the Builder becomes the responsible party for the construction or installation of those improvements.

V. Design Review

The Design Review Committee shall consist of one (1) member of the master association, (1) member of the project consultant team, and (1) volunteer representative from the surrounding neighborhoods and/or neighborhood association. The surrounding neighborhoods and/or neighborhood associations may include but not limited to, Rancho Paraiso, Hearthstone, Houghton Village or Arizona La Victoria or surrounding Registered Neighborhood Associations (Old Spanish Trail, Eastside or South Harrison). The Design Review Committee will review and approve all details of project design. A copy of the self-certification will be provided to the City of Tucson at the time of plan submittal advising whether the architectural and landscape design conforms to the Northern Star PAD Design Guidelines

The DRC shall remain in place through 100% of the initial build-out of the development. Beyond this point, the Committee's function will survive through the Homeowners Associations of the residential subdivision or through the property owners association of the commercial center, at their respective discretion.

W. Design Standards

Prior to development of any area within Northern Star PAD, detailed development and design standards will be submitted as an extension of this document. These standards



will follow the owner's vision to create a quality activity center similar to others in the metropolitan community such as Williams Center, La Encantada and The Tucson Spectrum. The guidelines will provide the framework for the design and character of Northern Star Planned Area Development and address the following goals:

- A common theme and design elements will be established that will be used throughout the project area. They will cover unifying site design elements, including streetscape design, signage, materials, colors and architectural styles and will be reviewed and approved by the design review committee established by the Master Developer. Guidelines should be clear, concise and enforceable.
- Address adjacent neighborhoods and provide for transitions at the edges of the property.
- Ensure new development does not adversely impact existing neighborhood character by complying with the Compatible Design policies of the Pantano East Area Plan.
- Ensuring compatibility with existing Southwestern architectural styles and building materials of adjacent land uses.
- Provide consistency with the PAD and the intentions of the document.

X. Interpretations and Amendments

1. Interpretation

The regulations and guidelines provided within this PAD supersede existing regulations within the City of Tucson Unified Development Code. If an issue arises regarding definitions, conditions, standards and/or situations not addressed in this PAD, those in the UDC or other COT regulations shall prevail, as interpreted by the COT Zoning Administrator.

2. Amendments

Amendments to this PAD may be necessary over time to respond to the changing market demands, or financial conditions, or to respond to the unanticipated needs of new users. Non-substantial changes to the PAD shall be approved pursuant to UDC Section 3.5.5.I and include the following:

- Modifications to the permitted and secondary uses that do not change the overall intent of the PAD.
- Modifications to tax code parcel boundaries, including changes to interior boundaries or combining parcels. (Except that changes to the PAD perimeter boundary may not be considered a minor amendment or non-substantial changes to the PAD).
- Modifications to the proposed site plan provided the Development Standards set forth in the PAD are maintained.
- Any other items not expressly defined as substantial based on UDC Section 3.5.5.I



Substantial changes (as defined in UDC Section 3.5.5.1), are subject to the amendment application process outlined in UDC Section 3.5.5.1.2.



Definitions

1. Noise Buffer: A setback between two separate land uses to lessen any negative impact from that land use.
2. Level of Service: is a measure used by traffic engineers to determine the effectiveness of elements of transportation infrastructure. LOS is most commonly used to analyze roadways by categorizing traffic flow with corresponding safe driving conditions.
 - **Level-of-Service B** describes reasonable free-flow operations. Free-flow (LOS A) speeds are maintained, maneuverability within the traffic stream is slightly restricted. The lowest average vehicle spacing is about 330 ft (100m) or 16 car lengths. Motorist still have a high level of physical and psychological comfort.
 - **Level-of-Service C** describes at or near free-flow operations. Ability to maneuver through lanes is noticeably restricted and lane changes require more driver awareness. Minimum vehicle spacing is about 220 ft (67m) or 11 car lengths. At LOS C most experienced drivers are comfortable, roads remain safely below but efficiently close to capacity, and posted speed is maintained. Minor incidents may still have no effect but localized service will have noticeable effects and traffic delays will form behind the incident. This is the targeted LOS for some urban and most rural highways.
 - **Level-of-Service D** describes decreasing free-flow levels. Speeds slightly decrease as the traffic volume slightly increase. Freedom to maneuver within the traffic stream is much more limited and driver comfort levels decrease. Vehicles are spaced about 160 ft(50m) or 8 car lengths. Minor incidents are expected to create delays. Example of LOS D is perhaps the level of service of a busy shopping corridor in the middle of a weekday, or a functional urban highway during commuting hours. It is a common goal for urban streets during peak hours, as attaining LOS C would require a prohibitive cost and societal impact in bypass roads and lane additions.
 - **Level-of-Service F** describes a breakdown in vehicular flow. Flow is forced; every vehicle moves in lockstep with the vehicle in front of it, with frequent slowing required. Technically, a road in a constant traffic jam would be at LOS F. This is because LOS does not describe an instant state, but rather an average or typical service. For example, a highway might operate at LOS D for the AM peak hour, but have traffic consistent with LOS C some days, LOS E or F others, and come to a halt once every few weeks. However, LOS F describes a road for which the travel time cannot be predicted. Facilities operating at LOS F generally have more demand than capacity.



Bibliography

Aerial Photographs, Pictometry, 2010.

Balanced and Critical Basin Map, Pima County.

City of Tucson General Plan ratified 2003.

City of Tucson GIS, TDOT Map Center, 2012.

City of Tucson Unified Development Code, 2013

FEMA Flood Insurance Rate Map, Pima County, Arizona.

Institute of Transportation Engineers, Trip Generation Manuals, 7th Edition, Volumes 1 & 3, 2003

MapGuide, Pima County Department of Transportation.

Stormwater Detention/Retention Manual, City of Tucson

USGS Topographic Map, Jaynes Quadrangle.



Appendix A: Conceptual Site Plan



This site plan is for illustrative purposes only. There are a great number of variations of that plan that could ultimately be utilized on this site. The plan is intended to show the overall concept for the site in order to provide direction for traffic and civil engineering studies, relationship of possible structures to surrounding neighborhoods, the ratio of necessary parking and possible on-site traffic circulation. It is not to be considered an actual proposed development plan.



Appendix B: UDC Code References for Use Specific Standards

The permitted uses allowed within the C-2 zone are listed within Section III.C: Permitted and Excluded Uses of this Specific Plan. The use-specific standards that pertain to these uses are listed below. Use Specific Standards are intended to provide additional standards for certain permitted and special exception land uses in order to mitigate any adverse impacts on adjacent land uses, on the immediate neighborhood, and on the community.

4.9.3.D.1 Educational Uses

Educational Uses are subject to the following use specific standards. Variances are not permitted; however, if the standards cannot be met, the applicant can request approval through a special exception procedure if permitted within the zone.

1. Licensing

- a. If licensing, certification, or similar type of approval is required by the State of Arizona for the use, proof of such licensure, certification, or approval shall be provided. Such information shall include the number of students for which the school is approved.
- b. If the number of students approved by the State exceeds the number approved on the site in accordance with zoning requirements, the number of students is limited to the number that meet zoning requirements.

4.9.4.E Postsecondary Institution

Teaching of only those operations or occupations permitted in the zoning classification of the property as permitted uses is permitted

4.9.4.C.2 & 3 Alcoholic Beverage and Entertainment

2. The following standards are required of large bars or dance halls:
 - a. Minimum Setbacks
 1. Setbacks for the following use areas are measured from the use area to a zone boundary line of R-3 or more restrictive zoning:
 2. Outdoor Use Area: 500 feet.
 3. Parking Area: 200 feet.
 4. Loudspeakers: 500 feet.
 - b. Security Management Plan

The applicant must submit a security management plan describing the method and operation of security within and outside the building, including the parking area, to the Zoning Administrator and the Police Chief. Any changes or amendments to the plan must be filed with, and approved by, the Zoning Administrator and the Police Chief.
 - c. Access

Access shall be either from a street shown on the Major Streets and Routes (MS&R) Map with no vehicular access to the site from a local street or from a local street within a nonresidential development.
3. Large bars and dance halls are prohibited



4.9.4.D.1, 2, 3 & 4 Animal Service

1. Overnight confinement for clinic treatment is permitted for a maximum of five animals.
2. Boarding of animals is prohibited.
3. The activity shall be within a completely enclosed building.
4. An outpatient clinic is permitted for small animals only.

4.9.4.D.1, 2, 3 & 4 Artisan Residence

1. Purpose
To provide an artisan residence use in the NC, C-1, C-2, and C-3 commercial zones designed to be used as both a dwelling and work space by an artist, artisan, or craftsperson, including persons engaged in the application, teaching, or performance of fine arts such as, but not limited to drawing, vocal or instrumental music, painting, sculpture, and writing; and the accessory sale of art objects produced on the premises. Buildings or spaces within buildings shall be used jointly for commercial and residential purposes. Nothing in this subsection limits principal uses as otherwise permitted by the applicable zoning.
2. Combined Uses
A building or a tenant space in a commercial zone may be used as an artisan workshop with a residential dwelling. The workshop and workshop activities shall be located indoors unless outdoor activity is permitted by the applicable zoning.
3. On-site Sales
The on-site sale of the artist's products, including occasional shows of the artist's works, is a permitted accessory use.
4. Separation and Access
Access to the residential use shall be only through the same access that is provided for the artisan use.
5. Operational Requirements
The operation of the artisan residence shall not create noise, vibrations, smoke, fumes, dust, odors, vapors, other noxious emissions, or any other similar nuisances that are discernible beyond the boundaries of the building enclosing the artisan residence.

4.9.4.I.1, 3, 4a & 4b Communications

1. Limited to a radio or television station, provided the buildings do not occupy more than 30 percent of the site and are set back at least 50 feet from any adjoining C-1 or more restrictive zoned property.
3. General. The following shall be applicable to all wireless communication requests.
Noninterference with Public Safety.
 - a. No wireless communication transmitter, receptor, or other facility shall interfere with police, fire, and emergency public safety communications. The Director of Operations for the City is authorized to determine whether any transmitter, receptor, or other facility has interfered with public safety communications or is reasonably believed to be an imminent threat to public safety communications. Upon making that determination, the Director of Operations shall notify the Zoning Administrator and the provider responsible for that facility. The Zoning Administrator may obtain a temporary restraining order from the City Court with



- or without notice to enforce this section, provided a hearing is scheduled within five days of the Court's order.
- b. All applications for towers/antennae will be reviewed by the Communications Division of the City of Tucson Operations Department and any other appropriate public safety department to ensure that the proposed installation of the towers/antennae will not interfere with any public safety communications or operations of the City. All applications shall include a certification by a registered or electrical engineer that each proposed antenna or tower will be in compliance with all standards established by the Federal Environmental Protection Agency and Federal Communications Commission (FCC) regarding potential health and safety hazards. Submittal of information and review of the application by the Department of Operations shall be in accordance with all applicable standards
 - c. Any antenna or tower for which the use is discontinued for six months or more shall be removed, and the property shall be restored to its condition prior to the location of the antenna or tower, all at the expense of the provider. The City may require financial assurances to ensure compliance with this provision/
 - d. No new towers shall be permitted within 400 feet of a designated Scenic Route or Gateway Route; within a designated Historic Preservation Zone (HPZ) or Environmental Resource Zone (ERZ); or on a protected peak or ridge as identified in a Hillside Development Zone (HDZ) except as follows:
 - 1. Communication towers and antennae shall be permitted on a protected peak or ridge that was used for such facilities prior to March 3, 1997, provided any new antennae and towers do not increase the area already disturbed and the placement of any new towers in such areas is approved as a special exception in accordance with Section 3.5.3, Zoning Examiner Legislative Procedure.
 - 2. New antennae may be permitted under Section 4.9.4.1.4 and.5 if they also comply with the purposes and review procedures of the overlay zone. New communication towers may be permitted on Gateway Routes in exceptional circumstances, provided there is no alternative and the placement is approved in accordance with Section 3.5.3, Zoning Examiner Legislative Procedure.
 - 3. The dimensional provisions of Article 6 as applicable to towers and antennae shall be superseded by the provisions of Section 4.9.4.1.5 and by the height and setback provisions of Section 4.9.4.1.5, .6, and .7.
 - e. All proposed wireless communication towers and antennae shall be in compliance with all Federal Communications Commission (FCC) regulations, including those protecting the public health and those protecting historic districts Submittal Requirements. The following information is to be submitted with each application for the installation of a tower or antenna.
 - (1) An updated Provider's Communication Plan, including any proposed changes in the service areas, antennae, towers, or policy direction.
 - (2) The proposed antennae/tower location, the type of antennae/tower, and the proposed service area.



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- (3) A statement of compliance with FCC requirements and specifically the areas listed in Sec. 3.5.4.20.C.6.
 - (4) If the proposed installation involves a new tower, then the following information is required.
 - (a) The searched area for the proposed location.
 - (b) All existing structures, buildings, towers, etc., of greater than twenty (20) feet in height located within the searched area.
 - (c) A report on why collocation within the search area is not a viable alternative.
 - (5) Any technological or engineering requirements which effect or limit the location, height, or construction of the proposed tower/antennae should be included in reports.
 4. The following requires approval in accordance with Section 3.3.3, PDSB Director Approval Procedure. The PDSB Director may forward the request to the Design Review Board (DRB) for design review and recommendation.
 - a. Wireless communication antennae, provided:
 - (1) The antennae are mounted on the wall or roof of a building, or concealed within an architectural or structural element of the building, not exceeding the permitted height of the building.
 - (2) The antennae and tower, or architectural or structural element, are architecturally and/or environmentally compatible with the building and general area.
 - (3) Wall or roof mounted antennae are limited to six feet above the building, or to 15 feet if the antennae are mounted on top of the roof, the building is 40 feet high or taller, and no more than six feet of the antennae can be seen from any point on the street which is a distance from the building equal to the height of the building.
 - b. Wireless communication antennae, provided:
 - (1) The antennae are mounted on an existing structure within public right-of-way or public property.
 - (2) The antennae are architecturally and/or environmentally compatible with the structure and general area.
 - (3) The existing structure may be extended up to ten feet in height to allow for the placement and architectural treatment of the new antennae.
 - (4) The new antennae do not substantially increase the visual mass of the existing facility.

4.9.4.K.1, 2, 3, & 4 Entertainment

1. A circus, carnival, or tent show shall be permitted for no longer than 15 days.
2. Circuses, carnivals, and tent shows are reviewed for compliance in accordance with Section 3.3.3, PDSB Director Approval Procedure.
3. A circus, carnival, or tent show shall be setback 100 feet from the activity to the lot line of any residential use or zone.
4. Motor vehicle parking areas and bicycle facilities for a circus, carnival, or tent show shall be dust-proofed, and access to the vehicular use areas shall be identified and controlled to minimize vehicular and pedestrian conflicts.



4.9.4.L.3 Financial Service

3. No non-chartered financial institution facilities, such as payday loan facilities, except where permitted as a special exception under Section 4.9.4.L.4.

4.9.4.M.1 Food Service

1. Activities may be conducted outdoors. Loudspeakers or music, live or recorded, shall not be permitted within 600 feet of a residentially zoned property.

4.9.4.O.2 Medical Service

2. Blood donor centers are not permitted.

4.9.7.E Home Occupations

1. Home occupations require review and consideration for approval in accordance with Section 3.3.3, *PDSD Director Approval Procedure*.
2. The home occupation shall be clearly secondary to the residential use of the dwelling.
3. The home occupation shall be conducted in such a manner that it is compatible with the residential character of the neighborhood in which it is located.
4. Except for multifamily development, no more than 25% of all buildings on the lot may be devoted to the home occupation. For multifamily development, no more than 25% of the dwelling unit may be devoted to the home occupation. A detached accessory building of not more than 200 square feet in area may be used for such home occupation. Goods related to the home occupation shall not be visible from the street.
5. Persons other than those residing in the dwelling shall not be employed in the home occupation, except that one nonresident of the premises may be employed in the IR, RH, SR, SH, O-2, O-3, NC, C-1, C-2, C-3, OCR-1, and OCR-2 zones.
6. Goods related to the home occupation shall not be visible from the street.
7. Goods shall not be sold on the premises.
8. Outdoor storage of materials or equipment related to the home occupation activity is not permitted on the premises.
9. Except for permitted signage, the home occupation use shall not substantially alter the exterior appearance or character of the residence in which it is conducted, either by exterior construction, lighting, graphics, or other means.
10. No more than one sign shall be visible from the exterior of the property used as a home occupation. The sign shall not exceed one square foot in size. Signs shall also conform to Chapter 3 of the Tucson Code.
11. A home occupation shall not create any nuisance, hazard, or other offensive condition, such as that resulting from noise, smoke, fumes, dust, odors, or other noxious emissions. Electrical or mechanical equipment that causes fluctuations in line voltage, creates any interference in either audio or video reception, or causes any perceivable vibration on adjacent properties is not permitted.
12. No more than five clients per day, and only one client at a time, shall be permitted on site.
13. Except as otherwise required, additional motor vehicle and bicycle parking is not required for a home occupation. The home occupation may involve the use of no more than one commercial vehicle for the transportation of goods or materials to and from the premises. The commercial vehicle is limited to a passenger car, van, or pickup truck. This vehicle cannot be more than 20 feet in overall length and not more than seven feet



in overall height and shall be parked on private property in a carport or garage or shielded from view from adjoining properties by landscaping, fencing, or screening material. Motor vehicle and bicycle parking necessitated by the conduct of such home occupation shall be provided on site.

14. Automotive - Service and Repair, hair salon, and Medical Service uses are prohibited as home occupations.

F. Home Occupation, Day Care

1. No more than one full-time equivalent person not residing on the premises shall be employed in the day care use.
2. During the hours of activity of the day care use, there is no limit on the amount of floor area devoted to this use.
3. Outdoor activities and equipment associated with the use is permitted and shall be screened by a five-foot fence, wall, or hedge where adjoining R-3 or more restrictive zoning.
4. Hours of operation shall be noted on the application, and those hours of operation shall not create an adverse impact on adjoining residences.
5. Any vehicle used in conjunction with the day care use is limited to a passenger car, van, or pickup truck.
6. The day care use shall be approved and licensed by the Arizona Department of Health Services prior to final approval.

G. Home Occupation, Group Dwellings

1. Room and board shall be provided to not more than four persons in the Family Dwelling who are not members of the family or household.
2. Meals shall be served only to roomers or boarders residing in the Family Dwelling. Separate cooking facilities in guest rooms are prohibited.
3. Parking is required for Group Dwellings in accordance with Section 7.4, Motor Vehicle and Bicycle Parking.

4.9.7.J.1,3.d & 4 Residential Care Services

1. A Rehabilitation Service or Shelter Care use shall not be less than 1,200 feet, in any direction, from another Rehabilitation Service or Shelter Care use. The applicant shall provide documentation demonstrating compliance with this standard prior to the establishment of the use.
- 3d. Care is permitted for an unlimited number of residents.
4. If licensing is required by the State of Arizona for the use, proof of such licensure is required.

4.9.9.B.1 General Merchandise Sales

1. Outdoor display or storage of fertilizer, manure, or other odorous material shall be located at least 30 feet from any interior lot line.



4.9.9.G 1 & 2 Vehicle Rental and Sales

1. Outdoor lights shall not operate later than 10:00 p.m., except for security lighting provided it does not exceed 10% of all outdoor lighting.
2. Any lights used to illuminate outdoor activity shall be arranged so as to reflect the light away from adjacent property and comply with Chapter 6, Outdoor Lighting Code, of the Tucson Code.

4.9.13.E Outdoor Activity

Activity may occur outdoors.

4.9.13.P C-2 Commercial Zone – General Restrictions

1. Outdoor display of finished products for rent or sale at retail or wholesale is permitted, unless prohibited by a use-specific standard.
2. The land uses in the Commercial Services (except Automotive Service and Repair, Day Care Use; Medical Service, Extended Health Care, Transportation Services, Land Carrier; and Travelers' Accommodation, Lodging) Industrial, Restricted Adult Activities, and Wholesaling Use Groups shall be conducted entirely within an enclosed building unless modified by Use Specific Standards.

4.9.10.A Commercial Storage

1. Adjacent to a residential use or zone, outdoor storage shall comply with the following:
 - a. Storage material shall not be visible from outside the screen.
 - b. Outdoor lighting shall be directed away from adjacent residential uses and zones.
2. Outdoor storage, when permitted, shall not be located in the street perimeter yard.

4.9.10.C.3 Personal Storage

3. All walls or doors visible from adjacent streets and residential properties shall be surfaced with a non-reflective material.

4.9.11.A.1, 5 & 9A. Distribution System

1. The setback of the facility, including walls or equipment, shall be 20 feet from any adjacent residential zone
5. The use shall not have any service or storage yards.
9. The use shall be located wholly within an enclosed building or within an area enclosed on all sides with a masonry wall or compact evergreen hedge, not less than six feet, nor more than ten feet, in height.



Appendix C: Traffic Impact Analysis



To: Greg Carlson, Carlson Engineering
Joe Yee, Northern Star

From: Mark Hickman, PhD, PE

Date: January 14, 2013

Subject: Sequencing of Roadway Improvements for the Northern Star PAD

This memorandum summarizes my assessment of the appropriate sequencing of roadway improvements related to the development of the Northern Star site (hereafter “the site”) at 2200 South Houghton Road in Tucson, Arizona. The subject property is located on the west side of Houghton Road between Golf Links Road and Old Spanish Trail. This property is currently undergoing a site analysis as part of a proposal for a Planned Area Development (PAD). My assessment of possible land uses are based on the Planning Center’s Conceptual Site Plan (NSP-01_ConceptualSitePlan.pdf), hereafter referred to as the “Conceptual Plan”. Potential access locations are based on other site plans prepared by the Planning Center and by Carlson Engineering.

At issue are the Houghton Road corridor improvements planned by the City of Tucson. Currently, this segment of Houghton Road is a 3-lane roadway, with one lane in each direction and a center two-way left-turn lane. The construction along Houghton between Old Spanish Trail and Golf Links is scheduled to be completed in a single stage in 2016. The 30% plans developed by Psomas indicate that, after the corridor improvements, this segment of Houghton will have 3 lanes in each direction and a 36-ft median. A fourth auxiliary lane is included on the west side of Houghton (southbound), to allow right turns from eastbound Old Spanish Trail onto Houghton and right turns from Houghton onto westbound Golf Links. Finally, Old Spanish Trail is a 2-lane undivided roadway, and Golf Links is a 4-lane divided roadway with a 20-foot median. There are no further planned improvements to Old Spanish Trail or Golf Links, outside of plans to widen these intersections near and through Houghton Road.

The purpose of my analysis was to determine: (1) what roadway improvements may be necessary for the Northern Star site, consistent with the planned development of the site; and, (2) to determine the possible timing of these improvements, depending upon the timing of the development of the site and of the Houghton Road project.

My work consisted of the following activities. *First*, using the Conceptual Plan, I used information in the ITE Trip Generation Manual to estimate the number of trips entering and exiting the site, for each land use, for both the AM peak period and the PM peak period on a weekday. *Second*, I distributed these entering and exiting trips to specific entrances to and exits from the site. *Third*, I estimated the minimum volumes entering the site necessary to warrant improvements in roadway infrastructure; i.e., right- and left-turn lanes. *Fourth*, I conducted a sensitivity analysis to determine the levels of development on the site when these infrastructure improvements will be needed. *Fifth*, I recommend specific thresholds for development that should be met before these improvements are required. Details on each of these steps are included in this memorandum.

Trip Generation

From the Conceptual Plan, the land uses in the development, together with the approximate gross floor area (GFA, in 1000’s of square feet), and/or number of units (for the apartment complexes), are listed in Table 1. The trips generated in the AM peak hour and the PM peak hour, entering and exiting the site, are also given in this table. All retail sites were assumed to be a single story, while the office complexes were assumed to have multiple stories. The apartment complexes were assumed to have two stories, allowing 12 dwelling units per major building.

Table 1: Land Use Assumptions

Buildings	Zone	ITE Land Use Type	Number	GFA, 1000 ft ²	AM Enter	AM Exit	PM Enter	PM Exit
Apartment block (2-story)	NW	221	156	---	16	57	59	32
Office – CW (3-story)	CW	710	1	63	87	13	17	79
Retail – CW	CW	820	1	56	35	23	104	109
Retail – SW	SW	820	1	9.6	6	4	18	19
Big Box / Home Improvement	NE	862	1	129.2	93	71	147	160
Retail – NE	NE	820	1	48	30	19	89	93
Retail – SE	SE	820	1	51.6	32	22	96	100
Office 1 – SE (4 stories)	SE	710	1	76.8	105	15	20	95
Office 2 – SE (8 stories)	SE	710	1	238.0	325	45	61	295

For purposes of trip distribution (assigning trips to specific driveways), it was useful to separate the proposed site plan into 5 separate zones. The northwest zone (NW) includes the apartment/mixed use development in the northwest portion of the site. The central west (CW) zone includes some retail and office space. The southwest (SW) zone includes smaller retail. The northeast (NE) zone includes one big box store with a number of peripheral retail sites. Finally, the southeast (SE) zone includes two large, connected office buildings, with some peripheral retail buildings. The zone structure is illustrated in Exhibit 1 (attached PDF).

Trip Distribution

Nine (9) access and egress driveways were used to determine traffic flows entering and exiting at each driveway. There are (1) three driveways from Old Spanish Trail (hereafter OST), including a main entrance in the center; (2) three driveways from Houghton, including a main entrance in the center; and, (3) three driveways from Golf Links, including a main entrance in the center. The locations of these access points are illustrated in Exhibit 2 (attached PDF).

It was assumed that the first two access points along OST would allow left-in access (OST-1 and OST-Main). The third driveway on OST (OST-3) only allows right-in, right-out access, due to its proximity to the intersection of OST and Houghton.

It was also assumed that the minor access driveways on Houghton (Houghton-1 and Houghton-3) would only allow right-in, right-out access. Further, the main access drive at Houghton (Houghton-Main) would allow left-in from Houghton, but *not* left-out. A left-out at this driveway presents significant challenges to the design, particularly in view of the 600-ft distance north to the signalized intersection at Old Spanish Trail, and in view of the weaving that will be necessary for the proposed dual left-turn lanes on the northbound approach at the intersection. Unless a traffic light is installed at this location, the left-out along Houghton is not advised.

Along Golf Links, the minor driveways (Golf Links – 1 and Golf Links – 3) will only have right-in, right-out access due to the current access control (a raised median) along Golf Links. The main entrance on Golf Links would have both right-in, right-out access as well as left-in, left-out access. The Golf Links – Main driveway would be located at the current median break on Golf Links. This location – about 1000 ft from the intersection with Houghton – should provide sufficient distance for a left turn out of the site.

The site’s entering and exiting trips were then allocated to specific access points. This allocation results in the turning movements, at each access point, shown in Table 2.

Table 2: Trip Allocation to Access Points

	AM Peak Hour				PM Peak Hour			
	Right in	Right Out	Left In ¹	Left Out ¹	Right in	Right Out	Left In ¹	Left Out ¹
OST – 1	3	28	9	17	20	19	26	6
OST Main	18	40	15	31	52	190	17	60
OST – 3	23	11			72	44		
Houghton – 1	30	17			36	52		
Houghton Main	115	46	97	0	47	234	108	0
Houghton – 3	76	15			18	101		
Golf Links – 1	117	17			41	63		
Golf Links Main	105	27	116	18	59	79	105	131
Golf Links – 3	5	1			11	3		

Note: ¹ Shaded cells indicate assumed restrictions on left turn movements.

2030 Turn Lane Conditions

To examine requirements for turn lanes with each access point, I used the City of Tucson’s [Transportation Access Management Guidelines](#). These guidelines include thresholds for adding right-turn and left-turn lanes for access. For left turn lanes, Figure 5-1 was used (p. 25), while for right turn lanes, Figure 5-2 (2-lane roadways) and Figure 5-3 (4-lane roadways) were used (p. 26-27).

Based on the 2030 traffic volumes from the Psomas traffic report, the thresholds for turning volumes are shown in Table 3. If the turning volume exceeds one of these thresholds, then a right-turn lane or left-turn lane (as appropriate) is warranted.

Table 3: Approximate Thresholds for Turn Lanes, using 2030 Forecast Volumes

Location	Right In	Left In
OST – 1	10	12
OST Main	10	12
OST – 3	10	Not Available
Houghton – 1	Auxiliary Lane	Not Available
Houghton Main	Auxiliary Lane	Available
Houghton – 3	Auxiliary Lane	Not Available
Golf Links – 1	14	Not Available
Golf Links Main	14	Existing
Golf Links – 3	14	Not Available

Comparing the thresholds in Table 3 with the expected turning volumes from Table 2, it appears that a right-turn lane will be needed at every access location along OST, and left-turn lanes will need to be added at OST-1 and at the OST Main entrance. A right-turn lane will also need to be added at the first and second entrances along Golf Links, namely Golf Links – 1 and Golf Links Main. It was unnecessary to analyze an additional right-turn lane along Houghton, as right turns into the site in 2030 may use the fourth (auxiliary) lane indicated in the 30% plans. Also, it is possible to allow left-turns from the 36-ft median on Houghton into the site.

Intermediate Turn Lane Conditions

To assess possible intermediate scenarios, I used a planning horizon of 2016. Following the analysis in the Psomas traffic report, traffic volumes were assumed to grow from 2007 to 2030 at a 5.2% annual rate for Old Spanish Trail, 3.7% for Golf Links, and 4.8% for Houghton between Old Spanish Trail and Golf Links. These rates were applied to the 2007 volumes observed by Psomas to obtain 2016 traffic volumes on each roadway.

Using these volumes, the associated thresholds for turn lanes can be seen in Table 4. Before the Houghton Road project is completed, the main entrance to the site from Houghton can use the two-way left-turn lane on Houghton. Similarly, the left turns from Golf Links can use the existing left-turn lane at that location.

Table 4: Approximate Thresholds for Turn Lanes, using 2016 Forecast Volumes

Location	Right In	Left In
OST – 1	24	12
OST Main	24	12
OST – 3	24	Not Available
Houghton – 1	10	Not Available
Houghton Main	10	Existing
Houghton – 3	10	Not Available
Golf Links – 1	44	Not Available
Golf Links Main	44	Existing
Golf Links – 3	44	Not Available

With these as guidelines, we can then examine the potential development scenarios and their likely impact on the turn volumes.

Scenario 1: Northern Star before Houghton

The following recommendations apply if the development of the Northern Star site precedes the widening of Houghton between Old Spanish Trail and Golf Links.

1. A right-turn lane on OST at OST-1 is not needed. The eastbound traffic movements on OST in 2016 do not require a turn lane at this location, even when the Northern Star site is fully developed.
2. A left-turn lane on OST at OST-1 will only be necessary after 60 dwelling units (apartments) have been developed. No other development on the site affects the need for this left-turn lane.
3. A right-turn lane on OST at OST Main is needed after:
 - All housing is developed in the NW zone; **and** the big box in the NE zone is developed; **and** there is a linear combination of (1) at least 30,000 sq ft of retail in NE or (2) at least 12,000 sq ft of retail in CW; **or**,
 - All housing is developed in the NW zone; **and** there is 48,000 sq ft of retail in NE; **and** there is at least 28,000 sq ft of retail in CW; **or**,
 - All housing is developed in the NW zone; **and** there is at least 56,000 sq ft of retail in CW; **or**,
 - All housing is developed in NW; **and** all office space is developed in CW; **and** there is at least 46,000 sq ft of retail in CW **or** 24,000 sq ft of retail in CW and 48,000 sq ft of retail in NE; **or**,

- All office space is developed in CW; **and** there is 48,000 sq ft of retail in NE; **and** there is 32,000 sq ft of retail in CW; **or**,
 - The big box is developed in NE; **and** there is any linear combination of (1) at least 48,000 sq ft of retail in NE, **and/or** (2) at least 24,000 sq ft of retail in CW, **and/or** (3) all office space in CW and 16,000 sq ft of retail in CW.
4. A left-turn lane at OST Main is needed after:
 - All housing is developed in the NW zone **and** the big box in the NE zone is developed **and** there is a linear combination of (1) at least 48,000 sq ft of retail in NE or (2) at least 16,000 sq ft of retail in CW; **or**,
 - All housing is developed in the NW zone **and** there is 48,000 sq ft of retail in NE **and** there is at least 24,000 sq ft of retail in CW; **or**,
 - All housing is developed in the NW zone **and** there is at least 36,000 sq ft of retail in CW; **or**,
 - All housing is developed in NW; **and** all office space is developed in CW; **and** there is at least 26,000 sq ft of retail in CW **or** 14,000 sq ft of retail in CW and 48,000 sq ft of retail in NE; **or**,
 - The big box is developed in NE; **and** all office space in CW and retail space in NE and CW is developed.
 5. A right-turn lane from OST into the OST-3 driveway is needed after completing 42,000 sq ft of retail in the NE zone.
 6. A right-turn lane from Houghton into the Houghton-1 driveway is needed after completing over 35,000 sq ft of retail in the NE zone.
 7. A right-turn lane from Houghton into the main east entrance is needed after:
 - The big box is developed; **and** there is 48,000 sq ft of retail in NE; **and** there is any retail or office development anywhere else on the site; **or**,
 - There is a linear combination of (1) at least 28,000 sq ft of office space in CW or (2) at least 34,000 sq ft of retail in CW; **or**,
 - There is at least 48,000 sq ft of retail development in NE; **and** at least 20,000 sq ft of retail development in CW; **or**,
 - There is a linear combination of (1) more than 40,000 sq ft of office development in the SE zone or (2) over 40,000 sq ft of retail development in the SE zone.
 8. A right-turn lane from Houghton into the Houghton-3 is needed when there is a linear combination of (1) more than 40,000 sq ft of office development in the SE zone or (2) over 40,000 sq ft of retail development in the SE zone.
 9. A right-turn lane off of Golf Links at Golf Links-1 will be needed when there is a linear combination of (1) more than 126,000 sq ft of office development in the SE zone or (2) over 40,000 sq ft of retail development and 100,000 sq ft of office development in the SE zone.
 10. A right-turn lane off of Golf Links at the main entrance is warranted under the following conditions:
 - All retail and office space is developed in the SE and SW zones; **and** there is a linear combination of (1) at least 16,000 sq ft of retail in CW or (2) at least 8000 sq ft of office space in CW; **or**,
 - There is at least 63,000 sq ft of office space in CW; **and** at least 42,000 sq ft of retail in CW; **or**,

- All office space is developed in the SE zone and there is a linear combination of (1) at least 13,000 sq ft of office space in CW or (2) at least 28,000 sq ft of retail in CW; **or**,
- All retail space is developed in the SE and SW zones; **and** there is a linear combination of (1) at least 56,000 sq ft of retail in CW **and** 50,000 sq ft of office space in CW, or (2) 36,000 sq ft of retail in CW **and** 63,000 sq ft of office space in CW.

11. No right-turn lane on Golf Links at Golf Links-3 will be warranted.

Scenario 2: Northern Star after Houghton

With the exceptions of items 6-8 from the list above, the same recommendations apply if the development of the Northern Star site occurs after the widening of Houghton between Old Spanish Trail and Golf Links. Items 6-8 would no longer be needed to accommodate right turns from Houghton, because there is assumed to be an auxiliary lane along this section of Houghton southbound.

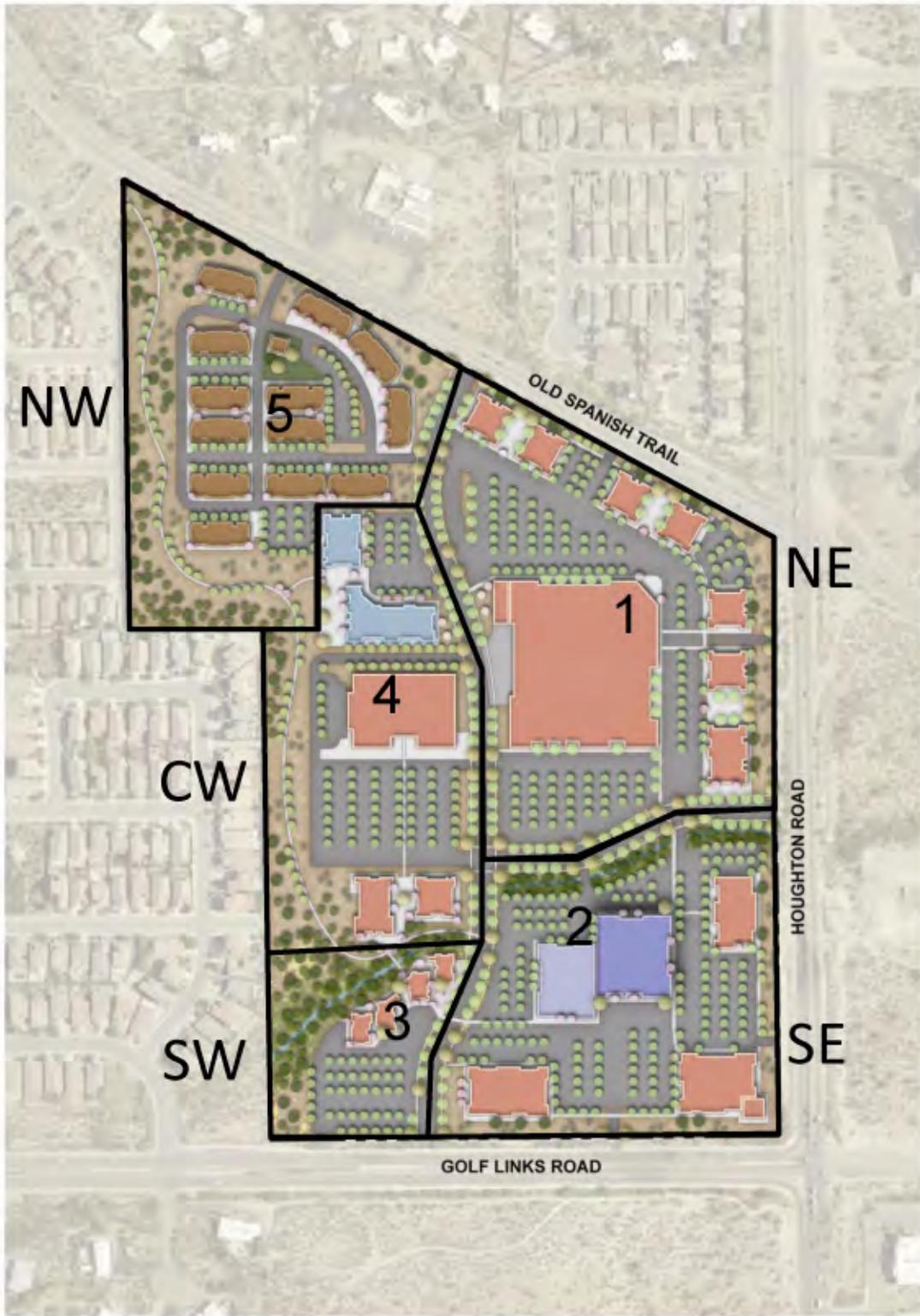
Item 5, the right turn lane at OST-3, is best implemented in coordination with the City of Tucson. In the 30% plans, the right-turn lane on OST eastbound to Houghton southbound begins 712 ft from the intersection with Houghton (after a taper). It may only be necessary to lengthen this right-turn lane further west on OST to accommodate the right-turn lane at OST-3.

Suggested Modifications of the City’s 30% Plans

The following items represent noted elements in the City of Tucson’s 30% plans for the Houghton Road corridor that should be revisited in future plan development.

1. The right-turn lane from OST eastbound to Houghton southbound should be coordinated between the City of Tucson and the Northern Star site to take advantage of the new right turn lane to be added along OST in the Houghton Road project.
2. Along Golf Links, the current roadway plans will need to be adjusted to retain the left-in median break from Golf Links. It appears that this break was eliminated in the 30% plans. A left-out at the same location is not included in the current 30% plans, but will be possible opposite the driveway on the south side of Golf Links. Thus, a left-out capability can be added to the design on Golf Links.
3. The median along Houghton should allow a break for a left-turn lane allowing access to the Houghton main eastern driveway.
4. The left-out from the site onto Houghton, at the Houghton Main access driveway, should not be considered unless a traffic signal is installed at this location.

CONCEPTUAL SITE PLAN



NORTHERN STAR PROPERTIES



Exhibit 1: Zone Structure of Site



Exhibit 2: Access Locations