CITY OF EL PASO, TEXAS
AGENDA ITEM
DEPARTMENT HEAD'S SUMMARY FORM

DEPARTMENT: City Clerk's Office

AGENDA DATE: July 24, 2018

PUBLIC HEARING DATE: August 7, 2018

CONTACT PERSON NAME AND PHONE NUMBER: Laura Prine, (915) 212-0049

DISTRICT(S) AFFECTED: District 1

STRATEGIC GOAL: Goal No. 6 – Set the Standard for Sound Governance and Fiscal Management

SUBGOAL: 6.11 – Provide efficient and effective services to taxpayers

SUBJECT:
AN ORDINANCE THAT THE CITY OF EL PASO SHALL PRESERVE, IN ITS NATURAL STATE AND IN PERPETUITY, ALL OF THE CITY OWNED REAL PROPERTY (APPROXIMATELY 1,106.9316 ACRES) REFERRED TO AS "REINVESTMENT ZONE NUMBER TWELVE, CITY OF EL PASO" DESCRIBED BELOW (THE "LAND"). THE CITY SHALL TAKE ALL STEPS NECESSARY AND APPROPRIATE TO PRESERVE THE LAND AND TO PREVENT IT FROM BEING DEVELOPED WITH EITHER PRIVATE DEVELOPMENT OR MAJOR PUBLIC ROADWAYS. THE LAND IS COMPRISED OF THE FOLLOWING PARCELS IN THE CITY OF EL PASO, EL PASO COUNTY, TEXAS, AND IS MORE PARTICULARLY DESCRIBED AS SET OUT IN EXHIBIT A : PARCEL 1 - NELLIE D. MUNDY SURVEY 246 (APPROXIMATELY 73.6664 ACRES); PARCEL 2 - S.J. LARKIN SURVEY 267 (APPROXIMATELY 632.735 ACRES); PARCEL 3 – S.J. LARKIN SURVEY 269, ABSTRACT 10070, TRACT 1-A (APPROXIMATELY 8.175 ACRES); PARCEL 4 - S.J. LARKIN SURVEY 268, ABSTRACT 10069 (APPROXIMATELY 15.8712 ACRES); PARCEL 5 - S.J. LARKIN SURVEY 268, ABSTRACT 10069, TRACT 1 (APPROXIMATELY 45.664 ACRES); PARCEL 6 – LAURA E. MUNDY SURVEY 234, ABSTRACT 1007, TRACT 2 (APPROXIMATELY 255.39 ACRES); AND PARCEL 7 – LAURA E. MUNDY SURVEY 234, ABSTRACT 1007, TRACT 2 (APPROXIMATELY 105.43 ACRES).

BACKGROUND / DISCUSSION:

On June 20, 2018, an initiative petition was filed with the City Clerk's Office related to the Tax Increment Reinvestment Zone Number 12 geographic area.

Section 3.11 – Initiative of the City Charter requires that the petition verification and placement of the proposed ordinance be placed on the City Council agenda meeting to be held within 30 working days of the filing date of the petition.

Thus, pursuant to all applicable City Charter provisions and requirements, the City Clerk is presenting this petition to the City Council within the 30 working days specified.

PRIOR COUNCIL ACTION:

Ordinance 018790 adopted by City Council on May 29,2018 designated a noncontiguous geographic area as Reinvestment Zone Number 12.

AMOUNT AND SOURCE OF FUNDING:
N/A

**********REQUIRED AUTHORIZATION**********

DEPARTMENT HEAD: Laura D. Prine

(If Department Head Summary Form is initiated by Purchasing, client department should sign also)

ORDINANCE NO. _____

The City of El Paso shall preserve, in its natural state and in perpetuity, all of the City owned real property (approximately 1,106.9316 acres) referred to as "Reinvestment Zone Number Twelve, City of El Paso" described below (the "Land"). The City shall take all steps necessary and appropriate to preserve the Land and to prevent it from being developed with either private development or major public roadways. The Land is comprised of the following parcels in the City of El Paso, El Paso County, Texas, and is more particularly described as set out in Exhibit A : Parcel 1 - Nellie D. Mundy Survey 246 (approximately 73.6664 acres); Parcel 2 - S.J. Larkin Survey 267 (approximately 632.735 acres); Parcel 3 – S.J. Larkin Survey 269, Abstract 10070, Tract 1-A (approximately 8.175 acres); Parcel 4 - S.J. Larkin Survey 268, Abstract 10069 (approximately 15.8712 acres); Parcel 5 - S.J. Larkin Survey 268, Abstract 10069, Tract 1 (approximately 45.664 acres); Parcel 6 – Laura E. Mundy Survey 234, Abstract 1007, Tract 2 (approximately 255.39 acres); and Parcel 7 – Laura E. Mundy Survey 234, Abstract 1007, Tract 2 (approximately 105.43 acres).

ADOPTED this _____ day of _____, 20____.

CITY OF EL PASO

_____
Dee Margo, Mayor

ATTEST:

_____
Laura D. Prine
City Clerk

Source: Initiative Petition submitted June 20, 2018

Exhibit A

"Reinvestment Zone Number Twelve, City of El Paso"

Northern Tract:

BEGINNING at a two inch pipe stamped "EPNG EL 4152 OF 1977" found for the corner common to Nellie D. Mundy Survey No. 243, Nellie D. Mundy Survey No. 246, and Section 10, Block 82, Township 1, Texas and Pacific Railway Company Surveys; thence

Leaving the boundary line common to said Survey No. 243 and said Survey No. 246 and following the boundary line common to said Survey No. 246 and said Section 10, South 87°09'10" East, a distance of2,349.66 feet to a two inch pipe found for the corner common to said Survey No. 246, said Section 10 and Section 9, Block 82, Township 1, Texas and Pacific Railway Company Surveys for an angle point of the parcel herein described, whence a two inch pipe found for the corner common to said Sections 10 and 9, Section 6, Block 82, Township 1, Texas and Pacific Railway Company Surveys and Laura E. Mundy Survey No. 236 bears North 03°26'26" East, a distance of 5,259.00 feet; thence,

Leaving boundary line common to said Survey No. 246 and said Section 10 and following the boundary line common to said Survey No. 246 and said Section 9, South 86°29'12" East, a distance of 1,292.46 feet to a 1/2 inch rebar with survey cap No. "TX 5337" set for an angle point of the parcel herein described, whence a two inch pipe found for the corner common to said Survey No. 246, said Section 9 and S. J. Larkin Survey No. 269 bears South 86°29' 12" East, a distance of 1,498.17 feet; thence,

Leaving the boundary line common to said Survey No. 246 and said Section 9, North 03°30'48" East, a distance of 800.00 feet to a 1/2 inch rebar with survey cap No. "TX 5337" set for an angle point of the parcel herein described; thence

South 86°48'31" East, a distance of3,941.88 feet to a 1/2 inch rebar with survey cap No. "TX 5337" set on the boundary line common to said Section 9 and Section 8, Block 82, Township 1, Texas and Pacific Railway Company Surveys for the northeast corner of the parcel herein described, whence a two inch pipe found for the corner common to said Sections 8 and 9, Sections 6 and 7, Block 82, Township 1, Texas and Pacific Railway Company Surveys bears N01h 04°45'06" East, a distance of 4,469.85 feet; thence

Following the boundary line common to said Section 9 and said Section 8, South 04°45'06" West, a distance of 800.00 feet to a two inch pipe found for the corner common to said Section 9, said Section 8 and said Survey No. 269 for an angle point of the parcel herein described; thence

Leaving the boundary line common to said Section 9 and said Section 8 and following the boundary line common to said Section 9 and said Survey No. 269, North 86°43'55" West, a distance of 1,196.09 feet to a 1/2 inch rebar with survey cap No. "TX 5337" found on the west boundary line of the Franklin Mountain State Park for an angle point of the parcel herein described; thence

South along the eastern property line of 389469 (Legal Description: S J LARKIN SURV 269 ABST 10070 TR 1 (7.3182 AC)), thence

West along the southern property line of 389469 (Legal Description: S J LARKIN SURV 269 ABST 10070 TR 1 (7.3182 AC)), to a point where said line meets the eastern property line of 647239 (Legal Description: S J LARKIN SURV 269 ABST 10070 TR 1-B (57.6395 AC)), thence

West along the southern property line of 267881 (Legal Description: NELLIE D MUNDY SURV 246 (149.9192 AC)), to a point where said line meets the eastern property line of 115245 (Legal Description: NELLIE D MUNDY SURV 243 TR 1-D (77.836 AC)), thence

North along the western property line of 267881 (Legal Description: NELLIE D MUNDY SURV 246 (149.9192 AC)), to a point where said line meets the southern boundary of 261545 (Legal Description: 82 TSP 1 SEC 10 T & P SURV (638.3213 AC)), to the point of beginning.

Southern Tract:

BEGINNING at the northwest corner of 91310 (Legal Description S J LARKIN SURV 267 (632.735 AC)), thence

East along the northern property line of 91310 (Legal Description S J LARKIN SURV 267 (632.735 AC)), to a point where it meets the southwest corner of 647230 (Legal Description: NELLIE D MUNDY SURV 246 (73.6664 AC)), thence

North along the northern property line of 647230 (Legal Description: NELLIE D MUNDY SURV 246 (73.6664 AC)), to a point where it meets the northwest corner of 213425 (Legal Description: S J LARKIN SURV 269 ABST 10070 TR 1-A (8.175 AC)), thence

South along the eastern property line of 213425 (Legal Description: S J LARKIN SURV 269 ABST 10070 TR 1-A (8.175 AC)), to a point where it meets the northeast corner of 647237 (Legal Description NELLIE D MUNDY SURV 246 (73.6664 AC)), thence

South along the eastern property line of 647237 (Legal Description NELLIE D MUNDY SURV 246 (73.6664 AC)), to a point where it meets the eastern property line of 91310 (Legal Description S J LARKIN SURV 267 (632.735 AC)), thence

South along the eastern property line of 91310 (Legal Description: S J LARKIN SURV 267 (632.735 AC)), to a point where it meets the northwest corner of 218150 (Legal Description: S J LARKIN SURV 268 ABST 10069 TR 1 (45.664 AC)), thence

South along the eastern property line of 218150 (Legal Description: S J LARKIN SURV 268 ABST 10069 TR 1 (45.664 AC)), thence

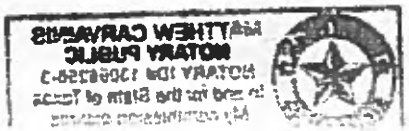
West along the southern property line of 218150 (Legal Description: S J LARKIN SURV 268 ABST 10069 TR 1 (45.664 AC)), to a point where it meets the eastern boundary of 91310 (Legal Description S J LARKIN SURV 267 (632.735 AC)), thence

South along the eastern property line of 91310 (Legal Description S J LARKIN SURV 267 (632.735 AC)), thence

West along the southern property line of 91310 (Legal Description S J LARKIN SURV 267 (632.735 AC)), thence

North along the western property line of 91310 (Legal Description S J LARKIN SURV 267 (632.735 AC)), to a point where it meets the southwest corner of 647233 (Legal Description: S J LARKIN SURV 267 (7.265 AC)), thence

North along the western property line of 647233 (Legal Description: S J LARKIN SURV 267 (7.265 AC)), to the point of beginning.



Economic & International Development Department

To: Mayor and Council

From: Jessica L. Herrera, Director
Economic & International Development

Date: July 31, 2018

Re: History of the Northwest Property

On August 7, 2018, City Council will consider an ordinance that will preserve, in its natural state and in perpetuity, approximately 1,107 acres of land currently zoned SmartCode and located in the northwest quadrant of the City. In preparation for that meeting, attached are several items intended to provide context and a detailed history of this property. Attachments include:

1. A presentation summarizing the history of the Northwest land. This is the same presentation that was provided to City Council during its work session on July 23, 2018.

2. A detailed timeline of the Northwest property dating back to 1979 through present.

3. The resolution approved by the El Paso Water Utility Public Service Board in October 2010 in response to the 2010 direction from City Council that the Northwest land be rezoned to natural open space. The City-initiated rezoning was ultimately defeated and staff was instead directed to rezone the land to SmartCode.

4. The 2011 Lost Dog Trailhead license agreement and renewal between the Borderland Mountain Bikers Association and the El Paso Water Utility. Note that the license clearly states that the trailhead is temporary and will be moved at the time development occurs.

5. The February 2012 Transmountain Corridor and Northwest Master Plan Charrette Report which provides a summary report on community feedback received during the July 2012 community outreach and master planning process and the resulting three development scenarios. City Council ultimately opted to move forward with Scenario 1.

6. The 2013 Northwest and Transmountain Corridor Regulating Plan, approved by City Council in March 2013 following two-year community input and planning process. This is the plan under which the Northwest land would be developed and represents a refinement of Scenario 1.

7. The September 2017 report by the Preservation and Conservation Planning Committee providing recommendations on conservation standards for development of Public Service Board managed land. Note that this report respects the 2013 Northwest and Transmountain Corridor Regulating Plan, which calls for the preservation of over 250 acres of land located in the Northwest, while the remaining portion is developable under SmartCode.

Backup for any of the other items listed in the detailed timeline is available upon request.

Jessica L. Herrera, Director
City 1 | 300 N. Campbell St. | El Paso, Texas 79901 | (915) 212-0094

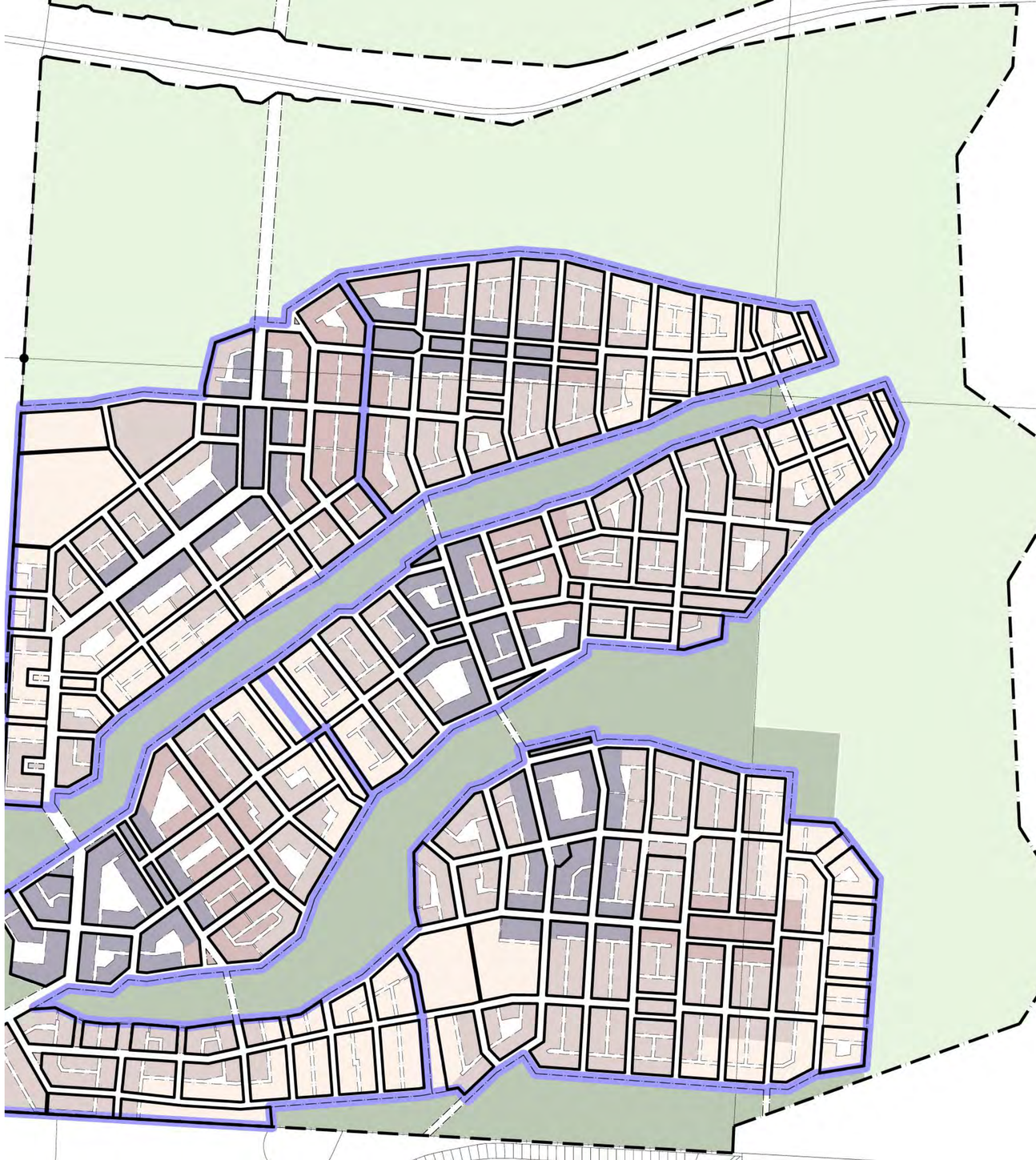

CITY OF EL PASO
NORTHWEST
DEVELOPMENT

A GROWING COMMUNITY

STRATEGIC GROWTH

El Paso is experiencing urban sprawl + annexations on the outskirts of the city

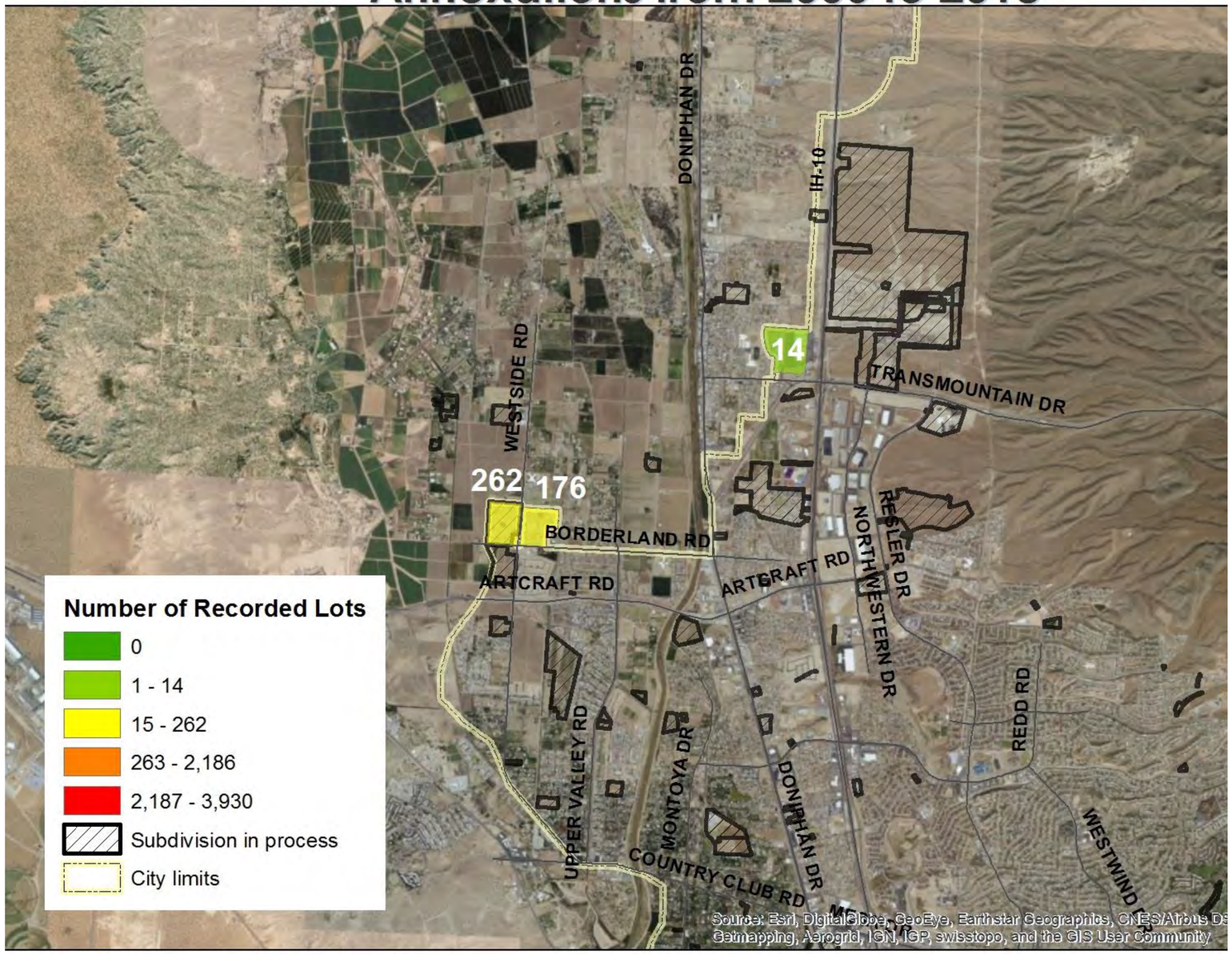
- More difficult and costly to service these areas
- Population trend shows growth in these areas



A GROWING COMMUNITY

WESTSIDE ANNEXATIONS

Annexations from 2006 to 2018



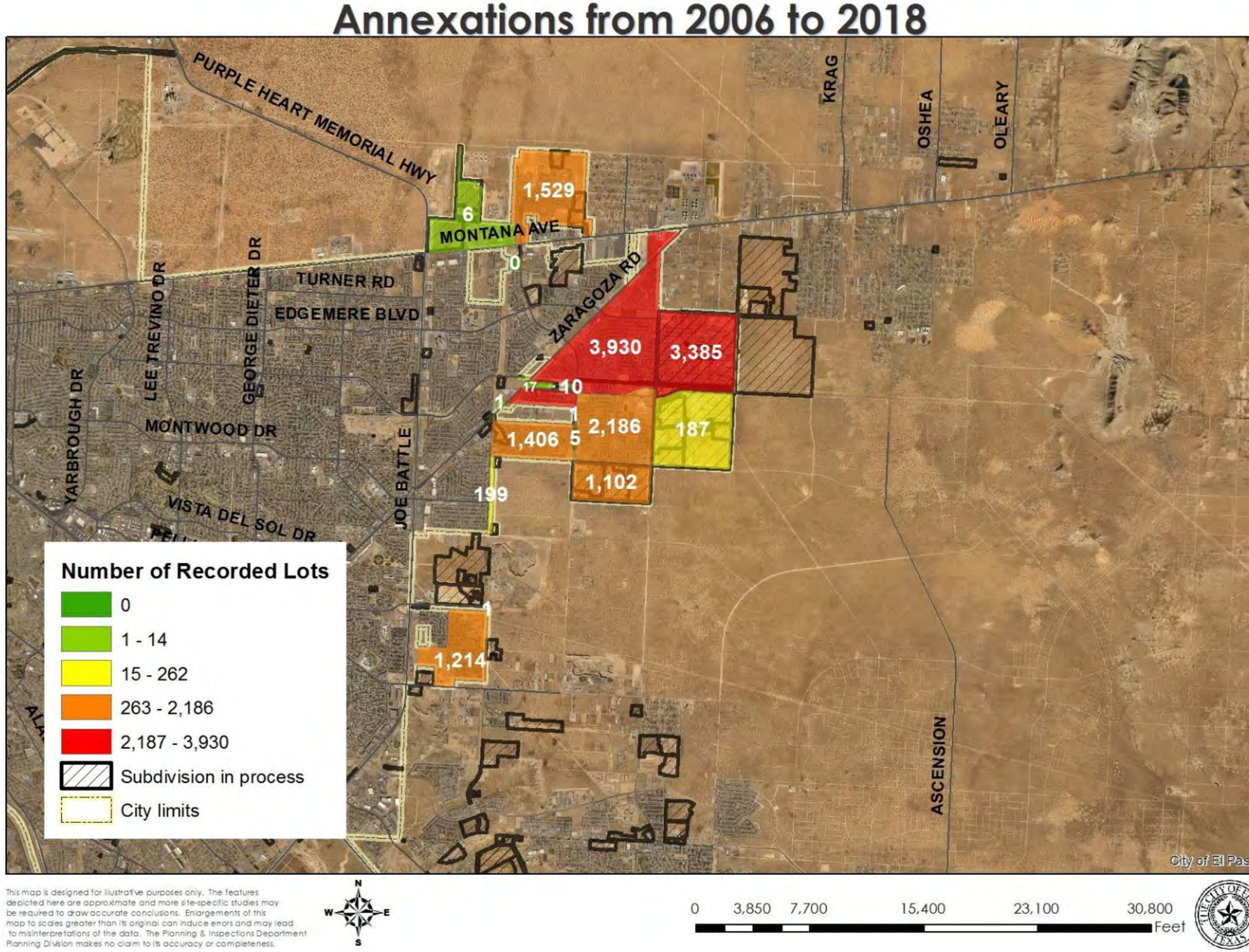
his map is designed for illustrative purposes only. The features depicted here are approximate and more site-specific studies may be required to draw accurate conclusions. Enlargements of this map to scales greater than its original can induce errors and may lead to misinterpretations of the data. The Planning & Inspections Department Planning Division makes no claim to its accuracy or completeness.

N W E S

0 3,000 6,000 12,000 18,000

A GROWING COMMUNITY

EASTSIDE ANNEXATIONS



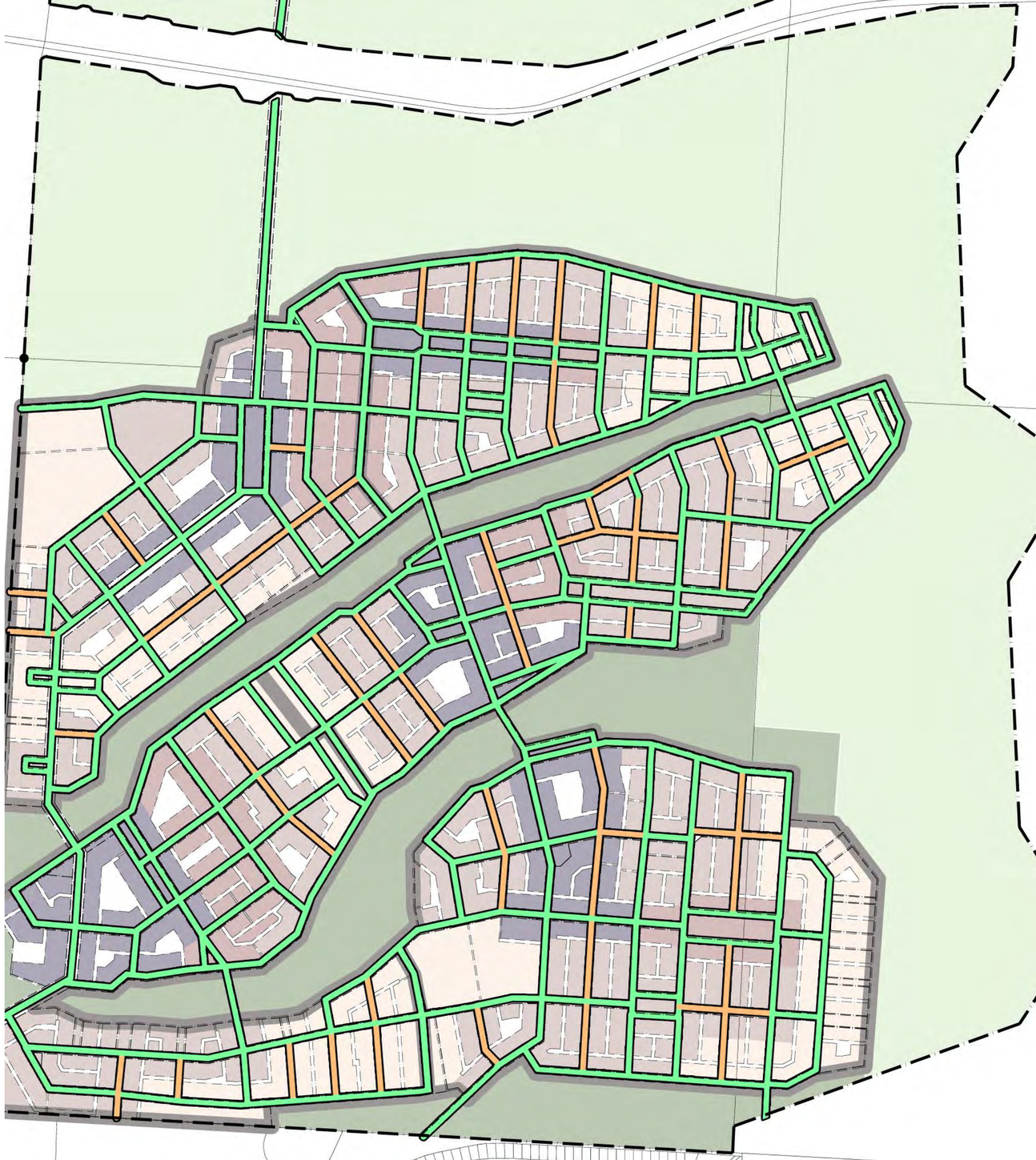
A GROWING COMMUNITY

STRATEGIC GROWTH

Strategic growth planning limits leap frog developments

- Easier and more cost effective to connect new adjacent developments to existing infrastructure and services

Couple strategic growth planning and urban development to maximize land use in the City



A GROWING COMMUNITY

STRATEGIC GROWTH

Will create additional property and sales tax for the City

- Plan calls for a mixed-use development
- Unique development that can be used to attract new businesses to the region
- Projected taxes to be collected: $1,312,920,254.*
- Creates entertainment ecosystem that compliments developments at Cohen, West Towne, Monticello and the Outlet Mall

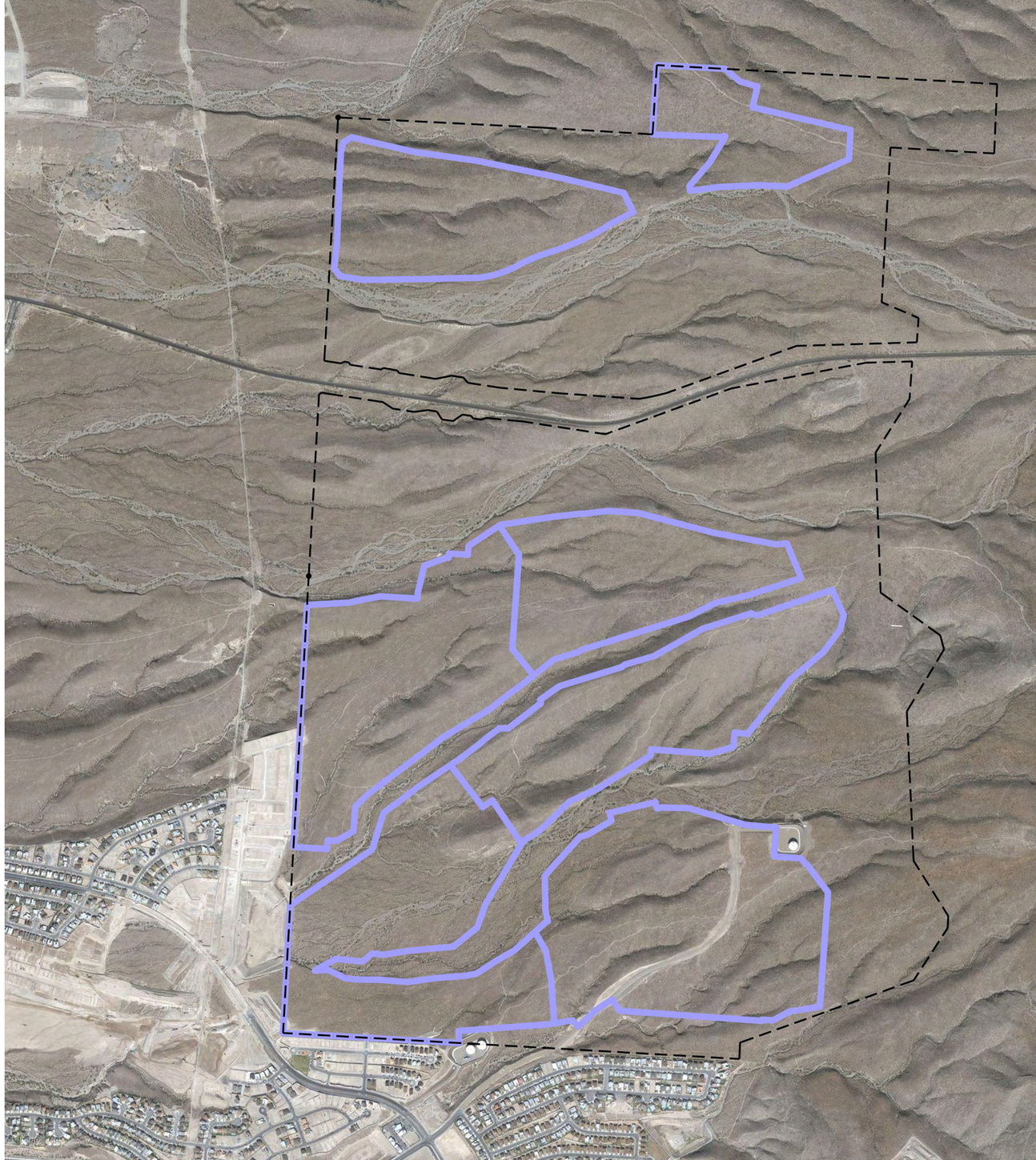
*For all taxing entities over a 36 year period

A GROWING COMMUNITY

STRATEGIC GROWTH

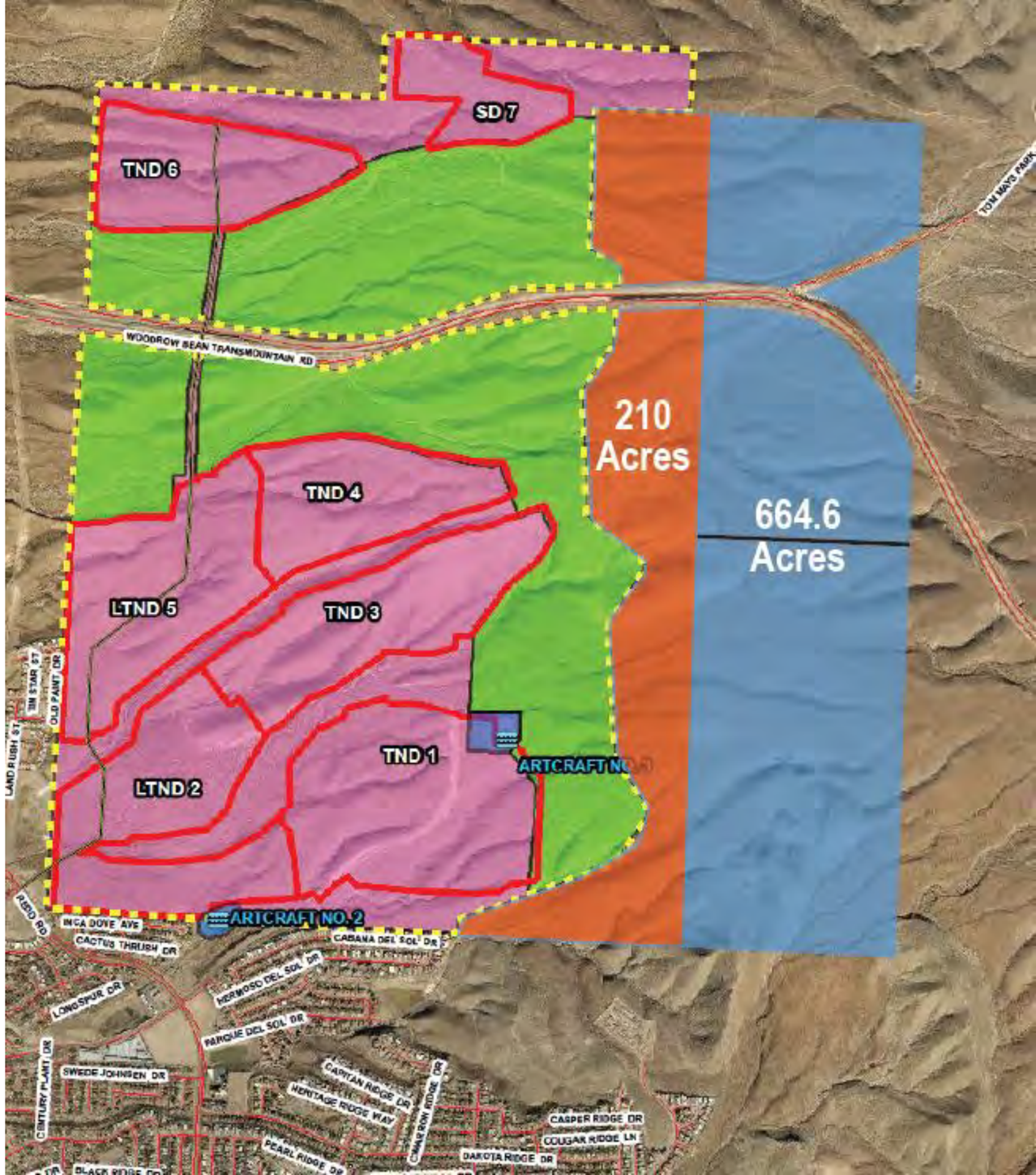
Supports Public Service Board's drainage efforts

- Storm water management is an issue in this area
- Difficult and expensive issue to mitigate



DETAILED TIMELINE

1989 to 2018



NORTHWEST DEVELOPMENT

DETAILED TIMELINE

1989

First Land Transfer to Franklin Mountain State Park (approximately 665 acres)

ca.1998

Developer requests to purchase the Northwest Land.

PSB opts to develop a master plan for the area

2003-2005

First Master Plan Developed

Master Plan completed for 1,850 acres.

March 2009

PSB and City transfer 210 acres of Northwest land to Texas Parks and Wildlife

NORTHWEST DEVELOPMENT

DETAILED TIMELINE

Fall 2009 – Spring 2013

TxDot begins schematic design, holds public meetings and hearings, and constructs the expansion of Loop 375

March 1, 2011

Two initiative petitions were submitted to prevent TxDot's Transmountain expansion

Neither petition received the required number of signatures

March 29 – July 20, 2011

City Council rezones property as a Reserve District

EPWU and the Borderland Bike Association execute agreement for temporary use and construction of Lost Dog Trail Head

August 2011

Third petition is filed to "preserve (the land) in its natural state and in perpetuity…"

Petition received the required number of signatures

NORTHWEST DEVELOPMENT

DETAILED TIMELINE

September 2011–January 2012

Ordinance is postponed to allow for community input regarding the development with support from Open Space Advisory Board

City held three charrettes to create a plan that would serve as a compromise

March 20, 2012

Council selects preferred development scenario and directs staff to rezone property to SmartCode

March 5, 2013

Approximately 1,700 acres rezoned to SmartCode.

Third land transfer to Texas Parks and Wildlife (658 acres).

December 2017

Public Service Board declares land inexpedient to its water system

NORTHWEST DEVELOPMENT

DETAILED TIMELINE

May – June 2018

City participates in several community meetings to explain the purpose of a TIRZ

May 29, 2018

City creates Tax Increment Reinvestment Zone #12

July 2018

Petition is filed to “preserve TIRZ 12 in its natural state and in perpetuity…”

Petition received the required number of signatures

August 7, 2018

Public hearing on ordinance to preserve Northwest land in its natural state in perpetuity

NORTHWEST DEVELOPMENT

ACTIONS TAKEN BY THE CITY

Public Engagement

Community Feedback

Public Service Board + City Council Action

- SmartCode Zoning

Engaging + Listening to the Pubic

- Citywide preservation efforts

NORTHWEST DEVELOPMENT

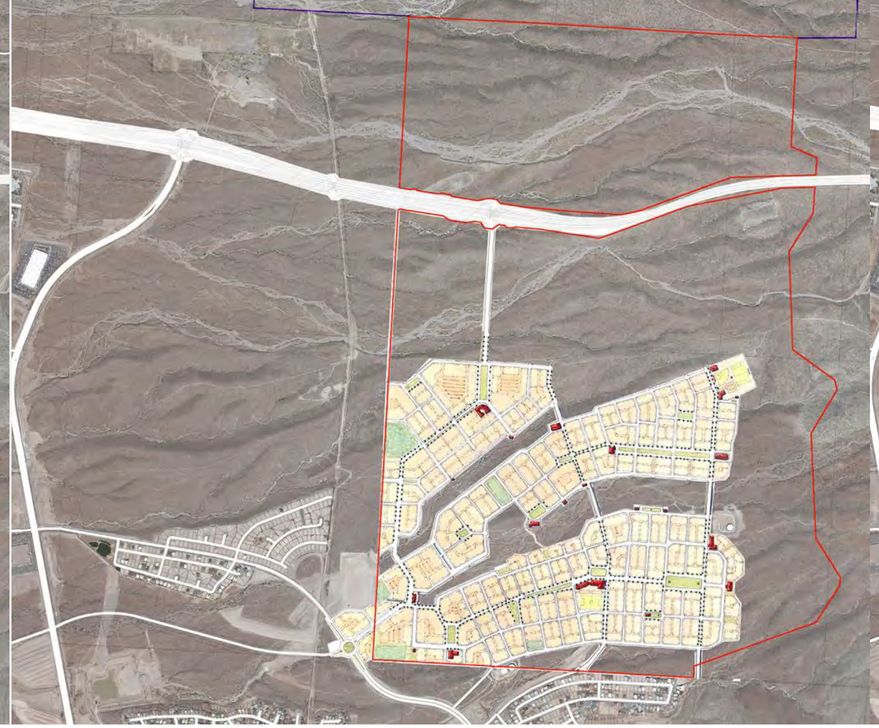
PUBLIC ENGAGEMENT

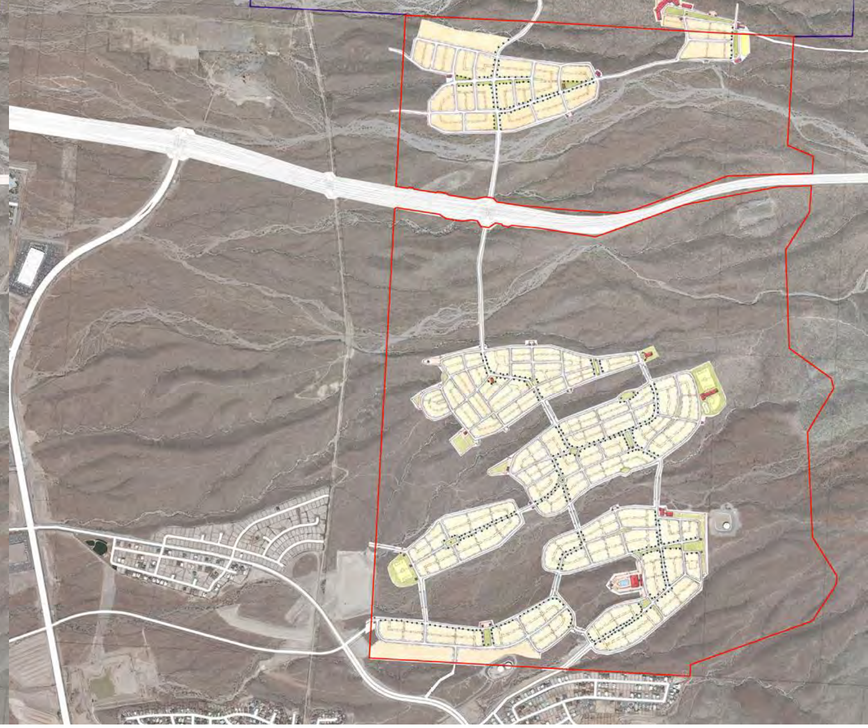
“MORE LOCAL MONEY...MORE JOBS!!”

“NO STRIP MALLS. STREETS AND BUILDINGS WITH CHARACTER.”

“LEAVE THIS NATURAL OPEN SPACE.”

—COMMUNITY FEEDBACK, 2012



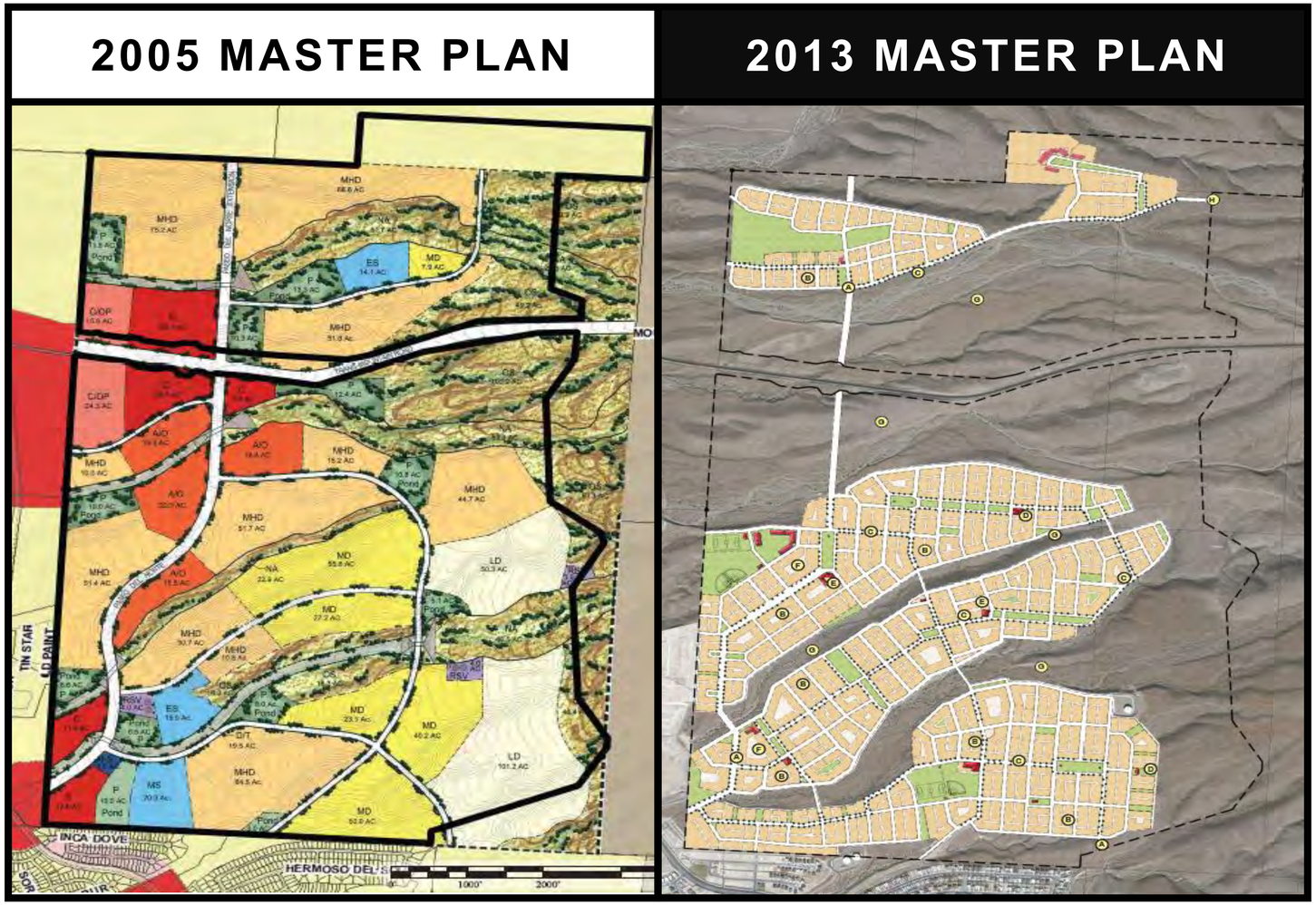


SCENARIO ONE

SCENARIO TWO

SCENARIO THREE

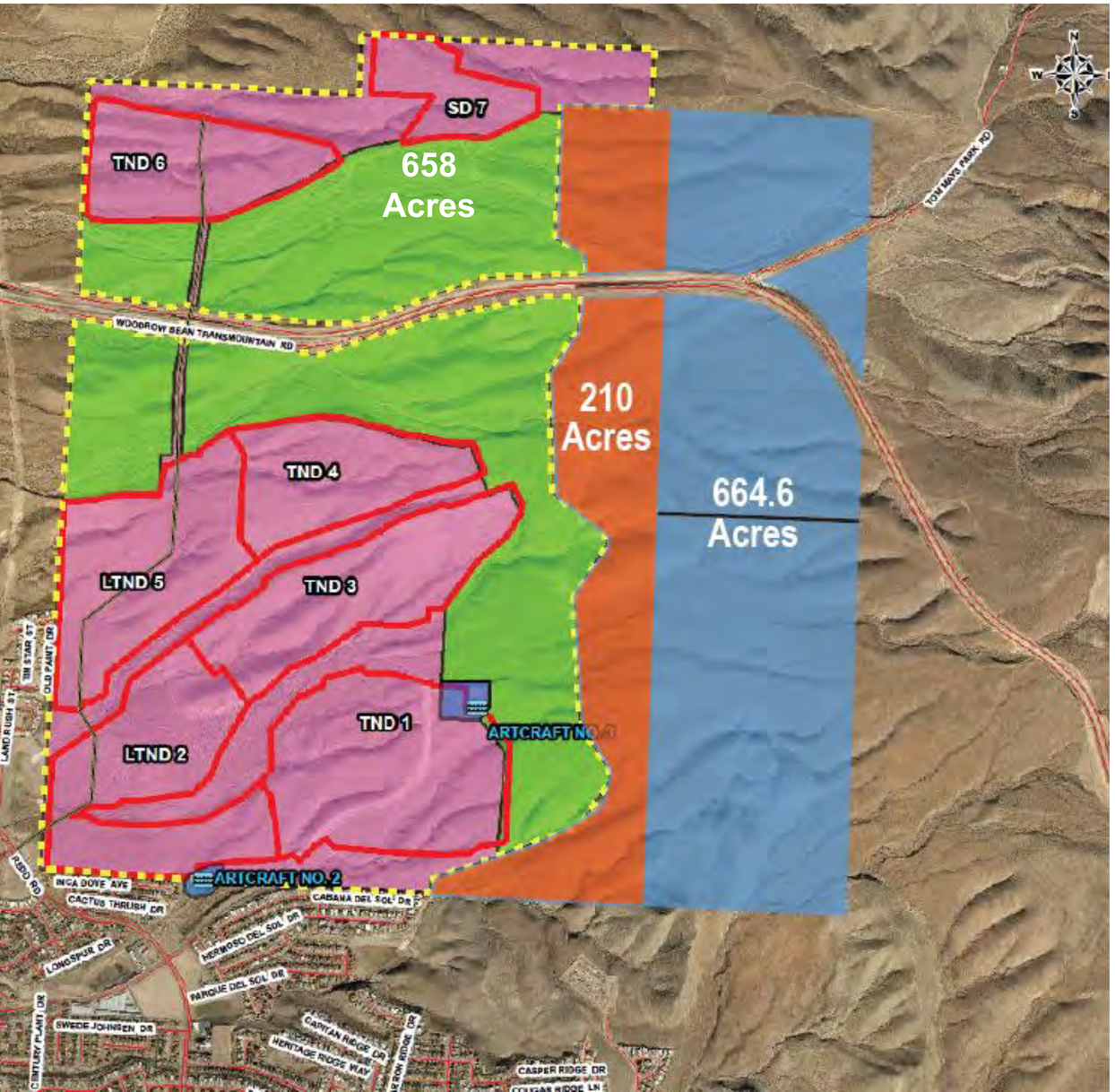
REZONED TO SMARTCODE



OPEN SPACE	
Old Plan	32% (454 acres)
New Plan	57% (942 acres)

DEVELOPABLE LAND	
Old Plan	68% (1,182 acres)
New Plan	43% (718 acres)

NORTHWEST PRESERVATION EFFORTS



Date	Acres	%
Land Owned by City 1989	2,533.6	100.0
1989 Transfer to TPW	664.6	26.2
2009 Transfer to TPW	210.0	8.3
2013 Transfer to TPW	658.0	26.0
Preserved in Plan	249.5	9.8
TOTAL PRESERVED AS OPEN SPACE	**1,782.1**	**70.3**

*751.5 acres or 29.7% of original NW parcel is developable.
**1,532.6 acres or 60.5% of original NW parcel has been transferred to TPW.

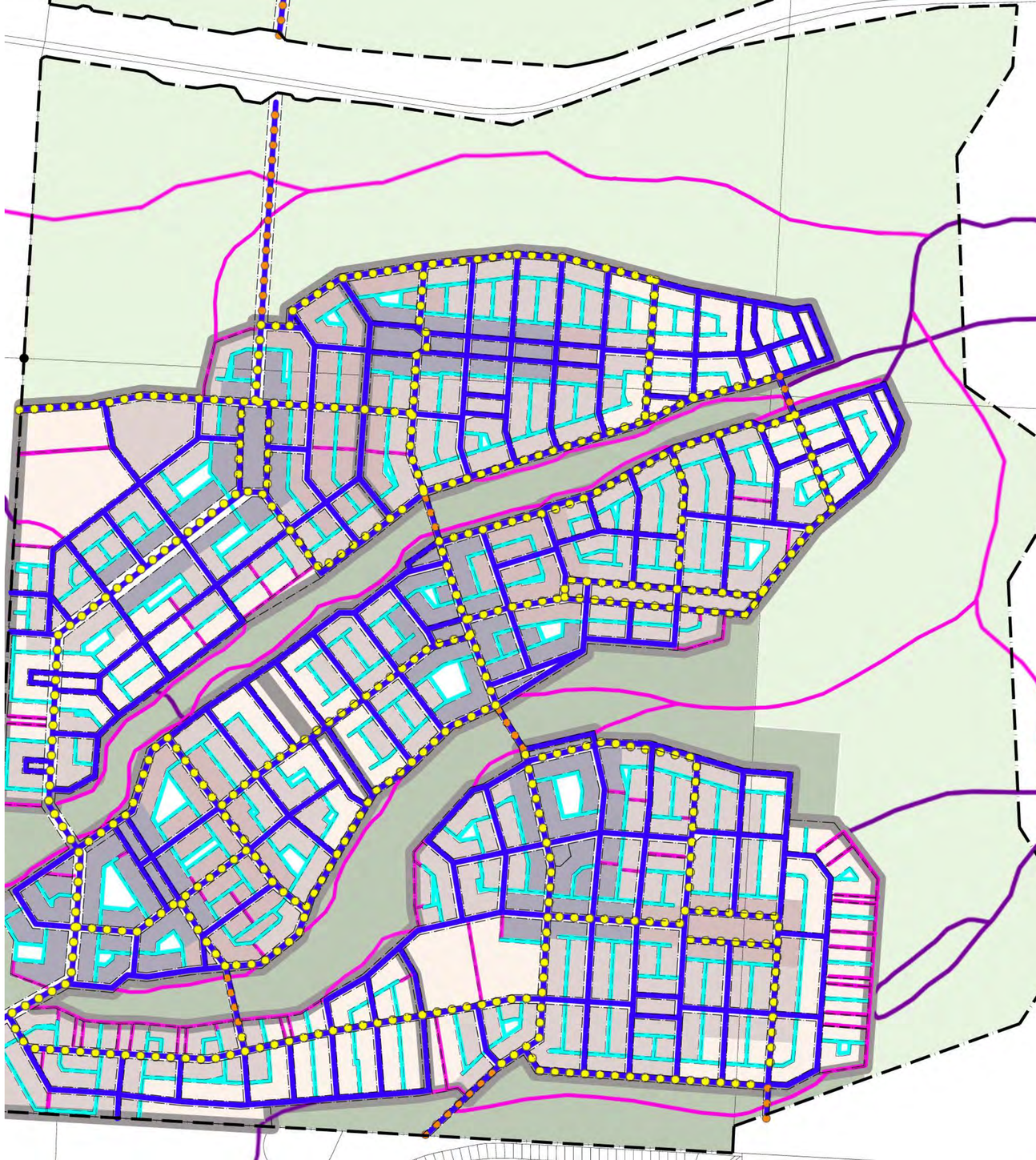
NORTHWEST DEVELOPMENT

A COMPROMISE

Development is clustered within definite boundaries surrounded by protected lands;

Consideration was given to:

- Existing topography to minimize grading;
- Preservation of natural storm water flow paths;
- Wildlife movement patterns;
- Potential noise sources;
- Existing trail systems; and
- Preservation of views.



NORTHWEST DEVELOPMENT

A COMPROMISE

Transect Zone Allocation

Maximum Block Size

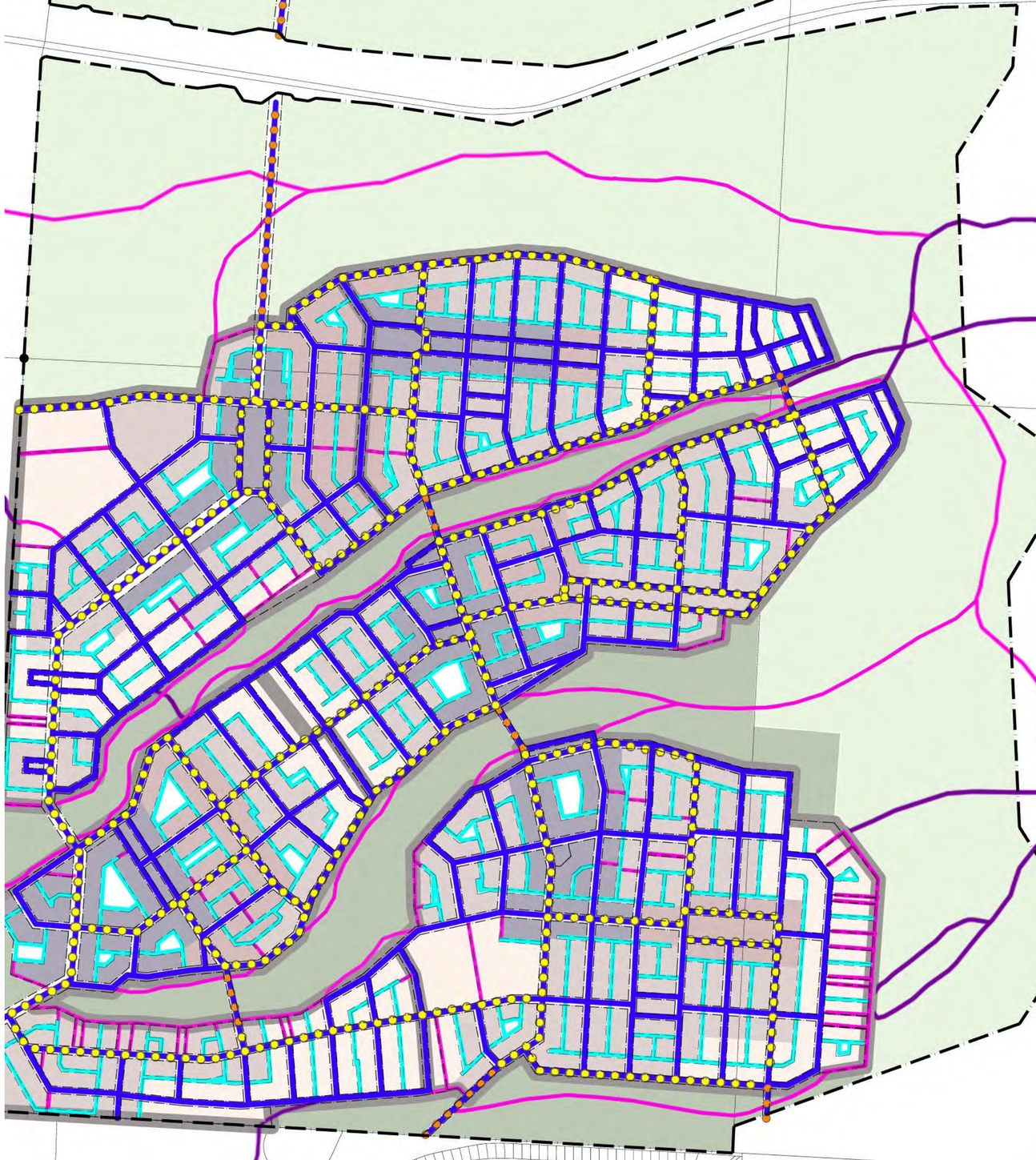
Civic Space

Playgrounds

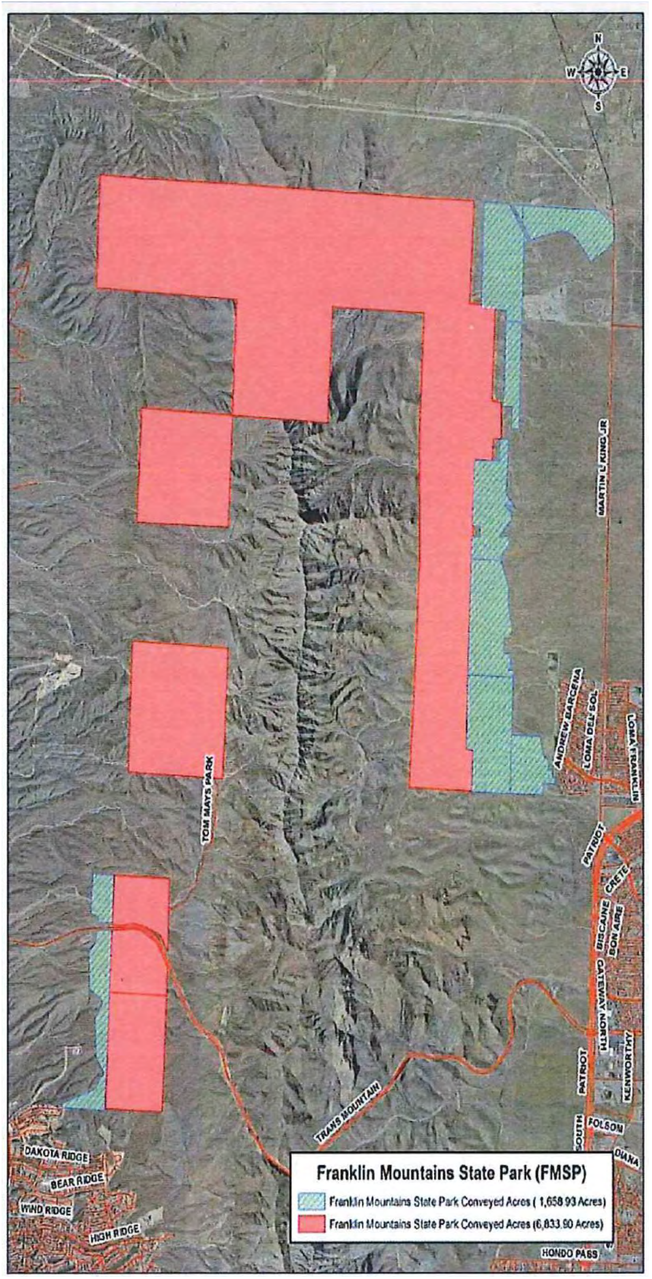
Density Requirements

Street Network and Design

Pedestrian, Bicycle & Trail Network



SUMMARY



CITYWIDE PRESERVATION EFFORTS

Conveyances to the State Park

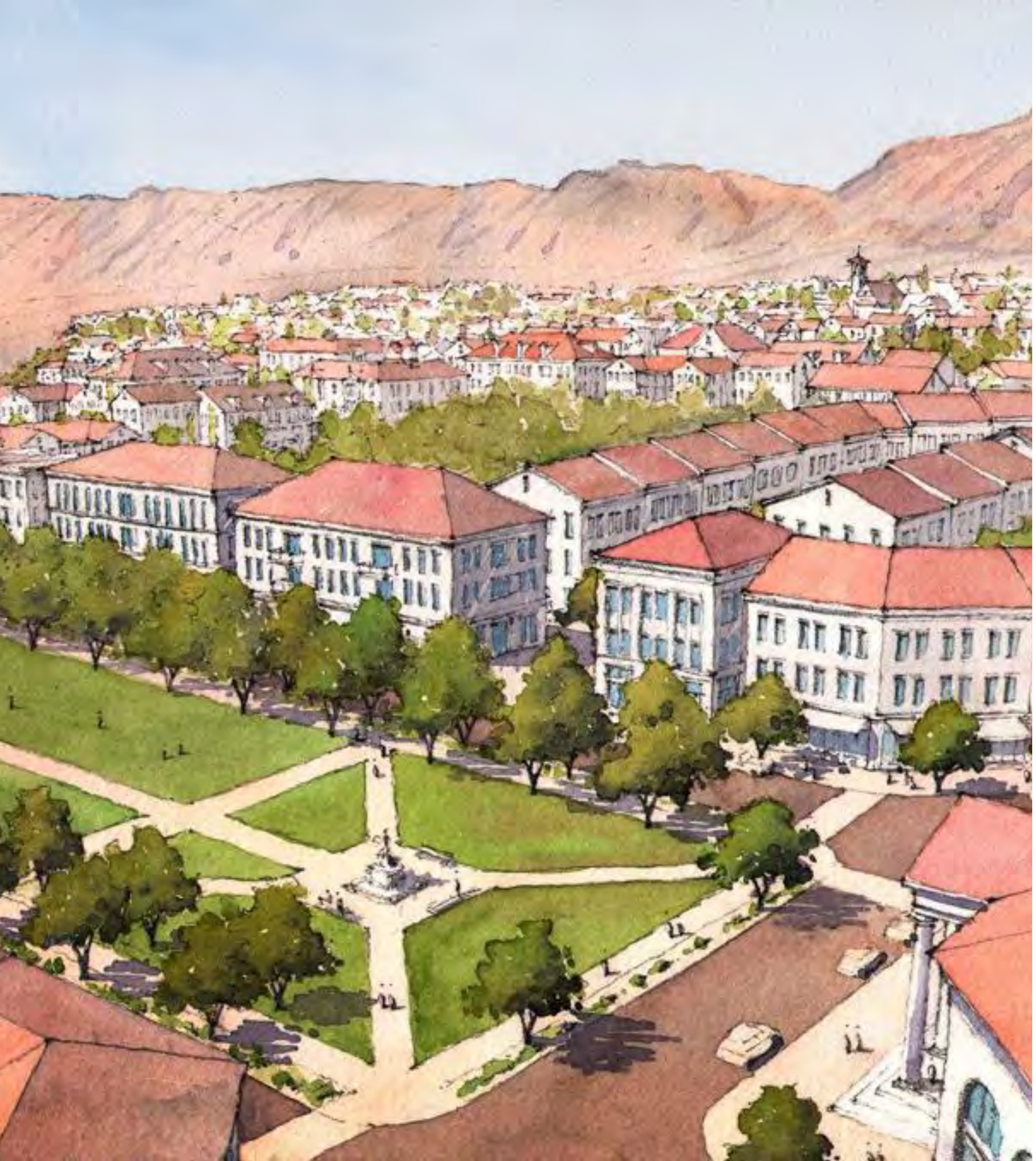
- 1981 – 2,580 acres
- 1989 – 6,834 acres
- 2009 – 1,659 acres
- 2013 – 658 acres

Overall, City/PSB have conveyed 11,731 acres to the State Park or roughly 44% of its total acreage.

In 2007 a dual purpose stormwater/open space fund was created.

With respect to the 2012 Quality of Life Bond, $5M was set aside for open space acquisitions to be spent over a 10 year period.

- 2015 – Kern View Estates Unit – 22.1 acres, $458,872
- 2018 – Knapp Land – 366 acres, $3.5 million
  - $1.5M using bond funds
  - $2M in storm water dual purpose funds



NORTHWEST DEVELOPMENT

SUMMARY OVERVIEW

City continues to reaffirm its commitment to preserving open space and applies these efforts to the City's urban development plan

Staff recommends the City continues to balance land development and preservation

Use strategic urban planning to limit urban sprawl

Create opportunities to diversify and increase the tax base

Assist PSB in storm water drainage efforts

NORTHWEST DEVELOPMENT

SUMMARY OVERVIEW

This area is pertinent to the strategic growth of the City

Plan was created with the input from the public and resulted in a compromise between open space advocates and City Officials

TIRZ 12 provides a valuable tool that promotes development but does not initiate construction

- TIRZ 12 would only collect 33% of the Tax Increment in the zone

THANK YOU

Elizabeth Triggs

Assistant Director, Economic and International Development

City 3 – 801 Texas 2nd floor

TRIGGSEK@
ELPASOTEXAS.GOV

915-212-0094

ELPASOTEXAS.GOV/
ECONOMIC-DEVELOPMENT

The Northwest Land

A Comprehensive History and Timeline

1979 - 1987 Franklin Mountain State Park Established

The Franklin Mountain State Park was established in 1979 through the passage of House Bill 867 in the Texas Legislature. The initial acreage for the State Park was acquired in 1981 and the Park was open to the public in 1987. The City with the Public Service Board (PSB) contributed a significant portion to the initial acreage, conveying 2,580 acres of its land to the Park.

1989 Second Land Conveyance to the State Park

In 1989, the City and PSB undertook a second conveyance to the State Park and deeded an additional 6,384 acres to the State Park; of that, approximately 665 acres was located at the foothills of the mountain, adjacent to the land contained within the 2013 Northwest Regulating Plan.

ca. 1998 PSB Receives Request to Purchase Northwest Land

In 1998, the PSB received a request to purchase land contained within the 2013 Northwest Regulating Plan. Under the land use plan for the City existing at the time, the land, if developed would primarily consist of residential development with some opportunity for commercial development. The PSB declined to sell the land and began the process of master planning the area to ensure balanced and sustainable development.

2003 – 2005 2005 Northwest Master Plan Developed and Adopted

In 2003, the PSB initiated the master planning process for approximately 1,850 acres of land located in the Northwest. The purpose of the plan was to establish a framework for development of the property expected to occur within the next 10 to 15 years given surrounding growth patterns. The resulting plan aimed to promote development that results in the efficient provision of services, create compatibility between uses, provide for sustainable environment and enhance the quality-of-life for future residents.

Following its assessment of existing conditions and public input to include environmental groups, the project team developed seven concept plans. The preferred concept plan, as recommended by the PSB, was further refined based on additional stakeholder input.

Prior to the plan's adoption in June 2005, the El Paso Mountain Committee (precursor to the Open Space Advisory Board) voted unanimously to recommend approval of the master plan with the condition that there be a scenic buffer on

the north side of Transmountain Rd.; that buffer was included in the plan ultimately adopted.

In June 2005, the master plan was adopted which further refined and developed the preferred concept plan, to include development phasing, infrastructure timing, and costs for major infrastructure. Adoption of the plan required the downgrading of the Master Thoroughfare Plan to reduce the number of arterials crossing Transmountain Rd. from four to one and amending the City's land use plan to decrease developable acreage within the plan area. The result was a plan that reserved approximately 40% of the original acreage for open space, while the remaining 60% remained developable.

Mar. 2009 Third Land Conveyance to the State Park

In March 2009, the City and PSB undertook a third land conveyance to the State Park, deeding a total of 1,659 acres to the Park. This conveyance included 210 acres of land immediately adjacent to the Park and developable area within the 2005 Master Plan, reaffirming the City and PSB's commitment to preservation in line with the adopted plan.

2009 – 2013 TxDOT Initiates the Loop375 – Transmountain Project

In the fall of 2009, the Texas Department of Transportation (TxDOT) initiated the schematic design and public input process for the expansion of Loop 375 (Transmountain Road) from I-10 to east of the Franklin Mountain State Park in northwest El Paso. The project, to include a four lane divided roadway with frontage roads and grade separated intersections, was necessitated by rapid population and housing growth which increased travel demand and caused safety concerns at intersections and driveways.

This project served as the catalyst for a series of discussions by City Council surrounding the preservation of land abutting Transmountain Road and culminated in the submission of two initiative petitions in March 2011 calling for the preservation of the area immediately adjacent to Transmountain Road in its natural state and in perpetuity. Although neither petition was certified, the City explored several options as detailed below.

Oct. 5, 2010 City Council Directs Staff to Initiate Rezoning of Transmountain Corridor to Natural Open Space

Prompted by TxDOT's Loop 375 – Transmountain Project, City Council directs City staff to initiate the rezoning of approximately 900 acres of land immediately abutting the north and south side of Transmountain Rd. from R-3 (Residential) and PMD (Planned Mountain Development) to NOS (Natural Open Space).

At its October 20th board meeting, the PSB approved a resolution asserting that rezoning a portion of the Northwest land to NOS, if approved, "significantly

impairs, encumbers and disrupts the development of the Westside Masterplan and Land Study that was adopted by ordinance by City Council in 2005 and further adversely impacts the planned transportation connectivity elements as identified in the City's Master Thorough Fare plan."

The resolution cited several negative impacts associated with the proposed rezone to NOS, including: 1) the negative impact to ratepayers and bondholders resulting from such an action; 2) the loss in future property tax revues potentially derived from the development of the property; 3) the impact to the planned balanced growth of the City by limiting development of land on the Westside and thereby, accelerate growth to the Eastside causing increased traffic problems in the area; and 4) the promotion of urban sprawl by pushing population growth into the Upper Valley, Santa Teresa, New Mexico and far east side outside the City limits.

Jan. 11, 2011 City Council Denies City-Initiated Rezoning of Northwest Land to NOS

In line with the October 2010 direction, City staff brought forward the proposed rezoning of approximately 900 acres of land abutting the north and south side of Transmountain Rd. and contained within the 2005 Master Plan. Prior to the January public hearing on the rezoning, the City Plan Commission unanimously recommended denial of the rezoning application, citing nonconformance with the City's Comprehensive Plan and the City's future land use map.

Following a failed motion to rezone the land to NOS, the City Council, in a 7 to 1 vote, directed City staff to begin the process to rezone land contained within the 2005 Northwest Master Plan to SmartCode.

Mar. 1, 2011 First and Second Initiative Petitions Filed

Two initiative petitions were filed in March 2011, both requesting City Council approve an ordinance to preserve in its natural state and in perpetuity approximately 800 acres of land abutting the north and south side of Transmountain Rd. Although neither petition received the requisite signatures to warrant placement on City Council's agenda, City Council continued its discussions to ensure balanced development in the Northwest, as described below.

Mar. 29, 2011 City Council Directs Staff to Rezone

In order to ensure no development would occur on the Northwest land while the directive to rezone the land to SmartCode was being explored, City Council directed City staff to create a new zoning district, the Urban Reserve District (URD). The purpose of the new district is to serve as an urban reserve for primarily city-owned property until it is needed for development, at which time it would be rezoned to either SmartCode or a mixed-use district. City Council further

directed City staff to initiate and process an application to rezone the entire 2005 Northwest Master Plan area to URD.

May 10, 2011 Northwest Land Rezoned to Urban Reserve District

City Council unanimously approved the rezoning of the land contained within the 2005 Master Plan from R-3 (Residential) and PMD (Planned Mountain Development) to URD.

Jul. 20, 2011 Lost Dog Trailhead Lease Agreement Executed

The El Paso Water Utility entered into a lease agreement with the Borderland Mountain Bike Association to allow for the construction and temporary use of the Lost Dog Trailhead. The lease authorizes the BMBA to construct a parking area for use by the public on PSB managed land to facilitate access to the Franklin Mountain State Park.

As stated in the lease and in anticipation of future northern development, the trailhead is "intended to be a temporary location until such time as a more permanent site is determined to be more feasible and agreeable to both parties." The Agreement further stated, "As land is developed to the north, a more practical location may be in the proximity of EPWater's Artcraft #3 Water Reservoir," which is located northeast of the current trailhead.

Aug. 2011 Third Initiative Petition Filed and Certified

In August 2011, first initiative petition was resubmitted with the requisite signatures to require a public hearing on the requested ordinance. The petition specifically called City Council to: "preserve in its natural state and in perpetuity all of the land in the acreage legally described as Parcel 1, Nellie D. Mundy Survey 246, City of El Paso, El Paso County Texas; Parcel 2, a portion of S.J. Larkin Survey, Abstract 10070, Tract 1, City of El Paso, El Paso County Texas; Parcel 3, a portion of S.J. Larkin Survey, Abstract 10070, Tract 1-A, City of El Paso, El Paso County Texas. The City shall take all steps to preserve this land and to prevent it from being developed with either private development or major public roadways. This land is also known as 'the West Transmountain Scenic Corridor.'"

This petition differs from the petition submitted and certified in July 2018 in that it encompasses approximately 800 acres of land immediately abutting the north and south side of Transmountain Rd. and focuses primarily on preservation of the Transmountain Corridor. The petition does not encompass the Lost Dog Trail or Lost Dog Trailhead.

Sep. 14, 2011 Open Space Advisory Board Recommends City Council Work to Develop an Alternative Plan for the Northwest

Following a presentation by City Staff, the Open Space Advisory Board recommended that City Council work with the community to develop an

alternative plan for the Northwest land that is the subject of the 2011 petition. Specifically, that in developing an alternate plan, City Council should:

1. Update the 2005 Northwest Master Plan and adopt the plan as part of the Comprehensive Plan update;
2. Include a public process and at least one charrette in the update process;
3. Direct staff to report back to City Council on progress in 90 to 120 days;
4. Rezone the Northwest land to SmartCode; and
5. Place a conservation easement for land preserved as natural open space.

A number of the 2011 petitioners sat on the Open Space Advisory Board at the time of recommendation, including petition author Jim Tolbert. The recommendation represents a willingness to compromise to find a solution that balances open space preservation and development within the northwest.

Sept. 20, 2011 Public Hearing on 2011 Initiative Petition

As per City Charter, an ordinance was drafted and placed on Council's agenda reflecting language requested in the certified petition. City Council voted to postpone the public hearing to December 20, 2011 to allow City staff time to secure a consultant to work with the community in designing an alternative to the 2005 Northwest Master Plan, in line with the Open Space Advisory Board recommendation.

In October, Dover, Kohl and Partners (DKP) who was also working with the City to update its Comprehensive Plan was retained as an independent third party to facilitate community meetings and develop an alternative plan for the Northwest land.

Dec. 20, 2011 Public Hearing on 2011 Initiative Petition

The ordinance was postponed an additional five weeks to allow staff time to conduct planned public charrettes and gather public input to inform an alternate plan for the Northwest.

Jan. 2012 Public Charrettes Held

A series of public charrettes and an open design studio was hosted by DKP to gather public input on an alternate plan for the Northwest. Over 80 members of the community attended the design charrettes. Additionally, DKP met with stakeholders in a series of technical meetings to review alternatives, including the PSB, the City, TxDOT, Frontera Land Alliance, the Open Space Advisory Board, the Franklin Mountain State Park, hikers and bikers, and others. To allow for continued progress, City Council postponed the public hearing on the ordinance associated with the initiative petition.

Mar. 5, 2012 PSB Recommends Preferred Development Scenario 1

Following public input, DKP developed three (3) alternate development scenarios for the Northwest land. During the March 2012 PSB meeting, DKP presented the results of the public input process, reaffirming that each of the alternate scenarios were developed to include a balanced approach for growth and open space.

During its meeting, the PSB failed to carry a motion made by Dr. Bonart, author of the 2018 Initiative Petition, to submit Scenarios 1 and 2 to City Council for consideration. The primary difference between the two scenarios is that Scenario 1 included some development north of Transmountain Rd., while Scenario 2 included no development north of the road. However, both scenarios included development at the location of the current Lost Dog Trail.

Ultimately, the PSB authorized the recommendation of Scenario 1 to City Council in a 3 to 2 vote.

Mar. 15, 2012 Open Space Advisory Board Recommends Preferred Development Scenario 2

The Open Space Advisory Board, after reviewing each of the three (3) development scenarios, voted in an 8 to 1 vote to recommend Scenario 2, or the development scenario limiting development to south of Transmountain Rd.

The Board's recommendation was prefaced by stating that, "as a proponent to open space and in response to strong public sport, the Open Space Advisory Board, recommends the City Council of the City of El Paso consider the option of no development within the study area…," however, "…in response to City Council's direction to resolve the conflict between the 2005 Master Plan and the citizen's petition, we support Dover Kohl's Scenario Number Two."

The Board additionally mad the motion that the following five items should be incorporated into the alternate development plan:

1. Conservation easement on the natural open space designated in the plan;
2. Bridges instead of box culverts on roadways that cross arroyos;
3. No large regional or neighborhood parks; rather, smaller pocket parks and linear parks along arroyos;
4. Keep the arroyos natural and do not make them hybrid;
5. Paseo del Norte should not be connected to Transmountain Rd. provided the Fire Department can provide safe access to surrounding neighborhoods without that connection.

Mar. 20, 2012 City Council Selects Preferred Development Scenario 1

The City Council, following a presentation summarizing each of the three scenarios, voted in a 5 to 3 vote to select Scenario 1 as the preferred development

scenario provided that each of the following recommendations made by the Open Space Advisory Board be incorporated into the final plan:

1. Conservation easement;
2. Bridges to be used to cross arroyos;
3. More small or pocket parks; and
4. Minimum encroachment into arroyos.

City Council additionally directed City staff to begin the process to rezone the Northwest land to SmartCode, using the preferred development Scenario 1 as its foundation.

Mar. 27, 2012 First Meeting of Technical Working Group

A technical working group was convened, comprised of City staff and PSB representatives to accomplish Council goals, including advancement of the SmartCode rezoning application and exploration of the feasibility of a conservation easement to preserve land designated natural open space in perpetuity.

Jun. 13, 2012 PSB Recommends Conveyance of Land to Texas Parks and Wildlife as Preferred Conservation Strategy

Following work conducted by the Technical Working Group, the PSB was presented with four conservation strategies for 650 acres of land in the Northwest area to be designated as natural open space. The strategies include: 1) conservation easement; 2) conservation covenant; 3) dedication as a City park; 4) conveyance to the State Park. The presentation included a review of each conservation mechanism and the associated strengths and weaknesses of each.

The PSB unanimously accepted the Technical Working Group's recommendation to convey land to be preserved as natural open space to the State Park. The recommendation further included a provision that the deed to the Park would include a reverter clause that would cause the land to return to City ownership should the State Park be unable to retain ownership of the land at any time in the future.

Jul. 17, 2012 City Council Approves Conveyance of Land to Texas Parks and Wildlife as Preferred Conservation Strategy

City Council accepted the PSB recommendation that the land be conveyed to the State Park with the condition that the land be limited or controlled to preserve large areas of undisturbed open space as its primary purpose, while still permitting passive recreational uses and necessary water, wastewater and stormwater utility systems as secondary purposes to the

area. Further, that, should the condition be violated, the land would automatically revert to the City.

Jan. 16, 2013 Open Space Advisory Recommends Approval the Northwest Land Rezoning to SmartCode Zone

The Open Space Advisory Board unanimously recommended that City Council approve the application to rezone the Northwest Land to SmartCode Zone with two recommended adjustments to the Regulating Plan that governs development of the SCZ zoned property. The recommendations suggest that a large 13 acre park (Civic Space 35) be designed in a "topographically-friendly" manner; and that roadways crossing arroyos be clearly designated as bridges in the plan with the exception of the two crossings located at the southwestern corner of the application.

Mar. 5, 2013 City Council Approves Northwest Land Rezoning to SmartCode Zone

City Council unanimously voted to approve the rezoning of the Northwest Land to SmartCode Zone under the 2013 Northwest and Transmountain Corridor Plan. The Plan called for the preservation of nearly 60% of the land (or 942 acres) as open space (this includes a large natural park and greenway designated in the northern portion of the development), while just over 40% (or 718 acres) would be developable. Of the land designated open space, 658 acres would be conveyed to the State Park, in line with the identified preferred method of preservation, as further described below.

Mar. 5, 2013 Fourth Conveyance of Land to the State Park

To achieve the preservation of land designated open space in its natural state and in perpetuity, the City Council voted unanimously to convey approximately 658 acres of the Northwest land to the State Park. Land conveyed included land immediately abutting the north and south side of Transmountain Rd., in line with the spirit of the 2011 petition which sought to preserve the Transmountain corridor; and land immediately abutting the Franklin Mountain State Park to create a permanent buffer between the State Park and future development.

Of the approximately 2,534 acres of land initially owned by the City in the area of the 2013 Northwest Regulating Plan, about 60% has been deeded to the State Park, leaving 40% in the City's ownership. Of that, only 718 acres (or 28%) remains developable when natural parks, arroyos and greenways are excluded.

Apr. 30, 2013 City Council Deletes the 2011 Initiative Petition Ordinance

As a result of the 2013 compromise, including conveyance of a significant portion of land contained in the 2005 Northwest Master Plan to the State Park, City Council deleted the ordinance resulting from the 2011 Initiative Petition from the agenda.

Jul. 15, 2016 Lost Dog Trailhead Lease Agreement is Extended

El Paso Water Utility extended its original lease agreement with the Borderland Mountain Bike Association for the temporary use of the Lost Dog Trailhead for an additional five years.

Dec. 11, 2017 Preservation and Conservation Planning Committee Presents its Recommendations to PSB

The Preservation Committee was formed to establish conservation standards for development so as to ensure a high quality of life for present and future generations. The Committee, created in late 2015, consists of representatives from Texas Parks and Wildlife, Frontera Land Alliance, Homegrown El Paso, Celebration of Our Mountains, High Desert Native Plants, Center for Ecological Planning and Design at the University of Utah, City of El Paso, County of El Paso, and El Paso Water Utility.

As part of its planning efforts, the Committee produced a map identifying lands to be preserved with no disturbance in the form of development (Full Conservation), lands that will be lightly developed as transition lands (Conservation Development) and lands that can be developed following El Paso's existing ordinance for smart growth (Smart Growth) Development. The Northwest Land south of Transmountain Rd is not included in the study to honor the 2013 Northwest Regulating Plan and associated future development plans. Similarly, the Northwest Land north of Transmountain Rd is identified as Smart Growth Development, in line with the compromise of 2013.

Dec. 11, 2017 Northwest Land Declared Inexpedient

The PSB declares the remaining land contained in the 2013 Northwest Regulating Plan inexpedient to the water system. Such a declaration allows for its sale.

May 9, 2018 Open Space Advisory Board Provides Recommendation Related to the Proposed TIRZ 12 Project and Finance Plan

In line with the Open Space Advisory Board's enabling ordinance, City staff opted to brief the OSAB on the Project and Finance Plan for the proposed Tax Increment Reinvestment Zone No. 12 which encompasses those Northwest lands still owned by the City and zoned SmartCode in 2013. The TIRZ is an economic development financing mechanism that can be used to encourage private investment in an area where investment is not otherwise occurring.

The purpose of the briefing was to solicit input from the OSAB on how TIRZ 12 funds could be used to preserve, acquire and maintain open space located within the Zone. The Board, in a 5 to 1 vote (with one abstention), voted to recommend that City Council use TIRZ funds to preserve the arroyos and maintain existing and develop new trails and trailheads to ensure sufficient public access to the Franklin Mountain State Park. That language was included in the final plan, adopted in June 2018.

May 29, 2018 City Council Establishes Tax Increment Reinvestment Zone No. 12

The City Council, in a 5 to 3 vote, approved the establishment of Tax Increment Reinvestment Zone No. 12 to encourage private investment in the Northwest area through the contribution of a portion of incremental tax revenues to eligible public project costs, including open space projects.

June 26, 2018 TIRZ 12 Final Project and Finance Plan Approved

Upon affirmative recommendation from the TIRZ 12 Board, the City Council voted to approve the project and finance plan that governs how TIRZ funds can be used to fund public projects in the Northwest area. Eligible projects may include stormwater drainage including green infrastructure low impact development to ensure minimum disturbance to arroyos; bridge infrastructure in line with previous OSAB recommendations to minimize impact to stormwater flow and wildlife movement patterns; and the construction and maintenance of existing and new trails and trailheads to link the development to the adjacently located Franklin Mountain State Park.

The City's contribution to the TIRZ fund was limited to 33% over its 36-year term. The plan anticipates as much as $1.3 billion in total tax revenue to all taxing entities of the 36 year term or an average of $9 million annually to the City of El Paso through property tax revenue alone.

July 2018 Fourth Initiative Petition Filed and Certified

The fourth initiative petition, authored by Dr. Rick Bonart, related to the northwest land was submitted and certified. A public hearing is scheduled to hear the related ordinance on Aug. 7, 2018. The petition expands the area of the original petition to include a total of just over 1,000 acres, including land south of the original 2011 petition. The petition, like the 2011 petition calls for preservation of all land contained within TIRZ 12 in its natural state and in perpetuity.

STATE OF TEXAS }
}
COUNTY OF EL PASO }

LICENSE AGREEMENT

1. PARTIES: The parties to this License Agreement are El Paso Water Utilities Public Service Board (Licensor) and Borderland Mountain Bike Association (BMBA) (Licensee).

2. PURPOSE: The purpose of this License Agreement is to grant to Licensee the nonexclusive right to construct a parking area with landscaping for use by the public for hiking and biking leading into the Franklin Mountain State Park. The parking area is intended to be a temporary location until such as time as a more permanent site is determined to be more feasible and agreeable to both parties. As land is developed to the north a more practical location may be in the proximity of the El Paso Water Utility Public Service Board's Artcraft #3 Water Reservoir.

3. LAND: The License Area is approximately 10,462 square feet of land which is described and depicted in the attached Exhibit A attached hereto and incorporated herein by this reference, and which is a part of the parcel of real property owned by Licensor more fully described as being a portion of Tract 1B-4N, S.J. Larkin Survey 266 City of El Paso, El Paso County, Texas and located at near the intersection of Redd Road and Helen of Troy, 1651 Redd Road ("Licensor's Property").

4. TERM: The term of this License Agreement shall be for a term of Five (5) years with an option to renew the License Agreement for an additional Five (5) years with the initial term to become effective from the date hereof unless terminated earlier as provided herein. If the Licensee wishes to renew this License, Licensee shall submit a request in writing to the El Paso Water Utilities Public Service Board no later than three (3) months prior to the expiration date of this License. Should Licensee fail to submit such request for the renewal of this License as herein required, the License shall expire upon the expiration date.

5. ADMINISTRATIVE FEE: There is a one-time administrative fee of $1,200 to initiate this License Agreement.

6. LICENSOR IN-KIND SERVICES: The El Paso Water Utilities Public Service Board may provide support and assistance to the Licensee in securing any permits required by te City of El Paso.

7. . RIGHTS RESERVED TO LICENSOR: Throughout the term of this License, the Licensor expressly reserves the right to install, repair or reconstruct the License Area used or occupied by Licensee, expressly including but not limited to water, sanitary sewer, stormwater drainage facilities, electric, gas and other pipelines, cables and conduit, and to do and permit to be done, any underground and overhead installation or improvement that may be deemed necessary by El Paso Water Utilities Public Service Board.

8. REGULATION OF CONSTRUCTION: The Licensee will be responsible for all design work, surveying and construction costs for the proposed parking, landscaping and stormwater facilities located within the License Area. The design work for the License Area will be subject to review and approval by the Licensor prior to submitting to the City for approval. The work done by the Licensee in placing, constructing, replacing, repairing, reconstructing or maintaining shall be subject to and governed by all laws and regulations of the City and El Paso Water Utilities Public Service Board. Licensee shall not commence construction of the parking and landscaped area without receiving the proper permit approvals by the City to include but not limited to building permits, drainage and grading and paving,

The Licensee covenants and agrees to pay for all associated costs resulting from required extension of utilities to the License Area including but not limited to reclaimed water service. It is expressly understood that reclaimed water service is currently not available to the site. The Licensee shall be responsible for securing and paying the water meter costs for water service first, if desired; and reclaimed water service when it becomes available for any proposed landscape irrigation purposes within the License Area. The El Paso Water Utilities Public Service Board will require the Licensee to secure the necessary water permit and pay the connection and monthly water bill.

9. LICENSE FEES: The Licensor shall waive the estimated License Fee of $800 in consideration of the Licensee permitting the agreement to be nonexclusive whereby the public is permitted to use the parking area.

10. USE OF PROPERTY: The License Area shall be used for parking and landscaping purposes only. Licensee shall not assign this License any part of the Property, without prior approval by Licensor.

11. CONDITION OF PROPERTY: Licensee accepts the Property in its condition including existing improvements and state of repair at the commencement of the License term, and Licensor shall not be obligated to make any repairs or improvements. Upon termination, Licensee shall surrender the Property to the Licensor in its present condition, except normal wear and tear.

12. ALTERATIONS: Any additional improvements or fixtures placed on the Property shall become the property of the Licensor at the termination of the Lease Agreement.

13. SPECIAL PROVISIONS: N/A

14. INSPECTIONS: During the term of the License Agreement, Licensor may enter the Property at all reasonable times to inspect the improvements.

15. LAWS: Licensee shall obey all applicable laws, restrictions, ordinances, rules and regulations with respect to the Property.

16. REPAIRS AND MAINTENANCE: Licensee shall bear all expenses of repairing and maintaining the Property. Licensee shall repair at the expense of Licensee any damage to the Property caused directly or indirectly by the acts or omissions of the Licensee or any other person therein or thereon by the consent, invitation or sufferance of Licensee. Repairs shall be completed promptly.

17. INSURANCE: The Licensor shall waive the standard liability insurance.

18. INDEMNITY: Licensor shall waive the Licensee from any indemnification resulting from any claims within the License Area.

19. DEFAULT: If Licensee fails to perform or observe any provision of this License Agreement and fails to remedy same within three days after notice by Licensor, Licensee shall be in default under this License Agreement.

20. TERMINATION: This License Agreement shall terminate upon expiration of the term or upon Licensee's default under this License. Upon termination, Licensee shall vacate the Property. The Licensor reserves the right to terminate this agreement on thirty (30) days notice, with or without cause.

21. HOLDING OVER: Any possession by Licensee after termination shall not operate to renew or extend the term.

22. ATTORNEY'S FEES: If Licensor, is the prevailing party in any legal proceeding brought under or with relation to this License Agreement, Licensor shall be entitled to recover from the Licensee all costs of such proceeding and reasonable attorney's fees.

23. NOTICES: All notices by Licensor shall be in writing and effective when delivered to the Property. All notices by Licensee shall be in writing and effective when delivered to the Licensor at the address noted herein.

LICENSOR:

El Paso Water Utilities
Edmund G. Archuleta, P.E.
President/CEO
1154 Hawkins Blvd.
El Paso, Texas 79925

LICENSEE:

BMBA
David G. Wilson
President
3307 Capella Avenue
El Paso, Texas 79904-2528

EXECUTED this the 20th day of July, 2011.

LICENSEE:
Borderland Mountain Bike Association (BMBA)

By: _____

David G. Wilson
President, BMBA

LICENSOR: El Paso Water Utilities
Public Service Board

By: _____

Edmund G. Archuleta
President/CEO

ACKNOWLEDGMENTS

STATE OF TEXAS }
}
COUNTY OF EL PASO }

BEFORE ME, the undersigned, Notary Public, on this day personally appeared EDMUND G. ARCHULETA, known to me to be the person whose name is subscribed to the foregoing instrument and known to me to be the President/Chief Executive Officer of the EL PASO WATER UTILITIES PUBLIC SERVICE BOARD, and acknowledged to me that he executed said instrument for the purposes and consideration therein expressed, and as the act of the EL PASO WATER UTILITIES PUBLIC SERVICE BOARD.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 20th day of July, 2011.

NANCY E. GUTIERREZ
MY COMMISSION EXPIRES
March 13, 2012

Nancy E. Gutierrez
Notary Public in and for
The State of Texas
My Commission Expires:

STATE OF Utah }
}
COUNTY OF Salt Lake }

BEFORE ME, the undersigned, Notary Public, on this day personally appeared DAVID G. WILSON, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed said instrument for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 19th day of July, 2011.

JUSTIN GOWAN
Notary Public
State of Utah
Comm. No. 604499
My Comm. Expires Dec 30, 2014

Justin Gowan
Notary Public in and for
The State of Utah
My Commission Expires: Dec 30, 2011/2014

Trails and Trailheads

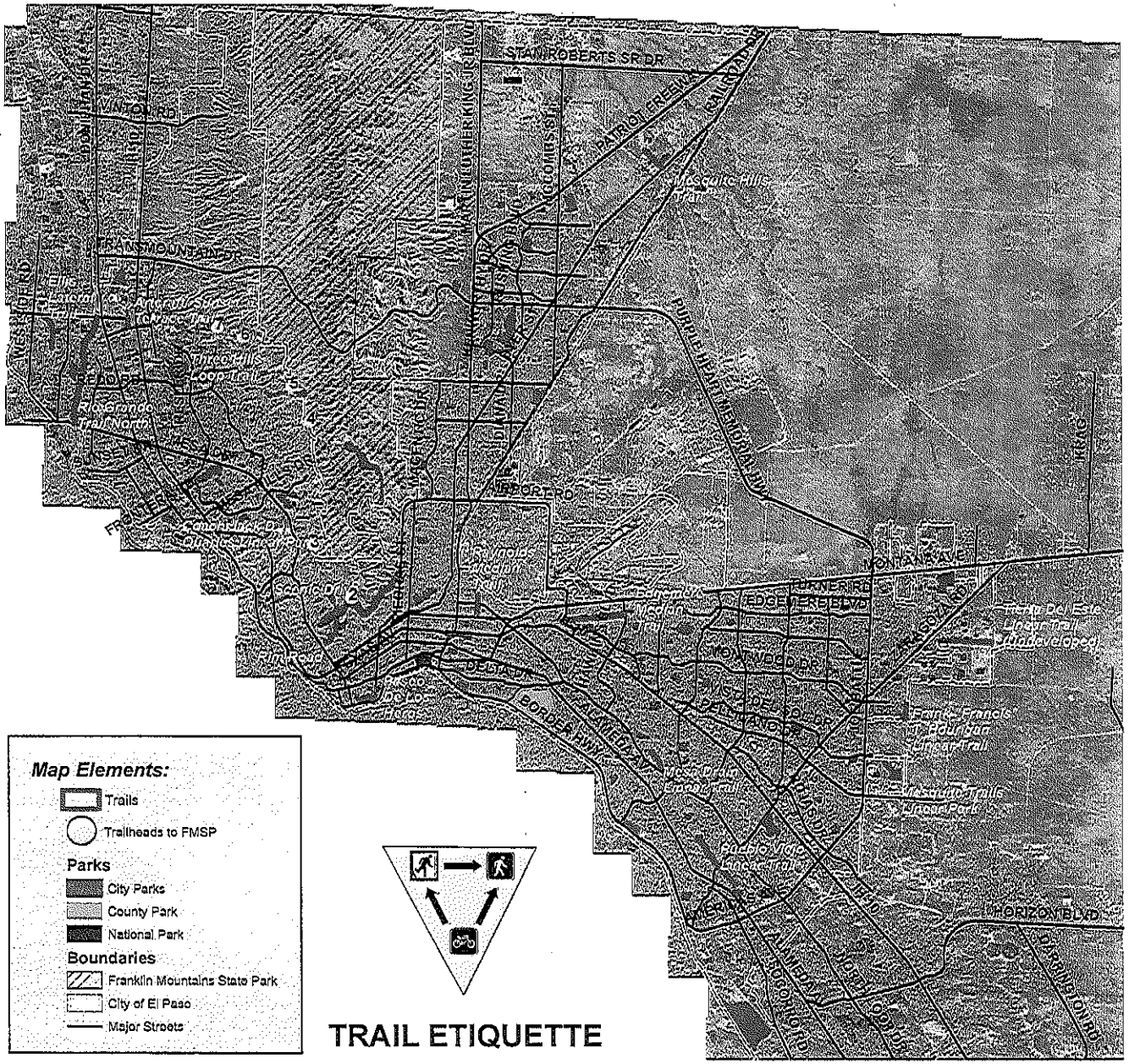
The City of El Paso Parks and Recreation Department has over 220 parks located throughout the City. Most of these parks have a paved pathway within the park that can be used for walking, jogging, rollerblading and bicycling.

The trails listed below are linear and do not loop within a park (with the exception of Three Hills Loop Trail).

Practice proper trail user etiquette:
Bicyclists/Rollerbladers YIELD to Joggers, YIELD to Walkers.

Leash and pick up after your pet for the health and safety of our community.

TRAILS	PLANNING AREA	GENERAL LOCATION	Length (miles)
Artcraft/Sunset Terrace Linear Trail	NW	Artcraft & Borderland	0.5
Coach Jack D. Quarles Linear Park	NW	Riverbend Dr & Little Lane	0.2
Edgemere Median Linear Trail	E	Airway to Hawkins	1.4
Ellis Lateral Linear Trail	NW	Lynne Beale at Debbie Good	0.8
Frank "Francis" T. Hourigan Linear Trail	E	2085 Shreya St.	0.9
Mesa Drain Linear Trail	MV	North Loop at Mauer	0.5
Mesquite Hills Linear Trail	NE	Mesquite Hills at Dyer	0.9
Mesquite Trails Linear Park	E	1526 Snowy Plover	1.0
Ojo de Agua Linear Trail	NW	670 Villa Descanso	0.7
Paseo De Los Heros Linear Trail	C	601 E. Eighth	0.4
Pueblo Viejo Linear Trail	MV	Roseway to Presa Pl.	1.5
Reynolds Median Linear Trail	C	Hastings to La Luz	0.5
Rim Road Linear Park	C	Kansas to Brown	0.7
Rio Grande North Linear Trail	NW	Country Club to Borderland	2.8
Scenic Drive Linear Trail (Drive closed to vehicles Sunday mornings for "Scenic Sundays")	C	Rim to Wheeling	1.8
Three Hills Loop Trail	NW	7400 High Ridge, within Westside Community	2.0
Tierra Del Este Linear Park (undeveloped)	E	Rich Beem at Rainbow Point	1.0
TRAILHEADS			
Chuck Heinrich (1)	NE	MLK at Loma Casitas	n/a
Pallsades (2)	C	Robinson at Rim	n/a
Thousand Steps (3)	NW	Stanton north of Vaquero	n/a
Thunderbird (4)	NW	Thunderbird north of Singing Hills	n/a
Ojo De Agua (5)	NW	Via De La Paz at Via Blanca	n/a
Lomas del Sol (6)	NW	Redd at Parque del Sol	n/a
Lost Dog / Redd (7)	NW	Redd at Helen of Troy	n/a



STATE OF TEXAS	}	FIRST AMENDMENT
	}	TO
COUNTY OF EL PASO	}	LICENSE AGREEMENT

This First Amendment to License Agreement is entered into on this 15th day of July, 2016, by and between the El Paso Water Utilities Public Service Board ("Licensor") and Borderland Mountain Bike Association ("Licensee").

WHEREAS, on July 20, 2011, the parties entered into a License Agreement ("License") whereby Licensor granted to Licensee a nonexclusive right to construct a parking area with landscaping on Licensor's property, for use by the public while hiking and biking in the Franklin Mountain State Park; and

WHEREAS, the License was for a period of five (5) years beginning on July 20, 2011, and ending on July 20, 2016, with one option to extend for an additional five (5) year period and;

WHEREAS, the parties desire to exercise the option to extend the License, thereby extending the term of the License for an additional five (5) years.

NOW, THEREFORE, in consideration of the mutual benefits and promises contained herein and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree to amend the License Agreement as follows:

1. **Term**. The License Agreement is amended to exercise the option to extend for an additional five (5) year term beginning on July 20, 2016 and ending on July 19, 2021.

2. Except as expressly herein amended, all other provisions and terms of the License Agreement between the El Paso Water Utilities Public Service Board and Borderland Mountain Bike Association shall remain in full force and effect.

(Signatures begin on following page)

Executed this 15th day of July, 2016.

EL PASO WATER UTILITIES
PUBLIC SERVICE BOARD

Marcela Navarrete
Marcela Navarrete – Vice President

STATE OF TEXAS)
)
COUNTY OF EL PASO)

ACKNOWLEDGMENT

This instrument was acknowledged before me on this 15th day of July, 2016, by **Marcela Navarrete,** as **Vice President** of **El Paso Water Utilities – Public Service Board.**

SUSANA BUSTILLOS
Notary Public, State of Texas
Comm. Expires 01-27-2020
Notary ID 13051368-0

Susana Bustillos
Notary Public, State of Texas

(Signatures continue on following page)

Executed this 15 day of July, 2016.

Borderland Mountain Bike Association

By: D.J. Singh
(Printed Name)
Title: President

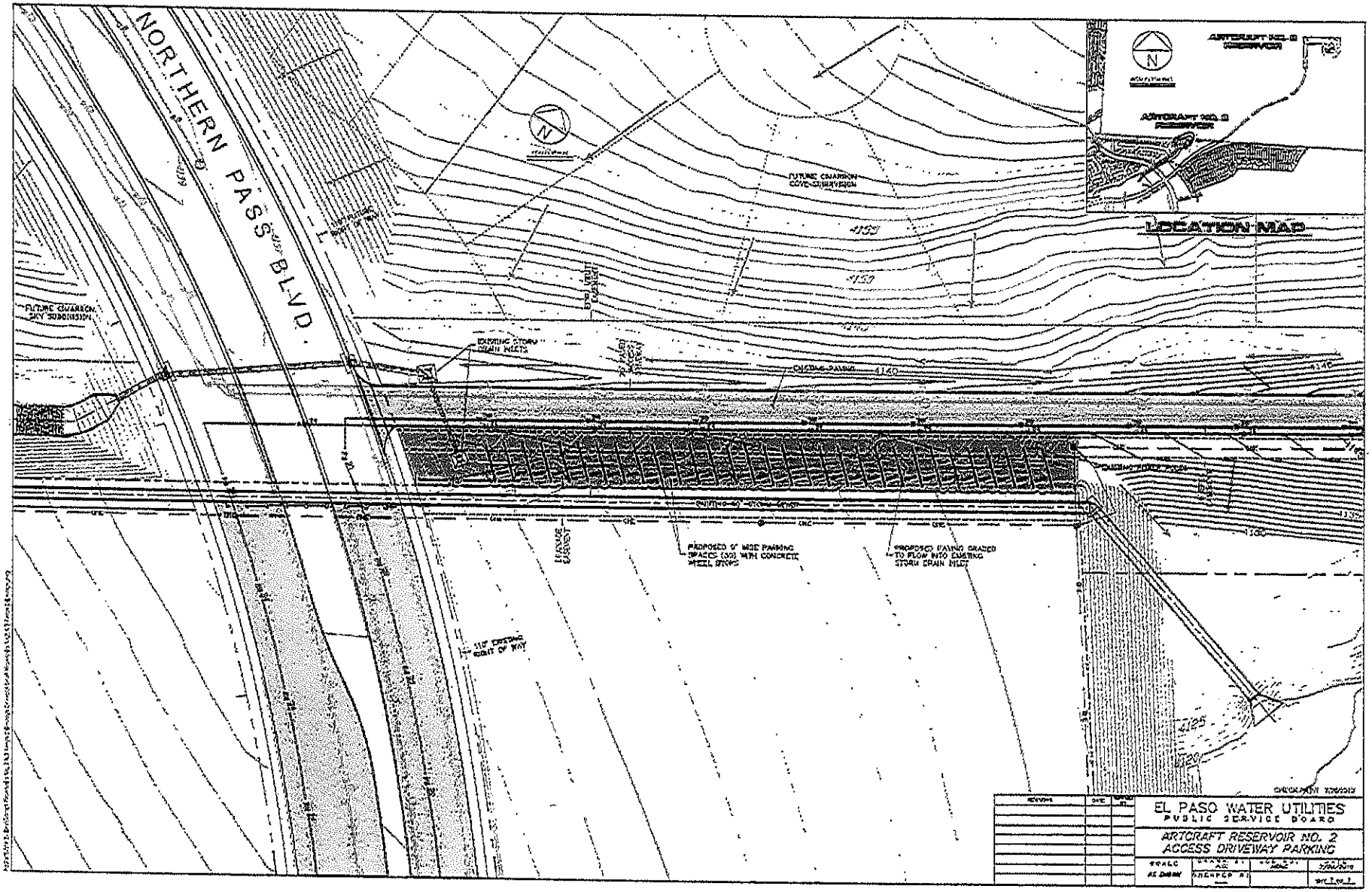
STATE OF TEXAS)
)
COUNTY OF EL PASO)

ACKNOWLEDGMENT

This instrument was acknowledged before me on this 15th day of July, 2016, by D.S. Singh as President of **Borderland Mountain Bike Association.**

SUSANA BUSTILLOS
Notary Public, State of Texas
Comm. Expires 01-27-2020
Notary ID 13051308-0

Susana Bustillos
Notary Public, State of Texas


NORTHERN PASS BLVD.
LOCATION MAP
PROPOSED 9' WIDE PARKING SPACES (30) WITH CONCRETE WHEEL STOPS
PROPOSED PAVING GRADED TO FLOW INTO EXISTING STORM DRAIN INLET
EXISTING STORM DRAIN INLETS
EL PASO WATER UTILITIES
PUBLIC SERVICE BOARD
ARTCRAFT RESERVOIR NO. 2
ACCESS DRIVEWAY PARKING

RESOLUTION

Whereas, the Public Service Board is the Trustee for the Water, Wastewater and Drainage Municipal Utilities for the City of El Paso; and

Whereas, the Public Service Board is charged with complete management and control of these Utilities including all its infrastructure and land assets as set forth in the original 1952 Bond Ordinance and subsequent Bond Ordinances; and

Whereas, the Public Service Board carefully manages its assets for the benefit of its ratepayers to maximize water, wastewater service and stormwater control and safety; and

Whereas, the Public Service Board as Trustees are charged with a fiduciary responsibility to its customers and bond holders to safeguard the assets of the Utility; and

Whereas, the Public Service Board through proper planning and foresight, identifies and reserves required Utility infrastructure on its land, and may from time to time sell land for contiguous and planned development; and

Whereas, the Public Service Board has masterplanned lands for sale including the Northeast Masterplan and the Westside Masterplan which were developed in cooperation with City Staff, school districts, TxDOT and other agencies, the public, environmental groups, and other stakeholders; and

Whereas, the Northeast and Westside Masterplans, also incorporate substantial open/green spaces, preserve arroyos, identifies and plans for miles of connecting hike and bike trails that lead into the Texas Franklin Mountain state park, incorporating park/ponds and other amenities; and

Whereas, the Northeast and Westside Masterplans additionally reserve sites for future city facilities including police stations, libraries, parks, Sun Metro and sites for schools, and

Whereas, the Westside Masterplan incorporates the Paseo Del Norte Interchange and Arterial as an integral part of the plan; and

Whereas the Public Service Board has spent over $700,000 masterplanning this Westside property in coordination with the city; and

Whereas, the Public Service Board, in conjunction with the City, is currently developing the Painted Dunes Masterplan, a 1,500 acre plan in northeast El Paso; and

Whereas, the Public Service Board, is a good steward of the environment as exemplified by its transfer of over 8,000 acres of land, to include arroyos, to the Franklin Mountain State Park, developing a sustainable water plan for the region, incorporating and promoting natural landscapes, conservation and the use of reclaimed water; and

Whereas, an item was placed on City Council agenda on October 5, 2010 to direct staff to rezone 900 acres of previously masterplanned PSB land to Natural Open Space.

NOW THEREFORE, BE IT RESOLVED BY THE EL PASO WATER UTILITIES PUBLIC SERVI CE BOARD THAT:

Section 1. The Public Service Board believes this action, significantly impairs, encumbers and disrupts the development of the Westside Masterplan and Land Study that was adopted by ordinance by City Council in 2005 and further adversely impacts the planned transportation connectivity elements as identified in the City's Master Thorough Fare plan.

Section 2. The Public Service Board entered into a Resolution with the City of El Paso, in May, 2010 to cooperatively work together to Masterplan land for all land sales over 25 acres, and the City agreed not to encumber any PSB lands.

Section 3. This City Council action negatively impacts the ratepayers of El Paso and the bondholders of City of El Paso Revenue Bonds by stopping the conversion of such property from a land asset to a cash asset to be used for required Utility infrastructure, estimated at a value of over $20,000,000.

Section 4. This City Council action represents a loss in property tax revenues potentially derived from this property of over $12,000,000 annually.

Section 5. The Public Service Board has not declared this land inexpedient to the System.

Section 6. This City Council action negatively impacts development of PSB lands north of this property by disrupting plans for contiguous development and growth.

Section 7. This City Council action will not allow the Public Service Board to construct water and wastewater utilities on this land required to serve adjoining land.

Section 8. This City Council action impacts the planned balanced growth of El Paso by limiting development of land on the Westside inside the city limits and will distort accelerated growth to the east side of El Paso causing increased metropolitan traffic problems in that area.

Section 9. This City Council action is promoting urban sprawl by pushing population growth into the Upper Valley, Santa Teresa, New Mexico and the far east side outside the city limits.

Section 10. This City Council action sends the wrong message to developers who have been encouraged to masterplan their properties, by overturning a masterplan approved by City Council itself.

Section 11. The Public Service Board vehemently opposes such action by the City Council and hereby authorizes the President/CEO to pursue all available remedies at law or in equity to fulfill its duty as Trustees of the water and wastewater system to protect the ratepayers of El Paso and the bondholders of City of El Paso Water and Sewer Revenue Bonds.

Section 12. The Public Service Board strongly urges the Mayor to veto any City Council action which disrupts, impairs or encumbers assets of the Public Service Board.

Section 13. The Public Service Board finds that the City Council, by action attempting to rezone approximately 900 acres of PSB lands, is not acting in the best interest of the citizens of El Paso and is negatively impacting the economic development of El Paso, placing a greater burden of taxes on existing taxpayers and ratepayers, is undermining the long term transportation infrastructure plan for El Paso, reducing connectivity and endangering the public.

Section 14. The Public Service Board hereby directs the President/CEO to deliver an original of this Resolution to the Mayor and City Council of the City of El Paso upon its passage and adoption and to other taxing entities affected and to TxDOT, Fort Bliss, El Paso Chamber of Commerce, REDCO and other stakeholders.

PASSED and ADOPTED this 22nd Day of October, 2010, by action of the El Paso Water Utilities Public Service Board meeting in specially called Strategic Planning Meeting with notice to the public as required under the Texas Open Meetings Act and with a quorum present as required under the Act.

EL PASO WATER UTILITIES
PUBLIC SERIVCE BOARD

Chair

ATTEST:

Secretary/Treasurer

APPROVED AS TO FORM:

Robert D. Andron, General Counsel

TRANSMOUNTAIN CORRIDOR & NORTHWEST MASTER PLAN CHARRETTE REPORT

FEBRUARY 2012

TRANSMOUNTAIN CORRIDOR & NORTHWEST MASTER PLAN CHARRETTE REPORT

Created By:

Mayor John Cook

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Susie Byrd, *District 2*
Emma Acosta, *District 3*
Carl L. Robinson, *District 4*
Dr. Michiel Noe, *District 5*
Eddie Holguin Jr., *District 6*
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Joyce A. Wilson, *City Manager*
David R. Almonte, *Health & Safety*
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Jane K. Shang, *Mobility Services*
William F. Studer Jr., *Finance & Management Support Services*

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John Rayborn
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Town Planning
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Justin Falango
Chris Podstawski
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Urban Advantage
Illustrations
Steve Price

The Street Plans Collaborative
Coding
Anthony Garcia

Hall Planning & Engineering
Transportation Planning
Rick Hall

Criterion Planners
Scenario Planning
Eliot Allen
Josh Ahmann

Public Service Board
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Ruth Katherine Brennand
Edward Escudero
David C. Nemir
Richard T. Schoephoerster
Maria F. Teran
John F. Cook, Mayor

EPWU-PSB Staff
Edmund Archuleta, President & CEO
Marcela Navarrete, Vice President - Strategic, Financial & Management
Jim Shelton, Utility Land & Water Rights Manager
Rudy Valdez, Utility Land Management Coordinator
Patricia D. Adauto, Consultant

. . . and El Paso residents

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1 PUBLIC PROCESS

HANDS-ON DESIGN SESSION

The Hands-on Design Session for the Northwest Master Plan and Transmountain Road Charrette was held on Tuesday, January 24, 2012 at Canutillo High School. The session was well attended by El Pasoans from throughout the City. During the interactive public session participants evaluated multiple scenarios for the corridor and surrounding lands created by the design team and then composed recommendations for improving the scenarios and presented their designs to the group.

Interviews were conducted with local media during the Hands-on Session and throughout the charrette. Both simple and detailed surveys were distributed to participants and posted on the project website www.planelpaso.org, The website was updated periodically throughout the charrette process.

DESIGN STUDIO & WORK-IN-PROGRESS PRESENTATION

Dover-Kohl refined the ideas produced by participants at the Hands-On Session as part of a Design Studio. The design studio was open to the public from Monday, January 23 to Friday, January 27 and located at the Canutillo Independent School District Board Room near Transmountain Road. Many members of the public visited the studio, gave additional input, and worked alongside the designers.

Stakeholder meetings were held with EPWU-PSB Staff, the Parks and Recreation Department, El Paso Department of Transportation, Texas Department of Transportation, hiking and biking advocates, the Frontera Land Alliance, local development industry representatives, the Canutillo Superintendent and school district staff, the Open Space Advisory Board and several others.

At the Work-in-Progress Presentation and Open House on Saturday, January 28 at the Canutillo High School Auditorium Dover-Kohl discussed the revised scenarios for the scenic corridor and surrounding lands. Attendees offered support, concerns, and recommendations for moving forward. The scenarios described complete neighborhoods with a mix of uses, multi-modal pedestrian-friendly thoroughfares, and significant amounts of open space in the form of preserved arroyos, and public spaces and recreational facilities.

2 PRELIMINARY SCENARIOS

PRELIMINARY SCENARIO 1

Preliminary Scenario 1 depicts a plan which the Public Service Board commissioned prior to the Northwest Master Plan Charrette initiative. The plan utilizes generalized land use districts which would result in conventional zoning districts that emphasize a strict separation of uses.

Transportation

Preliminary Scenario 1 is supported by a framework of minor and major arterial roadways with relatively high design speeds. The roadways would likely to be walled off at the sidewalk edge as they pass through residential areas given their inevitable character as loud, wide, and dangerous to cross. The arterials would connect pods of single-use districts. Within the districts collector streets would link neighborhood streets. Many of these neighborhood streets would terminate in cul-de-sacs. The entire system would likely be designed with blocks with large perimeters and the street network would have a low degree of internal connectivity. These factors would contribute to less pedestrian activity and more traffic congestion at the limited number of intersections that access the arterials.

Land Use

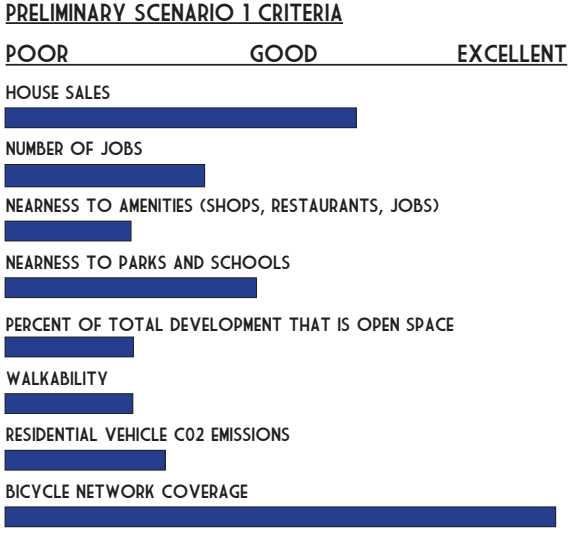
This scenario places development along Transmountain Road for approximately one half the freeway's edge with linear commercial development radiating from the intersection of Paseo Del Norte and Transmountain Road. A second commercial area is located on the southwest portion of the site near the intersection of Paseo Del Norte and Northern Pass Road. Other strictly commercial and office uses and residential uses of various densities are located in single-use distinct districts throughout the plan. Generally the plan moves from areas that are more dense to areas that are less dense farther from Paseo Del Norte.

Environment

Development would be located on both sides of Transmountain Road. Terrain that would be cost prohibitive to develop due to arroyo beds and steep slopes are typically avoided in the plan. In some cases arroyos are left undisturbed from the southern rim to the northern rim of the shallow valleys they form. In other cases arroyos would likely be channelized along concrete channels with box culverts that would allow water to pass under bridge crossings. Open spaces would be a mix of catchment areas for water, small parks, and trails along drainage areas.

Public Input

On the whole community members at the Hands-on Design Session voiced strong opposition to Preliminary Scenario 1 given that this scenario preserved less land than other scenarios, offered the least sensitive treatment of the Transmountain Corridor, and utilized land-use designations which would likely result in status quo development patterns with low walkability (amenities, parks, and schools would likely be far from homes, for instance).



PRELIMINARY SCENARIO 2

Preliminary Scenario 2 utilizes SmartCode form-based coding to allow neighborhood main streets at the nexus of neighborhoods and to create neighborhoods that would have central green spaces, a variety of unit types, and streets that would be required by code to be multi-modal and pedestrian-friendly.

Transportation

Avenues and boulevards would be used instead of standard minor and major arterial roadways. In walkable urban locations slower design speeds, planted parkways, and continuous sidewalks would make the streets safe for pedestrians Perimeter roads between the edges of neighborhoods and open spaces would allow for scenic drives.

Paseo Del Norte and a circular boulevard extending to the eastern portions of the site would together connect the mixed use centers and form the primary circulation system. Other connections would allow multiple routes for local trips to diffuse vehicular traffic and avoid congestion at intersections. Continuous sidewalks, short block perimeters, multiple intersections and pathways through the arroyos are intended to facilitate pedestrian activity.

Land Use

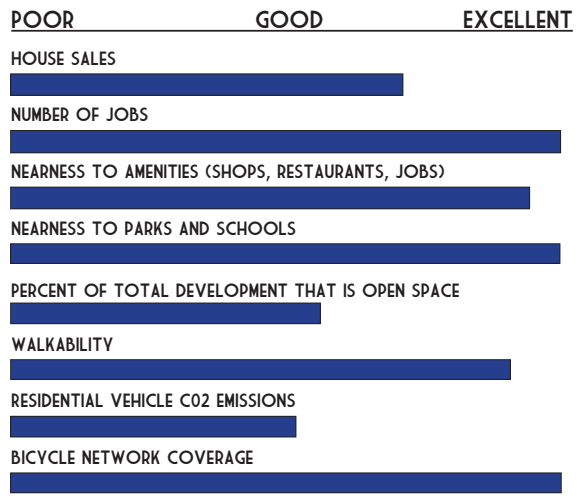
Preliminary Scenario 2 sites development away from Transmountain Road to protect the scenic view corridor. Mixed-use centers with varying amounts of office, commercial, and civic uses would be placed within a ten minute walk of residential homes. The settlement radiates out from a center at the intersection of Paseo Del Norte and Northern Pass Drive. Farther from Paseo del Norte mixed-use intersections are likely to contain corner stores and live-work offices. Within the residential portions of the neighborhoods multi-family units are proposed along neighborhood greens. Single family homes would be the most common unit type and the home lots would get larger toward the edges of neighborhoods.

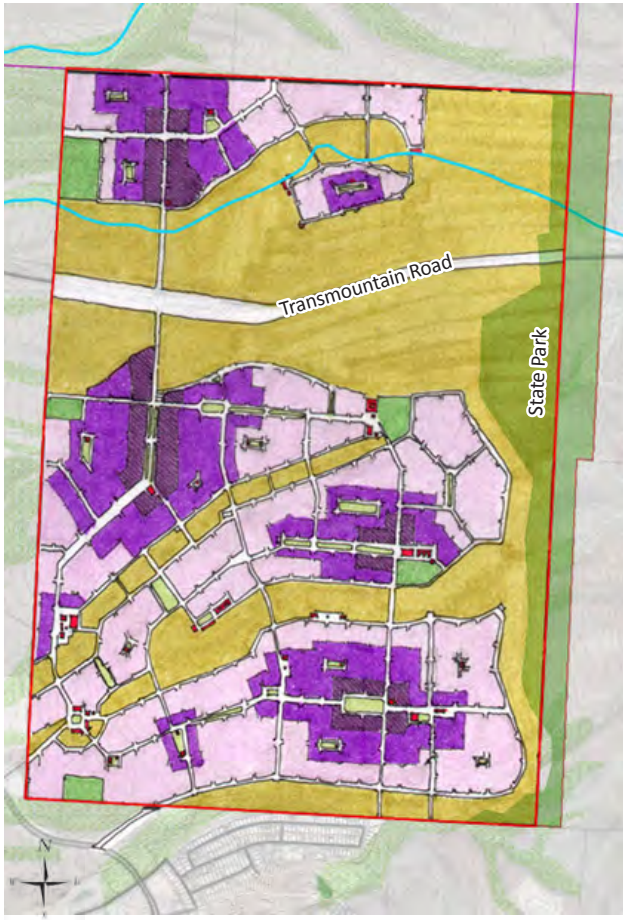
Environment

Development would be located behind the hills of Transmountain Road on flat plains or gently sloping hills. One exception is the residential portion located on high ground north of Transmountain and south of the alluvial arroyo flowway. Arroyos near Transmountain would be protected in their entirety from rim to rim. Arroyos within the areas of settlement would be protected from rim to rim or in part for drainage purposes, to provide neighborhood edges, and to provide scenic amenities with long views. At the southern edge of the property a buffer area would be provided between the study area and existing development.

Public Input

On the whole community members at the Hands-on Design Session expressed disapproval regarding Preliminary Scenario 2 given that this scenario preserved less land than other scenarios. While the more sensitive treatment of Transmountain Road over Preliminary Scenario 1 was appreciated participants expressed concern that development was located in areas visible from Transmountain Road.





LEGEND:

- T5 - Urban Center: High to Medium Density Residential Urbanism with Mixed-use Main Streets
- T4 - General Urban: Medium Density Residential Urbanism with Apartments and Offices
- T3 - Sub-Urban: Medium to Low Density Residential Urbanism with embedded Corner Stores & Civic Buildings
- T1 / T2 - Natural Arroyo / Open
- Civic Building (including fire stations and schools)
- Civic Space
- Park

PRELIMINARY SCENARIO 3

Preliminary Scenario 3 has the same land use and transportation design elements as Preliminary Scenario 2 with the exception that no development is proposed north of Transmountain Road. Also, and settlement stops on the eastern edge roughly one half mile from the Franklin Mountain State Park boundary in order to protect the higher foothills which have a high concentration of hiking and biking trails.

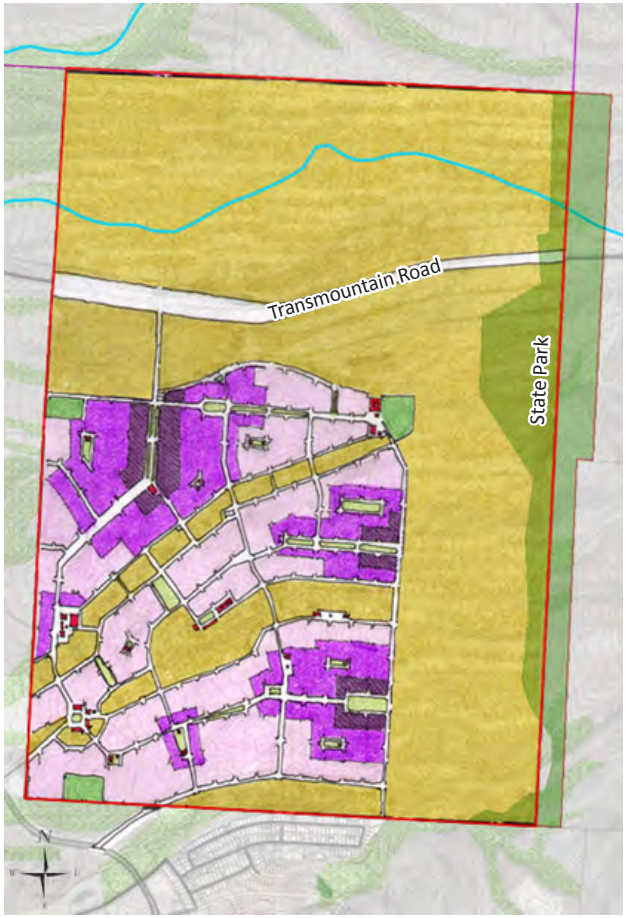
Environment

Development would be located behind the hills of Transmountain Road on flat plains or gently sloping hills. Arroyos near Transmountain would be protected in their entirety from rim to rim. Arroyos within the areas of settlement would be protected from rim to rim or in part for drainage purposes, to provide neighborhood edges, and to provide scenic amenities with long views. At the southern edge of the property a buffer area would be provided between the study area and existing development. The sources of impact to the state park in terms of potentially harmful externalities typical for residential development, such as invasive and exotic species, pets, and informal trails which could lead to erosion, are located farther from the park boundary.

Public Input

Many community members at the Hands-on Design Session expressed hesitant acceptance of Preliminary Scenario 3 provided that certain amenities would be included in the development and that all natural areas would be preserved in their entirety in perpetuity. Community members stated, however, that Preliminary Scenario 3 would only be acceptable if total preservation of the site was impossible.

Amenities recommended by the public includes trailheads which were open to the public, eco-sensitive architectural and environmental systems, sensitive treatment of the arroyos with bridges instead of box culverts, and destination amenities such as bike shops, cafes, and restaurants which offered visitors views of the Franklin Mountains State Park. Members of the public stated that an alternative entrance to the State Park would also be valued. Members of the public stated that at present entering the park heading east requires dangerous turning maneuvers across Transmountain Road.



PRELIMINARY SCENARIO 4

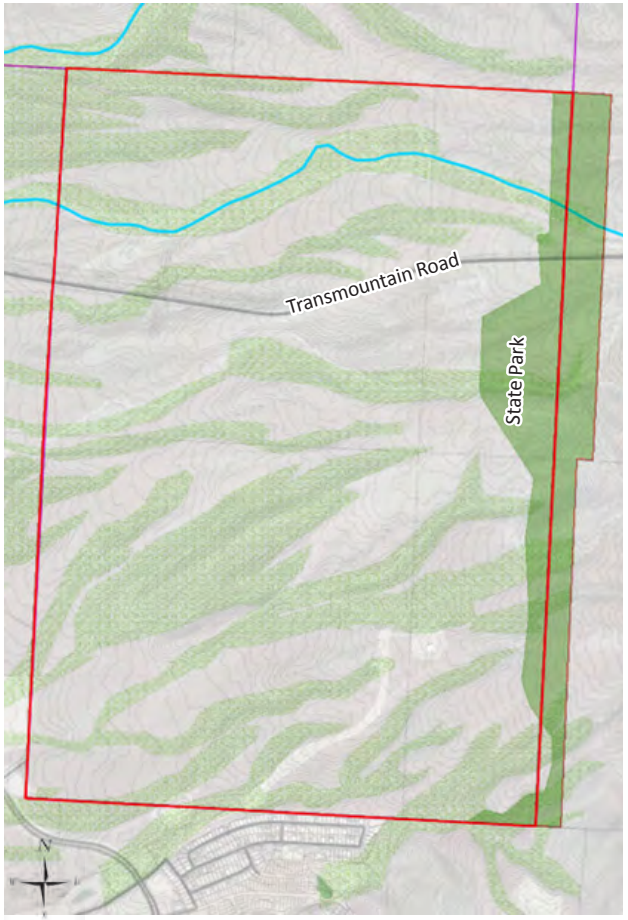
Preliminary Scenario 4 proposes no development within the study area. This scenario was not presented to the public as such, but was instead suggested by many participants at the Hands-on Design Session as a scenario for consideration.

In this scenario the entirety of the lands are presented in their natural state. Environmental stewardship of the land to prevent invasive, exotic, and pest species would be recommended. Existing trails would become formalized to allow people to enjoy the natural lands, prevent erosion from informal trails, and control access to the state park.

This scenario is difficult to evaluate given the criteria described previously. Suffice to say this scenario would produce the highest environmental benefit and the least economic return (at least in the short-term).

Public Input

Community members at the Hands-on Design Session overwhelmingly expressed a desire to see the lands preserved. Many attendees expressed their understanding that this use of the land might not be possible given the present, stated goals of the El Paso Water Utilities-Public Service Board staff.



LEGEND:

Arroyos and floodplains

3 SCENARIOS

SCENARIO 1

The plan builds incrementally from the intersection of Paseo Del Norte and Northern Pass Road and clusters development within definite boundaries surrounded by protected lands. The scenic corridor along Transmountain Road is preserved. A network of walkable streets connect mixed-use main streets and neighborhood centers. Various forms of recreational facilities are placed throughout the settlement. The new communities are complete, compact, connected, and pedestrian-friendly.

Transportation

Intended as an oasis of walkability within one of El Paso's most unwalkable areas the settlement consists of streets planned to create blocks which offer short enough perimeters to facilitate pedestrian movement. The interconnected street pattern provides multiple routes, diffusing traffic. The elongated blocks provide economical, double-loaded alleys. The blocks bend along their length to negotiate slopes and respond to the terrain.

Three "fingers" of settlement divided by preserved arroyos begin at a roundabout at the intersection of Paseo Del Norte and Northern Pass Road and extend east. The spine of the transportation network from south to north is composed of an extended Paseo Del Norte and two other primary thoroughfares parallel Paseo Del Norte, which span the arroyos. Primary east-west thoroughfares connect the network. The street sections of these primary thoroughfares are designed for maximum multi-modal capacity: multi-way boulevards, boulevards and avenues. A network of secondary thoroughfares connect the primary thoroughfares. These thoroughfares are designed for slower vehicular movement and consist of neighborhood streets and commercial streets. Neighborhood streets include yield streets, edge drives, rural roads, alleys and lanes. Commercial streets include various types of neighborhood main streets of varying dimensions.

Land Use and Form

The plan includes a mix of shopping, workplaces, entertainment and civic uses. A broad range of housing types and sizes would meet the needs of a diverse citizenry including both renters and homeowners. The plan is organized around a series of inviting, functional public spaces: arcaded shopping streets, neighborhood main streets leading to large central squares, and a number of smaller neighborhood parks. Form-based coding aligns buildings of varying sizes with the street edge, relocates parking to the rear of each lot and introduces a continuous line of awnings or arcades over sidewalks.

Each of the plan's neighborhoods has a center that includes some form of public open space as well as commercial and civic buildings at larger centers. In some neighborhoods small tree-lined central squares or placitas from the tradition of Spanish urbanism would be utilized. Placitas could contain churches, schools, and day-care centers as well as other uses.

Environment

The plan clusters development into a compact village, with a greenbelt around the Franklin Mountains State Park and Transmountain Road edges. The plan seeks to minimize grading. The site analysis which formed the basis of the plan included an examination of areas of steep and moderate slopes, potential flood zones, and routes of surface water runoff. Consideration was given to wildlife movement patterns, potential noise sources, existing trail systems, and the preservation of exceptional views.

SmartCode-Compliant Design

Coding using the El Paso SmartCode, Title 21 is assumed in order to accomplish several goals.

Goal 1: To build compact, mixed-use pedestrian friendly communities with the following shared physical characteristics:

1. Each neighborhood is limited to what can be traversed in a 5-minute or 10-minute walk.
2. Residences, shops, workplaces, and civic buildings are located in close proximity.
3. A hierarchy of streets serves both the pedestrian and the automobile.
4. Squares and parks provide places for social activity and recreation.
5. Private buildings form a clear edge, delineating street space.
6. Civic buildings are located with the neighborhoods to provide places of assembly for social, cultural, and religious activities.

Goal 2: To achieve social objectives which include:

1. Providing the elderly and young with independence of movement by locating most daily activities within walking distance.
2. To minimize traffic congestion and reduce the time spent commuting.
3. To make public transit a viable alternative to the automobile, decreasing the cost of transportation, by organizing using appropriate building densities.
4. To help residents and visitors come to know each other and to watch over their collective security by providing public spaces such as streets and squares.
5. To integrate various ages and economic classes and form the bonds of authentic community by providing a full range of housing types and workplaces.
6. To encourage community initiatives and support the balanced evolution of the settlement by providing suitable civic buildings and locations.

Potential Advantages:

- The Transmountain corridor remains scenic (development north of the road would likely still be visible)
- A new roadway leads to a potential new state park entrance
- Maximum number of sellable units
- Reduced interference to arroyos

Potential Disadvantages:

- Paseo Del Norte north of Transmountain would access unplanned northern City/PSB lands
- Minimum buffer between eastern edge of settlement and the state park

Design Elements

(A) stores, day-care facilities, live/work buildings, public transit stops or attached dwelling units on the squares keep the spaces active. A few major squares are

(B) A potential new road connects to the Franklin Mountains State Park to provide an entrance other that from Transmountain Road.

(C) A Desert Retreat Center is located at the axial termination of a major arroyo with views of the Franklin Mountains.

(D) The view of the Franklin Mountains from the east on Transmountain Road is protected by locating development behind hills wherever possible.

(E) Paseo Del Norte changes character in relation to the land-use: from a walkable urban avenue in centers to

(F) A landmark center at a roundabout at the intersection of Paseo Del Norte and Northern Pass Road provides a multi-story mixed use regional destination at the entrance to the settlement.

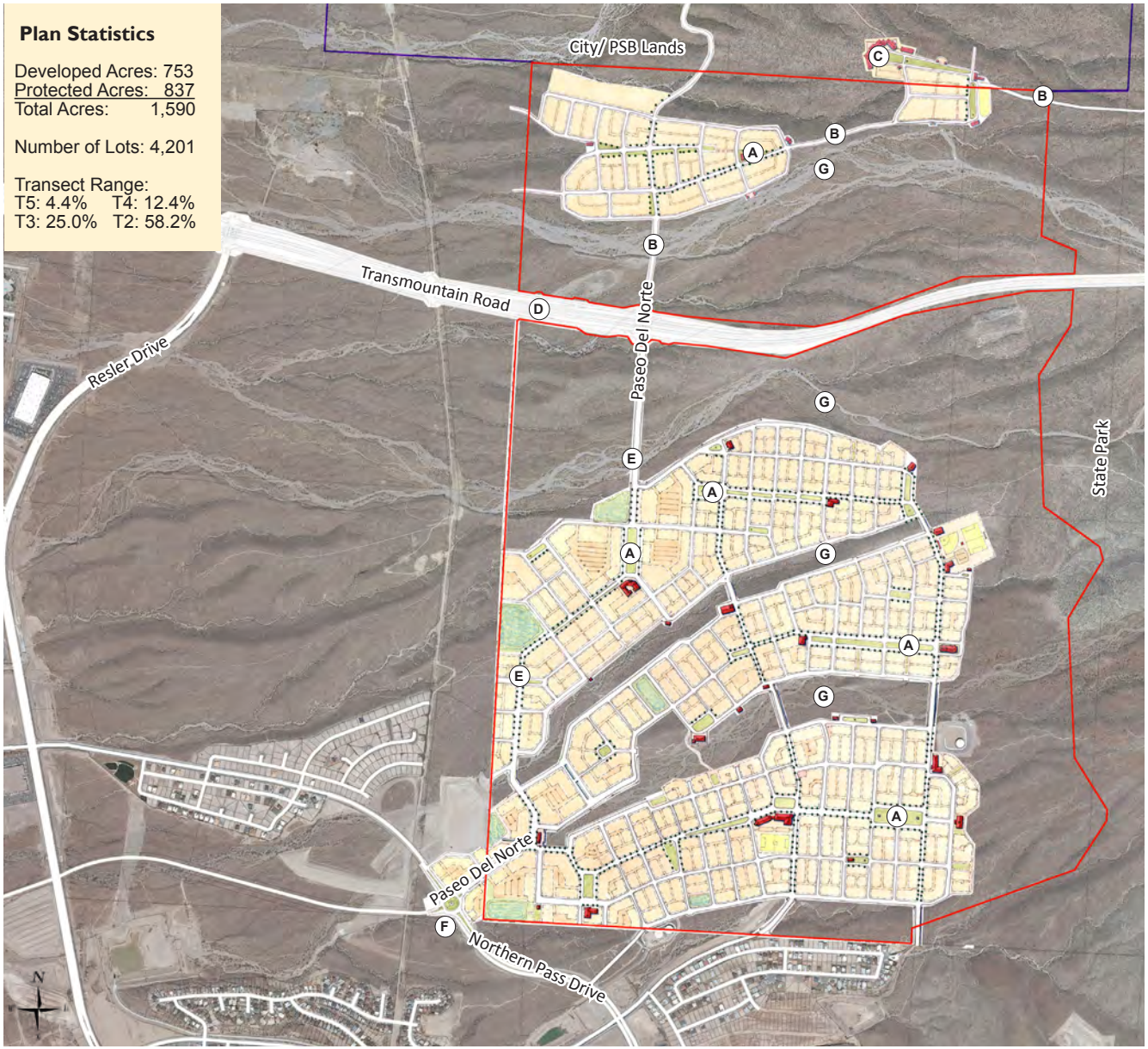
(G) Arroyos on the edge of the development are protected. Within the development large sections are protected for hydrological purposes, long views and recreational access.

Plan Statistics

Developed Acres: 753
Protected Acres: 837
Total Acres: 1,590

Number of Lots: 4,201

Transect Range:
T5: 4.4% T4: 12.4%
T3: 25.0% T2: 58.2%



SCENARIO 2

Scenario 2 has most of the design elements as Scenario 1 with the difference that development ends at a northern boundary known as "the petitioner's line", a line drawn by a coalition of environmental advocates demarcating a "no build area."

In August of 2011 environmental advocates including the Franklin Mountains Wilderness Coalition gathered more than the 4,578 required signatures necessary for the City Council to consider rezoning 800 square acres around Transmountain Road as Natural Open Space (NOS).

Should the issue be heard at the City Council representatives can approve it, approve it with amendments, deny it or take no action.

If the Council denies the petitioner's request the group can request the issue be put before voters in a May 2012 voter referendum. For this to occur the same number of signatures would need to be gathered by the petitioners. Ultimately however, a majority of the City Council may still overturn the voter-approved ordinance.

SmartCode-Compliant Design

Coding using the El Paso SmartCode, Title 21 is assumed in order to accomplish several goals.

Goal 1: To build compact, mixed-use pedestrian friendly communities with the following shared physical characteristics:

1. Each neighborhood is limited to what can be traversed in a 5-minute or 10-minute walk.
2. Residences, shops, workplaces, and civic buildings are located in close proximity.
3. A hierarchy of streets serves both the pedestrian and the automobile.
4. Squares and parks provide places for social activity and recreation.
5. Private buildings form a clear edge, delineating street space.
6. Civic buildings are located with the neighborhoods to provide places of assembly for social, cultural, and religious activities.

Goal 2: To achieve social objectives which include:

1. Providing the elderly and young with independence of movement by locating most daily activities within walking distance.
2. To minimize traffic congestion and reduce the time spent commuting.
3. To make public transit a viable alternative to the automobile, decreasing the cost of transportation, by organizing using appropriate building densities.
4. To help residents and visitors come to know each other and to watch over their collective security by providing public spaces such as streets and squares.
5. To integrate various ages and economic classes and form the bonds of authentic community by providing a full range of housing types and workplaces.
6. To encourage community initiatives and support the balanced evolution of the settlement by providing suitable civic buildings and locations.

Potential Advantages:

- The Transmountain corridor remains scenic to a maximum extent
- Ample number of sellable units
- Reduced interference to arroyos

Potential Disadvantages:

- Fewer sellable units than Scenario 1
- No new roadway leads to potential new entrance to the state park. A parallel entry roadway along Transmountain may still be possible with TxDOT approval.

Design Elements

(A) stores, day-care facilities, live/work buildings, public transit stops or attached dwelling units on the squares keep the spaces active. A few major squares are

(B) Lands north of Transmountain Road are preserved.

(C) Informal trail become formal trails for cycling and hiking.

(D) The view of the Franklin Mountains from the east on Transmountain Road is protected both by locating development behind hills and by use of a mapped line known as the “petitioner’s line”.

(E) Paseo Del Norte changes character in relation to the land-use: from a walkable urban avenue in centers to

(F) A landmark center at a roundabout at the intersection of Paseo Del Norte and Northern Pass Road provides a multi-story mixed use regional destination at the entrance to the settlement.

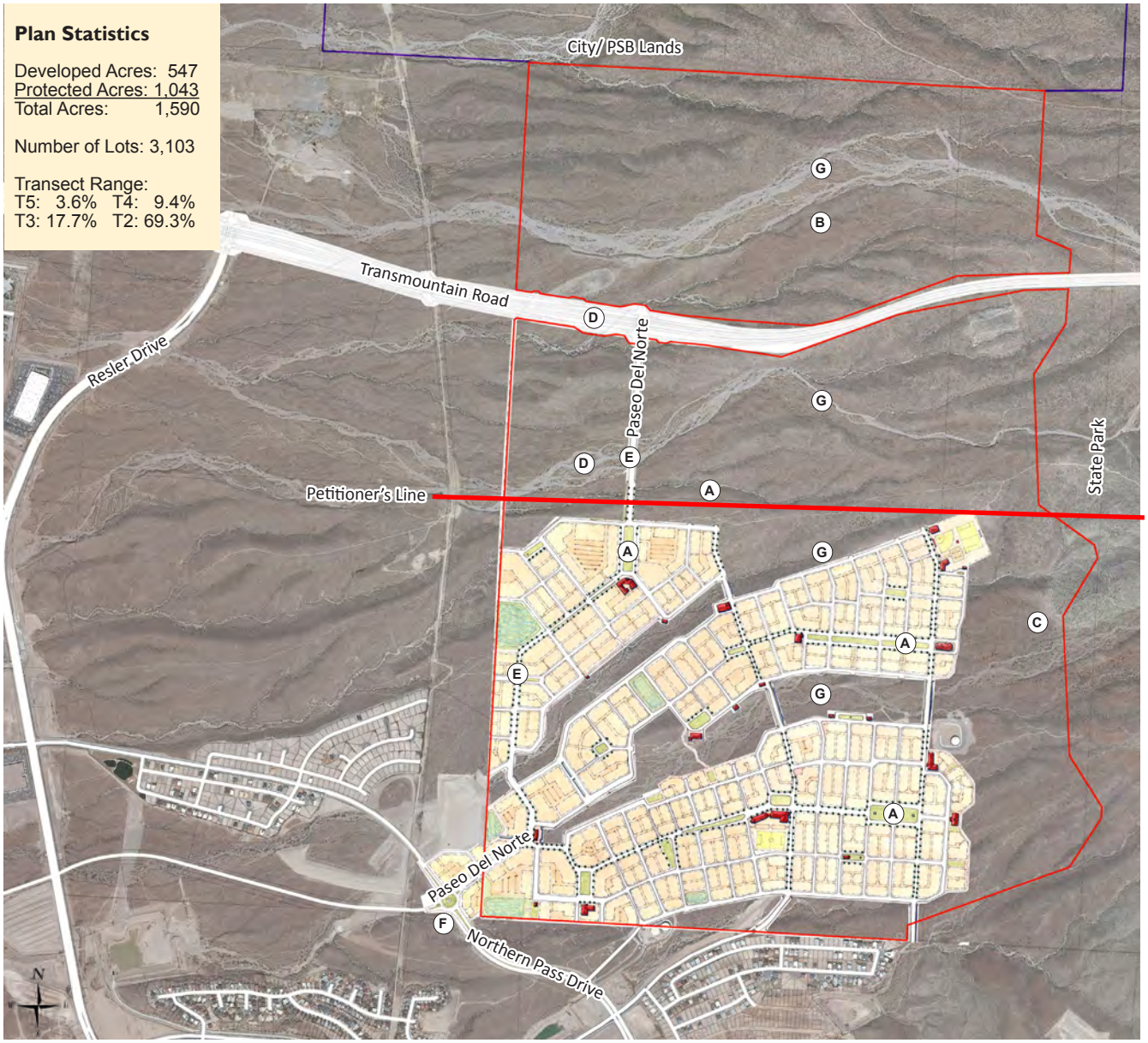
(G) Arroyos on the edge of the development are wholly protected. Within the development large sections are protected for hydrological purposes, long views and recreational access.

Plan Statistics

Developed Acres: 547
Protected Acres: 1,043
Total Acres: 1,590

Number of Lots: 3,103

Transect Range:
T5: 3.6% T4: 9.4%
T3: 17.7% T2: 69.3%



SCENARIO 3

During the charrette members of the public presented the groundwork for a scenario which would avoid arroyos and floodplains entirely by focusing development on the peaks of hills and in high valleys.

Many of the transportation, land use, form and environmental features remain the same as in Scenarios 1 and 2. However, one advantage to Scenario 3 is the higher percentage of open space and increased sensitivity to natural features. Each "village" of development is also more likely to have its own distinct identity given the distinct edges.

Areas between arroyos have been selected for development as they don't interfere with the natural flow of water over the site and keep new structures away from sites subject to flash floods. Placing structures too close to the arroyos could, over time, undermine foundations by exposing properties to the effects of floods and landslides. Protecting the arroyos and natural waterway systems, with little or no engineering, is crucial to both environmental conservation and ensuring a sustainable development pattern.

Large flat areas which are subject to occasional flooding have been avoided when placing new structures, but some of these areas have been identified as ideal locations for recreational fields and parks.

Disadvantages could include a lack of homes necessary to support neighborhood main streets. Free-standing stores at rural cross roads are more likely than the storefront retail of a main street. Weekly uses (destination restaurants and boutique stores) are more likely to be located in the settlement than daily uses (employment, shopping, services, municipal offices, schools). A lower ration of jobs-to-homes would also likely result in more people driving farther distances to work. The cost of providing infrastructure including water and wastewater utilities, streets and bridges, would likely be higher on a per unit basis.

One way to mitigate these disadvantages would be to build homes at higher densities. Mansion apartment buildings, townhouses, rowhouses and duplexes could represent a larger percentage of the building stock. Four and five story buildings would become more prevalent than in Scenario 1 or 2.

The overall visual impact of the settlement from the Franklin Mountains, Transmountain Road and existing neighborhood streets south of the study area is likely to remain comparable to Scenario 3 given the treeless expanses of the desert plain. However, if Scenario 3 utilizes taller buildings to achieve a unit count comparable to Scenario 3 than the visual impact of Scenario 3 may be higher. This scenario places a great deal of reliance on the local development community to build attractive, multi-family units.

SmartCode-Compliant Design

Coding using the El Paso SmartCode, Title 21 is assumed in order to accomplish several goals.

Goal 1: To build compact, mixed-use pedestrian friendly communities with the following shared physical characteristics:

1. Each neighborhood is limited to what can be traversed in a 5-minute or 10-minute walk.
2. Residences, shops, workplaces, and civic buildings are located in close proximity.
3. A hierarchy of streets serves both the pedestrian and the automobile.
4. Squares and parks provide places for social activity and recreation.
5. Private buildings form a clear edge, delineating street space.
6. Civic buildings are located with the neighborhoods to provide places of assembly for social, cultural, and religious activities.

Goal 2: To achieve social objectives which include:

1. Providing the elderly and young with independence of movement by locating most daily activities within walking distance.
2. To minimize traffic congestion and reduce the time spent commuting.
3. To make public transit a viable alternative to the automobile, decreasing the cost of transportation, by organizing using appropriate building densities.
4. To help residents and visitors come to know each other and to watch over their collective security by providing public spaces such as streets and squares.
5. To integrate various ages and economic classes and form the bonds of authentic community by providing a full range of housing types and workplaces.
6. To encourage community initiatives and support the balanced evolution of the settlement by providing suitable civic buildings and locations.

Potential Advantages:

- Transmountain corridor remains scenic (development north of Transmountain would likely be visible)
- A new potential roadway leads to a potential new entrance to the state park
- Ample number of sellable units
- Minimum interference to arroyos
- Retains Desert Retreat Center

Potential Disadvantages:

-

stories) would likely be necessary to accommodate a comparable number of units as Scenario 1.

Design Elements

(A)

stores, day-care facilities, live/work buildings, public transit stops or attached dwelling units on the squares keep the spaces active. A few major squares are

(B) A potential new road connects to the Franklin Mountains State Park to provide an entrance other that from Transmountain Road.

(C) A desert retreat center is located at the axial termination of a major arroyo with views of the Franklin Mountains.

(D) The view of the Franklin Mountains from the east on Transmountain Road is protected by locating development behind hills wherever possible.

(E) Paseo Del Norte changes character in relation to the land-use: from a walkable urban avenue in centers to

(F) The strong edge conditions give each hamlet its own distinct identity.

(G) Arroyos on the edge of the development are wholly protected. Within the development large sections are protected for hydrological purposes, long views and recreational access. Overall the avoidance of

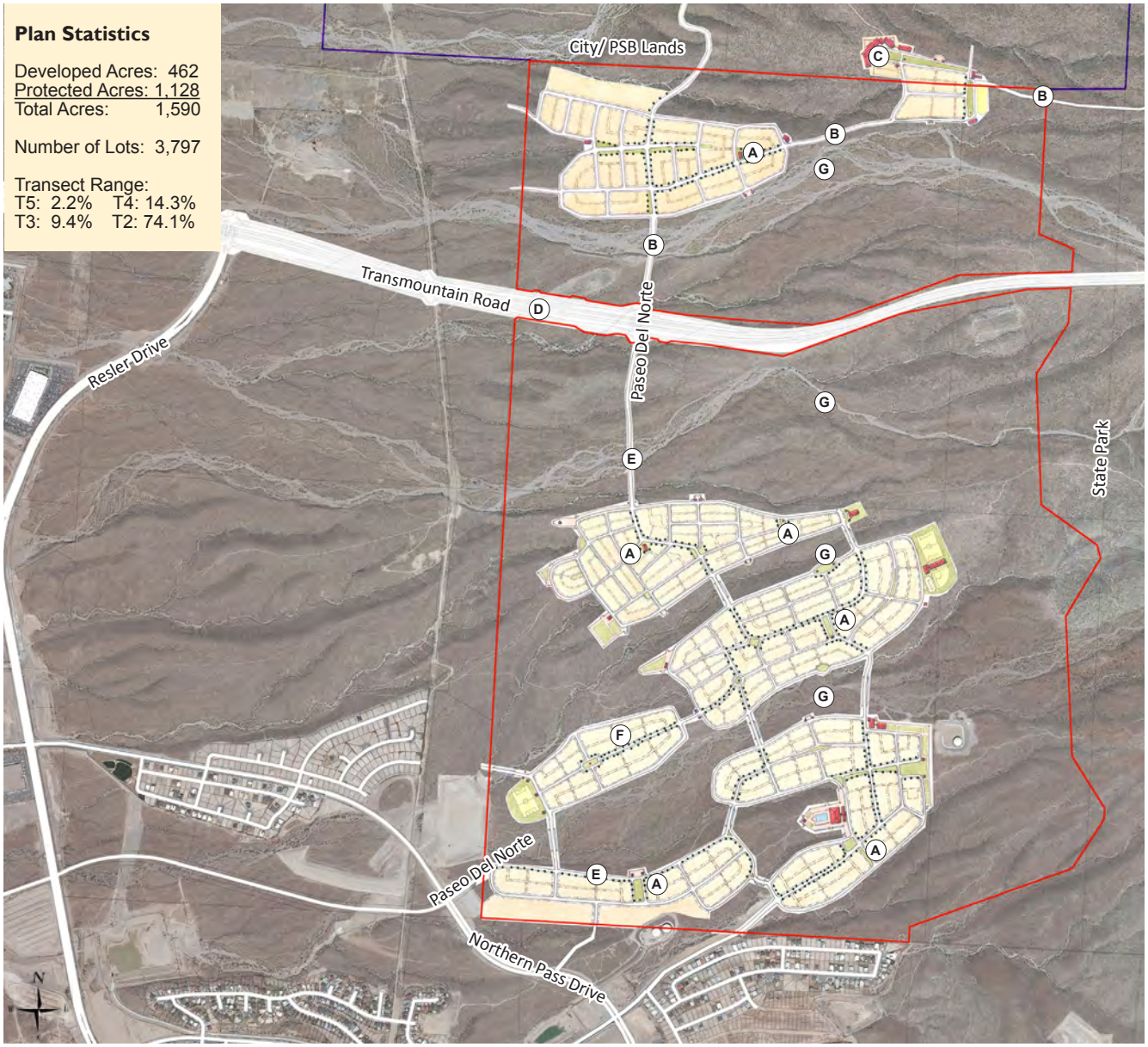
resiliency in storm events.

Plan Statistics

Developed Acres: 462
Protected Acres: 1,128
Total Acres: 1,590

Number of Lots: 3,797

Transect Range:
T5: 2.2% T4: 14.3%
T3: 9.4% T2: 74.1%



EDGE OF TOWN

The neighborhood design should celebrate the unique qualities of the land. Vistas should be created by use of greens at the edge of the settlement which are shared by the entire neighborhood. Streets should be oriented to maximize views and located at the visual termination of streets.

Thoughtfully sited overlooks provide seating and gathering areas. In some instances the squares should be quiet contemplative spaces on hilltops and across slopes. At other times they should be filled with activity, with community and holiday events and recreational uses.

Arroyos should define the edges of neighborhoods. Many arroyos currently crisscross the site, running down toward the west from the Franklin Mountains. While these could easily be seen as obstacles to development, they instead present a great opportunity to shape unique new neighborhoods which respond to the landscape while becoming amenities to future residents.

Proximity to arroyos gives developers an increased responsibility to employ Low Impact Development (LID) techniques within the newly created neighborhoods. Sensitivity to the arroyos needs to extend deep into each neighborhood. Roadways leading downhill toward arroyos should be designed as "green streets", helping to slow and clean water as it moves toward the washes. Pervious pavers could be incorporated into roadways, sidewalks and parking areas to increase permeability and help disperse water. Keeping water within the neighborhood allows it to seep into the ground, minimizing the need for irrigation of landscaping and street trees. Local, drought-resistant plantings like mesquite, cottonwood and Buffalo grass should be utilized.

All arroyos, parks and natural areas will be faced onto by public roadways and the fronts of buildings. No spaces will be privatized or hidden, ensuring access and views by all.

CENTER OF TOWN

The plan proposes a series of complete neighborhoods designed to include a full range of uses and building types. Recent development in the surrounding area has consisted of isolated residential subdivisions with separate commercial areas, requiring residents to drive for all their daily needs. Instead of following this precedent, the proposed neighborhoods incorporate a diverse mix of uses within a walkable urban fabric that supports and encourages a pedestrian oriented lifestyle.

At the heart of the community, large multi-story mixed-use buildings define meaningful public space. A large central park anchored by a civic building becomes a focal point for the neighborhood and provides a place for gatherings and special events where the entire community can come together. The central green has its edges planted with species native to or adapted to the climate and soil of this particular part of El Paso. If plants with higher water needs are included, such as some varieties of shade trees, these should be grouped in order to minimize irrigation.

The Franklin Mountains provide a dramatic backdrop for the neighborhood and gives it a unique character, while carefully sited civic buildings pierce the skyline, creating a memorable identity of place.

Architecture based on the best historic precedents from El Paso ensures a place that is deeply rooted with the best qualities that make El Paso a city loved by generations. Building materials echo the pigments and textures found in the landscape. The ultimate goal is that whatever is built on this special site be of the highest quality possible so that it is at least an even trade-off for the loss of open space and natural ecology. Value is created and retained by quality development. When approached with such a mindset, it becomes possible to build a place that can be loved by future generations El Paso residents.

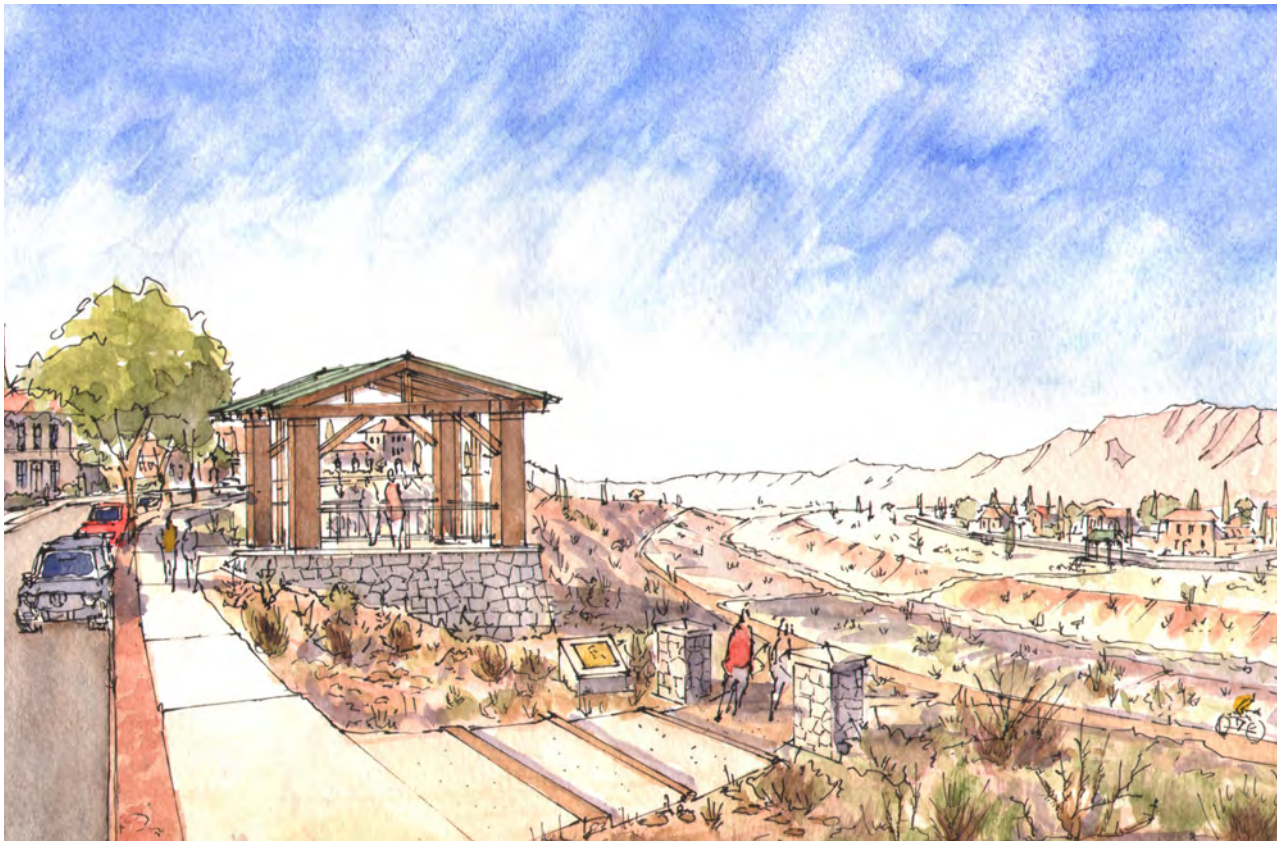
TRAILHEADS

The site of the Transmountain Road and Northwest Master Plan currently contains a series of informal trails that traverse the site. Currently, there are no visible formal trailheads or signs to indicate where a trail starts or ends. The trails would be reconfigured as a network within the overall neighborhood framework. This means adding new segments that connect the existing system to the neighborhoods, especially to those key spots in the plan were a trailhead would be located.

Each of the neighborhoods is designed to accommodate at least one or two trailheads. Each of the trailheads would be equipped with parking for several vehicles, bicycle racks and covered shelter. Public restrooms would also desirable, if there is space and an opportunity to do so. The proximity of the trailheads to neighborhood centers, or a neighborhood store, would allow for the users of the trail to find refreshments and food at close proximity. It would also be desirable to place a map of the trail system at the trailheads. Trail courses would be defined in the map by level of difficulty, making it easier for the users to plan their routes. At every trailhead there would be an opportunity to create a small building that has certain civic presence in the plan.

In addition to using the trails for recreation, the plan would also allow for some trails to be used for more casual mobility, be it by walking or biking. This would allow for some trails to be used as alternative paths between neighborhoods.

Trailheads would be located strategically along the edges of the neighborhoods, usually at a prominent site, be it at an important intersection or at the end of a street or public space. The space around the trailheads would be used as civic public space and configured like a plaza or square overlooking the arroyos.



LANDMARK ENTRY

A roundabout at the entry of the new settlement would safely integrate cars travelling through the intersection of Paseo Del Norte and Northern Pass Road while providing a landmark entry. Located outside of the land managed by the Public Service Board coordination with existing landowners would be essential.

At this busy intersection the buildings would be constructed at the highest density and height, with the greatest variety of uses. Attached buildings would form a continuous street wall and support the highest level of pedestrian activity. Commercial uses would be located on the ground floor with large windows and shopfronts fronting the sidewalk. The upper stories of these buildings would be a mix of office and residential uses.

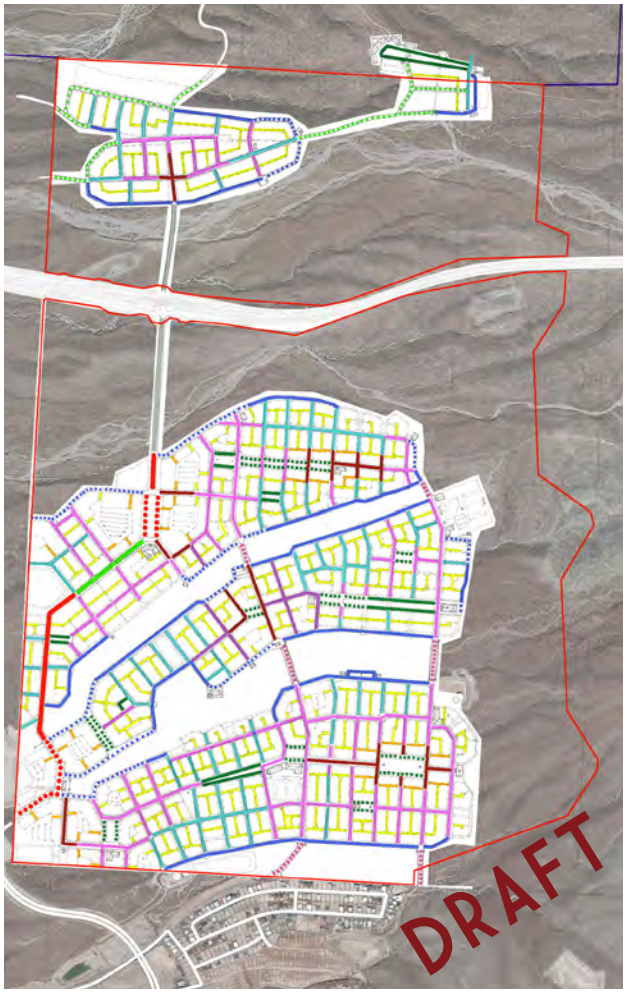
Paseo Del Norte is envisioned at this segment as a multiway boulevard. The multiway boulevard is a unique street type in its ability to serve distinctly different kinds of transportation options within a single, unified, thoroughfare. A multiway boulevard provides for relatively fast 30-35 mph traffic in a thorough-going set of center lanes (this is known as the Vehicular Realm) and walkable local access along one-way side access lanes on the side (the Pedestrian Realm). The side lanes are separated from the center lanes by wide, tree-planted medians. Buildings along the side access lane sited on the sidewalk and on-street parking is provided. Pedestrians, bicycles, vehicles moving at a slow pace within the Pedestrian Realm, and vehicles and transit moving at a rapid pace within the Vehicular Realm are all accommodated.

The multiway boulevard can also be, at times, and in places a form of civic art. Wide tree-lined sidewalks encourage pedestrians to visit shopfronts and dine at outdoor cafes; median promenades allow jogging or strolling in the shade; where traffic is slow, access lanes can become urban recreational spaces within sight of second floor residences.

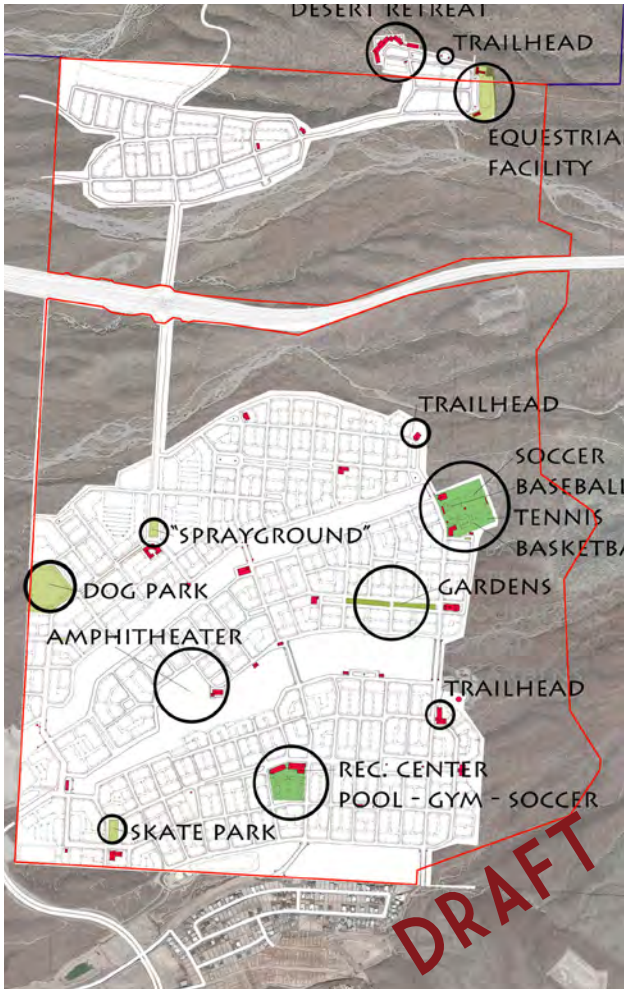
NEXT STEPS: DESIGN REFINEMENT

After selection of a Preferred Scenario by the Public Service Board and the City a detailed Final Development Scenario will be prepared which will include a Street Atlas, Parks and Recreation Plan and SmartCode Application. Below are samples based on Scenario 1.

Street Atlas



Parks and Recreation Plan



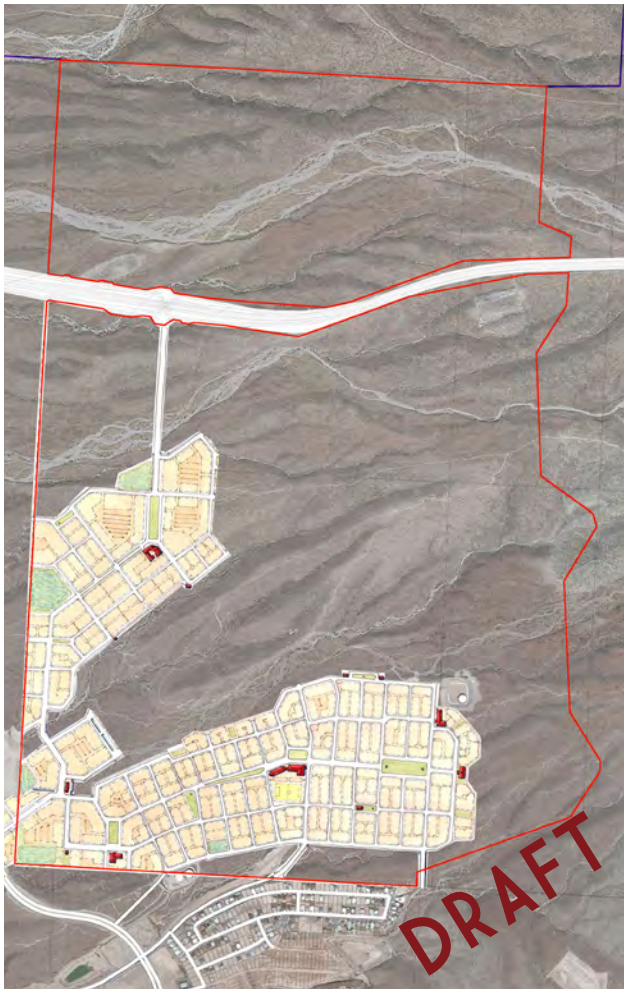
SmartCode Transect Map

NEXT STEPS: PHASING PLAN

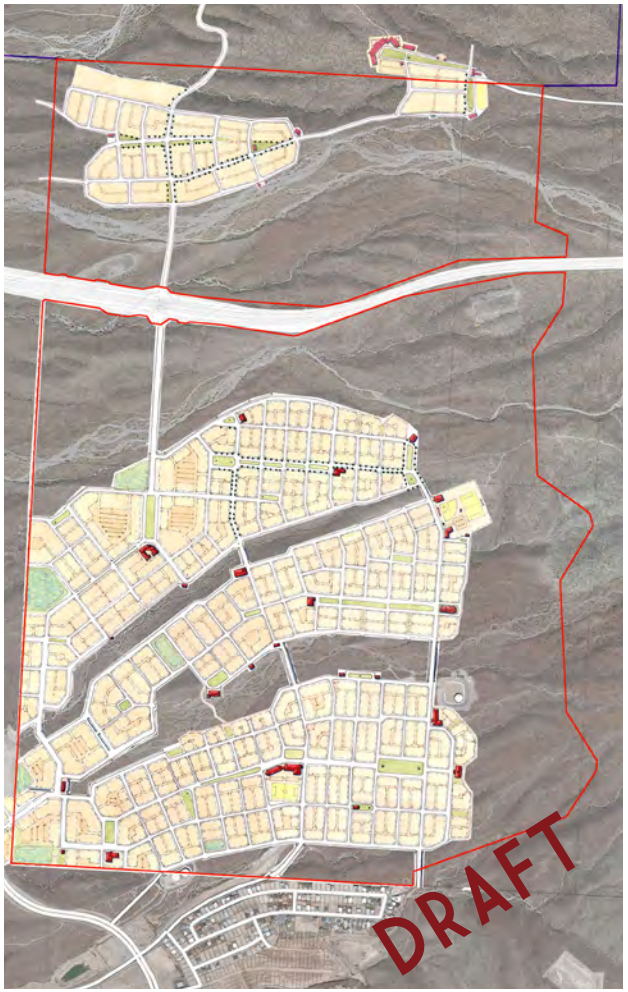
After selection of a Preferred Scenario a Phasing Plan will be created showing the incremental development of the site.

Phases 1- 2

Phases 3 - 5



Phases 6 - 12



Illustrative rendering showing the surrounding natural areas as amenities for development at the edge of the neighborhood.

SmartCode Application

El Paso, Texas

Code of Ordinances
Title 21 Application

Transmountain Corridor & Northwest Regulating Plan

New Community - Traditional Neighborhood Development

Prepared for the City of El Paso,
City Development Department

January 15, 2013

Table of Contents

Warrant / Variance Requests

- None requested

Project Team

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Jorge Grajeda

Urban Advantage
Illustrations
Steve Price

Hall Planning & Engineering
Transportation Planning
Rick Hall

Criterion Planners
Scenario Planning
Eliot Allen
Josh Ahmann

Code Compliance Checklist

- [X] New Community
- [ ] Infill Community

- [ ] Black & White Site Plan
- [ ] Legal Description

Regulating Plans

- [ ] Transect Zones/Density
- [ ] Civic Zones
- [ ] Playgrounds
- [ ] Special Districts (*if any*)
- [ ] Special Requirements (*if any*)
- [ ] Thoroughfare Network
- [ ] Block Network/Size

Additional Required Information

- [ ] Request for warrant or variance
- [ ] Proof of Notice

Per Section 21.10.040 - Process, General to all Plans. *(Municode last updated June 5, 2012)*

A. Any property to be developed under this code must be part of an approved new community plan or an infill plan as defined and set forth in Chapter 21.30 or Chapter 21.40 of this title respectively.

B. Any property to be developed under this title must be zoned "SmartCode Zone." The rezoning application shall include the following:

1. A site plan drawn to scale in black and white, and not less than eight and one-half inches by eleven inches and not more than twenty-four inches by thirty-six inches, showing the boundaries of the property proposed for rezoning, names of streets immediately adjacent to the property proposed for rezoning, the north point, the legal description of the property proposed for rezoning and the amount of land included. When over eight and one-half inches by eleven inches, the drawing shall be on paper suitable for reproduction;

2. One copy of the regulating plan demonstrating compliance with this Title and consisting of the following:

   a. For new community plans. A map or set of maps showing:

      (1) The locations of transect zones, civic zones including playgrounds. The locations of the transect zones shall be in conformance with the regulations set forth in this title;
      (2) Special districts if any; (Section 21.30.060
      (3) Special requirements if any; (Section 21.30.090
      (4) The thoroughfare networks and block layout; and
      (5) The lettering shall be so placed on the plans so as to be read from the bottom or from the right-hand side of the sheet, and the north point shall be directed away from the reader.

   b. For infill community scale plans. A map or set of maps showing the following:

      (1) The outline(s) of the pedestrian shed(s) and the boundaries of the community or communities;
      (2) The locations of transect zones and civic zones including playgrounds within each pedestrian shed, assigned according to an analysis of existing conditions and future needs. The locations of the transect zones shall be in conformance with the regulations set forth in this title;
      (3) A thoroughfare network, existing or planned (Table 3A, Table 3B, Table 4A, Table 4B and Table 4C);
      (4) Special districts, if any (Section 21.40.050);
      (5) Special requirements, if any (Section 21.40.070); and
      (6) The lettering of the zoning map(s) shall be so placed on the plans so as to be read from the bottom or from the right-hand side of the sheet, and the north point shall be directed away from the reader;

3. Any requests for warrants or variances; and

4. Proof of notice of proposed application to any recognized neighborhood association required to receive notice pursuant to Chapter 2.102 of the City Code.

Community Type

Per Sec. 21.30.020 - Sequence of community design for New and Infill Communities,

> "*Each pedestrian shed shall be designated with a community type in accordance with Section 21.30.030. The pedestrian sheds shall determine the approximate boundaries and centers of the communities.*"

Indicate the applicable Community Type:

- [ ] **Infill TND** (Traditional Neighborhood Development) Shall be assigned to neighborhood areas that are predominantly residential with one or more mixed use corridors or centers. An infill TND shall be mapped as at least one complete standard pedestrian shed, which may be adjusted as a network pedestrian shed, oriented around one or more existing or planned common destinations.

- [ ] **Infill RCD** (Regional Center Development). Infill RCD should be assigned to downtown areas that include significant office and retail uses as well as government and other civic institutions of regional importance. An infill RCD shall be mapped as at least one complete long or linear pedestrian shed, which may be adjusted as a network pedestrian shed, oriented around an important mixed use corridor or center.

- [ ] **Infill TOD** (Transit-Oriented Development) Any infill TND or infill RCD on an existing or projected rail or bus rapid transit (BRT) network may be redesignated in whole or in part as TOD and permitted the higher density represented by the effective parking allowance in Section 21.50.090(B)(4).

- [ ] **New Community Clustered Land Development** (CLD). Shall be structured by one standard pedestrian shed and shall consist of no fewer than thirty acres and no more than eighty acres.

- [X] **New Community Traditional Neighborhood Development** (TND) shall be structured by one standard or linear pedestrian shed and shall be no fewer than 80 acres and no more than 160 acres.

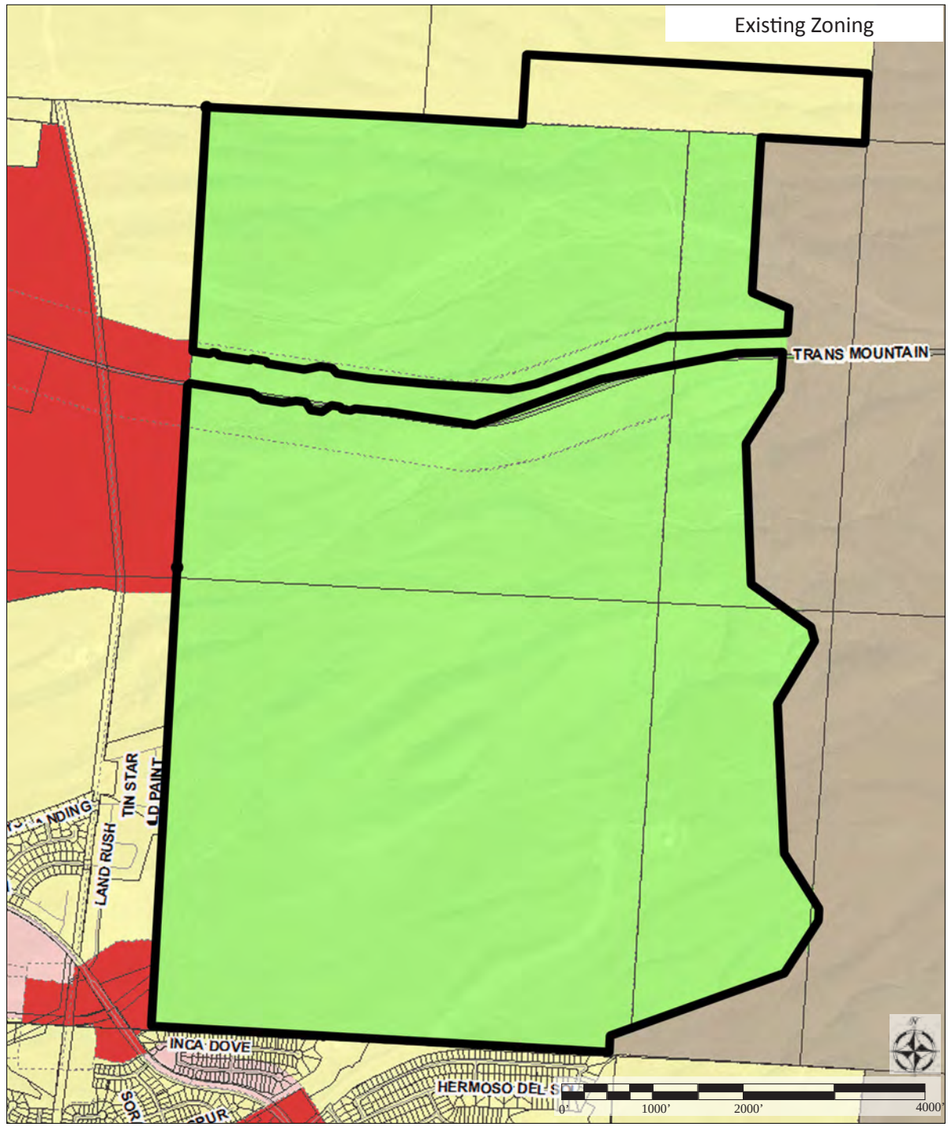
- [ ] **New Community Regional Center Development (**RCD) shall be structured by one long pedestrian shed or linear pedestrian shed and shall consist of no fewer than eighty acres and no more than six hundred forty acres.

- [ ] **New Community Transit-Oriented Development** (TOD) Any TND or RCD on an existing or projected rail or bus rapid transit (BRT) network may be redesignated in whole or in part as TOD and permitted the higher density represented by the effective parking allowance in Section 21.50.090(B)(4).

Existing Zoning Map

☐ Compliant with §21.10.040 (B)(1), the legal description of the properties are attached to this application.

Existing Zoning

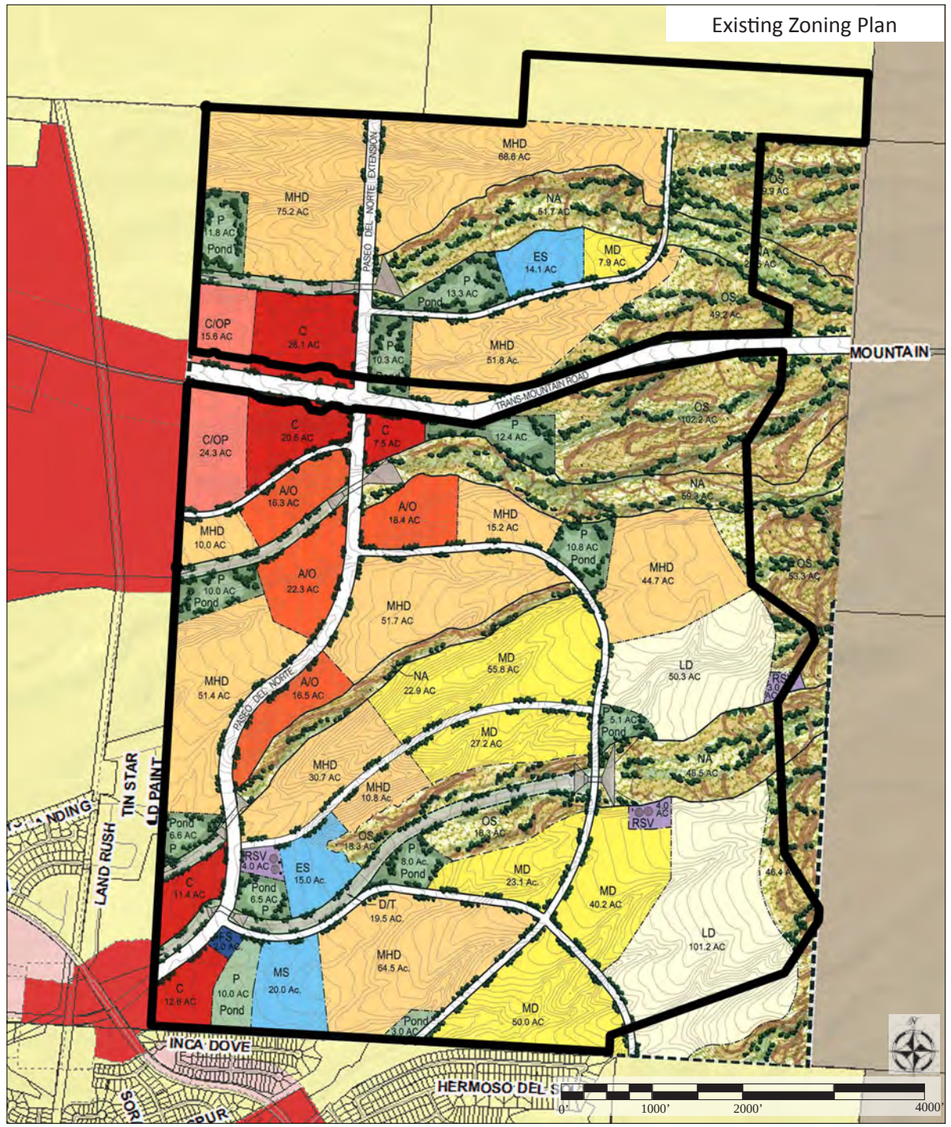


Zoning Districts

- Urban Reserve District
- Commercial (C-1, C-3, C-4)
- Light Industrial (M-1)
- Apartment / Office (A-0-C)
- Residential (R-3)
- Planned Mountain Development (PMD)

- Application Boundary

Existing Zoning Plan



Urban Reserve District (URD)

- Commercial (C)
- Commercial / Office Park (C/OP)
- Apartment / Offices (A/O)
- Medium / High Density Residential (MHD)
- Medium Density Residential (MD)
- Low Density Residential (LD)
- Fire Station (FS)
- School (ES / MS)
- Park / Pond
- Open Space (OS)
- Natural Arroyo (NA)
- Drainage / Trail
- Reservoir (RSV)

Other Zoning Districts

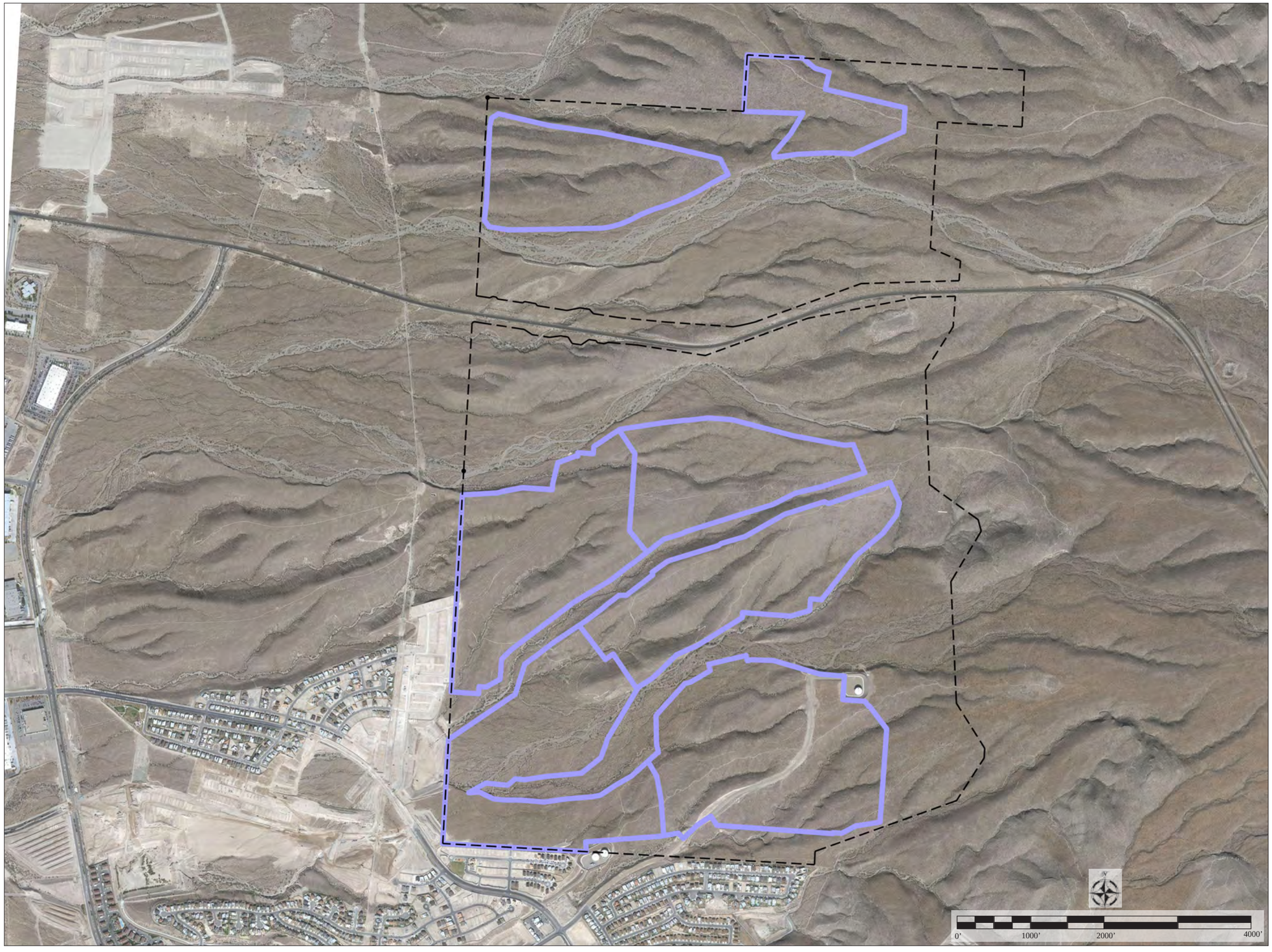
- Commercial (C-1, C-3, C-4)
- Light Industrial (M-1)
- Apartment / Office (A-0-C)
- Residential (R-3)
- Planned Mountain Development (PMD)

- Application Boundary

Aerial

Compliant with §21.10.040 (B)(4)

Proof of notice of proposed application to any recognized neighborhood association required to receive notice pursuant to Chapter 2.102 of the City Code.



Application Boundary

New Community Boundary

Illustrative Plan

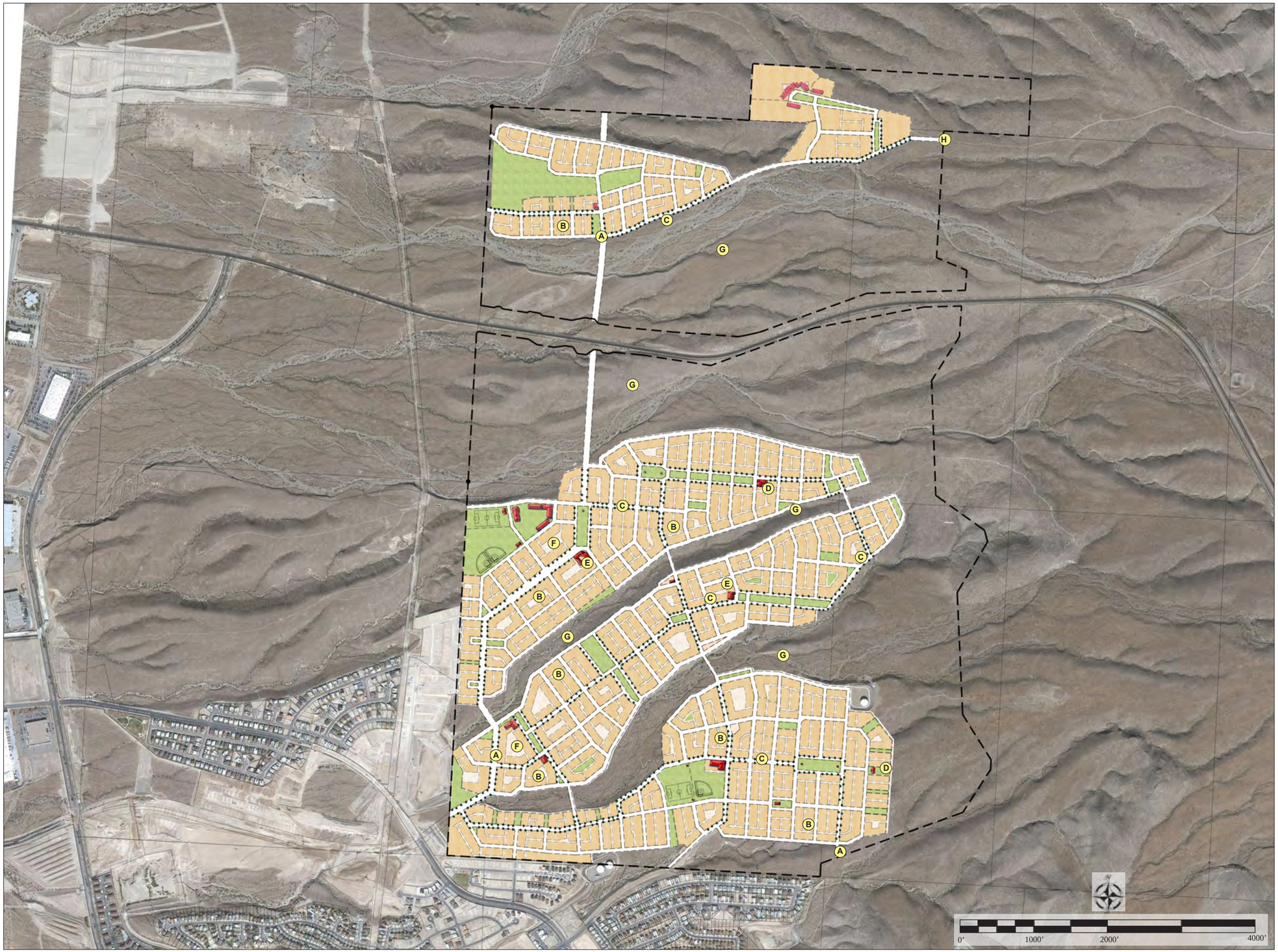
The plan builds incrementally from the intersection of Paseo Del Norte and Northern Pass Road and clusters development within definite boundaries surrounded by protected lands. The scenic corridor along Transmountain Road is preserved. The plan is organized around a network of walkable streets connecting mixed-use main streets and neighborhood centers. Various forms of recreational facilities are placed throughout the settlement. The new communities are complete, compact, connected, and pedestrian-friendly.

The plan includes a mix of shopping, workplaces, entertainment and civic uses. The plan is organized around a series of inviting, functional public spaces: arcaded shopping streets, neighborhood main streets leading to large central squares, and a number of smaller neighborhood parks.

General Recommendations

- (A) Primary street connections link the neighborhoods.
- (B) Service alleys provide access to parking, utilities and trash pick up.
- (C) Street trees provide shade and enhance the pedestrian experience.
- (D) Memorable meeting places provide a sense of identity for the community.
- (E) Civic buildings front greens.
- (F) Parking is hidden from the pedestrian realm by liner buildings.
- (G) Arroyos are treated as a public amenity.
- (H) A new road provides a connection to Franklin Mountains State Park.

- Development Area
- Civic Buildings
- Greens
- Thoroughfares
- Application Boundary



Site Plan

- ☐ Compliant with §21.10.040 (B)(1) requiring black and white site plan.
- ☐ Identify application type (See Project Data)
- ☐ Identify Community Type and boundaries based on Pedestrian Shed. (See Project Data)

Pedestrian shed requirements for an New Communities are set forth in Sections §21.30.030

For New Community TNDs: "A traditional neighborhood development (TND) shall be structured by one standard or linear pedestrian shed and shall be no fewer than eighty acres and no more than one hundred sixty acres." §21.30.030(B)(1)

Project Data

Project Name:	Transmountain Corridor & Northwest Regulating Plan
Application Type:	New Community
Total Site Area:	1,658.98 Acres
New Community Boundary Area:	751.5 Acres
TND 1 Area:	156.4 Acres
L-TND 2 Area:	133.3 Acres
TND 3 Area:	114.9 Acres
TND 4 Area:	87.0 Acres
L-TND 5 Area:	127.5 Acres
TND 6 Area:	88.4 Acres
SD 7 Area (Northwest Park) :	44.0 Acres

- Proposed Rights-of-Way
- Pedestrian Shed
- Application Boundary
- New Community Boundary

Transect Zone Allocation

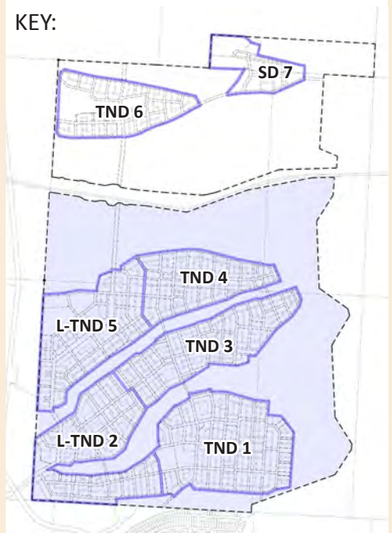
Compliance with transect zone allocation requirements as set forth in §21.80.170, Table 14 (A).

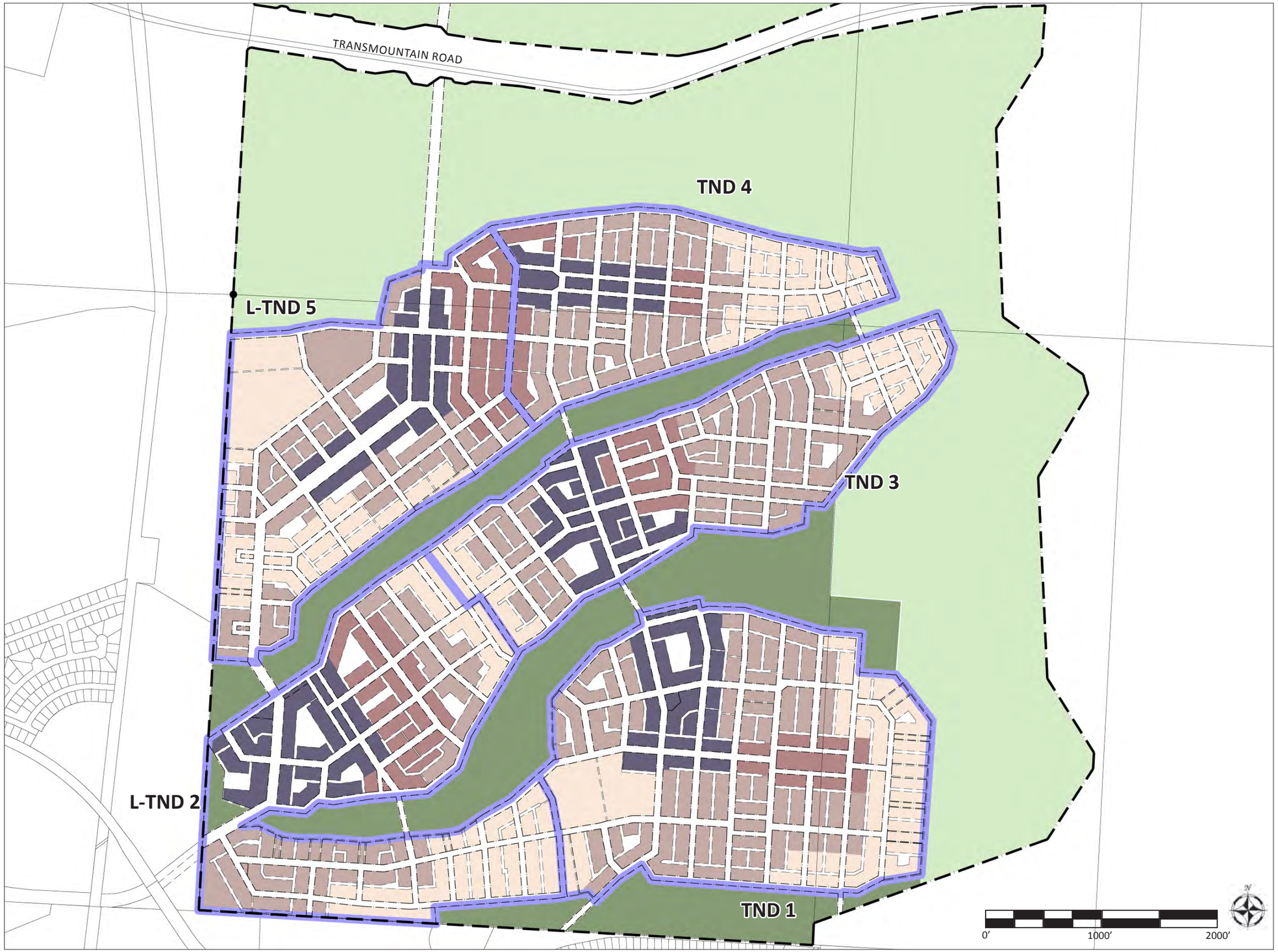
Compliance with the requirement that areas outside the Pedestrian Sheds (Community Boundaries) are T1, T2, T3, a special district or civic space per §21.30.020 (G).

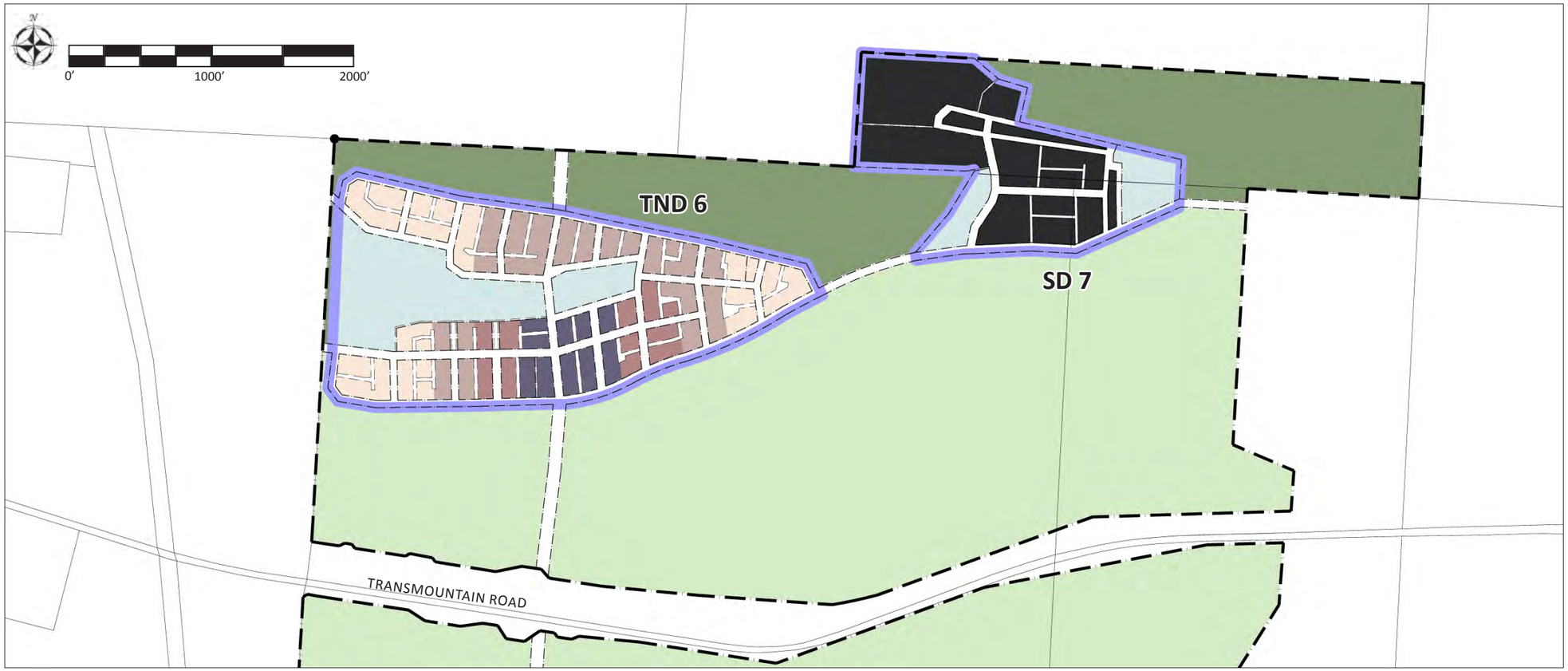
(Continued next page)

- T1 Natural - Utility Greenspace
- T1 Natural - Stormwater Open Space
- T1 Natural
- T3 Suburban
- T4 General Urban
- T4-O General Urban - Open
- T5 Urban Center
- SD Special District
- Application Boundary
- New Community Boundary

KEY:







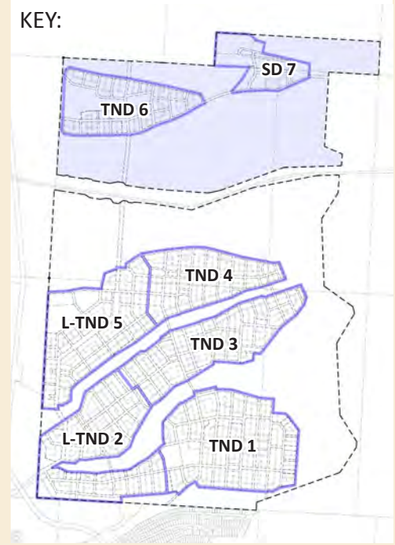
Transect Zone Allocation

Compliance with stream buffers and thoroughfare crossings as set forth in §21.30.100(E)(2).

"The stream buffers for streams shall extend one hundred feet from each side of the centerline of the watercourse or the limits of the one-hundred-year floodplain, whichever is greater. Stream buffers shall be maintained free of structures or other modifications to the natural landscape, including agriculture. Thoroughfare crossings shall be permitted when approved by City Council as part of the regulating plan."

- T1 Natural - Utility Greenspace
- T1 Natural - Stormwater Open Space
- T1 Natural
- T3 Suburban
- T4 General Urban
- T4-O General Urban - Open
- T5 Urban Center
- SD Special District
- Application Boundary
- New Community Boundary

KEY:



TRANSECT ZONE ALLOCATION TABLE

	SD Special District	T1 Natural	T2 Rural		T3 Sub-Urban		T4 General Urban				T5 Urban Center		Total
	Area (Acres)	Area (Acres)	Area (Acres)	% TND Area	Area (Acres)	% TND Area	T4 (Acres)	T4-O (Acres)	T4 + T4-O Area (Acres)	% TND Area	Area (Acres)	% TND Area	Area (Acres)
Requirement	no minimum	no minimum	no minimum		10%-30% of TND Area		30%-60% of TND Area				10%-30% of TND Area		
TND 1	-	-	-	-	45.6	29%	74.8	11.1	85.9	55%	24.9	16%	156.4
TND 2	-	3.1	-	-	37.1	28%	40.9	22.2	63.1	48%	30.0	22%	133.3
L-TND 3	-	-	-	-	23.0	20%	56.4	11.8	68.2	59%	23.7	21%	114.9
TND 4	-	-	-	-	23.4	27%	39.9	10.2	50.1	58%	13.5	15%	87.0
TND 5	-	-	-	-	38.1	30%	45.6	20.4	66.0	52%	23.4	18%	127.5
L-TND 6	-	22.5	-	-	22.9	26%	23.0	10.0	33.0	37%	10.0	11%	88.4
SD 7 (Northwest Park)	36.0	8.0	-	-	-	-	-	-	-	-	-	-	44.0
Outside New Community Boundaries	-	908.5	-	-	-	-	-	-	-	-	-	-	908.5
Total For Site	35.8	942.2	-	-	190.1	-	280.6	85.7	366.3	-	125.5	-	1660.0

(Acreage rounded to the nearest 10th of an acre.)

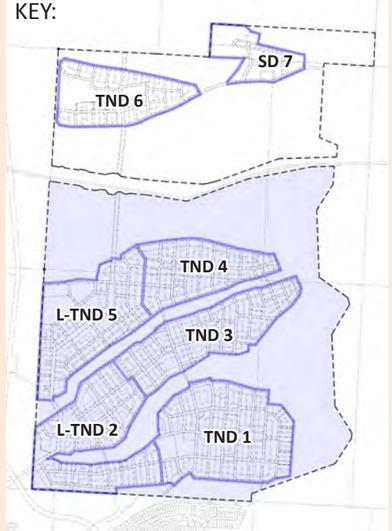
Note: "TND Area" is the Gross Site Area within each TND New Community Boundary, including Civic Zones and Thoroughfares.

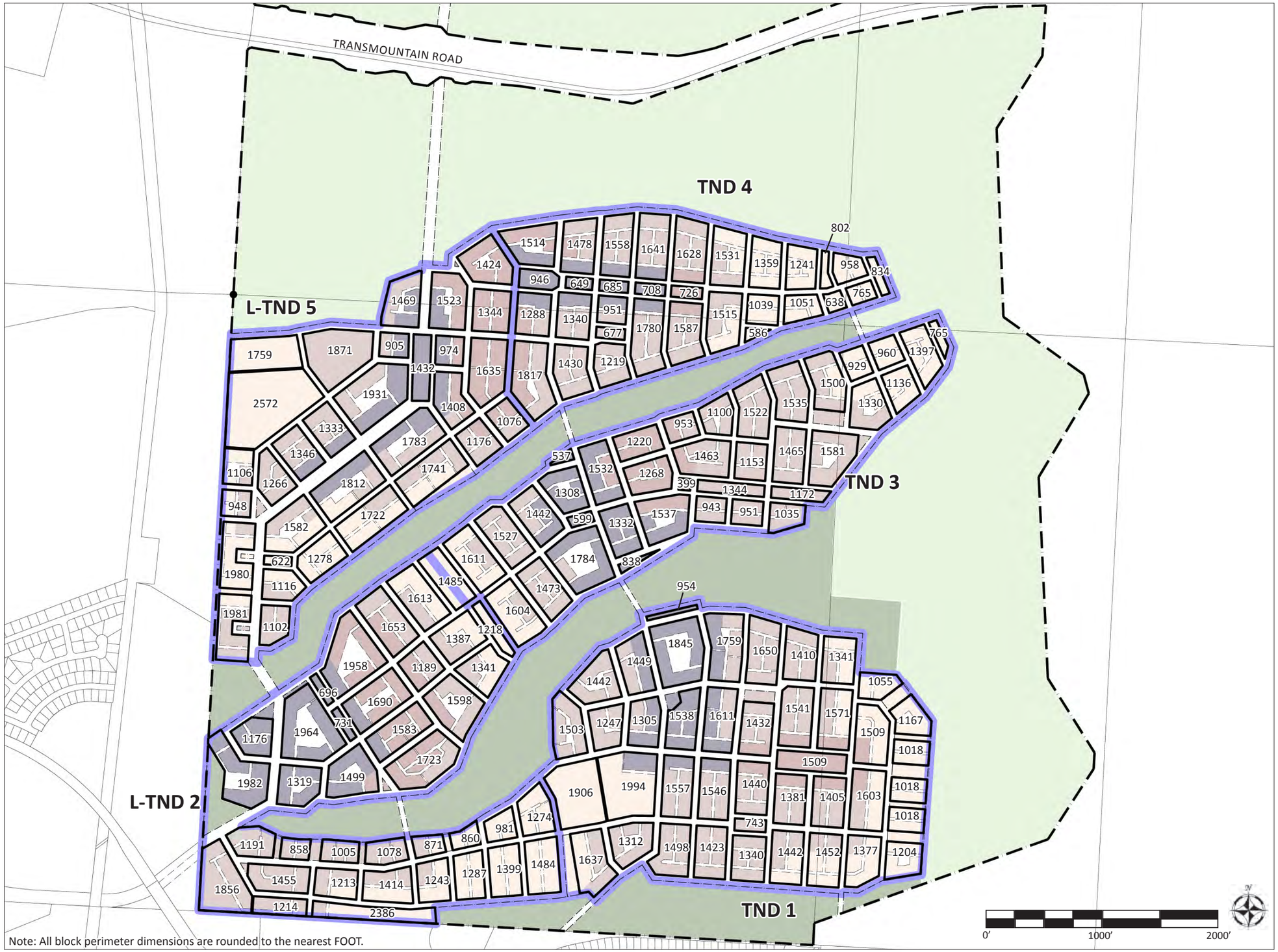
Maximum Block Size

Compliance with maximum block size requirements as set forth in §21.80 Table 14: Summary Table, Section C.

- T1 Natural - Utility Greenspace
- T1 Natural - Stormwater Open Space
- T1 Natural
- T3 Suburban
- T4 General Urban
- T4-O General Urban - Open
- T5 Urban Center
- SD Special District
- Application Boundary
- New Community Boundary

KEY:





Note: All block perimeter dimensions are rounded to the nearest FOOT.

Note: All block perimeter dimensions are rounded to the nearest FOOT.

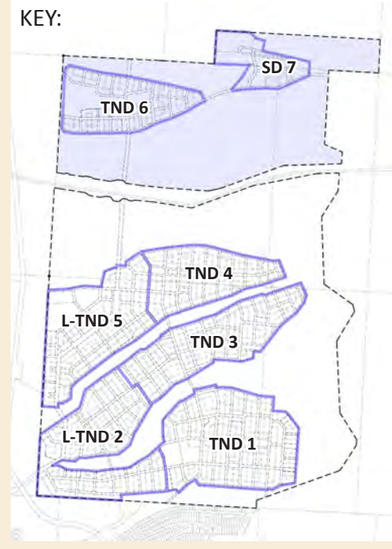
MAXIMUM BLOCK SIZE						
	SD Special District	T1 Natural	T2 Rural	T3 Sub-Urban	T4 & T4-O General Urban	T5 Urban Center
Requirement	3000' maximum	no maximum	no maximum	3000' maximum	2400' maximum	2000' maximum

Note: When a block carries more than one transect designation, it must comply with the more restrictive maximum block size requirement. For example, a block with T4 and T5 transect designations must comply with the T5 maximum block size requirement.

Maximum Block Size

- T1 Natural - Utility Greenspace
- T1 Natural - Stormwater Open Space
- T1 Natural
- T3 Suburban
- T4 General Urban
- T4-O General Urban - Open
- T5 Urban Center
- SD Special District
- Application Boundary
- New Community Boundary

KEY:



Civic Space

Compliant with Civic Space Requirement:

For New Communities, §21.30.050(C)(3-5) and 21.80.160 Table 13:

"Civic spaces shall be designed as generally described in Table 13, and distributed throughout transect zones as described in Table 14e."

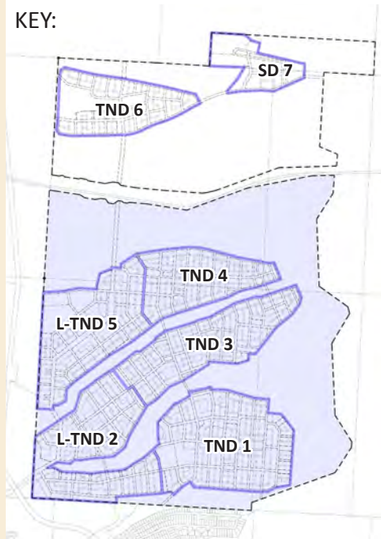
"Each pedestrian shed shall contain at least one main civic space. The main civic space shall be within eight hundred feet of the geographic center of each pedestrian shed, unless topographic conditions, pre-existing thoroughfare alignments or other circumstances prevent such location. A main civic space shall conform to one of the types specified in Table 13b, 13c or 13d."

For New Communities per §21.30.050(C)(1): "Each pedestrian shed shall assign at least five percent of its urbanized area to civic space."

(Continued next page)

- Main Civic Space
- Neighborhood Civic Space
- Greenway Civic Space
- Civic Building Site
- Pedestrian Shed
- Application Boundary
- New Community Boundary

KEY:

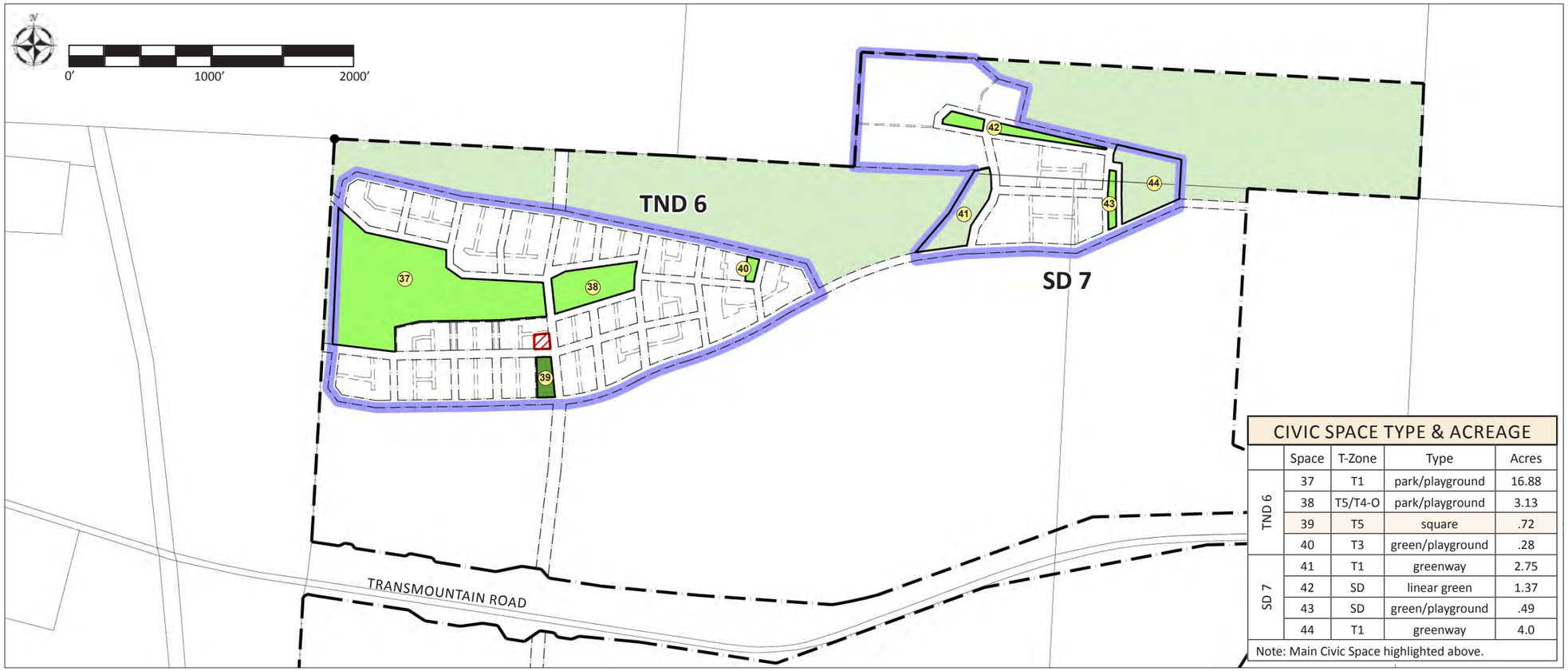


CIVIC SPACE TYPE & ACREAGE

	Space	T-Zone	Type	Acres
TND 1	1	T3	green/playground	.53
	2	T3	green	.70
	3	T3	green/playground	.56
	4	T4-O	square	2.18
	5	T4	green/playground	.54
	6	T4	green/playground	.64
	7	T5	plaza	.34
	8	T4	playground	.15
	9	T3	park/playground	9.8
	10	T3	green	.95
L-TND 2	11	T3	playground	.14
	12	T4	playground	.18
	13	T1	greenway	2.80
	14	T5	green/playground	.31
	15	T5	linear green	.87
	16	T4-O	green/playground	.49
	17	T3	green	.96
	18*	T3	green/playground	1.27
TND 3	18*	T3	green/playground	1.28
	19	T5	plaza	.26
	20	T5	green/playground	.43
	21	T5	plaza	.34
	22	T4-O / T4	linear green	2.60
	23	T4	playground	.22
	24	T4	playground	.30
	25	T4	square	.69
	26	T3	green/playground	.47
TND 4	27	T3	green	.56
	28	T3	green/playground	.57
	29	T3	green	.52
	30	T4	square	.52
	31	T5 / T4-O	linear green/ playground	3.40
L-TND 5	32	T5	square	2.00
	33	T3	green/playground	.85
	34	T4	elementary school/ playground	5.11
	35	T3	park/playground	13.21
	36	T3	green/playground	.40

Note: Main Civic Space highlighted above.

*Civic Space 18 is a total of 2.55 acres; it has been allocated 1.27 acres to L-TND 2 and 1.28 acres to TND 3.



CIVIC SPACE TYPE & ACREAGE				
	Space	T-Zone	Type	Acres
TND 6	37	T1	park/playground	16.88
	38	T5/T4-O	park/playground	3.13
	39	T5	square	.72
	40	T3	green/playground	.28
SD 7	41	T1	greenway	2.75
	42	SD	linear green	1.37
	43	SD	green/playground	.49
	44	T1	greenway	4.0
Note: Main Civic Space highlighted above.				

Civic Space

Compliance with Civic Space Frontage Requirements:

"Each civic space shall have a minimum of fifty percent of its perimeter enfronting a thoroughfare, except for playgrounds."

Compliant with Civic Building requirements:

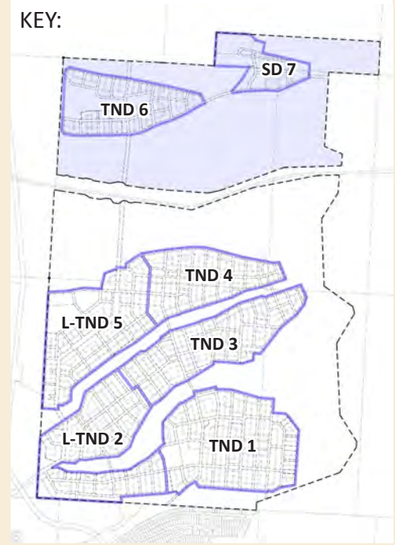
For New Communities per §21.30.050(D)(4) "Civic Building sites shall not occupy more than twenty percent of the area of each pedestrian shed."

New Communities per §21.30.050(D):
(1) should have "a meeting hall or a third place in proximity to the main civic space of each pedestrian shed."

(2) "One Civic Building lot shall be reserved for an elementary school."

- Main Civic Space
- Neighborhood Civic Space
- Greenway Civic Space
- Civic Building Site
- Pedestrian Shed
- Application Boundary
- New Community Boundary

KEY:



CIVIC SPACE ALLOCATION TABLE					
	Civic Space (Acres)	% TND Area	Location of Main Civic Space	Civic Building Sites (Acres)	% TND Area
Requirement	minimum 5%		<800' from Center	maximum 20%	
TND 1	16.4	10%	519'	1.7	1.1%
L-TND 2	7.0	5%	314'	1.1	.8%
TND 3	6.6	6%	64'	0.4	.4%
TND 4	5.6	6%	0'	0.4	.4%
L-TND 5	21.5	17%	30'	5.9	4.6%
TND 6	21.0	24%	0'	0.2	.2%
SD 7 (Northwest Park)	8.6	-	-	-	-
Outside New Community Boundaries	239.3	-	-	-	-
Total For Site	326.0	-	-	9.7	-

(Acreage rounded to the nearest 10th of an acre.)

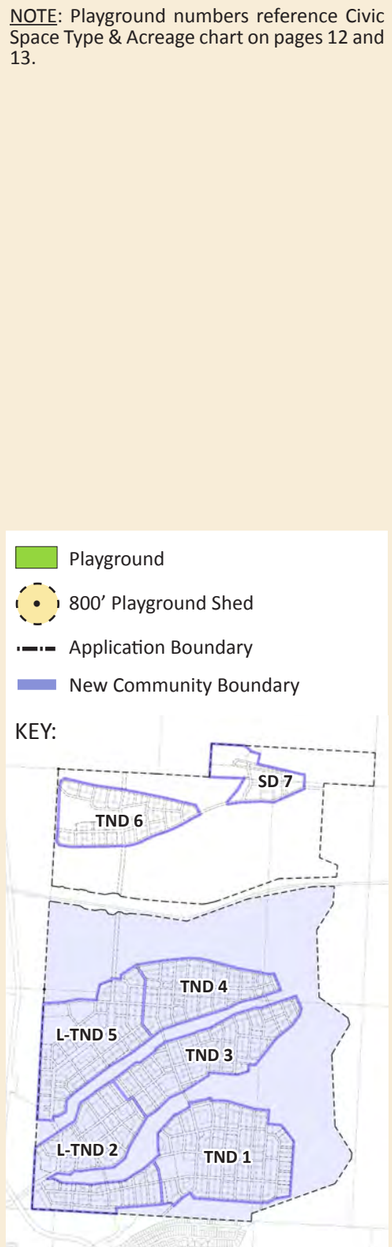
Notes:

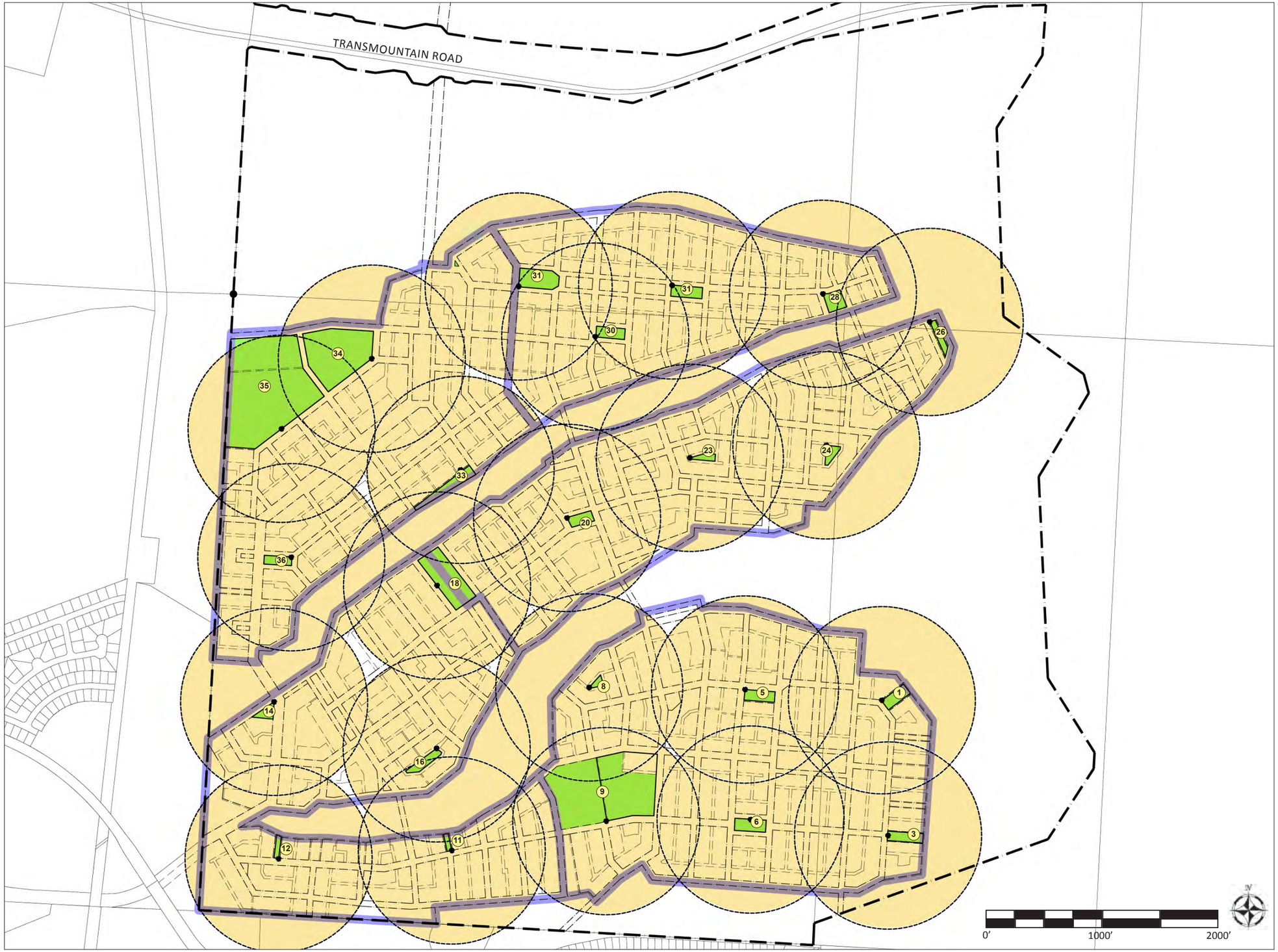
1. "TND Area" is the Gross Site Area within each TND New Community Boundary, including Civic Zones and Thoroughfares.
2. Neighborhood civic spaces of substandard size are shown as green but not outlined or numbered, and are not counted toward the civic space requirement. Substandard civic spaces may not necessarily enfront 50% on a thoroughfare.
3. Civic Space 9 in TND 1 and Civic Space 35 in L-TND 5 shall be reserved for Neighborhood Parks.
4. The Civic Building Site located in L-TND 2 between Civic Spaces 14 and 15 shall be reserved for the City of El Paso Fire Department.
5. The Civic Building site located in L-TND 5 on Civic Space 34 shall be reserved for an Elementary School.
6. Civic building sites identified (excluding the Elementary School site) shall include a neighborhood meeting hall as part of the built structure, unless an alternate third place is constructed in proximity to the neighborhood's main civic space.

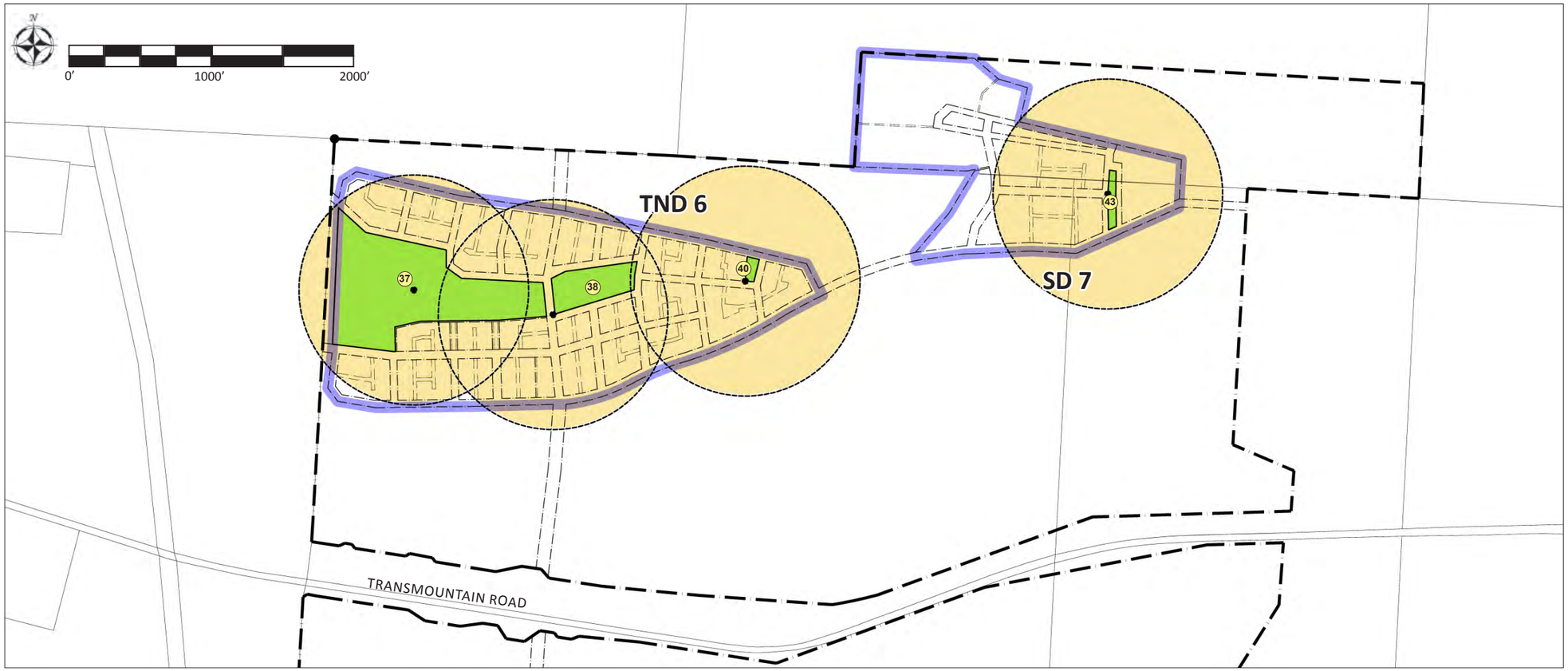
Playgrounds

☐ For New Communities, per §21.30.050(C)(5): *"Within 800 feet of every lot in residential use, a civic space designated and equipped as a playground shall be provided."*

NOTE: Playground numbers reference Civic Space Type & Acreage chart on pages 12 and 13.







Playgrounds

NOTE: Playground numbers reference Civic Space Type & Acreage chart on pages 12 and 13.

- Playground
- 800' Playground Shed
- Application Boundary
- New Community Boundary

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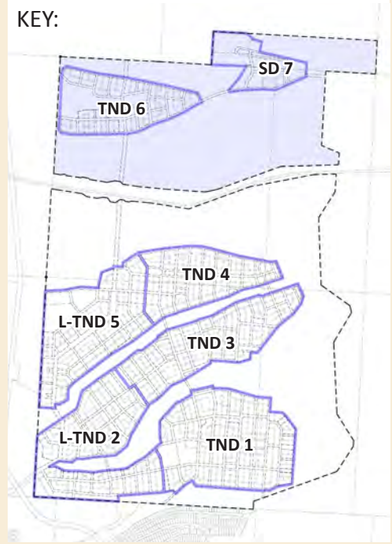


Density Calculations

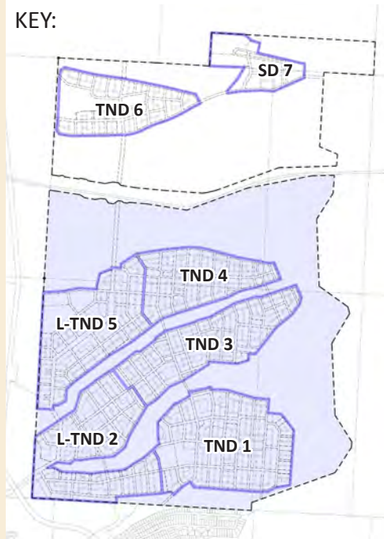
Compliance with §21.30.080(B)

"Density shall be expressed in terms of housing units per acre as specified for the area of each Transect Zone by Table 14b."

NOTE: The El Paso Water Utilities shall service this development based on the density shown within this page of the regulating plan. Any increase to this density shall require a new assessment by the El Paso Water Utilities to provide water and wastewater service to the area. The determination will be made at the subdivision platting stage for any phase where an increase is proposed.

- T1 Natural - Utility Greenspace
- T1 Natural - Stormwater Open Space
- T1 Natural
- T3 Suburban
- T4 General Urban
- T4-O General Urban - Open
- T5 Urban Center
- SD Special District
- Application Boundary
- New Community Boundary

KEY:



Density Calculations

NOTE: The El Paso Water Utilities shall service this development based on the density shown within this page of the regulating plan. Any increase to this density shall require a new assessment by the El Paso Water Utilities to provide water and wastewater service to the area. The determination will be made at the subdivision platting stage for any phase where an increase is proposed.

- T1 Natural - Utility Greenspace
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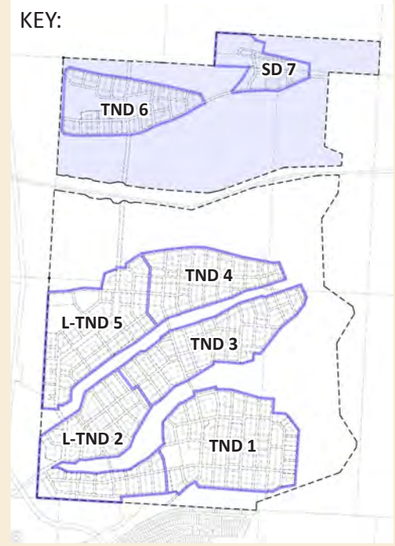


DENSITY CALCULATION													
	SD Special District*	T1 Natural	T2 Rural	T3 Sub-Urban		T4 General Urban				T5 Urban Center		Total	
	Net Site Area (Acres)	Net Site Area (Acres)	Net Site Area (Acres)	Net Site Area (Acres)	Density @ 6 UPA	T4 Net Site Area (Acres)	Density @ 15 UPA	T4-O Net Site Area (Acres)	Density @ 20 UPA	Net Site Area (Acres)	Density @ 24 UPA	Net Site Area (Acres)	Base Density (units)**
TND 1	-	-	-	33.0	198	73.5	1103	8.9	178	24.6	590	140.0	2068.9
L-TND 2	-	0.3	-	34.8	209	40.8	612	21.7	434	28.7	689	126.3	1943.6
TND 3	-	-	-	21.2	127	52.8	792	11.6	232	22.7	545	108.3	1696.0
TND 4	-	-	-	21.7	130	39.4	591	9.6	192	10.7	257	81.4	1170.0
L-TND 5	-	-	-	23.7	142	40.5	608	20.4	408	21.4	514	106.0	1671.3
TND 6	-	2.5	-	22.6	136	23.0	345	10.0	200	9.3	223	67.4	903.8
SD 7 (Northwest Park)	35.4	-	-	-	-	-	-	-	-	-	-	35.4	-
Outside New Community Boundaries	-	669.2	-	-	-	-	-	-	-	-	-	669.2	-
Total For Site	35.4	672.0	-	157.0	942	270.0	4051	82.2	1644	117.4	2818	1134.0	9453.6

(Acreage rounded to the nearest 10th of an acre.)

Notes:

"Net Site Area" is the Gross Site Area, including Thoroughfares but excluding Civic Zones.

*Not counted toward overall density at this time, a unit cap may be a part of the Special District requirements.

**Office or retail shall be counted as one thousand square feet for each unit of net site area density.

Thoroughfare Network

Compliant with Thoroughfare termination and cul-de-sac limitation as set forth in §21.30.070(A)(6).

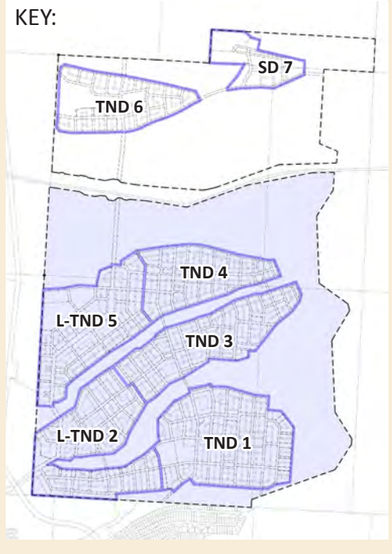
Number of Culs-de-sacs: None

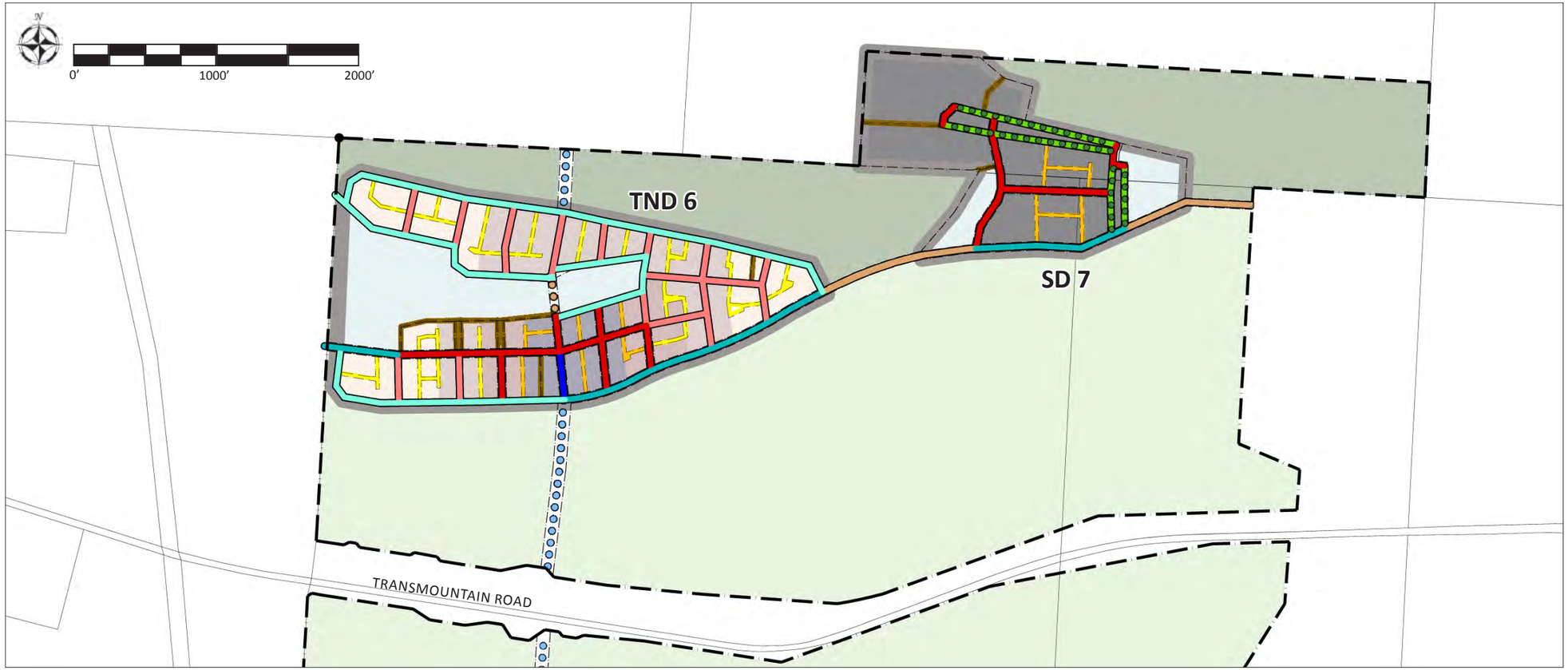
NOTE: At the time of platting, all thoroughfare assembles shall comply with Low Impact Development Standards as required by the City's Drainage Design Manual.

- AV 90-56
- AV 90-44*
- BV 125-43
- CS 60-34
- ST 60-34
- ST 52-26
- ST 40-19
- ST 40-19 alt
- ST 56-20
- BR 44-34
- DR 60-34
- DR 52-26
- PT 8-8
- RA 24-24
- RL 24-12
- T1 Natural (Utility)
- T1 Natural (Stormwater)
- T1
- T3
- T4
- T4-O
- T5
- SD
- Application Boundary
- New Community Boundary

*AV 90-44 will become BR 72-44 where it crosses a FEMA flowpath, thereby limiting damage to critical arroyos and stormwater management systems.

KEY:





Thoroughfare Network

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- T1 Natural (Stormwater)
- T1
- T3
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- Application Boundary
- New Community Boundary

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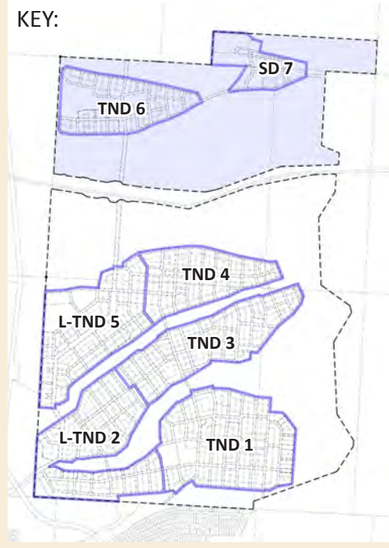


Thoroughfare Assemblies

☐ All additional thoroughfare assemblies comply with §21.80.030, Table 3a and Table 3b.

NOTES:

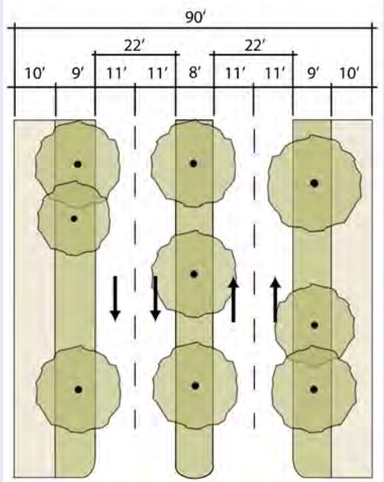
1. Pavement width includes curb and gutter where present, and is measured from face of curb to face of curb.
2. At the time of platting, all thoroughfare assembles shall comply with Low Impact Development Standards as required by the City's Drainage Design Manual.

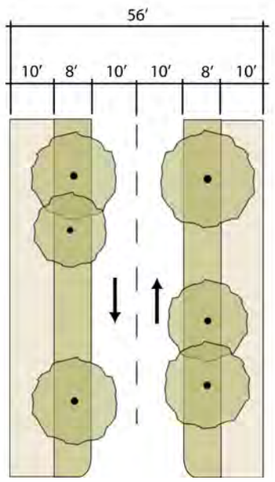
ST-57-20

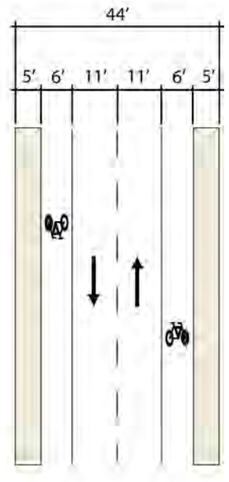
- Pavement Width
- Right of Way Width
- Streetscape Type

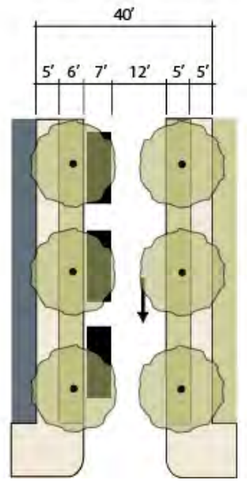
THOROUGHFARE TYPES

BV: Boulevard
AV: Avenue
CS: Commercial Street
DR: Drive
ST: Street
RD: Road
RA: Rear Alley
RL: Rear Lane
BT: Bicycle Trail
BL: Bicycle Lane
BR: Bicycle Route
PT: Path
TR: Transit Route









	AV 90-44*	ST 56-20	BR 44-34	ST 40-19 alt
Thoroughfare Type	Avenue	Street	Bridge	Street
Transect Zone	T1, T2	T1, T2	T1, T2	T3, T4
Right-of-Way Width	90 feet	56 feet	44 feet	44 feet
Pavement Width	44 feet	20 feet	34 feet	34 feet
Movement	Free Movement	Slow Movement	Slow Movement	Slow Movement
Vehicular Design Speed	35 MPH	25 MPH	25 MPH	20 MPH
Pedestrian Crossing Time	5.7 Seconds	5.7 Seconds	6.8 Seconds	5.4 Seconds
Traffic Lanes	2 lanes	2 lanes	2 lanes	1 lane
Parking Lanes	None	None	None	One side @ 7 feet marked
Curb Radius	15 feet	15 feet	15 feet	15 feet
Public Frontage Type	Common Yard	Common Yard	n/a	PF, T/L, FC, ST
Walkway Type	10 foot Multi-use Trail	10 foot Multi-use Trail	5 foot Sidewalk	5 foot Sidewalk
Planter Type	9 foot Swale (*not included BR 72-44)	8 foot Swale	n/a	6' Continuous Planter; 5' Continuous Planter
Curb Type	Swale	Swale	Curb	Curb
Landscape Type	Trees Clustered Naturalistically	Trees Clustered Naturalistically	n/a	Trees at 30 feet o.c. Average
Transportation Provision	BT	BT	BL	BR

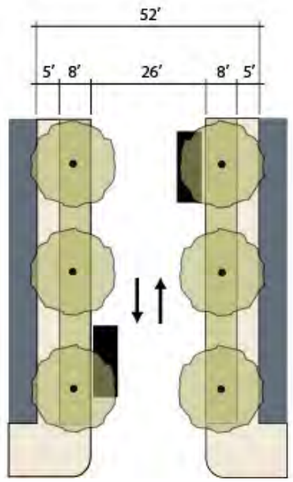
*AV 90-44 will become BR 72-44 where it crosses a FEMA flowpath, thereby limiting damage to critical arroyos and stormwater management systems.

ST-57-20

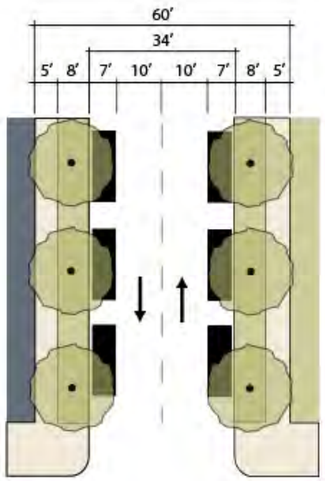
- Pavement Width
- Right of Way Width
- Streetscape Type

THOROUGHFARE TYPES

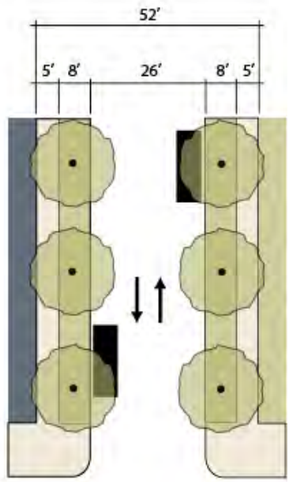
BV: Boulevard
AV: Avenue
CS: Commercial Street
DR: Drive
ST: Street
RD: Road
RA: Rear Alley
RL: Rear Lane
BT: Bicycle Trail
BL: Bicycle Lane
BR: Bicycle Route
PT: Path
TR: Transit Route



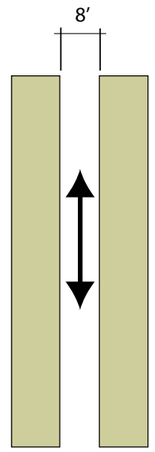
ST 52-26



DR 60-34



DR 52-26



PT 8-8

	ST 52-26	DR 60-34	DR 52-26	PT 8-8
Thoroughfare Type	Street	Drive	Drive	Pedestrian
Transect Zone	T3, T4, T5	T3, T4, T5	T2, T3, T4, T5	T2, T3, T4, T5
Right-of-Way Width	52 feet	60 feet	52 feet	8 feet
Pavement Width	26 feet	34 feet	26 feet	8 feet
Movement	Yield Movement	Slow Movement	Yield Movement	Pedestrian Movement
Vehicular Design Speed	20 MPH	20 MPH	20 MPH	n/a
Pedestrian Crossing Time	7.4 Seconds	9.7 Seconds	7.4 Seconds	n/a
Traffic Lanes	1 Yield lane	2 lanes	1 Yield lane	n/a
Parking Lanes	Both sides @ 7 feet unmarked	Both sides @ 7 feet marked	Both sides @ 7 feet unmarked	None
Curb Radius	10 feet	10 feet	10 feet	n/a
Public Frontage Type	PF, T/L, FC, ST	PF, T/L, FC, ST	PF, T/L, FC, ST	Varies by Transect
Walkway Type	5 foot Sidewalk	5 foot Sidewalk	5 foot Sidewalk	8 foot Sidewalk
Planter Type	7 foot Continuous Planter	8 foot Continuous Planter	7 foot Continuous Planter	None
Curb Type	Curb	Curb	Curb	None
Landscape Type	Trees at 30 feet o.c. Average	Trees at 30 feet o.c. Average	Trees at 30 feet o.c. Average	Varies
Transportation Provision	BR	BR	BR	n/a

Thoroughfare Assemblies

NOTES:

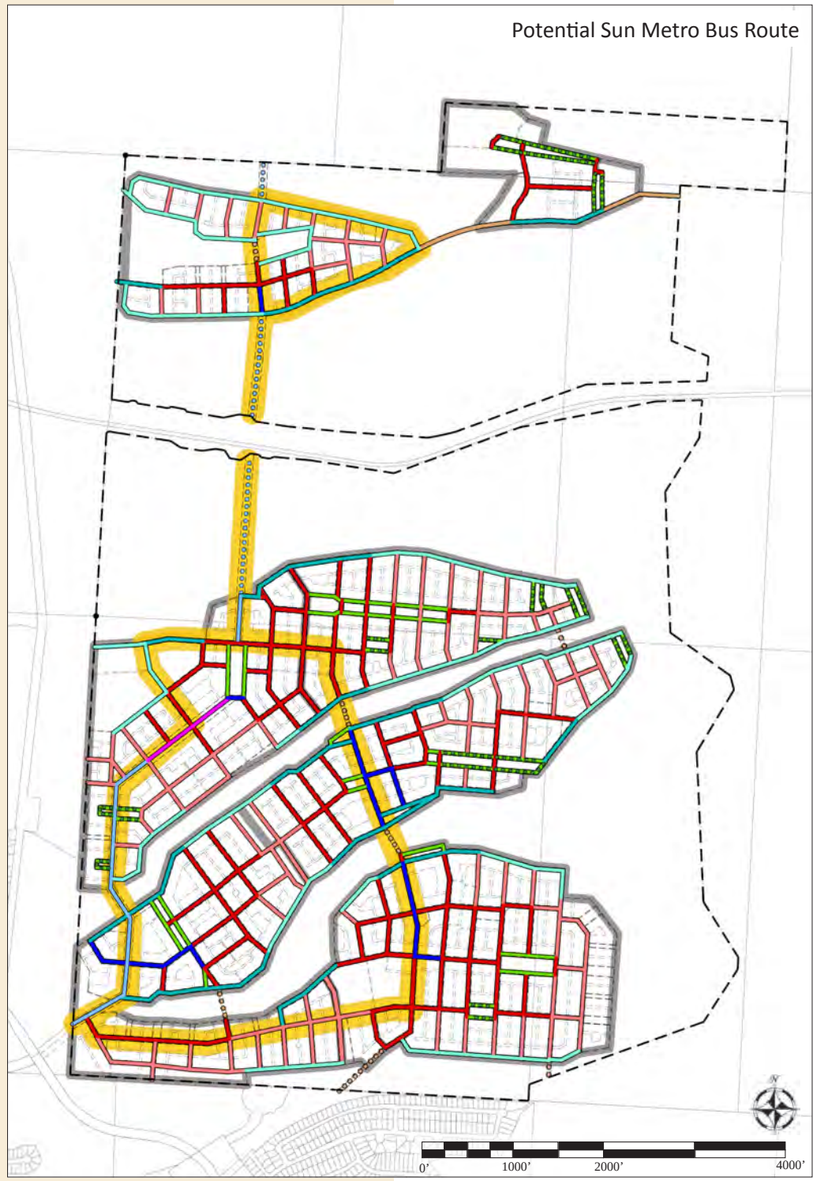
1. Pavement width includes curb and gutter where present, and is measured from face of curb to face of curb.
2. At the time of platting, all thoroughfare assembles shall comply with Low Impact Development Standards as required by the City's Drainage Design Manual.

Sun Metro Bus Route Thoroughfare Assemblies

Alternate thoroughfare assemblies shall be used along the Sun Metro bus route, to provide 11 foot travel lanes to facilitate bus movements. These alternate assemblies shall only apply to portions of the cross-section that are included on the bus route.

NOTES:

1. Pavement width includes curb and gutter where present, and is measured from face of curb to face of curb.
2. At the time of platting, all thoroughfare assembles shall comply with Low Impact Development Standards as required by the City's Drainage Design Manual.

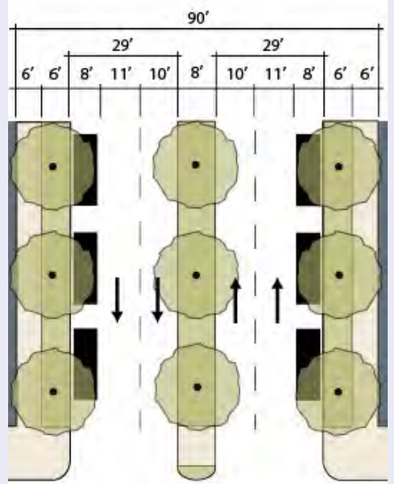


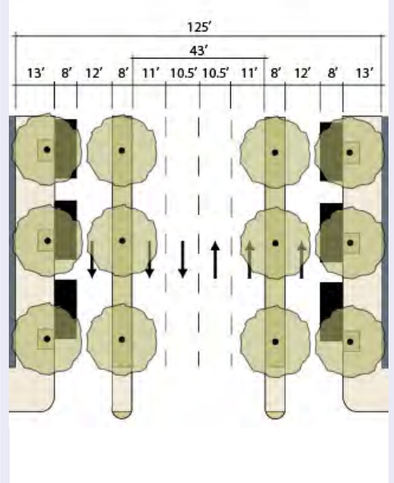
ST-57-20

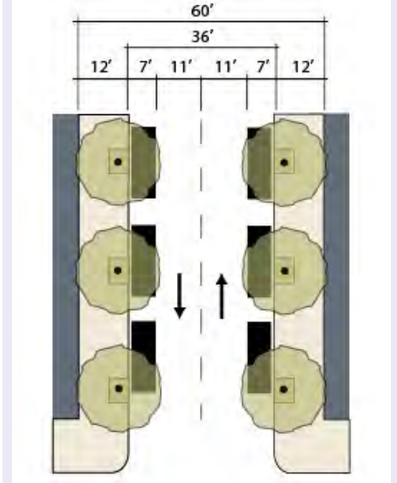
- Pavement Width
- Right of Way Width
- Streetscape Type

THOROUGHFARE TYPES

BV: Boulevard
AV: Avenue
CS: Commercial Street
DR: Drive
ST: Street
RD: Road
RA: Rear Alley
RL: Rear Lane
BT: Bicycle Trail
BL: Bicycle Lane
BR: Bicycle Route
PT: Path
TR: Transit Route







	AV 90-58 (replaces AV 90-56)	BV 125-43 (replaces BV 125-43)	CS 60-36 (replaces CS 60-34)
Thoroughfare Type	Avenue	Boulevard	Commercial Street
Transect Zone	T3, T4, T4O, T5	T4O, T5, T6	T4O, T5, T6
Right-of-Way Width	90 feet	125 feet	60 feet
Pavement Width	58 feet total	20 feet - 43 feet - 20 feet	36 feet
Movement	Slow Movement	Free Movement (inner lanes)	Slow Movement
Vehicular Design Speed	25 MPH	35 MPH	20 MPH
Pedestrian Crossing Time	8.2 Seconds	5.7 Seconds - 12.2 Seconds - 5.7 Seconds	10.2 Seconds
Traffic Lanes	4 lanes	4 lanes & two one-way slip roads	2 lanes
Parking Lanes	Both sides @ 8 feet marked	Both sides @ 8 feet marked	Both sides @ 8 feet marked
Curb Radius	10 feet	10 feet	10 feet
Public Frontage Type	PF, T/L, FC, ST, SH	Forecourt, Shopfront, Gallery, Arcade	Shopfront, Gallery, Arcade
Walkway Type	6 foot Sidewalk	6 foot Sidewalk	12 foot Sidewalk
Planter Type	6 foot Continuous Parkway	7 foot Continuous Parkway	4' x 4' tree well
Curb Type	Curb or Swale	Curb	Vertical Curb
Landscape Type	Trees at 30 feet o.c. Average	Trees at 30 feet o.c. Average	Trees at 30 feet o.c. Average
Transportation Provision	BR, TR	BR, TR	BR, SH, TR

ST-57-20

- Pavement Width
- Right of Way Width
- Streetscape Type

THOROUGHFARE TYPES

BV: Boulevard
AV: Avenue
CS: Commercial Street
DR: Drive
ST: Street
RD: Road
RA: Rear Alley
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BT: Bicycle Trail
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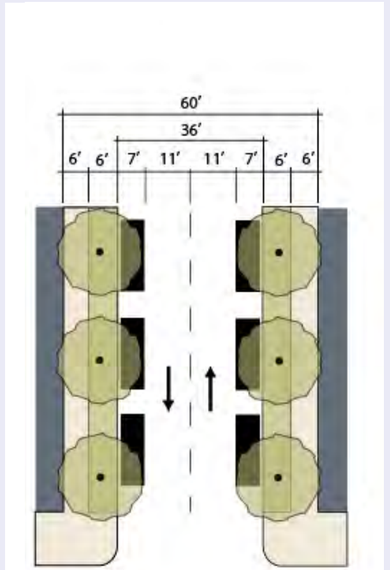
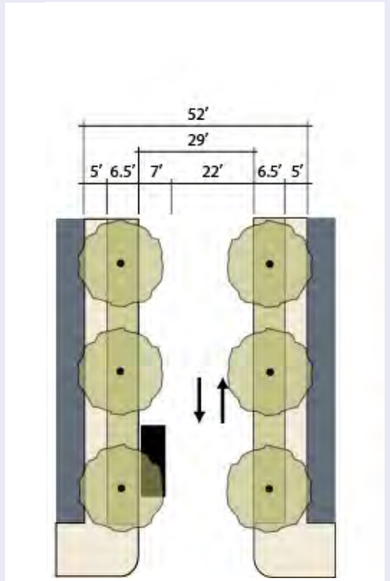
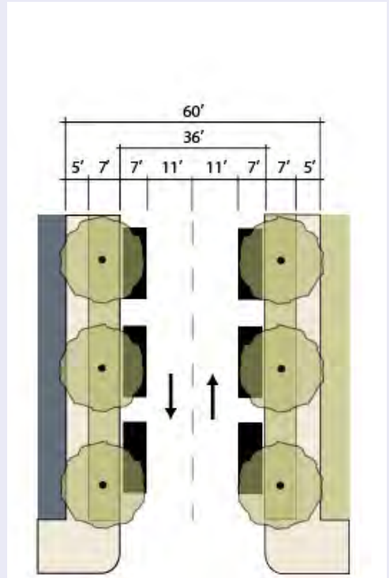


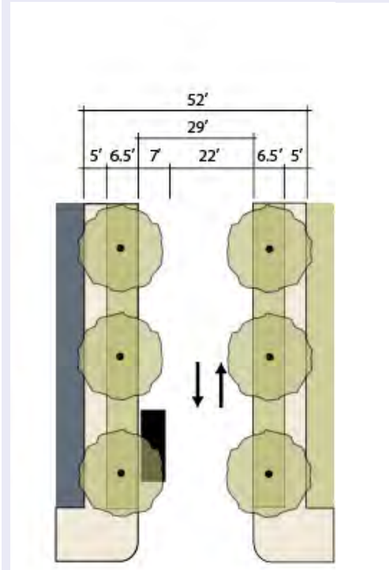
ST 60-36
(replaces ST 60-34)



ST 52-29
(replaces ST 52-26)



DR 60-36
(replaces DR 60-34)



DR 52-29
(replaces DR 52-26)

	ST 60-36 (replaces ST 60-34)	ST 52-29 (replaces ST 52-26)	DR 60-36 (replaces DR 60-34)	DR 52-29 (replaces DR 52-26)
Thoroughfare Type	Street	Street	Drive	Drive
Transect Zone	T4, T4O, T5	T3, T4, T5	T3, T4, T5	T2, T3, T4, T5
Right-of-Way Width	60 feet	52 feet	60 feet	52 feet
Pavement Width	36 feet	29 feet	36 feet	29 feet
Movement	Slow Movement	Slow Movement	Slow Movement	Slow Movement
Vehicular Design Speed	20 MPH	20 MPH	20 MPH	20 MPH
Pedestrian Crossing Time	10.2 Seconds	8.2 Seconds	10.2 Seconds	8.2 Seconds
Traffic Lanes	2 lanes	2 lanes	2 lanes	2 lanes
Parking Lanes	Both sides @ 7 feet marked	One side @ 7 feet unmarked	Both sides @ 7 feet marked	One side @ 7 feet unmarked
Curb Radius	10 feet	10 feet	10 feet	10 feet
Public Frontage Type	Shopfront, Gallery, Arcade, Stoop	PF, T/L, FC, ST	PF, T/L, FC, ST	PF, T/L, FC, ST
Walkway Type	6 foot Sidewalk	5 foot Sidewalk	5 foot Sidewalk	5 foot Sidewalk
Planter Type	6 foot Continuous Planter	6.5 foot Continuous Planter	7 foot Continuous Planter	6.5 foot Continuous Planter
Curb Type	Curb	Curb	Curb	Curb
Landscape Type	Trees at 30 feet o.c. Average	Trees at 30 feet o.c. Average	Trees at 30 feet o.c. Average	Trees at 30 feet o.c. Average
Transportation Provision	BR, TR	BR, TR	BR, TR	BR, TR

Sun Metro Bus Route Thoroughfare Assemblies

NOTES:

1. Pavement width includes curb and gutter where present, and is measured from face of curb to face of curb.
2. At the time of platting, all thoroughfare assembles shall comply with Low Impact Development Standards as required by the City's Drainage Design Manual.

Pedestrian & Bicycle Network

Compliant with Bicycle Network requirement as set forth in §21.30.070(A)(6):

"A bicycle network consisting of bicycle trails, bicycle routes and bicycle lanes should be provided throughout as defined in Chapter 21.70, Definitions of Terms and allocated as specified in Table 14d."

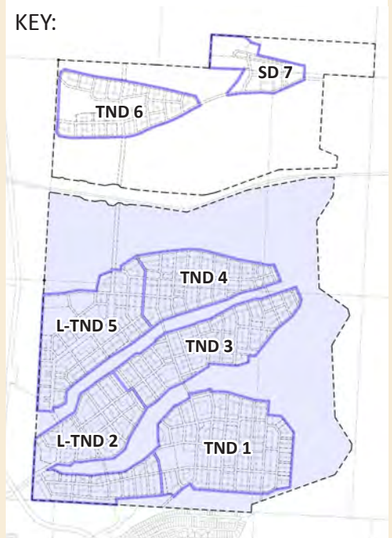
Bicycle Network:
- Sharrow
- Bike Lane or Trail

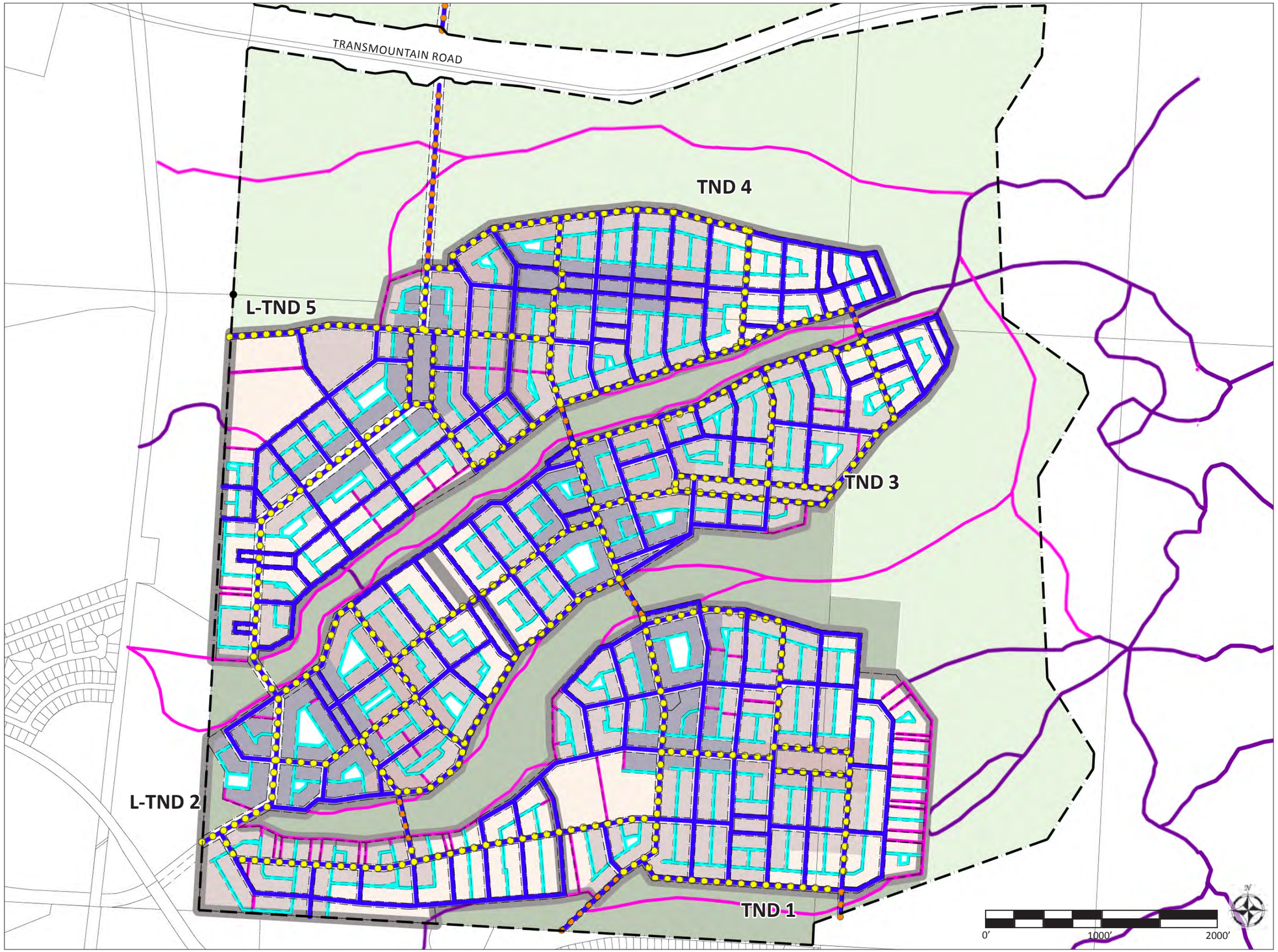
Pedestrian Network:
- Street w/ Sidewalk
- Alley
- Path (new)
- Path (exist.)

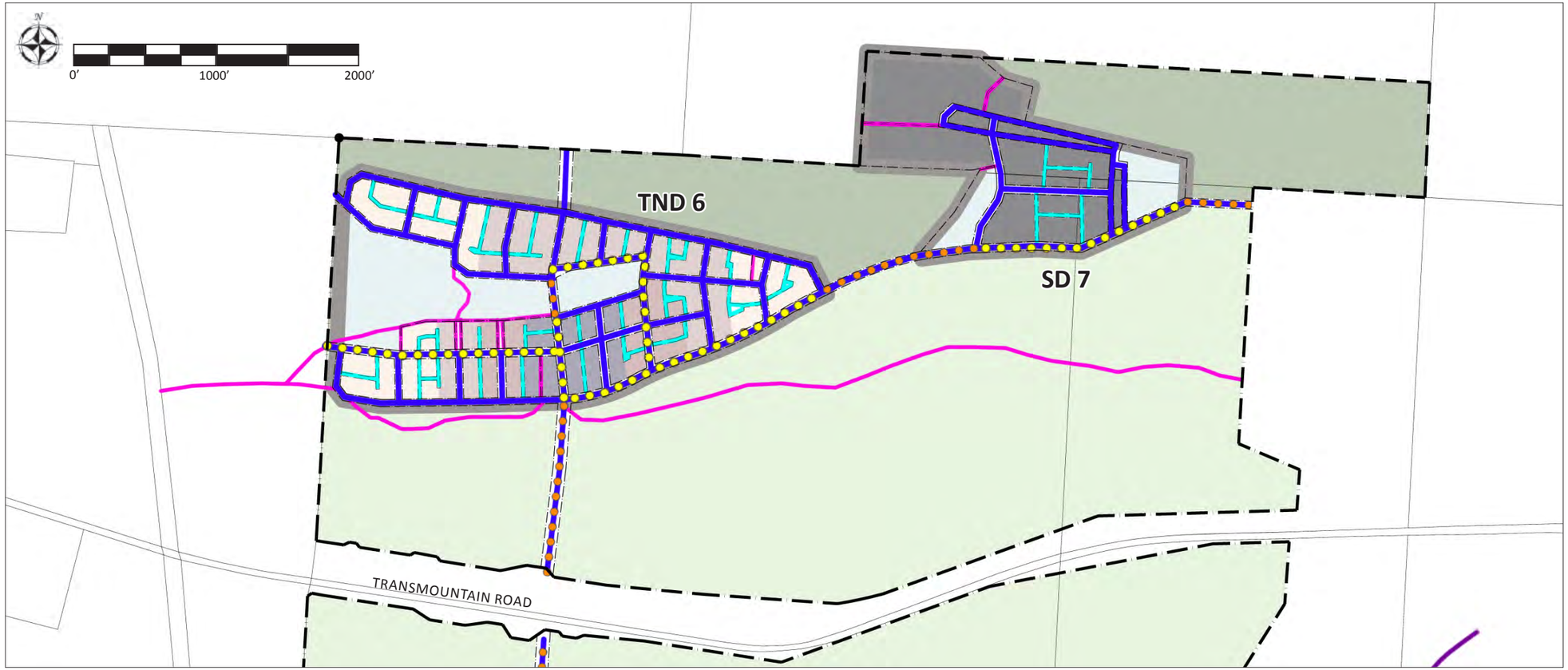
- Application Boundary
- New Community Boundary

T1 Natural (Utility)
T1 Natural (Stormwater)
T1
T3
T4
T4-O
T5
SD

KEY:







Pedestrian & Bicycle Network

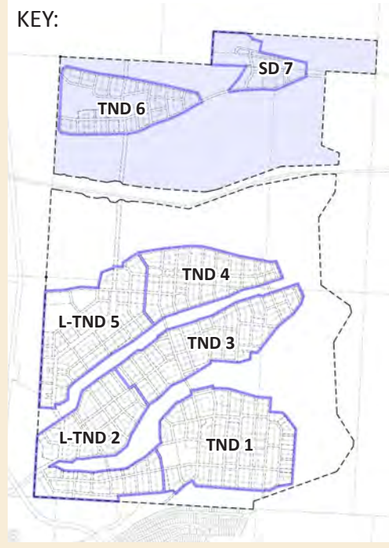
Bicycle Network:
- Sharrow
- Bike Lane or Trail

Pedestrian Network:
- Street w/ Sidewalk
- Alley
- Path (new)
- Path (exist.)

- Application Boundary
- New Community Boundary

T1 Natural (Utility)
T1 Natural (Stormwater)
T1
T3
T4
T4-O
T5
SD

KEY:



Special Requirements Plan

☐ Compliance with special requirements for mandatory and recommended Retail Frontage:

For New Communities, per §21.30.090 (A)(2): *"Designations for mandatory and/or recommended retail frontage requiring or advising that a building provide a shopfront at sidewalk level along the entire length of its private frontage."*

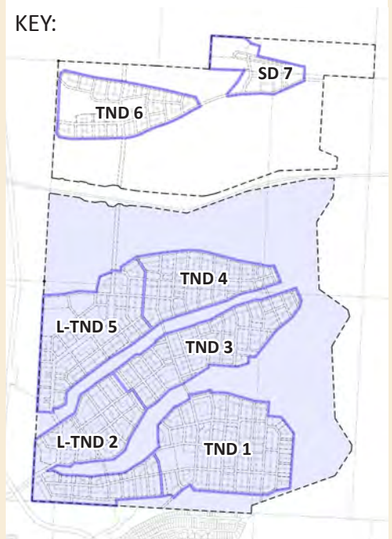
☐ Compliance with special requirements for recommended Gallery/Arcade Frontage:

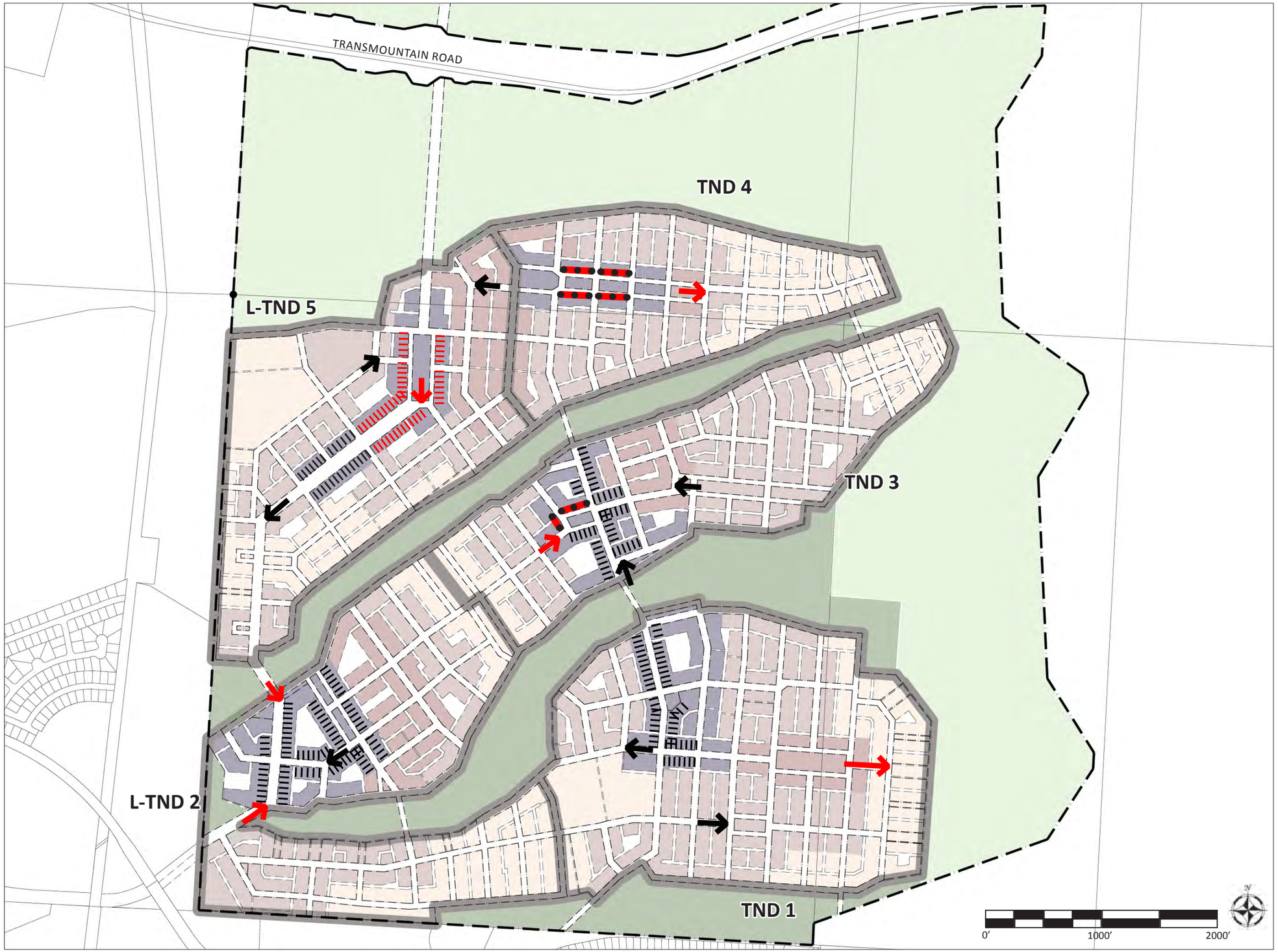
For New Communities, per §21.30.090 (A)(3): *"Designations for mandatory and/or recommended gallery frontage advising that a building provide a permanent cover over the sidewalk, either cantilevered of supported by columns"*, and per §21.30.090 (A)(4): *"Designations for mandatory and/or recommended arcade frontage advising that a building overlap the sidewalk such that the first floor is a colonnade."*

(Continued next page)

- Mandatory Retail
- Recommended Retail
- Recommended Gallery/Arcade
- Mandatory Terminated Vista
- Recommended Terminated Vista
- Application Boundary
- New Community Boundary

KEY:





Special Requirements Plan

Compliance with special requirements for terminated vistas:

*For New Communities, per §*21.30.090 (A) (6)*: "Designation for mandatory and/or recommended terminated vistas locations, requiring or advising that the building be provided with architectural articulation of a type and character that responds visually to the location, as approved by the CRC."*

Mandatory Retail

Recommended Retail

Recommended Gallery/Arcade

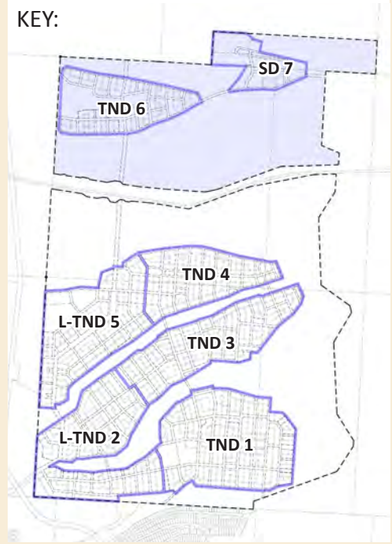
Mandatory Terminated Vista

Recommended Terminated Vista

Application Boundary

New Community Boundary

KEY:



Special Requirements Plan

☐ Compliant with Special Requirements for A/B Grid:*

For New Community Plans, per section §21.40.070(1): "A differentiation of the Thoroughfares as A-Grid and B-Grid. Buildings along the A-Grid shall be held to the highest Standard of this Code in support of pedestrian activity. Buildings along the B-Grid may allow automobile-oriented standards. The Frontages assigned to the B-Grid shall not exceed thirty percent of the total length of frontages within a Pedestrian Shed."

*The locations indicated are recommended.

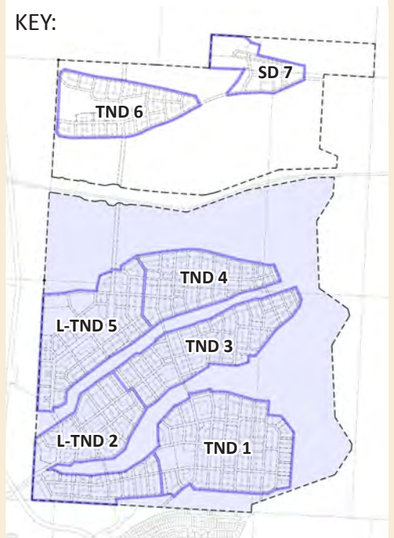
A-Grid

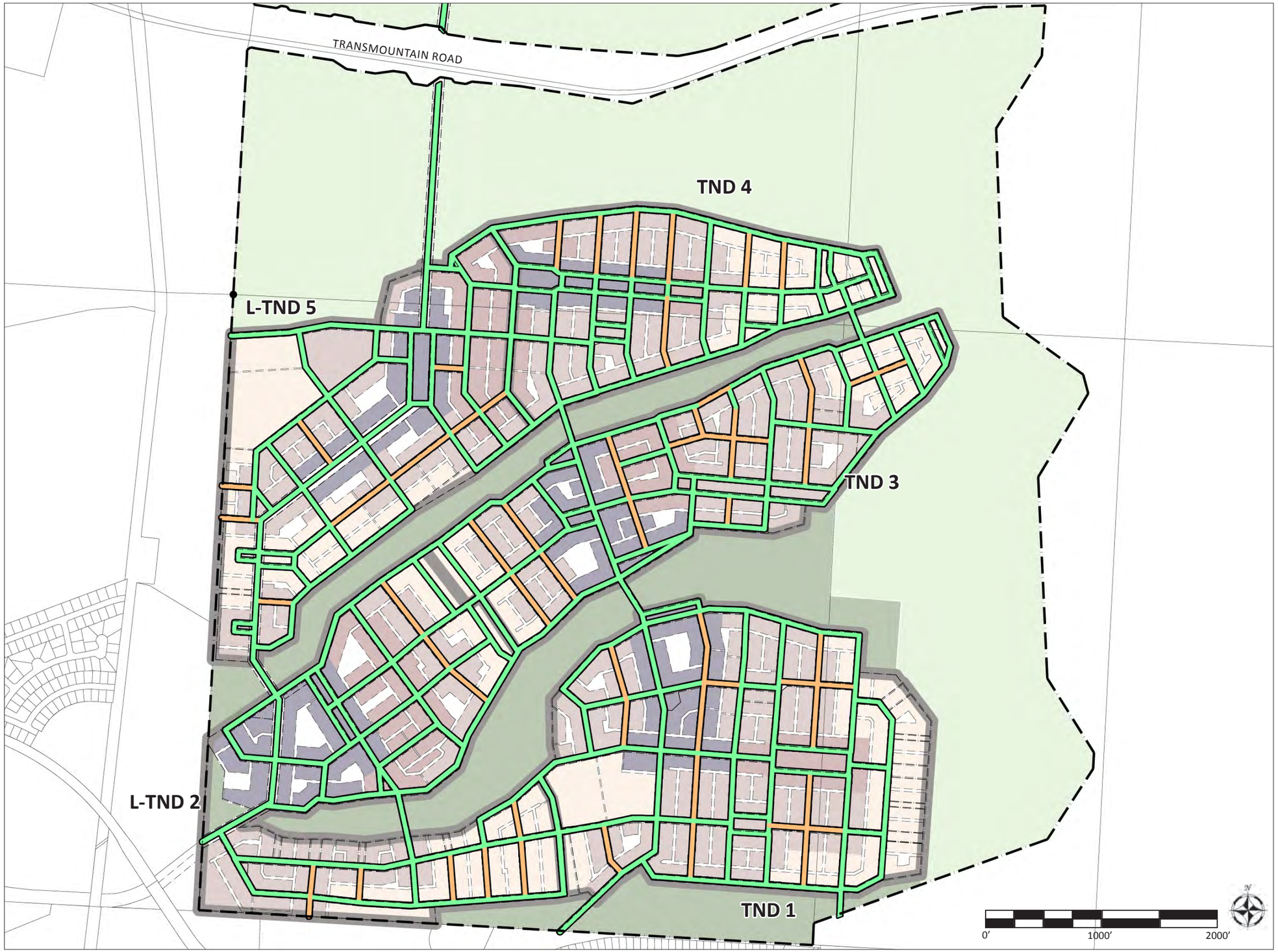
B-Grid

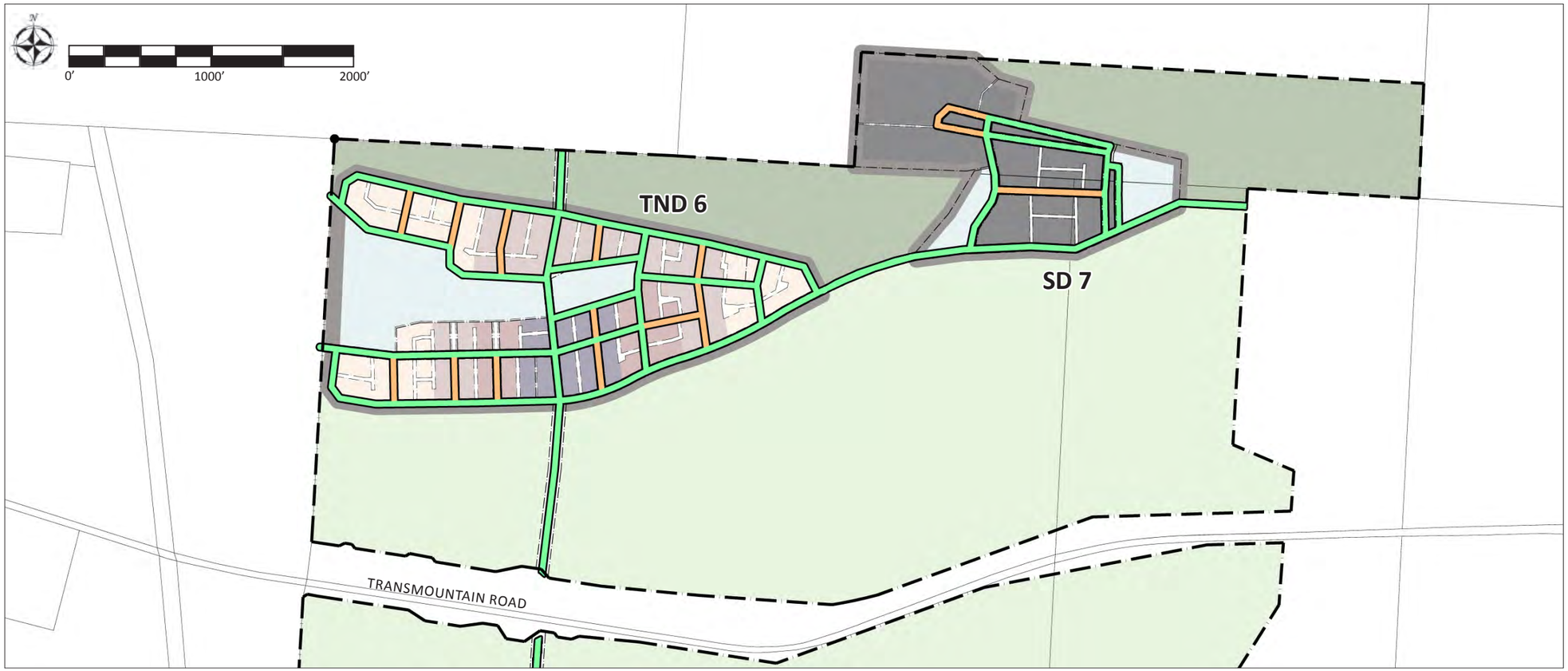
Application Boundary

New Community Boundary

KEY:



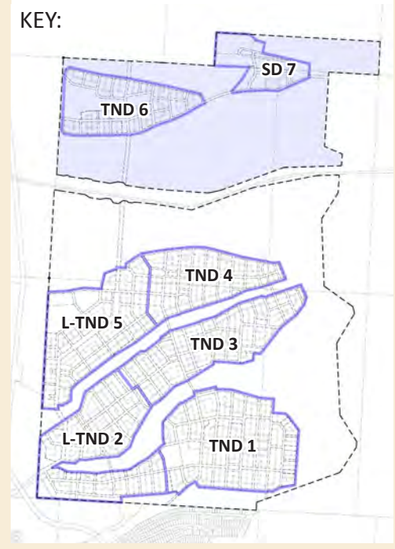




SPECIAL REQUIREMENTS PLAN

A-Grid
B-Grid
Application Boundary
New Community Boundary

KEY:

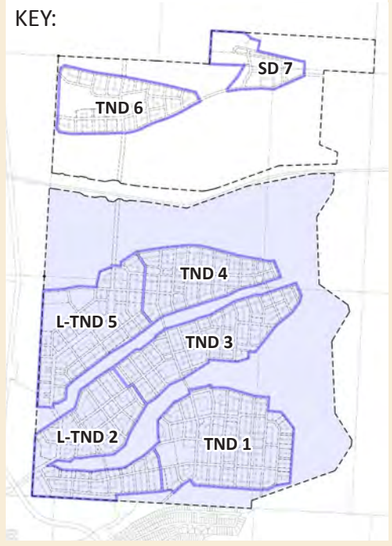


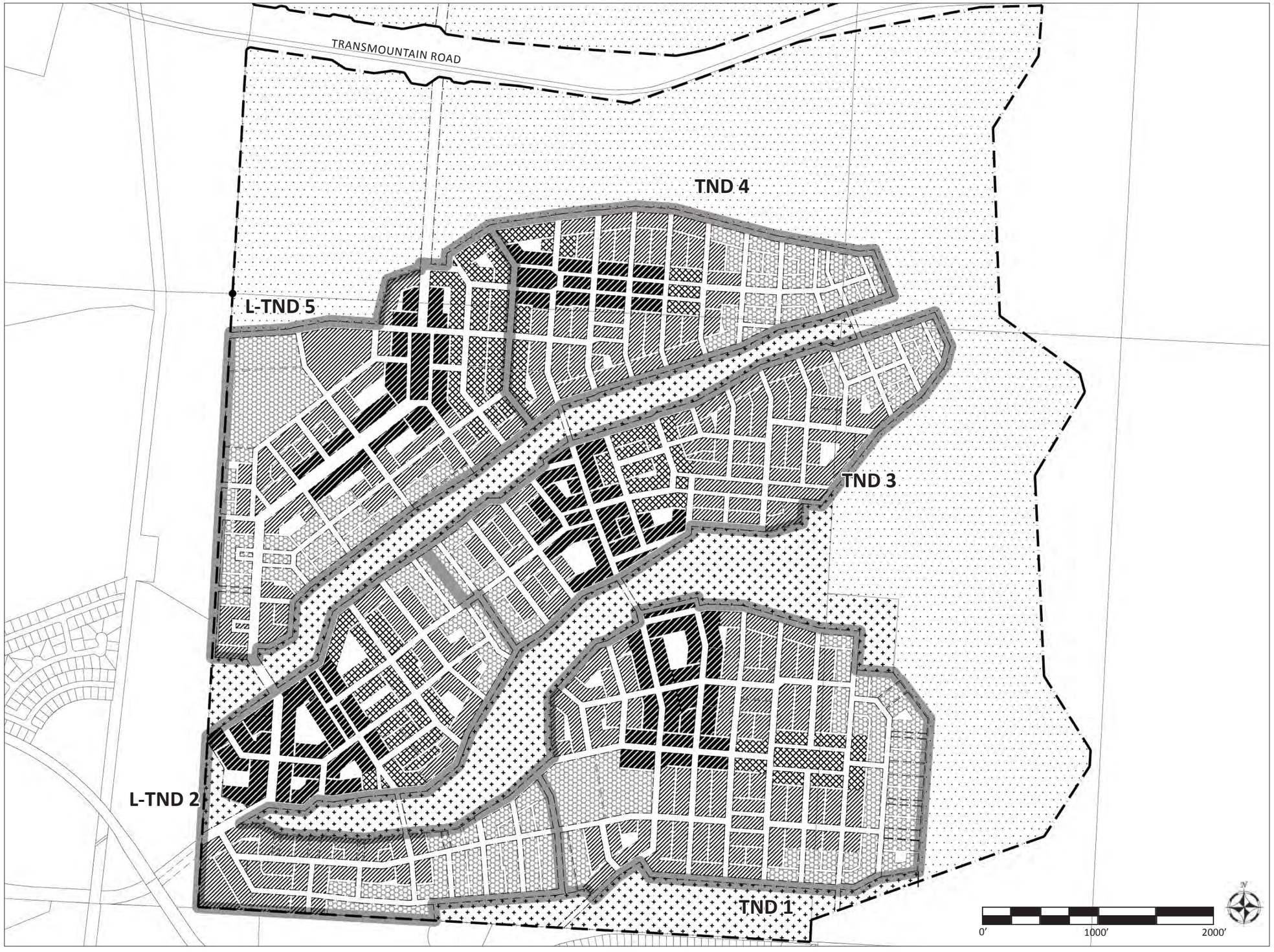
A/B GRID ALLOCATION TABLE		
	A-Grid	B-Grid
Requirement	minimum 70%	maximum 30%
TND 1	78%	22%
L-TND 2	87%	13%
TND 3	76%	24%
TND 4	85%	15%
L-TND 5	87%	13%
TND 6	79%	21%
SD 7	79%	21%

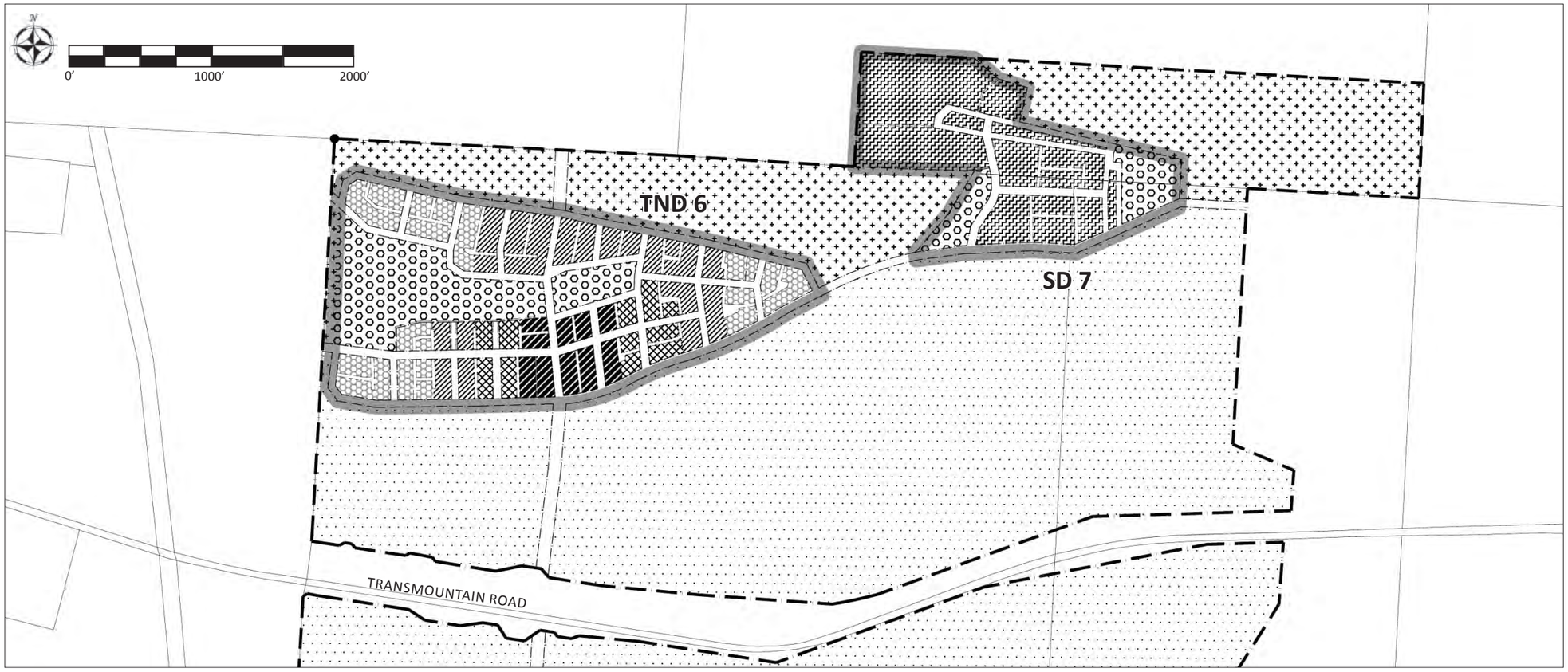
Black and White Regulating Plan for Recording

- T1 Natural - Utility Greenspace
- T1 Natural - Stormwater Open Space
- T1 Natural
- T3 Suburban
- T4 General Urban
- T4-O General Urban - Open
- T5 Urban Center
- SD Special District
- Application Boundary
- New Community Boundary

KEY:







Black and White Regulating Plan for Recording

- T1 Natural - Utility Greenspace
- T1 Natural - Stormwater Open Space
- T1 Natural
- T3 Suburban
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- SD Special District
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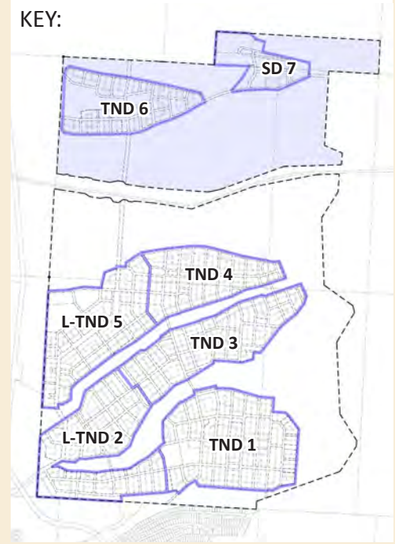

Special District Requirements

This page contains the regulations for **SD 7 - Northwest Park** (designated as "Special District" on the Transmountain Corridor & Northwest Master Plan Regulating Plan).

	SD 7
a. ALLOCATION OF ZONES	
CLD	N/A
TND	N/A
TOD	N/A
b. BASE RESIDENTIAL DENSITY	
By Right	24
By TDR	N/A
Other Functions	50 - 100%
c. BLOCK SIZE	
Block Perimeter	3000 ft. max.
d. THOROUGHFARES	
HW	not permitted
BV	not permitted
AV	not permitted
CS	permitted
DR	permitted
ST	permitted
RD	not permitted
Rear Lane	permitted
Rear Alley	permitted
Path	permitted
Passage	permitted
Bicycle Trail	permitted
Bicycle Lane	permitted
Bicycle Route	permitted
e. CIVIC SPACES	
Park	permitted
Green	permitted
Square	permitted
Plaza	permitted
Playground	permitted
f. LOT OCCUPATION	
Lot Width	N/A
Lot Coverage	N/A
g. SETBACKS - PRINCIPAL BUILDING	
Front Setback	0 ft. min., 20 ft. max.
Side Setback	0 ft. min.
Rear Setback	0 ft. min.
h. BUILDING Disposition	
Edgeyard	permitted
Sideyard	permitted
Rearyard	permitted
i. PRIVATE FRONTAGES	
Common Yard	permitted
Porch & Fence	permitted
Terrace, Dooryard	permitted
Forecourt	permitted
Stoop	permitted
Shopfront	permitted
Gallery	permitted
Arcade	permitted
Parking Lot	permitted
j. BUILDING CONFIGURATION	
Principal Building	6 Stories, max.
Outbuilding	N/A
k. BUILDING FUNCTION	
Residential	not applicable
Lodging	open use
	open use
Retail	open use

DISPOSITION

CONFIGURATION

FUNCTION

September 2017

ENRICH, ENHANCE AND ELEVATE EL PASO

Recommendations to Establish a Criteria for the Preservation of Public Land in El Paso,Texas

El Paso's open spaces are an integral part of our community's identity. Our natural landscapes not only provide us with places of great beauty, but they also play a critical role in providing habitat for wildlife along with clean water, fresh air and recreational opportunities. In response to a petition asking that the Public Service Board (PSB)-owned lands be preserved adjacent to the western and northeastern portions of the Franklin Mountains, a Preservation Committee was formed to establish conservation standards for development so as to ensure a high quality of life for present and future generations. This map identifies lands to be preserved with no disturbance in the form of development (Full Conservation), lands that will be lightly developed as transition lands (Conservation Development) and lands that can be developed following El Paso's existing ordinance for smart growth (Smart Growth Development).

The mapped image to the right (Figure 1) illustrates areas of undeveloped land to the east and west sides of the Franklin Mountains and this committee's proposed recommendations for development. The areas shaded in light green, light blue, and dark blue indicate the Public Service Board (PSB)-owned territory included in the "We the People" Petition presented to the PSB in 2015. These images also articulate land designated as part of the Franklin Mountains State Park and Castner Ranger as well as land that has been masterplanned by the City of El Paso.

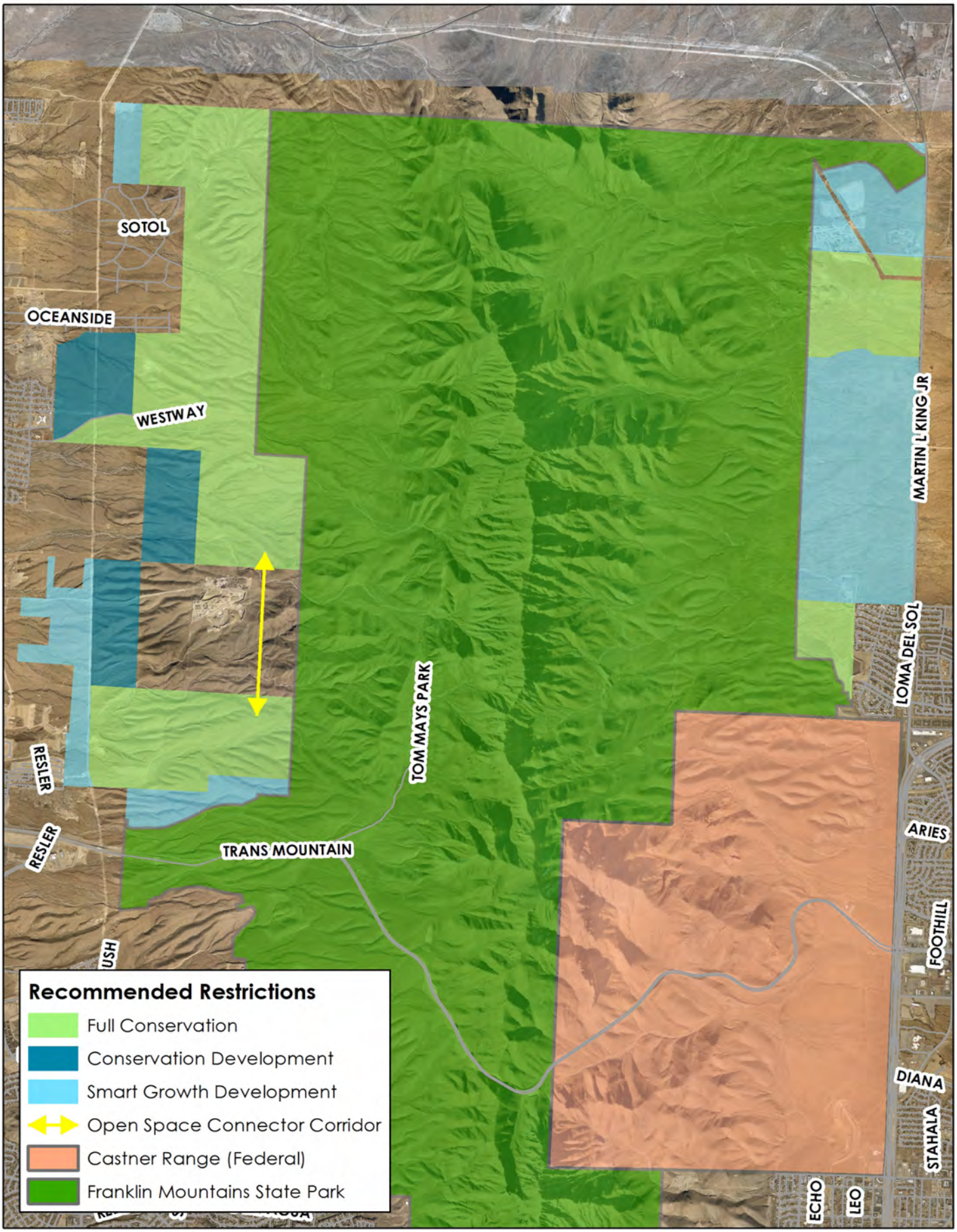

Figure 1: Recommended restrictions applied to land outlined in the "We the People" Petition

Over 6,000 people agreed that they wanted to preserve, in its natural state and in perpetuity, all of the underdeveloped land owned by the City of El Paso on the western side of the Franklin Mountains. Given the many factors surrounding that area of land, the current expectation to sell Public Service Board (PSB)-owned land, and the "We the People" petition these 6,000 people signed, it was imperative to establish a Preservation and Conservation Planning Committee (PCPC).

On December 3, 2015, the newly-formed PCPC met and determined the purpose of the group: to develop criteria to identify which specific City owned, Public Service Board-managed lands mentioned in the petition should be preserved, which lands can be developed, and to establish conservation standards for development so as to ensure a high quality of life for present and future generations.

The PCPC has endeavored to develop criteria that will identify and classify lands that best accommodate development while also considering appropriate conservation of land. The group has utilized a collaborative approach specifically designed to create a lasting legacy in our region by:

- obtaining community input
- creating broad based + holistic preservation goals
- identifying specific development criteria
- identifying land protection critical impact areas
- identifying existing funding mechanisms that increase the feasibility of preservation and conservation goals

The purpose of the project is to provide scientific data and specific analysis to the Public Service Board (PSB) and the City of El Paso as well as other government agencies, individuals, developers and business owners regarding existing natural resources on PSB managed lands adjacent to the Franklin Mountains State Park. The data is intended to assist in land sale and development decision-making. The work of the committee has taken into consideration the recommendations presented in Plan El Paso, the Northwest Master Plan, the El Paso Livable City Sustainability Plan, the El Paso City Resilience Assessment and the El Paso Open Space Plan as well as priorities brought forward by community stakeholder groups. The key theme that emerged was to build a stronger El Paso through future development and conservation that are mutually beneficial, reinforcing and balancing people, planet, and prosperity in our region. Conservation and development should not be viewed as being in conflict with one another.

The resulting goals identified by the PCPC are to:

1. safeguard natural and cultural features
2. improve wildlife habitat and natural habitat connectivity
3. address the health of our regional watershed
4. contribute to the local economy of our communities
5. expand understanding of ecosystem services valuation

The criteria discussed in this report identifies the most appropriate locations for development while preserving areas of ecologically important habitat as well as functional wildlife corridors. These areas provide an essential conduit for movement, maintaining a fundamental ecological process that affects the distribution, persistence, and structure of biological communities as well as providing significant economic and social benefit to residents and businesses in the surrounding area.

"We the people want preserved, in its natural state and in perpetuity, all of the undeveloped land owned by the City of El Paso on the western side of the Franklin Mountains that is north of Transmountain Road, east of the EPNG Pipeline Road and south of the New Mexico/ El Paso boundary and on the eastern side of the Franklin Mountains that is north of Transmountain, west of Martin Luther King, Jr. Blvd. and south of the New Mexico/El Paso boundary" ("We the People" Petition led by Jim Tolbert, Celebration of our Mountains).

DID YOU KNOW ?

El Paso Water through the PSB owns and manages over 8,000 acres of virgin land within the city limits.

"Ecosystem goods and services are the benefits that nature provides to people. These benefits are the basis of all economic activity as they provide a clean water supply, breathable air, nourishing food, flood risk reduction, waste treatment, and a stable climate. Without natural capital, many of the services (benefits) that we generally take for granted (and receive for free) could not exist, or would need to be replaced at a very high cost" (Appendix I: Earth Economics, Ecosystem Services Valuation, El Paso 2016).

Some of the key benefits of conservation criteria for development are as follows:

- **Reduced infrastructure costs for flood control**. Protecting arroyos and other water conveyance features in their natural condition has proven economic benefits.
- **Increased ecotourism that boosts the local economy.** A defined network of natural areas that have the capacity to energize the community and strengthen local tourist related businesses.
- **A healthier community and workforce.** Safe and easy access to parks, trails, and open space are desirable amenities for a thriving economy.
- **A streamlined permitting process.** Identifying criteria for public lands suitable for development will reduce conflicts with conservation advocates, provide clarity for and structure for developers allowing for faster and more effective project processing and completion.
- **Improved quality of life.** Preserving habitat and functional wildlife corridors is an important part El Paso's quality of life. This is an important component companies look for when considering whether or not to relocate here.

The Preservation and Conservation Planning Committee recommends the criteria presented here for adoption by the PSB in reference to lands identified in the aforementioned petition.

Which lands are being considered?

The land area being considered for this analysis includes territory specifically identified in the aforementioned PSB petition (8,188 acres) (see Figure 1 on page 3).

How do we get there?

The widely recognized practice of Conservation Development has the potential to preserve 50% to 70% or more of buildable land, with a much higher quality and percentage of land than other approaches such as clustered development. In order to accomplish the goals set forward in this document, all PSB lands not scheduled for 100% preservation, with conservation easement(s), but are scheduled for development would be subject to following the Conservation Development criteria outlined on pages 28-30. The benefits include cost reduction through a reduction in infrastructure costs while obtaining density neutral development, preserving land without any cost to the community, while reducing demand for future public land acquisition. It also reduces storm water run- off and treatment costs, conserves groundwater as natural areas infiltrate water, reduces flooding, and provides numerous other free ecological services. It is also believed from analyzing similar projects that the price per acre obtained at the sale of the land with these criteria would at least match previous averages or even exceed it (see page 18 for extended list of benefits).

Tools to determine why to preserve or develop land

For the lands that are slated for development, an extensive ecological inventory including data on soils, steep slopes, open space, hydrology, flora, and fauna, habitat types, endangered species, threatened and vulnerable species, and archeologic/ cultural significance must be done to locate the primary and secondary conservation

areas. Prior to development, the conservation areas along with existing development and disturbed lands need to be identified and mapped with overlays that will create an "open space" map identifying the habitat areas of disconnection between the designated open space areas to preserve. These areas must be connected to link natural habitats to larger areas and provide a "Connected Open Space" map between critical open space areas to facilitate the movement of wildlife and plants, and their genetic materials. The "Connected Open Space" overlay then identifies the areas to be preserved and the areas to be developed (example shown on pages 38-39).

The land identified in this report was purchased in the mid-1900s by the City of El Paso, using tax payer funds, for the sole purpose of water conservation and management of water resources. The land described within this report is currently managed by the Public Service Board (PSB).

Historically, PSB-managed lands determined inexpedient to the water system have been sold. Before March 1, 2013, all proceeds from the sale of El Paso Water (EPWU) managed property was placed in the EPWU Improvement Fund and used for capital projects. As of March 1, 2013, all proceeds from the sale of EPWU managed property are placed in the EPWU Land Sales Restricted Reserve Fund (LSRRF) for the purpose of funding future water supply projects, EPWU, under the direction of the PSB, has sold 1,423.3873 acres over the past 10 years, 658.2954 acres of which were sold to the Texas Parks and Wildlife Department. The total amount of revenue generated by these sales was $23,922,940.44..[1]

In summary, the goal of this report is to uphold the message that lead 6,000 people to sign their names in favor for preservation and conservation-friendly development: "We the people want preserved, in its natural state and in perpetuity, all of the undeveloped land owned by the City of El Paso on the western side of the Franklin Mountains that is north of Transmountain Road, east of the EPNG Pipeline Road and south of the New Mexico/El Paso boundary and on the eastern side of the Franklin Mountains that is north of Transmountain, west of Martin Luther King, Jr. Blvd. and south of the New Mexico/El Paso boundary."

1 Amounts verified by EPWU on June 3, 2016.

Figure 2 (above): Infographic explaning the economic development benefits associated with designating the Organ Mountains-Desert Peaks as a National Monument

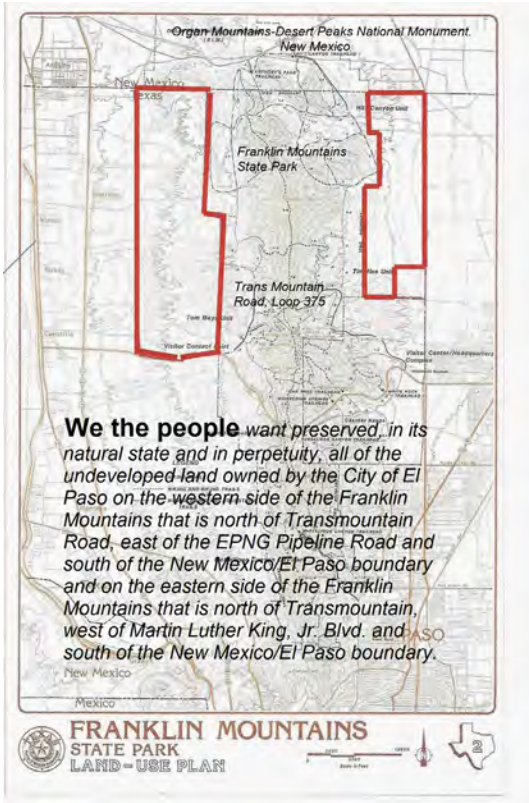

Figure 3 (right): The original "We the People" petition image *(Courtesy of Celebration of Our Mountains)*

ACKNOWLEDGMENTS

Committee Members

A sincere thank you to the following committee members for their dedication and hard working in creating this report (names are listed alphabetically by last name).

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Lois Balin, Texas Parks and Wildlife Department**

Lupe Cuellar, El Paso Water

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JIM TOLBERT, CELEBRATION OF OUR MOUNTAINS

Open space and the preservation of our natural desert environment is critical to creating a more sustainable and resilient El Paso. As a major urban center our city has both a responsibility and an opportunity to set the example for development in the desert Southwest. Based on known data regarding the impact of preservation of natural land as well as the research and recommendations presented in this report, a clear need to protect open space in our community is evident. Through efforts to provide more parkland access, increase density in appropriate areas, limit sprawl in mountainside or other undeveloped areas and protect existing desert ecosystems, our city can improve quality of life for residents, generate increased economic opportunity, and simultaneously support the fragile natural environment around us.

Few would disagree that past models of urban development are obsolete and no longer serve the needs of our growing population and diminishing natural resources. Expanded growth of El Paso's footprint strains both capital and environmental resources. Cost associated with both construction and maintenance of expanded infrastructure systems necessary to support the displacement of natural systems is not sustainable in the long term. These direct costs emerge in addition to the indirect costs associated with community health impacts and loss of naturally occurring quality of life amenities.

Imagine a community where more open space is possible without restricting population and economic growth. Imagine a community with better air quality without the need to impose restrictive laws or spend excessive amounts of public dollars. Imagine a place where the life of our natural water sources can be extended. Imagine a healthier more sustainable environment for El Paso.

All of these are possible through careful planning, public and private sector cooperation and consideration of systemic cost benefit analysis. Issues not addressed today, become the burden of future generations. Now is the time to come together to create the framework for a sustainable, prosperous and healthy future for our community.

Jim Tolbert
Director, Celebration of Our Mountains

"What you need to do is make sure that the place in which you live, and your people live, is as nice as the places they would dream about visiting" -Charleston Mayor Joseph Riley

It is a rare opportunity for a city to have in their control thousands of acres of raw land whose use can be carefully planned to yield the best short-term and long-term results. It is a truly enviable position in which El Paso is in right now. Obviously, someone had the vision a few decades ago to purchase this land and we are all grateful for that today. The question is: will we have the vision today to plan the best use for this land in a way that future generations will be grateful to us for what we did with it?

In order to capitalize on this situation a true and thorough effort must be made to fully understand and exploit the incredible opportunities that lie within these parcels of land and its surrounding areas. As with anything that is worthwhile, this task will not be easy and it will require a great deal of time and resources. However, the long-term cost to El Paso will be much greater if nothing but the status quo is followed.

As a member of this community I have witnessed the growth this city has seen in the past two decades. As a member of the development community I have witnessed the way development decisions are made and actually implemented. Although there has been some progress, the way we currently develop in El Paso is not sustainable. Ignoring for now the health-related and environmental issues, simply stated, we as a city cannot financially afford to continue to grow and develop in this manner and the only way to be able to sustain the status quo is to continually raise fees, raise taxes, and borrow money through bonds to pay for the new and maintain the existing infrastructure. The good news is that there is a better way to do this and one that will not cost more.

Our design and decision making metric needs to be revised to include considerations that impact the way we live and the true cost to the city. Both can be greatly improved by taking some simple steps that would yield the same, if not better, bottom line to the developer while lessening the burden to the municipalities involved. By the way, these principals that can lead to a better way to develop and a better way to live are not theoretical ideals that only work in textbook examples. It is actually something that has been successfully applied in many parts of the country, some with similar conditions as El Paso, and around he world. After all, it borrows from the logical way that urban areas used to grow organically and, by necessity, self-sufficiently.

The purpose of this report is to increase awareness of the current situation, the great opportunity, and its potential benefits and to also serve as the catalyst for evoking the action required. This report is a great resource for better understanding the critical situation and includes a sample of what new criteria for the sale of the land might look like as well as some basic guidelines for development and preservation of the same land. It also concludes with some possible next steps of action that can be taken.

It is important to make clear that this report does not contain all the answers nor the methods and means of achieving the desired goal. It is written with the hope of obtaining the attention of the needed stakeholders and instilling a desire to take action. As you read through this report, please remember why this is important and keep in mind the impact it could have. I would also recommend that you keep in mind that this is not just about conservation and preservation. In my point of view, it is not even the priority but rather the result of good planning. When good sound principles are implemented into land planning that focus on the elements that result in the best long-term benefits, the end result is communities that are healthy and sustainable, not only in environmental, ecological, and human health ways, but also very much in an economically-sustainable way as well.

*"Sensible and Efficient land use is the single most important factor in obtaining regional self-sufficiency" (*World Institute for Sustainable Habitat). I hope this report motivates you to get involved, in some way. After all, it is our responsibility as El Pasoans and as individuals that can make a difference to make sure that this land has the best possible outcome for all El Paso and its future generations.

Joseph Nester
Kaizen Construction Services, LLC

Our future : #ChihuahuanDesertLandAndWater

The City of El Paso has over 7,000 acres of open space that they own, of which they are, deciding what to sell and what, of the 7,000 acres, could be preserved and managed as open space. The City of El Paso possesses a wonderful treasure that is so unique that other cities would love to have this opportunity before them as a way to improve their communities! This is an opportunity for the City of El Paso--the City is finalizing their area wide Strategic Plan and the 7,000 acres fits perfectly with their goals.

These lands address many of the Cities goals outlined in their strategic plan: viewsheds, quality of life, recreation, health/sustainable community and increase eco-tourism. See below bolded strategic goals listed by the City which are then followed by an explanation of how each of the City goals will benefit your family, our community, our region and our future.

1. The lands, if left undisturbed will create and improve the visual impression of the community. El Paso residents and their families, along with visitors, regardless of one's mobility and social economic status benefit directly from a view shed of the Franklin Mountains. Such views lead to a positive visual stimulus that makes people feel good, improve mental health, and let's one take pride in their community and the areas special natural features. To achieve such benefits you need to have continuous viewshed corridors that are set aside, in perpetuity.

2. Continuous lands of open space located in an urban center would provide endless outdoor recreation opportunities. The mountains offer unique hiking, biking, bird watching, sightseeing, rock-climbing, photography, geo-cashing, etc. All set in an urban area that has a major airport, with a major highway that runs alongside the lands and can draw in people from adjacent states and Mexico. Preserving existing open space lands as natural areas will create numerous opportunities for people to experience nature and learn about it in real world terms. Such open space offers the opportunity for the creation of innovative recreational, educational and cultural programs to be developed. This is a unique situation that is not found anywhere else that will directly enhance El Paso's quality of life and assist drawing people to region to work, live and lay family roots.

3. Accessible natural open space promotes a healthy, sustainable community with outdoor activities for residents and visitors alike. Being outside supports a healthier mental and physical wellbeing and higher quality of life, which in turn results in lower health care expenses. Maintenance and infrastructure cost are minimal in natural settings, as opposed to developed areas which need regular maintenance. Leaving the lands as natural lands greatly reduces any future expenses that would be needed to maintain infrastructure, address flooding, and increase need for water for the growing population, resulting in reducing taxpayer expenses into the future. As these lands are already owned by the City, no bond or grant funds would need to be encumbered by the taxpayers or raised to have the open lands for public use. In addition, the lands were bought in the 50's for water conservation and as the region becomes dryer and the City is building piping over 100's of miles to bring water to the City, would be wise to keep the lands open and used for their original purposes water conservation.

A partnership could be developed with the Frontera Land Alliance, FMSP, BoarderPlex and other organizations and businesses to assist in sustaining the lands for the community in a healthy way.

4. Very little infrastructure and up keep of land, would grow the local economy with a focus on Ecotourism. Such focus would have a positive income for hotel, supplies, and food industry as people visit the City lands, the state park and sounding sites. El Paso can be promoted as "the" home base for day trips to the Franklin Mountains, Hueco Tanks, Oregon Mountains Desert Peak National Monument, Guadalupe Mountains, Big bend, etc. A prime example of how recreation opportunities improve the local economy is how Oregon Mountains Desert Peak National Monument has promoted ecotourism and has resulted in positive growth for Las Cruces.

We have 7,000's acres at the end of the Rocky Mountains being considered for development and preservation. The land could be left natural and be promoted for viewsheds, quality of life (clean air/water), recreation opportunities, healthy and sustainable community and promote eco-tourism. All of which are goals for the City of El Paso as stated in their Strategic Plan.

The City of El Paso has an opportunity to create a wonderful treasure. In 100 years if the lands remain open it is likely people will look back and say thank goodness the City had the foresight to protect the land as happened in 1097's to the Franklin Mountains State Park!

Janae' Reneaud Field
Executive Director
The Frontera Land Alliance

A core priority for this study is the engagement of a broad range of stakeholders from a variety of industry and community backgrounds representing diverse interests. Following over a year of research and development, this report will continue to be vetted by the following stakeholders and others:

- American Institute of Architects, El Paso Chapter Board of Directors
- Border Environmental Cooperative Commission
- Borderplex Alliance, Regional Planning Task Team
- City of El Paso, Economic Development Department
- City of El Paso, Planning and Inspections Department
- County of El Paso
- Eco El Paso, Board of Directors
- El Paso Association of Home Builders
- El Paso Water
- Environmental Protection Agency Region 6
- The Frontera Land Alliance, Board of Directors
- The Greater El Paso Chamber of Commerce
- The Private Sector Development Community
- Texas Parks and Wildlife

In order to gain a balanced, objective perspective, the plan will also be vetted with the following external entities:

- 100 Resilient Cities, Pioneered by the Rockefeller Foundation
- Christine Morris, Chief Resilience Officer, City of Norfolk, Virginia
- Greg Guibert, Chief Resilience Officer, City of Boulder, Colorado
- Theresa O'Donnell, Chief Resilience Officer, City of Dallas
- Earth Economics
- Sumner Swaner, Landscape Architect and Environmental Planner, real estate developer, and Adjunct Professor in the College of Architecture and Planning at the University of Utah
- Urban Sustainability Directors Network, Texas State Peer Network (Participating Cities Include Austin, Dallas, Houston, San Antonio, Plano, Denton + El Paso)
- US Green Building Council, Texas Chapter, Board of Directors
- Texas Society of Architects, Sustainability Committee

Each group will be contacted directly by a member of the committee, provided an electronic copy of the pre-final recommendations, then given approximately two weeks to respond with comments, questions or concerns. Additionally, an online survey has been created in order to gather broad community-based feedback.

The following section details priorities identified by committee members, supplemented by feedback from the aforementioned stakeholder groups.

Priorities identified by stakeholders reinforced the key theme identified for this report, "to build a stronger El Paso through future development and conservation that are mutually beneficial, reinforcing and balancing people, planet, and prosperity in our region."

The views, values and goals in our community are as diverse as the groups invested in it's future. This report attempts to address those varying concerns while aligning priorities in an effort to develop a common goal set.

Stakeholders, for the purposes of this report, include all those affected by development including:

- Those who operate businesses benefiting from job creation associated with development
- Consumers of services provided by those businesses
- People who live in the community who benefit from the ecosystem services provided by undeveloped lands
- Preservation groups interested in responsible land conservation practices
- Businesses invested in growth and development of the identified land area
- Public Entities and Professionals who the design, plan and manage land development in the region

The committee recognizes that balance is necessary to achieve maximum benefit for the community at large. For example, by adding new roads, homes and businesses, El Pasoans gain economic development benefits and increased tax revenue (keeping in mind that infrastructure costs for these services can be greatly reduced by using conservation design). In contrast, serious consequences to our community's quality of life and the health of the overall ecosystem exist when natural land is developed irresponsibly. **Narrowly defined economic benefits lacking consideration for quality of life, quality of place, human health and environmental stability threaten the capacity for broad-based, long-term community benefits.** For example, protecting public lands for recreation purposes adds to quality of life and protects ecosystem services important to water conservation, air quality, and wildlife habitat preservation, but may limit our economic development opportunities.

DID YOU KNOW ?

El Paso is ranked 75th in a Trust for Public Land Park Score ranking of 98 cities which provides a rating based on per capita parkland playgrounds, recreation centers, and other open space amenities

In the Ecosystem Services Valuation Report produced for El Paso by Earth Economics (Appendix G), a team of experts calculated that **"the annual value of ecosystem services within the El Paso study area (limited in this case to approx. 7.757 acres) is estimated to be between $3.4 million and $6.7 million."** Further research is absolutely needed to fully understand the benefits open space provides to our community, especially in terms of ecotourism benefits. However this valuation gives us a preliminary understanding of the importance of protecting open space land in terms of air quality benefits, habitat, soil retention, and disaster risk reduction.

In the following sections, we will highlight the costs and benefits in several different areas, including infrastructure investment, resource conservation, economic development, tourism, health, wildlife, social equity, and water resources. Protecting public land can encourage ecotourism, extend the life of our natural resources, offer health benefits via outdoor recreation opportunities, provide habitat for critical species, and improve access for low-income residents to parkland. Protecting public land can occur in a density-neutral manner and does not necessarily mean fewer development options or reduced land available for new businesses.

Figure 4: Aerial View of the City of El Paso (Partial)

DID YOU KNOW ?

The City of El Paso, within the designated city limits, encompasses 256 square miles of land area.

For many years, citizens and community leaders have worked together in an effort to improve quality of life for El Pasoans. For approximately the last decade, a variety of plans, initiatives and strategies have been developed in the context of urban progress. In 2007, the "Towards a Bright Future: A Green Infrastructure Plan for El Paso," commonly referred to as the Open Space Master Plan, was adopted as a plan for open space preservation with the goal to protect the health, safety, and general welfare of the residents of El Paso. In 2009, the Open Space Advisory Board was created to act in an advisory capacity providing recommendations to City Council in an effort to preserve and acquire open space as identified in the Open Space Master Plan. In 2009, City Council adopted The Livable City Sustainability Plan inspired by the City's strategic goal to make El Paso **"the most livable city in the United States."** In 2011, the city put forward a comprehensive masterplan emphasizing smart growth, transit oriented development and revitalization of existing neighborhoods from one end of the city to the other. In 2012, voters approved a $470 million bond program targeting some of the most ambitious quality of life improvement projects in our history. In mid 2015, a new City Strategic Plan was released emphasizing a vision to, **"have safe and beautiful neighborhoods, a vibrant regional economy and exceptional recreational, cultural and educational opportunities."** Paired with a mission to "Deliver outstanding services to support a high quality of life for residents, businesses and visitors" this plan serves as a roadmap for action and a guide for decision making across the city. That plan has since been updated to reflect the changing needs of the community further emphasizing the need to highlight El Paso's natural and cultural assets as a driver of both economic development and overall quality of life.

These strategies are mirrored by the passion and energy El Pasoans have devoted to the preservation of our community's natural assets. To date, over 55,000 El Pasoans have signed petitions and letters expressing their support for conserving the natural region within and immediately surrounding the Franklin Mountains.[1] These grassroots initiatives clearly articulate the value that the people of El Paso place on naturally occurring resources and open space. The Franklin Mountains State Park in the City of El Paso is the largest urban park in the nation lying completely within the city limits of a city. It is iconic for this community and for conservation efforts across the state.

As our city, 256 square miles in size, continues to grow outward, natural resources are depleted while fundamental infrastructure expansion places extraordinary pressure on critical services and municipal systems. The footprint left by this type of growth has environmental, economic and social impacts on both the community and the region. We can create opportunities for our local economies to grow by investing in land for outdoor recreation, for wildlife, and water. Such investments have a ripple effect. Active aging adults relocating in the western US are three times more likely to settle in a county with more protected public lands than one with fewer protected lands. This has led more than half a million active aging adults to relocate to the Western United States between 2000 and 2010 (The Golden Rush: How Public Lands Draw Retirees and Create Economic Growth)

Additionally, as a modern binational city, we are dependent on local and regional systems in terms of air, water, energy, economic development and trade; making it critically important to protect our natural resources: "The border region includes a

1 30,000+ signatures for Castner Range, 6,252 signatures for "We the People" petition, 1,377 signatures for "Protect Scenic Transmountain Corridor in NW El Paso (2012)," 1,571 signatures for "PSB offers compromise to stop open space election (2011)," and 15,000 signatures for a petition asking City Council to obtain State Park status for the Franklin Mountains (1979).

number of cities that share common airsheds; thus, activities in one city can directly affect the other, whether in the same country or across the border. As such, strategies and solutions to address air pollution along the border need to be developed and implemented binationally, with active engagement from the community, as well as local, state, federal, and Tribal authorities."[2] Issues like population growth and migration have exacerbated challenges in terms of air quality, water quality, and peak energy demands. However, opportunity to mitigate long term impact through strategic, data driven decision making presents itself here.

Unless we work together as one region across political boundaries, we may be overwhelmed by the dramatic shifts in demographics and changes in our environment. We may find ourselves unable to achieve the quality of life and public health that we wish for ourselves and future generations. Therefore we need to create a framework which will give us the ability to improve and preserve green space critical to our needs while appropriately developing others. This framework must be based on firm science. Our communtiy has the opportunity to set the example for the wise use of public funds to provide public services by using natural systems in addition to or instead of man-made systems specifically in an arid urban environment.

Benefits of Strategic Conservation

Short-Term

- Protects and maintains the values & functions of natural ecosystems;
- Sustains working land;
- Reduces opposition to development;
- Provides predictability and certainty;
- Reduces costs for built infrastructure.

Long-Term

- Assist in Decision Making: Speed up the permitting process for developers because the jurisdictional agencies will be in agreement on the areas suitable for development.
- Accountable to Citizens: It will determine where transportation corridors will best improve the quality of life for residents and visitors to our region.
- Economic Growth: It will identify recreation and ecotourism opportunities that have the potential to increase local business revenue.
- Holistic Approach: It will improve the safety of citizens and reduce flood damage when arroyos are left as natural features that can handle the high quantities and fast speeds of water flowing to the Rio Grande, while considering the surrounding use of lands and gray infrastructure.
- Healthy Lifestyle: It will promote physical health, mental health, and quality of life by expanding recreational and outdoor experiences, potentially reducing healthcare expenses.

DID YOU KNOW ?

EPWU's current available supply of water is 131,000 acre-feet per year.

2 Environmental Protection Agency. Border 2020 Goals and Objectives. Accessed on October 4, 2016. Retrieved from < https://www.epa.gov/border2020/goals-and-objectives>

Careful planning that identifies the best areas for development while preserving large patches of ecologically important environments and functional wildlife corridors are essential for providing habitat for plants and animals, delivering a conduit for movement, and maintaining fundamental ecological process that affect the distribution, persistence, and structure of biological communities. Because the greatest threats to wildlife and biodiversity are habitat destruction, degradation, and fragmentation, purchasing land outright or protecting it through the application of conservation easements ensures the protection of lands important for habitat. However, which lands are conserved and in what pattern they are conserved is equally important for maintaining habitat connectivity and minimizing the destructive effects of habitat fragmentation. Prioritizing lands for acquisition maximizes the conservation benefit of each dollar spent (Environmental Law Institute 2006).

This type of managed approach is also critical for long term development planning. Developing the land will attract more people there to boost the local economy. Development will allow for the expansion of new industrial sites as well as areas for living. With easy access to Transmountain road and to New Mexico, the area could bring in many new businesses, families, and commuters to the area. Development can provide trails for commuting to encourage biking instead of cars.

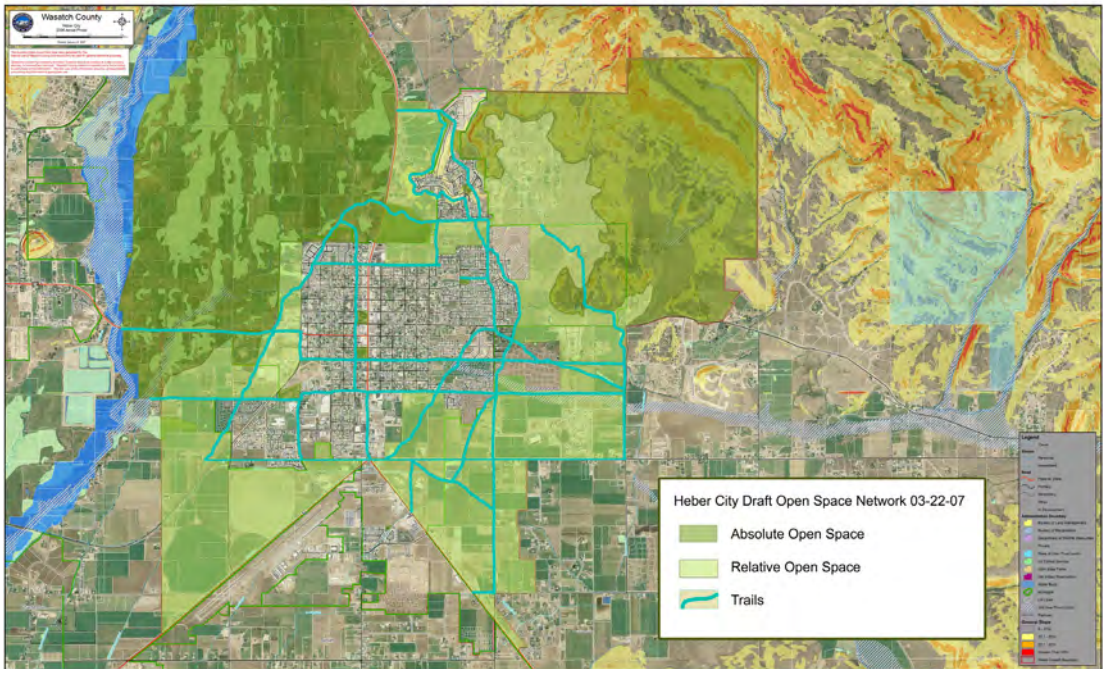

Figure 5: Example Open Space Network, CEDAR Planning Methodology, Sumner Swaner

The group has identified the following important expectations for the plan:

- **A plan is needed that can be approved by all stakeholders and interested parties.**
- **The plan should identify the social, environmental and economic value of land under conditions of preservation and development.**
- **The benefits of the plan should address holistic cost benefit strategies aimed at enhancing quality of life under a variety of conditions.**
- **The plan should suggest a methodology for vetting land sale and development decisions in El Paso and the immediately surrounding territory.**
- **The plan provides recommendations for a clear methodology to be used for alignment of social, economic, environmental and development values across broad stakeholder groups.**

To understand the power of how this decision will affect our future and the generations to come, one needs to learn why the recommendation is being made to conserve 50% of the land. Education, outdoor recreation and the maintaining of natural, open space connects each of us to an intimate knowledge of our environments and the life within. The health of our residents is one of the primary objectives that have been identified in the City's' recently-developed Strategic Plan. This natural land will improve the quality of life in our communities.

We have a shared responsibility to conserve and educate the community about our natural world: to use only what we need, make smarter choices, and pass on to future generations the beauty, wildlife, water and natural resources we have today.

Social Impacts

Social Equity and Environmental Justice

Exemplary of a strong border culture, the majority of El Paso residents identify as Hispanic (83%) and are Spanish speakers (65%). A large portion of El Paso families earn less than their counterparts across Texas. Just over 20% of El Pasoans live below the federal poverty line with certain neighborhoods exceeding 40%. Median Household Income, at 71% of the US average, is approximately $42,000 annually. It is no coincidence that this statistic relates to both economic and social vulnerability. Wages, educational opportunity, access to healthy lifestyle choices and social and physical mobility all reflect the barriers facing this population (City of El Paso Resilience Assessment, 2016).

A scarcity of parks and open space exacerbates an already unjust system for some El Pasoans. In a general evaluation conducted in 2013 in Northeast El Paso, findings showed that for a planning population of 110,900 there are just 4.22 acres of parkland (including non-City parks) for every 1,000 residents. In addition, there are only 1.6 acres of pocket and neighborhood parks per every 1,000 residents.[1] In comparison, according to the Trust for Public Land in the 2015 City Park Facts report, the median average for low-, medium- and high-density cities is 12.5 acres of parkland per 1,000 residents.[2] Adopting this recommended preservation criteria would help mitigate these inadequacies and would provide this underserved population with greater equality of services when compared to the rest of the state and the nation.

Health

A key finding in a 2011 American Heart Association review of more than 200 research studies was that for every $1 spent on building biking trails and walking paths an estimated $3 in medical expenses is saved (Trust for America's Health, 2012). The City of El Paso Department of Health identified obesity, diabetes, fitness and nutrition as the number one health priority for our community in 2013.[3] In addition, of patients admitted to El Paso Children's Hospital, bronchitis and asthma without complications has been identified as the number one general pediatric diagnosis. These statistics are indicative of a population suffering from a high level of preventable disease directly affected by the surrounding physical environment. The 2013 Department of Health study also identified the following 4 categories of potential impact across the health

1 El Paso Parks Facilities – General Evaluation Scorecard for Calendar Year 2013. Northeast PR Master Plan Scorecard

2 Trust for Public Land. 2015. 2015 City Park Facts. Retrieved from <https://www.tpl.org/sites/default/files/files_upload/2015-City-Park-Facts-Report.pdf>

3 City of El Paso - Department of Public Health (2013, July 31) Community Health Assessment Final Report. Retrieved August 2, 2015 from https://www.elpasotexas.gov/~/media/files/coep/public%20health/community%20health%20assessment%20final%20report.ashx?la=en

DID YOU KNOW ?

In 2010, more than 500 million gallons of "reclaimed water" were returned to the Hueco Bolson

continuum: Community Prevention, Clinical Prevention, Care and Treatment and Post Discharge Follow Up. In 2015, the Healthy Eating Active Living Plan[4] produced by the Insitute for Healthy Living noted that adults reporting "no leisure time physical activity in the past month" in 2010 (when the survey was conducted) in El Paso County was 28.7%. Increased access to outdoor public recreation space including parkland and trails can help increase the amount of physical activity in which adults enage on a monthly basis. In addition to physical health, increased access to outdoor public recreation space can also improve mental health. According to a study published in Psychological Science in 2008, performance on memory and attention tests improved by 20% after study subjects paused for a walk through an arboretum.[5] When these people were sent on a break to stroll down a busy street in town, no cognitive boost was detected. **A great opportunity for improvement for our community lies on the proactive, preventative healthcare end of the spectrum as a function of an improved urban condition supportive of human health and well-being.**

Nature deficit disorder research "indicates that one of the best antidotes to a stressful lifestyle is to spend time in natural settings outdoors. Children who spend time outdoors are likely to be: happier, healthier, smarter, more cooperative, better problem solvers, and more creative. Children need leisurely, unscripted, and exploratory hours to find the wonders in their own backyards and neighborhoods, from discovering the beauty of the stars in the night sky to watching lizards on a warm summer's day." (Cheryl Charles, Nature Deficit Disorder Special Edition, March 18, 2013)

Environmental Impacts

Water Resources

According to Towards a Bright Future, Mountains to River – A Green Infrastructure Plan for El Paso, it is believed that "30% of remaining arroyos connect to the edge of the Franklin Mountains State Park. These provide excellent potential corridors for trail access to the lower mountain areas, and also provide excellent corridors for natural drainage though El Paso. Many of these corridors are also longer than one mile in length..." **Arid lands, such as those found across El Paso, are associated with intense rainstorms that generate substantive rainfall impacts and locally high rates of overland flow runoff leading to flooding, hill-slope and channel erosion and high sediment concentration.** Preservation of specific areas would allow for vegetation to remain undisturbed and would assist in reducing erosion and flooding. Alternative methods to slow down, intercept and stabilize the flow of water are varied; however, using a combination of bioengineering and natural materials often produces the most effective results.[6]

Due to the tremendous growth El Paso is experiencing, the natural flow of water has been altered, causing large amounts of water during rainstorms to concentrate in developed areas instead of naturally filtering into the ground or flowing to the river. The Borderplex Alliance projects the population of El Paso County to grow by 69.7% between 2000 and 2040, so we can expect our landscape to change even more over the next 20 years.[7]

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4 Healthy Eating Active Living Strategic Plan. 2015. Paso Del Norte Health Foundation. http://pdnihl.org/wp-content/uploads/2015/03/HEAL-strategic-plan.pdf

5 Berman, Marc, Jonides, John, and Stephan Kaplan. 2008. Cognitive Benefits of Interacting With Nature. Psychological Science, Volume 19, Number 12.

6 Storm water, Arroyos, and Slope Stabilization Recommendations for Arid Lands. Austin, TX: Texas Parks and Wildlife Department, 2015. 4 pp. pamphlet. No author cited.)

7 Regional Data—Population. 2010. Borderplex Alliance. <http://www.borderplexalliance.org/regional-data/el-paso/overview/population>

In 2006, El Paso experienced one of the region's most severe storm events in recent memory. During that weather event, El Paso received 15 inches of rain over a four day period causing an estimated $180 million in property damage: "Storms in a saturated atmosphere repeatedly developed and moved over mainly the northwest third of El Paso County, concentrating in an area near the Franklin Mountains. Rainfall reports varied from 4–6 inches within 15 hours, with an isolated report of about 8 inches on the western slope of the mountain range. Antecedent conditions from 4 days of heavy rains, combined with terrain effects of the mountains, led to excessive runoff and flooding not seen on such a large scale in the El Paso area in more than 100 years."[8] Our mountains and arroyos naturally channel water to the Rio Grande, however, development near the mountain and increasing hardscape acreage at the city core with little regard for green infrastructure, capacity for stormwater absorption is greatly diminished.

As a result of the storm of 2006, emergency funding was pulled from existing capital bond funding to commence repair and reconstruction needed throughout the city: **"In total, $115 million of bond funding has been earmarked for the critical repair and reconstruction work needed within the City's road and storm water drainage system that is a direct result of Storm 2006."** A Presidential Disaster was declared on August 15, 2006 triggering a request for state and federal funding assistance. Retention ponds were breached, roads were destroyed, and over 69 houses were bought out as a result of irreparable damage.

DID YOU KNOW ?

During the Storm of 2006, El Paso received 15 inches of rain over four days and caused an estimated $180 million in property damage

Arroyos

Arroyos are ephemeral, unstable, and dynamic, and therefore particularly unsuitable for development. Attempts at controlling arroyos have unpredictable effects downstream, on surrounding arroyos, on flatter desert lands and on all the human structures they contain. Confining a dynamic system disrupts the natural ecological balance and creates erosion, incision, loss of habitat, habitat degradation and altered habitats. Increasing impervious areas by paving and curbing will invariably contribute to increased peak flows and will impair the storm water treatment functions that vegetated areas perform naturally. Traditional arroyo management using concrete walls, channels, and culverts, and building on floodplains creates unhealthy stream systems. Traditional methods are expensive to build and maintain and can potentially lead to more problems.

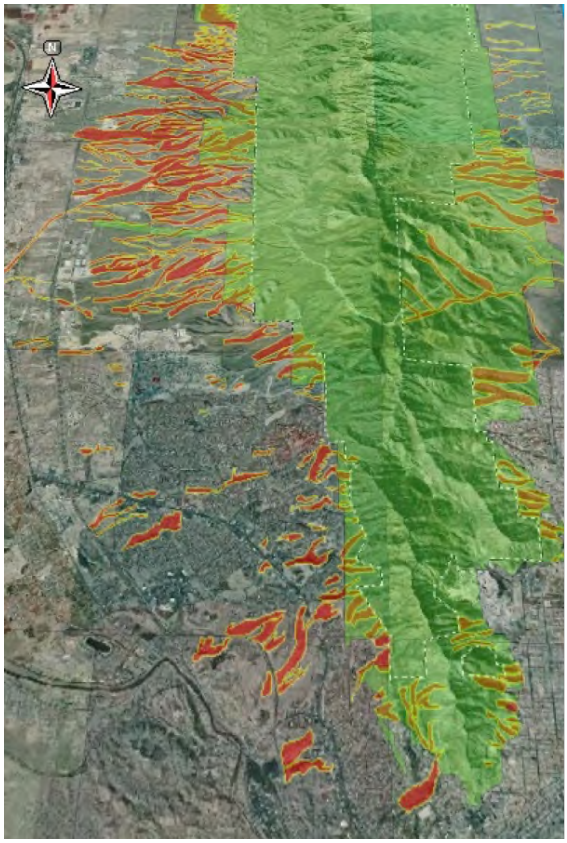


Figure 6: Arroyos along the Franklin Mountains (City of El Paso Planning Department, 2005)

8 Texas Almanac. Accessed on 10/3/2016. Retrieved from <http://texasalmanac.com/topics/environment/significant-weather-2000s>

Wildlife

Some wildlife species, such as, prairie dogs, black-footed ferrets, and Mexican wolves, may have been extirpated from the Franklin Mountains region because of human development. Other species present, such as mountain lions, mule deer, and some bird species, may also disappear from the Franklin Mountains if development eliminates critical habitat. There is interest in future research for the Chihuahuan Desert Species of Greatest Conservation Need, as listed in the Texas Parks and Wildlife State Conservation Action Plan 2012 (see Appendix E).

Economic Impacts

Infrastructure Investment and Resource Conservation

In the short term, through the use of taxes, the City supports development by extending services, such as fire departments, police departments, parks and recreation centers, sidewalk and road repairs, bike lanes, right-of-way maintenance, street lamps, etc.

Considering the long-term impacts of this, taxes for long-term development is not sustainable as the life span of the infrastructure expires, and maintenance is needed. On the other hand, if the land is kept undeveloped, based on the ecosystems services evaluation conducted for the open space land mentioned in the petition, less development may ultimately mean more tax revenue. Open space land requires very little maintenance and actually naturally provides services, that would otherwise come as a cost to the City of El Paso and El Paso Water, such as water recharge, storm water control, and dust control. In addition, open space provides an opportunity for recreation, which can promote health and wellness benefits, further decreasing the health care cost burden for the community.

Economic Development and Tourism

Protecting public lands also has the potential to attract significant ecotourism dollars driving a sustainable form of economic development. In 2006, Hueco Tanks brought in $582,207 in County sales, and $331,774 in County residents' personal income. In 2007, Hueco Tanks and Franklin Mountains State Park brought 72,644 visitors to El Paso County (Texas State Park, Natural Economic Assets). Additionally, studies show that many Americans, specifically seniors, flock to areas of the Southwest seeking homes set in the natural desert landscape and stable climate native to our region. Having access to beautiful open space adds to our quality of life and our experience economy, making El Paso an attractive area for businesses interested in relocating in our region. In addition, different habitat types are important to migrating species that stop, stage and feed on their way through El Paso. Some of these habitats are home to Southwest species that are not commonly found anywhere else in Texas, which attracts birdwatchers from across the state to view species such as the Crissal Thrasher, hummingbirds, Scaled Quail and Gambel's Quail.

Furthermore, property values tend to increase when adjacent to undeveloped natural areas. The real estate market consistently demonstrates that many people are willing to pay more for property located close to parks and open space areas than for a home that does not offer this amenity. The higher value of these residences requires their owners to pay higher property taxes, termed the "proximate principle" by Compton in 2004. In effect, this denotes a "capitalization" of park land into increased property values of proximate land owners.

Studies have found the potential for an increase in property value depends upon the characteristics of the open space and the orientation of surrounding properties. Property value increases are likely to be highest near those greenways which:

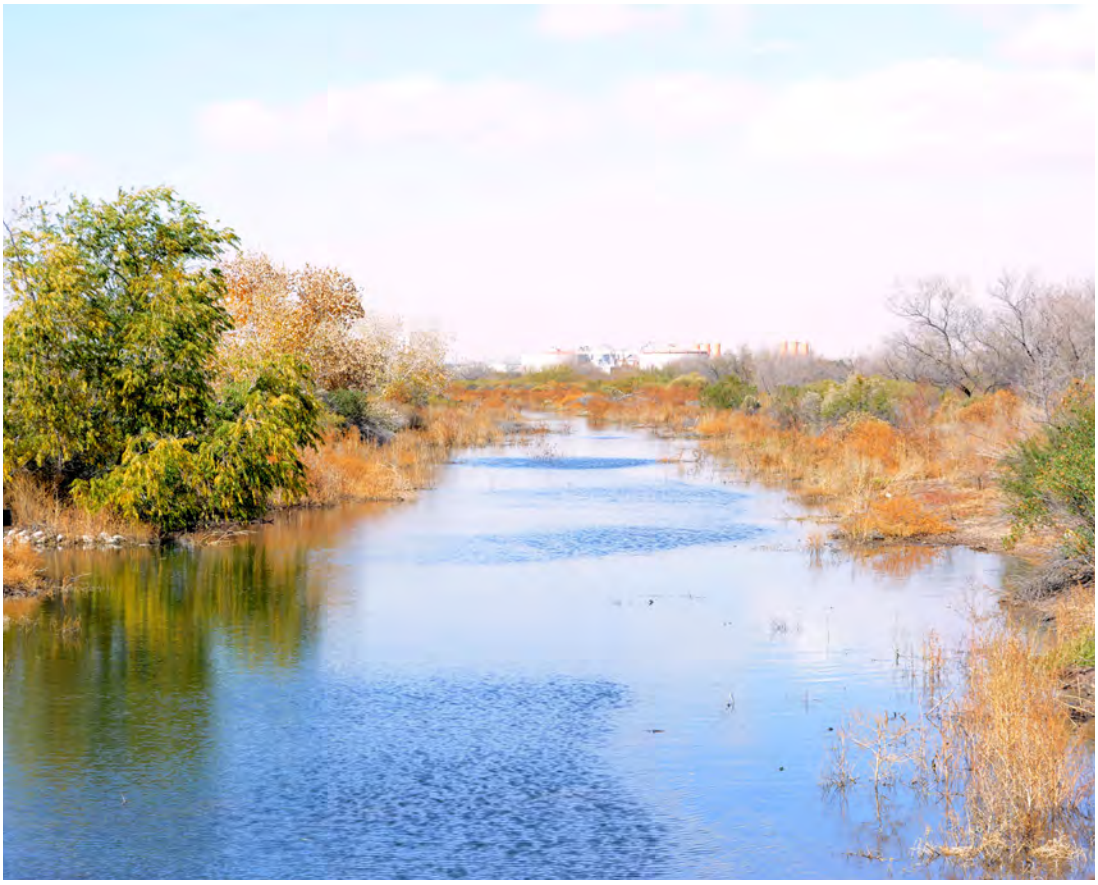
DID YOU KNOW ?

Value increase to homes located within 1,500 feet of the following types of parks:
Natural Areas: $10,648
Golf Courses: $8,849
Specialty Parks: $5,657
Urban Parks: $1,214

- Highlight open space rather than highly developed facilities
- Have limited vehicular access, but some recreational access
- Have effective maintenance and security

Many studies have revealed increases in property values in instances where the property is located near or adjacent to open spaces. In one study conducted in Boulder, Colorado, housing prices declined an average of $4.20 and up to $10.20 for each foot of distance from a greenbelt (up to 3,200 feet). Additionally, in Boulder, the average value of property adjacent to the greenbelt was 32% higher than those 3,200 feet away. **Another study found that urban land adjacent to the greenbelt was worth approximately $1,200 more per acre than urban land 1,000 feet away from the greenbelt boundary.** A study in Amherst and Concord, Massachusetts, found that clustered housing with open space appreciated at a higher rate than conventionally-designed subdivisions and their home yielded owners a higher rate of return, even though the conventional subdivisions had considerably larger lot sizes (Lacy, 1990). An analysis of property surrounding four parks in Worcester, Massachusetts, showed a house located 20 feet from a park sold for $2,675 (1982 dollars) more than a similar house located 2,000 feet away. In the vicinity of Philadelphia's 1,300 acre Pennypack Park, property values correlate significantly with proximity to the park. Conclusions showed properties where the homes that faced the park sold for between 7 to 23 percent more than homes one block from the park (Real Property Values. Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors).

In addition, the view-sheds of preserved flora and fauna are a critical economic asset to the the City of El Paso and surrounding areas. Undeveloped land is a limited resource that once developed out of its natural state cannot be easily restored therefore diminishing its value to the community.



The following section details the recommendations of this report. It is divided into different sections to guide the reader through the recommendations:

1. Overview: Recommendations for which PSB-owned land in the petition area should be fully conserved, should follow Conservation Development as outlined, or developed according to Smart Code with the possibility for some conservation development criteria to be incorporated.
2. Recommended criteria to be used to select which sections of a recommended Conservation Development land parcel should be conserved. The remaining sections can be developed and should include the recommended zoning requirements.
3. Methods for achieving conservation development
4. Visual example of how the recommended criteria can be applied to lands suited for conservation development
5. Additional considerations and recommendations
6. Future zoning and ordinance recommendations

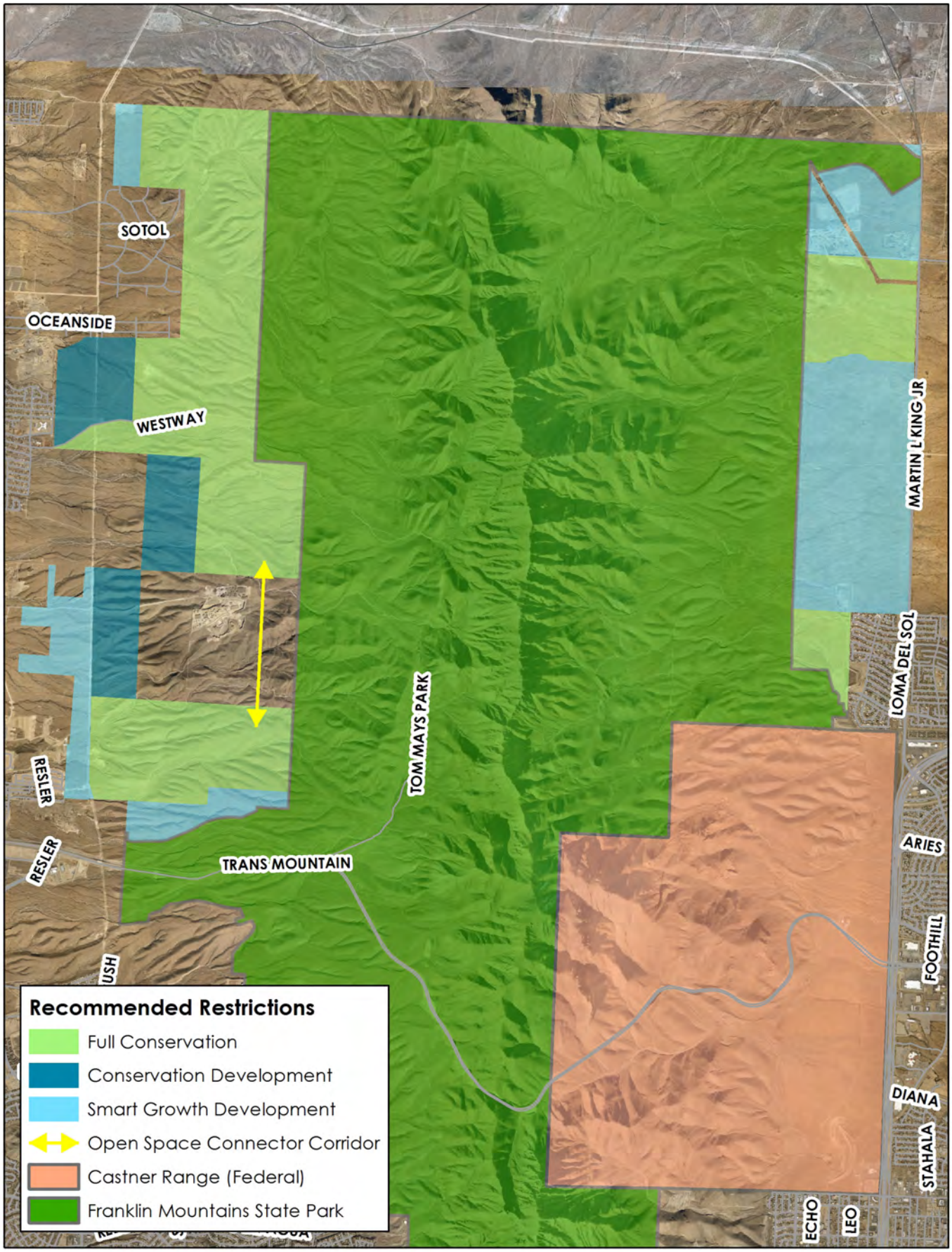


Figure 7: Recommended land within the petition area to be either fully preserved, lightly developed with the conservation development conditions or developed according to Smart Code (with some additional conditions as appropriate).

Note: The area recommended for Full Conservation on the east side of the Franklin Mountains is owned by the City, but the General Land Office holds the mineral rights, which are currently leased.

The purpose of this report is to:

1. **Develop criteria to identify which specific City owned, Public Service Board managed lands mentioned in the petition should be preserved;**
2. **Identify which lands can be developed, and;**
3. **To establish conservation standards for this development so as to ensure a high quality of life for present and future generations.**

The Public Service Board (PSB)-owned land that is being considered for sale falls into three separate levels of development shown in green, light blue, and dark blue on the maps to the left (page 26).

The **Conservation Area** (**green area)** (4,037 acres) is to have no disturbance in the form of development, it may be used for passive recreation if and when needed. The green area will allow all to remain as a natural habitat. The green area has the roughest terrain, steepest slopes and is a large mass of connected land that will allow for the water to hit the ground and flow downhill or be absorbed. As a reminder the original purpose for the City purchasing of these lands in the 1900s was for water conservation. To ensure that the land use does not change in the future it is being asked that a conservation easement be placed on the lands to ensure as the years go by that others do not attempt to sell and build on the Franklin Mountains. If the City lacks the capacity and expertise to manage the land we recommend that they enter into partnerships. One example is to form an Memorandum of Understanding (MOU) with the Franklin Mountain State Park (FMSP) or other Texas Parks and Wildlife Department (TPWD) divisions. This agreement will allow the City to have the ability to co-manage and share resources for cohesive oversight and give the FMSP future ability to expand trails with new access points to the state park.

The **Conservation Development Area (light blue)** (905 acres) has been designated to assist with the transition from non-developed lands to more highly developed lands. The conservation development area will have deed restrictions on what may be developed listed in the deed before the sale of the land. To ensure the deed restrictions are followed the land will be sold with a conservation easement, also listing the restrictions. The conservation easement would be placed on the land before it is sold to a private land owner. This will provide oversight to ensure that the development follows the deed restrictions. The sites that can be developed will be shown in the conservation easement as a "building envelope/zone," which designates where the structures will be built. The holders of the conservation easement are obligated to ensure that the land will be preserved and developed according to the terms stated in the agreement and the conservation easement, which will include regular site visits for monitoring and evaluation. In those designated building envelopes/zones, the criteria outlined on the next few pages will be used to ensure that the development is minimal and will have a low impact on the surrounding natural areas. As a future recommendation, a Conservation Development Zone that codifies the recommended criteria could be created to ensure the criteria is being followed. *Note*: The bulk of the following recommendation section will explain this conservation development criteria further.

The **Smart Growth Plus Some Criteria Area (dark blue)** (2,483 acres) will follow the existing City of El Paso ordinance for smart growth. Due to the fact there are arroyos, corridors, and trails that do go through all the mountain lands some of the light blue criteria will be considered before the final development plans are to be accepted. This must be done on a case by case bases as the land all varies. This can be done with a site walk and discussion with the developers.

The following sections describes recommended criteria that should be used to select which sections of a land parcel designated as "Conservation Development" on page 26 (Figure 7) should be preserved. This criteria is recommended to be included in the agreement between the PSB and a developer during the sale of PSB-owned land within the petition area.

After identifying which parcels should be developed or preserved based on this criteria, the remaining sections of the land parcel can be developed in a way that includes the recommended zoning requirements for Conservation Development (page 29).

Additionally, and where appropriate, this criteria could also be used to identify which sections of the Smart Growth Plus Some Criteria area (dark blue) could and should be conserved to enhance the quality of life in those masterplanned areas.

The method for how to apply this criteria in a way that ensures these conditions are met after the sale of land can be found on pages 32-34. A visual example of how this criteria can be applied to an area designated for Conservation Development can be found on page 36-37.

***This report recommends* that all Public Service Board (PSB) lands not scheduled for 100% preservation, with conservation easement(s), or considered for Smart Growth development with some conservation criteria, and are scheduled for development shall follow the principles outlined below for Conservation Development.** This report recommends that these principles be included in the sale agreement between the PSB and a developer, until a time when these principles can be codified in the form of a new Conservation Development Zone (CDZ) as established by the City of El Paso. Technical assistance may be provided by Texas Parks and Wildlife or Frontera Land Alliance to help apply this criteria.

Recommended criteria for identification of which sections of a land parcel designated at Conservation Development should be preserved

1. **The PSB-owned lands included in the Open Space Plan of El Paso**. The City of El Paso adopted the Open Space Master Plan, also known as "Towards a Bright Future: Mountains to River -A Green Infrastructure Plan for El Paso" on February 27, 2006. It is now incorporated within Plan El Paso, the City's comprehensive plan, which was adopted in 2012. Of the land listed in the Open Space Plan, the following are PSB-owned:
    - The remaining undeveloped lands in the "Mountains to River" Arroyo System north of Trans-Mountain Road, EPWU page 5-19 and 5-43.
    - Northeast Open Space - Bajadas, arroyos and canyons in buffer zones and NE Immediate to High Northeast Arroyos
    - Arroyo systems and canyons, page 5-11
2. **Lands containing any Primary Conservation Areas (PCA)**: FEMA, arroyos, wetlands, steep slopes > 20%, archaeological sites, and land parcels containing habitat and species listed in the Species of Greatest Conservation Needs and Rare Communities List found in the 2012 State of Texas Conservation Action Plan and the Chihuahuan Desert and Arizona- New Mexico Mountains Ecoregions Handbook, August 2012 (full

The annual value of ecosystem services within the El Paso study area is estimated to be between $3.4 million and $6.7 million (Appendix I: Earth Economics, Ecosystem Services Valuation, El Paso 2016).

description is on page 45, #17 of terminology) (Texas Parks and Wildlife Conservation Action Plan 2012).

3. **Large contiguous or connected natural areas** that contain Primary Conservation Areas
4. **Land parcels abutting or connected to the Franklin Mountains** or other large natural open space areas > 100 acres (Conservation Buffers, Design Guidelines for Buffers, Corridors, and Greenways 2008, Conservation Thresholds for Land Use Planners 2003, Dale, et. al. 2000 of America).
5. **Arroyos and other functional habitat corridors that have functional connectivity** that allows movement of species or populations and their genetic makeup among habitats and populations (Conservation Thresholds for Land Use Planners 2003, Dale, et. al. 2000, Hellmund and Smith 2006).
6. **Land parcels on lands with steep slopes > 20 percent** (Arendt 1996, Arendt 1999).
7. **Land parcels containing Secondary Conservation Areas (SCAs)** having ecologically sensitive habitat, such as arroyos, natural swales and berms, talus slopes, sky islands, rock-dominated canyons or formations, and sandy dunes, or with historical significance, such as events remembered that affected people on a large scale (Texas Parks and Wildlife Conservation Action Plan 2012). (full description is on page 45, #19 of terminology)
8. **Land parcels with habitat diversity that contain plant communities that vary in plant species richness** (number of different species), plant physiognomy (external appearance of vegetation, its vertical structure and growth form of the dominant taxa) and levels of plant succession (Conservation Thresholds for Land Use Planners 2003, Dale, et. al. 2000, The Ojai Valley Land Conservancy Conservation Criteria).
9. **Land parcels with a diversity (richness, variety and variability) of wildlife species (**Dale, et. al. 2000, The Ojai Valley Land Conservancy Conservation Criteria).
10. **Land parcels accessible for passive recreation to the public** (The Ojai Valley Land Conservancy Conservation Criteria).
11. **Buffer zones or land patches in sizes capable of sustaining plant communities (5.0 - 250 acres) and animal communities (2.5 acres – 3.5 square miles),** depending on the species or habitat of concern (Conservation Buffers, Design Guidelines for Buffers, Corridors, and Greenways 2008).
12. **Broad corridors (typically 0.7 - 1.2 miles for most of their length) to allow for trails** without compromising linkages for wildlife.
13. **Corridors > 300 feet needed for large mammals**, such as mule deer (Conservation Buffers, Design Guidelines for Buffers, Corridors, and Greenways 2008).

Recommended zoning considerations or requirements for the areas designated as Conservation Development (light blue, page 26)

1. **Density**. Zoning and density allocations are calculated for the benefit of the natural resources, where open space, not lot size, is the focus of the plan (Arendt 1999, Natural Lands Trust, Inc.). Density shall be established by City of El Paso's Planning and Inspections Department, based on zoning codes, to allow for maximum density of remaining, non-conserved land area. It is recommended that there not be lot size minimums in the Conservation Development Zone (CDZ), once created.
2. **Landowner Compact.** This technique permits abutting landowners to plan their combined properties comprehensively, allowing them to effectively erase the boundary lines separating their properties. Areas best suited for development and conservation could be located so the benefits are maximized across the abutting properties. This planning tool shall be permitted in the Conservation Development area and shall include property contiguous with the Conservation Development area, if permitted by property owners (Arendt 1999).
3. **Density Neutral.** Conservation Development goals shall be met without reducing permitted density of homes. The CDZ, once created, will not require uniform lot size.
4. **Inventory and Site Analysis Plans.** All parcels being proposed for Conservation Development shall prepare inventory and site analysis plans, that indicate all buildable, unbuildable, primary and secondary conservation areas and all of the significantly important landscape elements identified in the aforementioned criteria. Additional criteria can be added to the CDZ, once created, from time-to-time by future amendments.
5. **Site Visit.** All parcels being proposed for Conservation Development require all involved in the process—the developer, planning staff, Parks and Recreation staff, etc.—to conduct a site walk on the property before any engineering plans are put into place in order to identify the conservation areas to be preserved (McMahon 2010). If an in-person site visit is not feasible for all parties, a flyover or virtual option may be used.
6. **Sketch Plan Required.** All parcels being proposed for Conservation Development shall have a professionally-prepared sketch plan. The sketch plan shall illustrate the required elements mentioned above and any issues arising from the site visit. The sketch plan shall comply with all City requirements. The sketch plan shall use the Four-Step Design Process (Arendt 1996), which follows here:
    - **Step 1.** Identify the Primary and Secondary Conservation Area lands (see Terminology for full definition on page 45, #17, #19) that should potentially be protected. Use landowner's compact process as needed. 50-70% minimum open space is required.
    - **Step 2.** Locate housing sites or footprints; with minimum 80% of the dwelling units contiguous with preserved open space, the design shall attempt to have 100% of the dwelling units contiguous with the open space.

"Natural open space improves mental and physical health. Researchers hypothesize that exposure to the natural outdoors causes significant, measurable changes to the brain. These changes lead to clearer thinking, greater ability to focus and maximum cognitive ability. In short: enjoying nature makes you smarter. Recent studies have already linked spending time in nature with stress reduction and overall happiness" (Backpacker Magazine).

"Natural beauty reflects the value that people place on having a view of or access to nature. This value tends to be highest for land in close proximity to development and then decreases with distance" (Appendix I: Earth Economics, Ecosystem Services Valuation, El Paso 2016).

- **Step 3.** Design street alignments and trails, with consideration of the Planned Mountain Development code (20.10.370) which stipulates that streets in that district must prevent "undue scarring and grading," In addition, streets and trails should incorporate conservation design elements where appropriate, such as, narrow road cross-sections, no curb and gutters, and using drainage swales and green infrastructure techniques to harvest water on site and reduce runoff to the maximum extent possible.
- **Step 4.** Draw in lot lines, using conservancy lot design techniques as needed.

7. **Maintenance Plans.** All parcels being proposed for Conservation Development shall prepare planting plans, restoration plans and warranty instruments as required by this zone and further specified by the City.

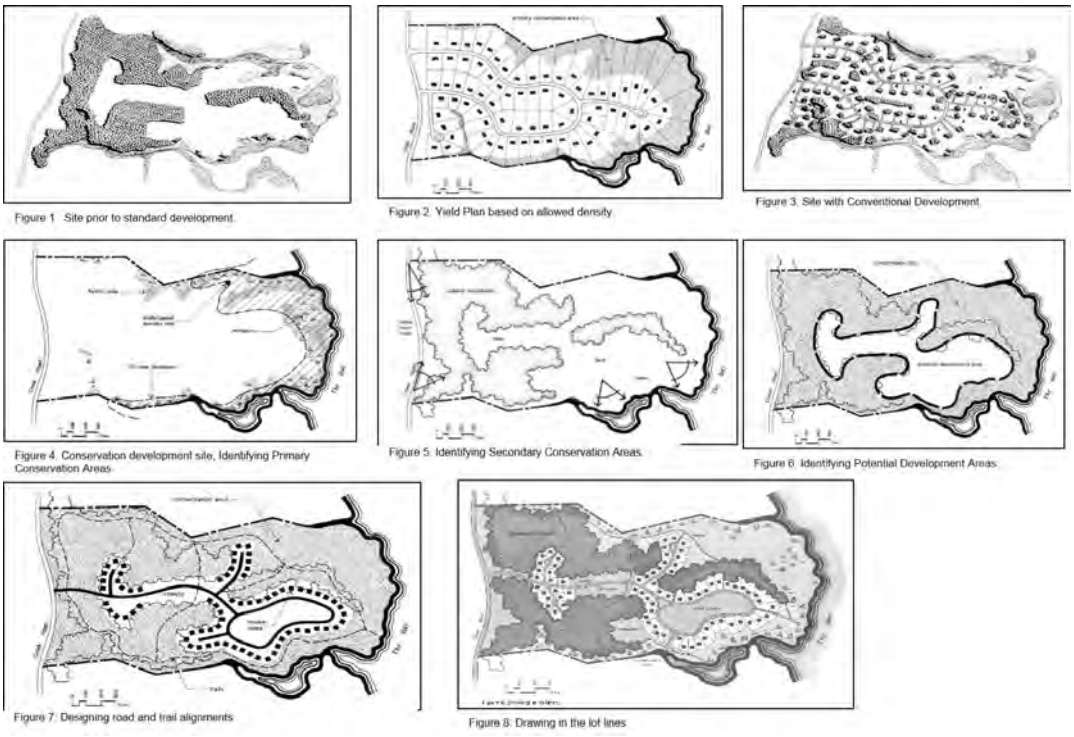


Figure 8: A comparison of standard development (Figures 1-3) versus conservation development (Figures 4-8)

It is recommended that the following actions be considered before development occurs.

Ecological Considerations

1. Examine the impacts of local decisions to understand the regional context across the landscape for species continuance and ecosystem sustainability (Conservation Thresholds for Land Use Planners 2003, Dale, et. al. 2000 of America, Kihslinger and McElfish 2009).
2. Plan for long-term change (10-50 years) and unexpected ecological processes over lengthy and variable time scales (Conservation Thresholds for Land Use Planners 2003, Dale, et. al. 2000 of America, Kihslinger and McElfish 2009). Biodiversity, biological resilience and integrity are directly proportional to the quantity and quality of undisturbed natural open space lands.

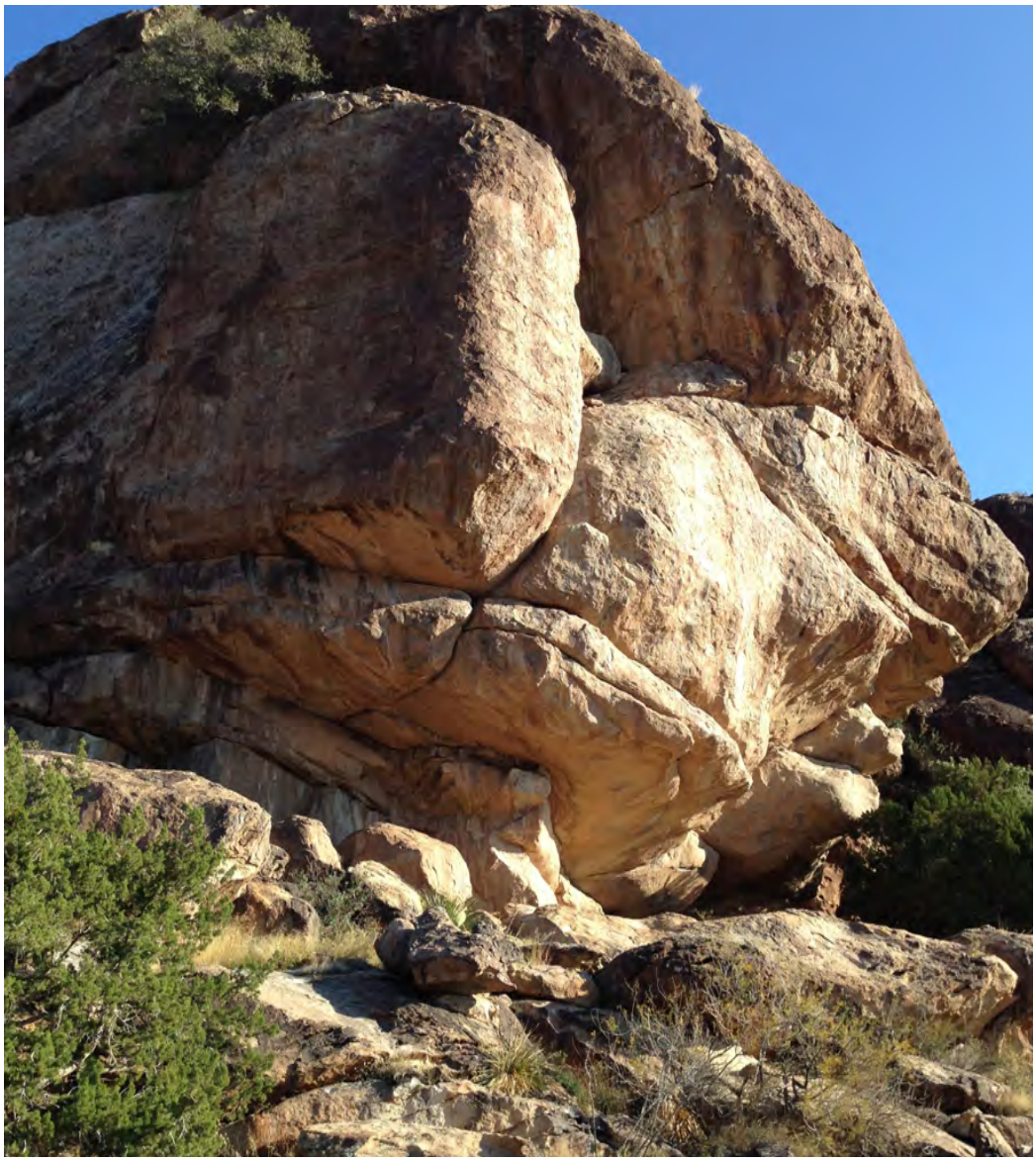
Lastly, it is recommended that the following standards regarding conservation practices be included in the sale agreement between the PSB and a developer.

Key Conservation Standards (to be considered DURING development)

- Avoid land uses that deplete natural resources over a broad area to prevent the irreversible disruption of ecosystems and associated processes (Dale, et. al. 2000 of America, Kihslinger and McElfish 2009).
- Retain large contiguous or connected areas that contain critical habitats and avoid fragmenting these areas to maintain more ecosystem processes and support a greater diversity, abundance and survival of plants and animals over time (Dale, et. al. 2000 of America, Kihslinger and McElfish 2009).
- The natural state of the land in development areas shall be preserved by eliminating mass grading, minimizing grading, and plant removal.
- The top soil which contains indigenous native plant seeds and nutrition removed by grading will be stockpiled at the site.
- Road and lot configuration shall maintain and preserve the natural topography, wildlife movement corridors, ecologically sensitive habitats, significant plant cover, as well as minimize cut and fill and preserve views on or off the subject parcel.
- Drainage plans should maintain the character of natural water flows to avoid concentrating flows and shall be designed using vegetative, or other pervious surfaces to enable water infiltration where appropriate.
- Avoid the removal or disruption of cultural features such as archaeological or historic sites.
- Structures should be oriented to maximize solar gain in the winter months and minimize solar gain in the summer months.
- Compensate for adverse effects of development on natural processes with revegetation of natural habitat and or mitigation (Dale, et.al. 2000).
- Minimize the introduction and spread of non-native species facilitated by the development of transportation infrastructure and the creation of edge environments and artificial landscapes. (Dale, et. al. 2000, Kihslinger and McElfish 2009).

"Watersheds in the U.S.-Mexico border region are shared bi-nationally, with rivers flowing from one country to the other or forming the international boundary. Protecting and restoring watersheds and water quality in these rivers and providing adequate drinking water and basic sanitation services requires collaborative bi-national, multi-jurisdictional planning efforts."

Environmental Protection Agency, Border 2020 Goals and Objectives



How to ensure the conservation development standards are followed: Methods to be used during the sale of land to ensure conservation

Despite having national and state legislation to protect rare and endangered species and their habitats, the region continues to suffer significant biodiversity loss. Additional incentive mechanisms and tools are available to conserve our regional biodiversity. Incentives are necessary to supplement other conservation tools, such as regulation and land acquisition. To ensure that an incentive mechanism continues to be biologically effective, there must be outcome-based evaluation and adaptive management systems in place.

Conserving land carries with it many long-lasting benefits for our state. By preventing more land from being covered in concrete, we are ensuring that more of the precious little water that falls will soak into the ground and our aquifers, replenishing our water supply. Also, conserving land protects habitat for iconic Texas wildlife. As some may know, today we face the dilemma of how to maintain our rivers, lakes, aquifers and springs along with the working ranches and natural areas of our watershed. About 80 percent of Texas farms and ranches are now less than 500 acres. Farms and ranches between 500 and 2000 acres in size are declining. Because ninety-four percent of Texas land is privately owned, maintaining open space is ultimately up to us.

Locally, the region is facing some tough issues. For instance, there are just 1.38 acres of park space for every 1,000 persons in El Paso and in a city like Minneapolis they have 13.3 acres per 1,000 residents. We continue to experience flood damage that results from the filling or alteration of arroyos. Responding to these and other challenges requires concerted action and collaboration from all stakeholders. Unless we work together as one region across political boundaries, we may be overwhelmed by the dramatic shifts in demographics and changes in our environment.

The following section lists possible methods that may be used during the sale of City land to ensure conservation values are protected.

Transfer of Development Rights Programs:

Local governments undertake transfer of development rights (TDR) programs to use the market to implement and pay for development density and location decisions. TDR programs allow landowners to sever development rights from properties in government-designated low-density areas, and sell them to purchasers who want to increase the density of development in areas that local governments have selected as higher density areas. TDR programs appear to offer many advantages to local governments that want to control land use but also compensate landowners for restrictions on the development potential of their properties. TDR programs can be easier to implement than typical zoning programs; they make development more predictable and use the market to compensate landowners for lost property value. TDR programs are also more permanent than traditional zoning regulations (Jason Hanly-Forde, George Homsy, Katherine Lieberknecht, Remington Stone).

"The value of stored carbon, carbon stock, is included in the asset value. A forest provides an annual carbon sequestration service via growth that draws carbon from the atmosphere. The forest also holds a great deal of carbon within the trees, the stock. Similarly, shrublands in El Paso hold carbon in the plant material and soil... Carbon sequestration and storage is a critical, natural process that reduces the amount of carbon in the atmosphere and slows climate change. Carbon markets are now emerging around the world where land owners are paid to protect and expand forests to increase the amount of carbon removed from the atmosphere and offset fossil fuel emissions" (Appendix I: Earth Economics, Ecosystem Services Valuation, El Paso 2016).

Conservation Easement (Agreements):

The City of El Paso owned land can be sold with the condition that a specific part of the land will have placed on it a conservation easement at the end of year two by the new landowners. Conservation agreements (also known as a conservation easement) offer great flexibility. If the donation benefits the public by permanently protecting important conservation resources and meets other federal tax code requirements it can qualify as a tax-deductible charitable donation. The amount of the donation is the difference between the land's value with the easement and its value without the easement. Placing an easement on your property may or may not result in property tax savings. Conservation agreements permanently limit uses of the land in order to protect its conservation values. It allows the owner to continue to own and use your land and to sell it or pass it on to heirs. Future owners will be bound by the agreement's terms. By protecting these lands, land trusts help ensure that every Texan has access to clean water, the freedom and peace granted by natural areas and the opportunity to be physically connected to our natural and cultural heritage.

Sell the land with conservation easements on the land: There are a few scenarios for how this could happen:

- The conservation easement may be placed on a specific trail, an arroyo, or acres of land, but still allows for land to be developed next to the conservation easement.
- The City of El Paso exchanges mountain land with a conservation buyer for other lands that are more suitable for development. The new owner of the land buys the land with the understanding of the criteria that accompanies the land, which may range from no development to development with limitations.
- The City of El Paso may sell the land with restrictions on how the land may be developed
- Sell (or give) to Texas Parks and Wildlife Department which will result in increased revenue from tourists for the region and improved connectivity to the Oregan Mountains Desert Peak National Monument trails, and a buffer to the existing state park.
- Public Improvement District (PID): Developers or neighbors to land that are up for sale could be purchased through the use of PID. This ensures the developers and or the neighbors will know the land remains open and natural, which in turn increase the value of their development/homes.

Tax for Land Conservation: The City of El Paso could establish a tax to assist with land conseration. Example: Conservation-minded Georgians wanting to help preserve the state's natural resources and have the opportunity to donate to the Georgia Land Conservation Program (GLCP) through their 2015 state income tax forms. The GLCP has used the donated funds since 2005 to

permanently protect 39,229 acres of natural, agricultural and historical lands. The GLCP is part of Checkoff Georgia, a marketing and education initiative designed to educate tax filers on how their donations are used. More information can be found at www.checkoffgeorgia.com. Individual taxpayers may donate to the GLCP by adding a dollar amount to line 29 on Georgia Form 500 or line 13 on Georgia Form 500EZ. This amount is subtracted from the overall refund or added to the overall payment. Contributions are deductible in tax year 2016. For more information on the GLCP, please visit www.glcp.ga.gov.

Chihuahuan Desert Nature Center and Drive-Through Native Wildlife Park

All across the country many communities have been very successful in helping people connect with their natural environment. Some of these ventures are private, others are municipal. All have the potential to create new revenue opportunities and jobs in our city. For example, in Austin, Texas the City created a very successful Nature and Science Center. A Chihuahuan Desert Nature Center could be developed to provide educational and discovery opportunities to complement the new Chihuahuan Desert exhibit scheduled to open at the El Paso Zoo in 2018 and the new Franklin Mountains State Park Visitor Center at Tom Mays. The Nature Center could be modeled after the Chihuahuan Desert Nature Center in Fort Davis, Texas where visitors pay an entrance fee. The idea of a drive-through Northern Chihuahuan Desert Nature Park was first proposed at the El Paso Environmental Summit in 2014. The response of the over 300 people in attendance was overwhelmingly positive. Drive-through nature parks feature wildlife species in their natural habitat. A wildlife park, with both the drive-through park and nature center located adjacent to each other, could become another new revenue source for El Paso and add to El Paso's quality of life.

Benefits of Development Conservation Standards

Conservation Development preserves 50% to 70% or more of the buildable land, with a much higher quality and percentage of land than clustering.

The benefits of conservation development include:

- **Protection of clean water in streams, arroyos and drainages and reduced storm water run-off and treatment costs**
- **Conservation of groundwater: Natural areas allow water to infiltrate, leading to reduced flooding**
- **Cleaner air: Most trees and vegetation are left intact, helping combat climate change**
- **Preservation of the City's rural character, vegetation, wildlife, trails, viewing, topography, and tourism/ agricultural economies**
- **Reduction of costs associated with the future purchasing of open space for recreational activities desired by the community money**
- **Equivalent number of homes: By taking advantage of these conservation development standards, the same number of home sites can be built as compared to a conventional subdivision development,**
- **Fairness to developers and landowners: Homes that factor in conservation development have been proven to be more profitable and faster-selling.**

The following model code provisions are provided as examples of embedding ecologically sensitive landscape types into land use planning policies (Swaner, per. Comm. 2016). The City of El Paso has existing development regulations that are complementary to some of the recommendations made in this report.

Zoning Districts which currently exist:

The **Natural Open Space (NOS)** zoning district is intended to protect ecologically sensitive lands and to prohibit those activities that would adversely affect the environmental characteristics of the land, while still permitting passive recreational use. The NOS is also intended to preserve land that, if disturbed, may be susceptible to flooding and soil erosion due to steep slopes and significant quantities of stormwater runoff. It would be appropriate to apply the NOS zoning district to PSB land designated for full conservation.

The **Planned Mountain Development (PMD)** zoning district is intended to provide design alternatives that serve to minimize disturbance of the natural character of mountainside areas and which enhance the open space and aesthetic qualities of the land. The PMD is designed to protect, stabilize and enhance the development of environmentally sensitive lands, and to preserve them from the encroachment of highly intensive forms of development. Limitations to the PMD include its focus on mountainside land, meaning it would not be an appropriate zoning district for all PSB land. Additionally, while the PMD limits development, it does not prohibit development, even on very steeply-sloped land.

Recommended Zoning Districts

The **Conservation Development Zone (CDZ)** recommended by this report for future adoption would establish requirements that ensure that environmentally significant areas within otherwise developable lands would be protected. In turn, development on the remainder would be permitted at relatively high degrees of intensity. The CDZ is not currently a zoning district codified by the City of El Paso, and its implementation would require significant work to draft code language and calibrate regulations, however, it would be a more effective mechanism for ensuring sensitive development of PSB land. The criteria recommended by this report for conservation development would be the basis for the CDZ.

Application of Recommended Selection Criteria

The committee has identified the following seven steps necessary for application of the recommended selection criteria to proposed land area:

1. Identify and map existing development, highly disturbed lands, such as quarries, and the Primary Conservation Areas (PCAs) identified on page 45, #17 onto a base map.[1]
2. Identify and map the secondary conservation areas (identified on Page 45, #21) including scenic views, historically significant and natural lands with passive recreational value on to the base map (Dale, et. al. 2000, Texas Parks and Wildlife Conservation Action Plan 2012).
3. Use overlays on the map of all the defined resources on the base map (Steps 1 and 2) to form an "open space" map (Arendt 1996, Arendt 1999, Swaner 2006) (Figure 9).
4. Locate the habitat gaps on the "Open Space" map by locating the disconnections between the designated open space areas to preserve (Figure 10).

1 Kihslinger, R. and J. Jr. McElfish. 2009. Nature-Friendly Land Use Practices at Multiple Scales. Environmental Law Institute, Washington, D.C.

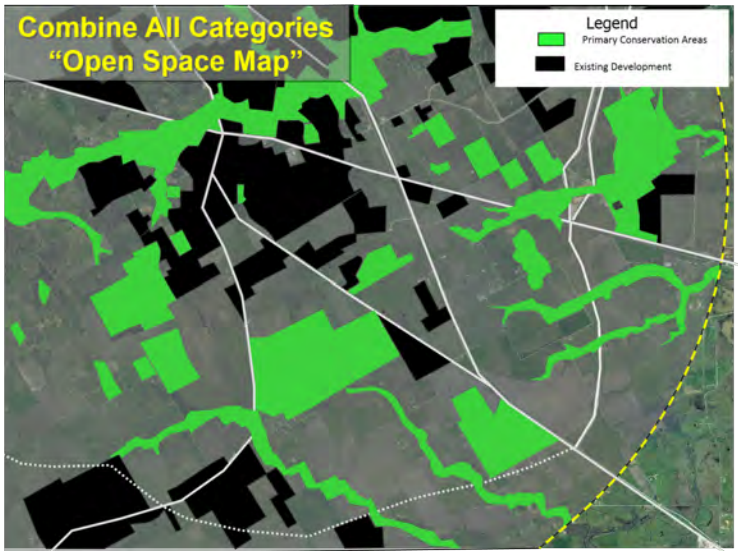


Figure 9: Example of the "Open Space Map" (steps 1-3)

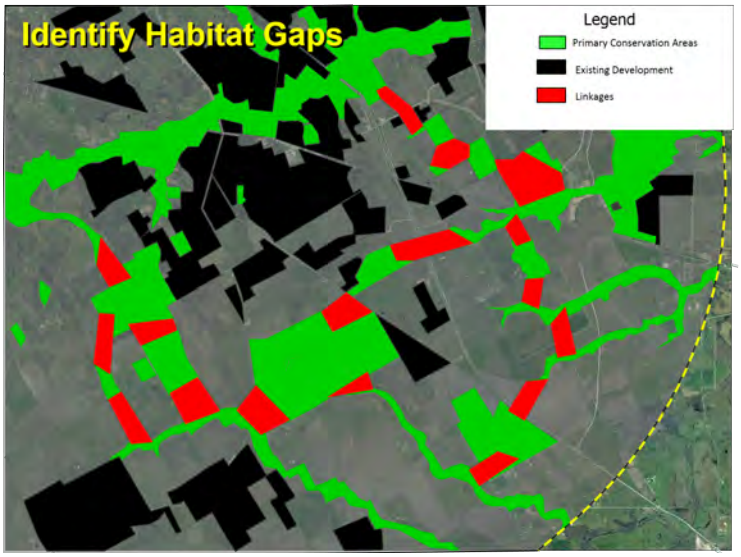


Figure 10: Example of an "Open Space Map" with habitat gaps in red (step 4)

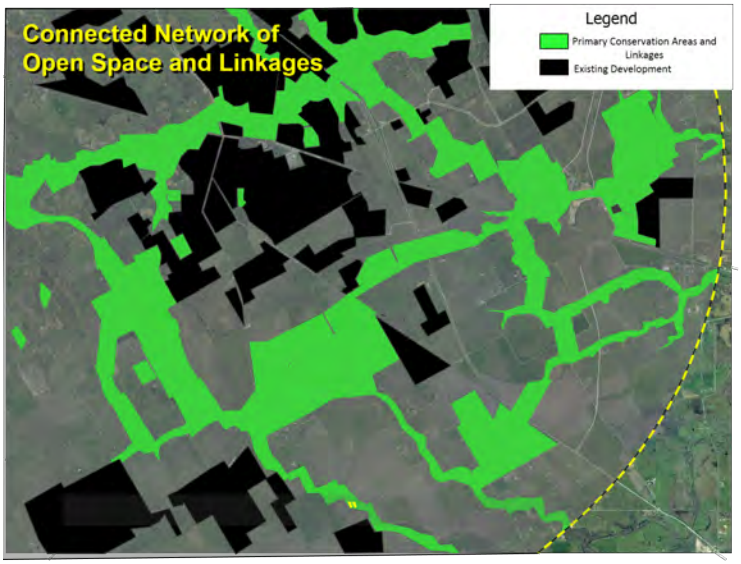


Figure 11: Example of a "Connected Open Space" in green and existing adjacent development (steps 5-6)

Figure 12: Connected open space map and placement of densities (step 7)

5. Determine the linkages to the natural open space areas (Arendt 1996, Arendt 1999, McElfish 2004, Swaner 2006). Linkages between essential natural open space areas ensure that critical movement patterns between habitats are maintained for fauna.
6. Connect the resources and linkages on another "Connected Open Space" overlay (Figure 11) with a connected network circuity that has all corridors connected to all of the open space areas to facilitate the movement of wildlife, plants, and their genetic materials.[2]
7. The "Connected Open Space" overlay identifies areas that should be preserved.[3] Development densities (low, medium, high) can now be determined for the remaining unpreserved land, based on proximity and relationship to preserved space.

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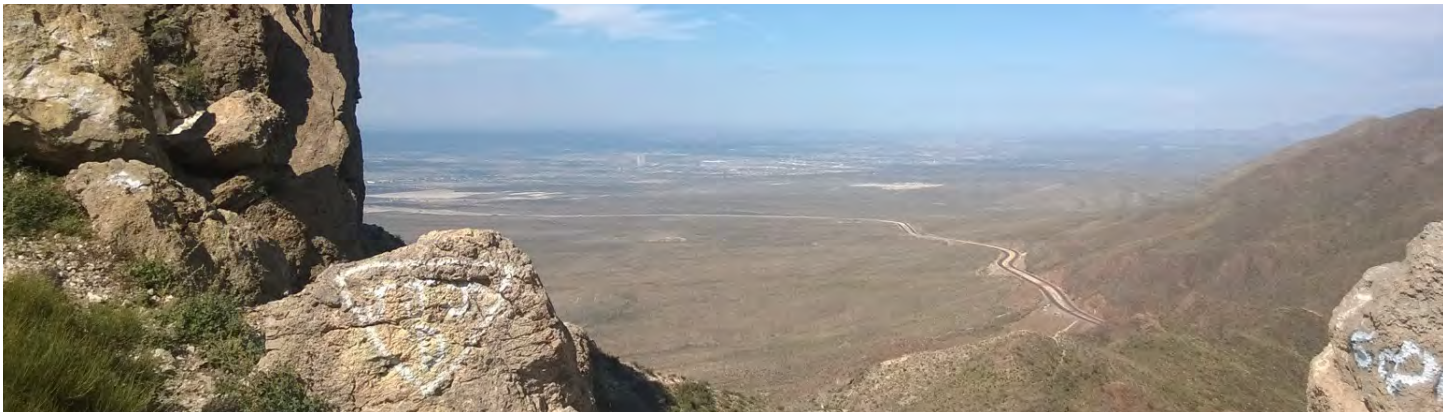
2 Kihslinger, R. and J. Jr. McElfish. 2009. Nature-Friendly Land Use Practices at Multiple Scales. Environmental Law Institute, Washington, D.C.

3 Kihslinger, R. and J. Jr. McElfish. 2009. Nature-Friendly Land Use Practices at Multiple Scales. Environmental Law Institute, Washington, D.C.



Beyond consideration of the PSB-owned lands in the petition, there are additional zoning and ordinance changes that could be made that align with the intentions of this report. These recommendations could be considered in future long-term planning conversations.

Future Zoning and Ordinance Recommendations

1. **Open Space Tract Size.** Remove restrictions that prevent cities from achieving interconnected open space networks that would be lost if linkages involve parcels smaller than 25 acres (Arendt 1999, Natural Lands Trust, Inc. 2001).
2. **Lot size and density**
    - Enable Lot Size Reduction: Permit reductions in lot size minimums when a developer is preserving a significant percentage of land as open space or allow for a sliding density (Arendt 1999, Natural Lands Trust, Inc.).
    - **Density Incentives.** Conservation design standard where full standard density is only allowed through the use of the CDZ where > 50% of the site as natural open space. (Arendt 1999, Natural Lands Trust, Inc. 2001).
    - **Density bonuses** given for preserving more land. *Example*: A yield plan of 18 two-acre lots (Arendt 1999).
        - Option 1 is density neutral with 18 smaller lots, with 50% open space.
        - Density bonus of 24 lots that preserves 60% open space.
        - Density bonus 36 lots (100%) and preserves 70% open space.
    - **Provide Options for Permitted Density** (net developable acreage) (Arendt 1999). This could include the application of Density Factors for different types of land subject to environmental constraints within a tract to determine the adjusted tract acreage (ATA). This could also include a Yield Plan process, in which the primary and secondary conservation areas are identified first to determine the potential development areas, instead of using the conventional layout (sprawl) of maximum lots **(Figures 1-9).**
3. **Requiring CDZ in Certain Situations.** Parcels proposed for development along the pre-determined conservation lands found in the El Paso Open Space Plan.
4. **Adoption of an arroyo ordinance that protects arroyos and their surrounding buffer** and prohibits development in floodplain and arroyos without loopholes, maintains native vegetation (that are regionally appropriate and provide a suitable habitat) in the buffer zone, prohibits dumping debris, clearing, excavating, filling, alternative drainage, and impervious paving in the floodplain or within 100 feet on both sides of an arroyo's overbank (Fischer and Fischenich 2000, Spence et. al.1996).
5. **Adoption of a City of El Paso zoning ordinance with maps and overlays for an "open space" map** that outlines the basis for development density and locations considering the biological needs of the resources to be protected, and to set specific uses and densities that are designed to conserve continuous lands, protect biodiversity and key areas, and concentrate development in other places (Arendt 1997, Arendt 1999, Honachefsky 2000, Swaner 2006).

"As the region's population dynamics are shifting, leaders must plan for the future; taking into consideration the evolving needs from the continuing rural to urban migration, changing demographics, and intensified pressure on our land, water, and wildlife resources" (Texas Outdoor Recreation Plan, 2012, Texas Parks and Wildlife Department).

6. **Adoption of a City of El Paso development ordinance that prohibits development on steep slopes > 20%** (Arendt 1997, Arendt 1999, Lehigh Valley Planning Commission 2008, Steep Slope Development Standards 2003).[1] Slopes are naturally unstable yet sloping terrain serves as groundwater recharge areas and is prone to severe erosion if disturbed.
7. All subdivision, land development and planning, growth management, and infrastructure zoning ordinances should reference the City of El Paso's "The Plan for El Paso" approved by the City Plan Commission (on April 22, 1999, and City Council on April 29, 1999), and the "Towards a Bright Future: Mountains to River -A Green Infrastructure Plan for El Paso" (Open Space Plan) approved Feb 27, 2006 to support and implement biodiversity goals.
8. Adoption of an impervious surface ordinance **that allows developers other** "soft" infrastructure. The ordinance would require developers to consider the use of vegetation, grass swales, etc., as an alternative to concrete gutters and canals.
9. **Only native plants are allowed** to be used in all developed lands including urban and suburban and public and private infrastructures (Dale, et.al 2000).
10. **Adoption of a vegetation control ordinance** that prohibit the introduction of exotic invasive plants during the development, allow developers to count protected native habitats for some or all of the landscaping requirements in zoning code, and set a standard for public owned land to prefer or require native plants in government projects and lands.
11. **Adoption of a weed control ordinance** that clearly differentiates between unkempt yards with non-native, invasive and noxious weeds and yards full of healthy native vegetation.
12. **Adoption of a stormwater management/sediment and erosion control ordinance** that encourages the use of rain gardens, bioswales, and constructed wetlands.
13. **Prohibit the feeding of wildlife, domestic and feral dogs and cats**, excluding songbirds and hummingbirds (Dauphine, et.al. 2011, Texas Parks and Wildlife Feral Cat Briefing Paper 2014, Winter et.al, 2006).
14. **Prohibit freely roaming feral dogs and cats** to minimize the impact on native fauna (Dauphine, et.al. 2011, Texas Parks and Wildlife Feral Cat Briefing Paper 2014, Winter et.al, 2006).

1 Steep Slope Development Standards, Planning and Zoning in Michigan, adapted from the 'Shiawassee & Huron Headwaters Preservation Project' developed by Oakland County Planning and Carlisle Wortman & Associates

CONCLUSION

This report provides sound information and materials gathered from a plethora of scientific data to support our recommendations on the tools and techniques needed to prudently determine which Public Service Board-managed lands should be preserved without development and which lands should be conserved using either light development or development with special criteria. The recommendations will have significant positive benefits to the health and welfare of the community, our precious regional natural resources, and the developers. It is the hope of the Preservation and Conservation Planning (PCPC) committee that the PSB will use this landmark report that would then be a foundation for development of natural lands for the City and County of El Paso.

This report has been produced with many diverse perspectives. The purpose of the group was to develop criteria to identify which specific City owned, Public Service Board managed lands mentioned in the petition should be preserved, which lands can be developed, and to establish conservation standards for development so as to ensure a high quality of life for present and future generations.

The PCPC believes that we are presenting well-vetted criteria that will identify and classify lands that best accommodate development while also considering appropriate conservation of land. The report has been written based on scientific data. The data is intended to assist in land sale and development decision making.

The committee has taken into consideration the recommendations presented in Plan El Paso, the Northwest Master Plan, the El Paso Livable City Sustainability Plan, the El Paso City Resilience Assessment and the El Paso Open Space Plan, as well as priorities brought forward by community stakeholder groups. The key theme that emerged was to build a stronger El Paso through future development and conservation that are mutually beneficial, reinforcing and balancing people, planet, and prosperity in our region. Conservation and development should not be viewed as being in conflict with one another.

The resulting goals identified to safeguard natural and cultural features, improve wildlife habitat and natural habitat connectivity, address the health of our regional watershed, contribute to the local economy of our communities, and expand understanding of ecosystem services valuation. More specifically this plans shows some of the key benefits of conservation criteria for development are: Reduced infrastructure costs for flood control, increased ecotourism that boosts the local economy, and a healthier community and workforce.

The PCPC recommends the criteria presented here for adoption by the PSB in reference to lands identified in the aforementioned petition. The Committee would also like to advocate for commencement of discussion with City staff regarding application of the recommended criteria for all municipally owned undeveloped land within the jurisdiction of the City of El Paso. The PCPC would like to also advocate that this criteria be applied to additional lands outside of the petition area, to include: the PSB lands included in the “Towards a Bright Future: Mountains to River -A Green Infrastructure Plan for El Paso, also known as The Open Space Plan, listed in Chapter 5, Major Arroyo System to be Preserved, page 5-19 and Upper Northwest Arroyos, pg.5-43, and lands that are either large, contiguous or connected to natural areas containing floodplains, watersheds, arroyos, steep slopes > 20%, significant wildlife habitats, species identified in the Texas Parks and Wildlife Conservation Action Plan 2012, or that are accessible for passive recreation to the public.

"When ecosystem services are lost, communities pay. Loss of natural flood protection, wildlife habitat, and clean drinking water often requires that communities build facilities to replace lost ecosystem services. Shrublands, riparian buffers, and wetlands all provide flood protection. These ecosystems are able to slow, absorb, and store large amounts of rainwater and runoff during storms. Changes in land use and the potential for more frequent storm events due to climate change make mitigation of extreme events one of the most important services for economic development" (Appendix I: Earth Economics, Ecosystem Services Valuation, El Paso 2016).

1. **Biodiversity:** The variety of life at every hierarchical level and spatial scale of biological organizations: genes within populations, populations within species, species within communities, communities within landscapes, landscapes within biomes, and biomes within the biosphere. (E. O. Wilson (1988))
2. **Biological diversity:** the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems. http://www.biodiversitya-z.org/content/biodiversity
3. **Biological dispersal:** The movement of individuals (animals, plants, fungi, bacteria, etc.) from their birth site to their breeding site ('natal dispersal'), as well as the movement from one breeding site to another ('breeding dispersal'). https://en.wikipedia.org/wiki/Biological_dispersal.
4. **Carrying Capacity:** (Ecology) the number of species or populations of living organisms that a region can support without environmental degradation. http://www.merriam-webster.com/dictionary/carrying%20capacity.
5. **Conservation:** The act of conserving: prevention of decay, waste, or loss; preservation; conservation of wildlife; official supervision of rivers, forests, and other natural resources in order to preserve and protect them through prudent management; the careful utilization of a natural resource in order to prevent depletion.
6. **Dynamic:** Always active or changing; having or showing a lot of energy; of or related to energy, motion, or physical force. http://www.merriam-webster.com/dictionary/dynamic
7. **Ecological**: Relating to the relations and interactions between organisms and their environment, including other organisms.
8. **Ecological services:** The important benefits for humans that arise from healthily functioning ecosystems, notably the production of oxygen, soil genesis, erosion control, infiltration of storm water, flood prevention, purification of water and air, pollination of plants and decomposition of waste. http://www.dictionary.com/.
9. **Ecologically Sensitive Habitat:** Lands that are slow or unable to recover from human impacts, such as deserts. Lands that support unique vegetation communities, or the habitats of rare or endangered species.
10. **Ecosystem:** 1. A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. Convention on Biological Diversity 1992. 2. Ecosystems are the smallest unit of a living system which is functionally independent. They have four main elements – biotic, abiotic, interactions of energy flows, and a physical space in which to operate. http://biodiversitya-z.org/content/ecosystem
11. **Extirpation:** (Biology) To destroy or remove completely, as a species from an particular area, region, or habitat. http://www.ecologydictionary.org/
12. **Extinction:** Species where it is no longer possible to recreate a breeding population. Extinction is absolute when there are no breeding males (semen), breeding females (oocytes), nor embryos remaining.
13. **Functional Connectivity:** 1. describes the ease with which individuals can move about within the landscape as a function of the organism's behavioral response to landscape elements and the spatial configuration of the entire landscape (Kindlemann & Burel 2008), 2. The extent to which a species or population can move among landscape elements in a mosaic of habitat types (Hilty et al. 2006).
14. **Historical Significance:** Events remembered that affected people on a large scale (Texas Parks and Wildlife Conservation Action Plan 2012). Historical significance is often determined by historians, authors and educators on three criteria: - how notable the event was at the time, - how widespread and lasting the consequences of the event were, and - how symbolic or representative of historical issues or trends the event were. 2014 edition of Teaching Historical Thinking
15. **Landscape Connectivity:** Landscape Connectivity can be broken down into 'structural connectivity' and 'functional connectivity.' Structural connectivity refers to the physical relationship between landscape elements whereas functional connectivity describes the degree to which landscapes

actually facilitate or impede the movement of organisms and processes. www.wildlandsnetwork.org/sites/default/files/terminology%20CLLC.pdf

16. **Preservation**: To keep alive or in existence; make lasting; to keep safe from harm or injury; protect or spare; to keep up or maintain.
17. **Primary Conservation Areas:** FEMA, arroyos, wetlands, steep slopes > 20%, archeological sites archeological sites and land parcels containing habitats and species listed in The Species of Greatest Conservation Needs and Rare Communities List found in the 2012 State of Texas Conservation Action Plan [(T) State Threatened Species, (E) Federally Endangered Species]:
    - **Amphibians and Reptiles**: Woodhouse's toad, ornate box turtle, red- eared slider, Chihuahuan mud turtle (T), spiny softshell turtle, Rio Grande cooter, Texas horned lizard (T), mountain short-horned lizard (T), Dixon's whiptail, reticulated gecko (T), Chihuahuan Desert Lyre Snake (T), Western hog-nosed snake (T), Western diamondback rattlesnake, prairie rattlesnake, Massasauga.
    - **Birds:** Western burrowing owl, golden eagle, American kestrel, Aplomado falcon, peregrine falcon, Northern harrier, Harris's hawk, Swainson's hawk, long-billed curlew, yellow-billed cuckoo, Bell's vireo, Cassin's sparrow, lark sparrow, painted bunting, Eastern meadowlark, summer tanager, loggerhead shrike, scaled quail.
    - **Mammals:** desert shrew, black-tailed prairie dog, Texas antelope squirrel, gray-footed chipmunk, desert pocket gopher, banner- tailed kangaroo rat, Chihuahuan Desert pocket mouse, Nelson's pocket mouse, Mearn's grasshopper mouse, Northern rock mouse, black-footed ferret, swift fox, pronghorn, hog-nosed skunk, hooded skunk, Western spotted skunk, long-tailed weasel, big brown bat, California myotis, Western small-footed myotis, cave myotis, long-legged myotis, Yuma myotis, fringed myotis, canyon bat, tri-colred bat, mountain lion, black bear (T) and American badger.
    - **Invertebrates**: Texas hornshell (T), Salina mucket (T), Mexican fawnsfoot (T) Franklin Mountain talus snail
    - **Plants:** Sneed's pincushion cactus (E), sand prickly-pear cactus, New Mexico Vasey's bitterweed.
    - **Endangered Plants:** Sneed's pincushion cactus (E), sand prickly-pear cactus, New Mexico Vasey's bitterweed.
    - **Rare plant communities:** North American Warm Desert Wash System, Chihuahuan Mixed Salt Desert Scrub System, Chihuahuan Sandy Plains Semi-Desert Grassland System, North American Warm Desert Active and Stabilized Dune System, Apacherian-Chihuahuan Semi-Desert Grassland and Steppe System, Chihuahuan Sandy Plains Semi-Desert Grassland System, North American Warm Desert Interdunal Swale Wetland System, Southwest Plateau and Plains Dry Steppe and Shrub (ggrasslandsdiversity/nongame/tcap/documents/chih_tcap_2012.pdf)
18. **Riparian:** Relating to, or situated on the bank of a river or other body of water.
19. **Secondary Conservation Areas:** priority habitats including ecologically sensitive lands (cliff faces, talus slopes, sky islands, rock-dominated canyons, arroyo canyon shrublands, sky Island foothill slope shrublands sandy dunes, gypsum, saline evaporative basins, barren ground within semi-arid grassland matrixscenic views, culturally or historically significant, and natural lands with passive recreational value. (Arendt 1999, Swaner 2006, https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/nongame/tcap/documents/chih_tcap_2012.pdf)).
20. **Spatiotemporal:** 1. having both spatial and temporal qualities. 2. of or relating to space-time. www.merriam-webster.com/dictionary/spatiotemporal
21. **Sky islands:** isolated mountains surrounded by radically different lowland environments. This has significant implications for natural habitats. Endemism, altitudinal migration, and relict populations are some of the natural phenomena to be found on sky islands.
22. **Talus slopes** are formed when debris from a weathering rock piles up to a certain angle of repose. These slopes usually lie at a very steep hill or under a cliff. https://www.reference.com/science/talus-slope-a27454724fd87b60

APPENDICES

The following appendices provide context to the document in terms of minimum patch areas and conservation buffers which allow for animal and plant species to thrive, arroyo buffer widths, and species with the greatest conservation needs.

Additionally, this section details the feedback received from community stakeholders as well as provides maps of the newly-proposed Mountain-to-River Trail.

The last appendix is a very detailed report provided by Earth Economics, which contains a detailed ecosystem services assessment conducted for the lands outlined in the petition.

- **Appendix A:** *Examples of Minimum Patch Area*
- **Appendix B:** *Minimum Patch Area for animals and plant species*
- **Appendix C:** *Corridor Width Summary*
- **Appendix D:** *Riparian (Arroyo) Buffer Width*
- **Appendix E:** *Chihuahuan Desert Species of Greatest Conservation Need*
- **Appendix F:** *Detailed Stakeholder Feedback Chart*
- **Appendix G:** *Newly-Proposed Mountain to River Trail*
- **Appendix H:** *Examples of Different Development Densities that Could Be Allowed Under the Recommended Conservation Development Area*
- **Appendix I:** *Earth Economics' Ecosystem Services Assessment for El Paso*

APPENDIX A. Examples of Minimum Patch Area

(From Conservation Buffers, Design Guidelines for Buffers, Corridors, and Greenways. 2008).

	Taxa	Patch Area
	Plants	5 to ≥ 250 ac
	Invertebrates	50 sq ft to ≥ 2.5 ac
	Reptiles and Amphibians	3 to ≥ 35 ac
	Grassland Birds	12 to ≥ 135 ac
	Waterfowl	≥ 12 ac
	Forest Birds	5 to ≥ 95 ac
	Small Mammals	2.5 to ≥ 25 ac
	Large Mammals	40 ac to ≥ 2 sq mi
	Large Predator Mammals	3.5 to ≥ 850 sq mi

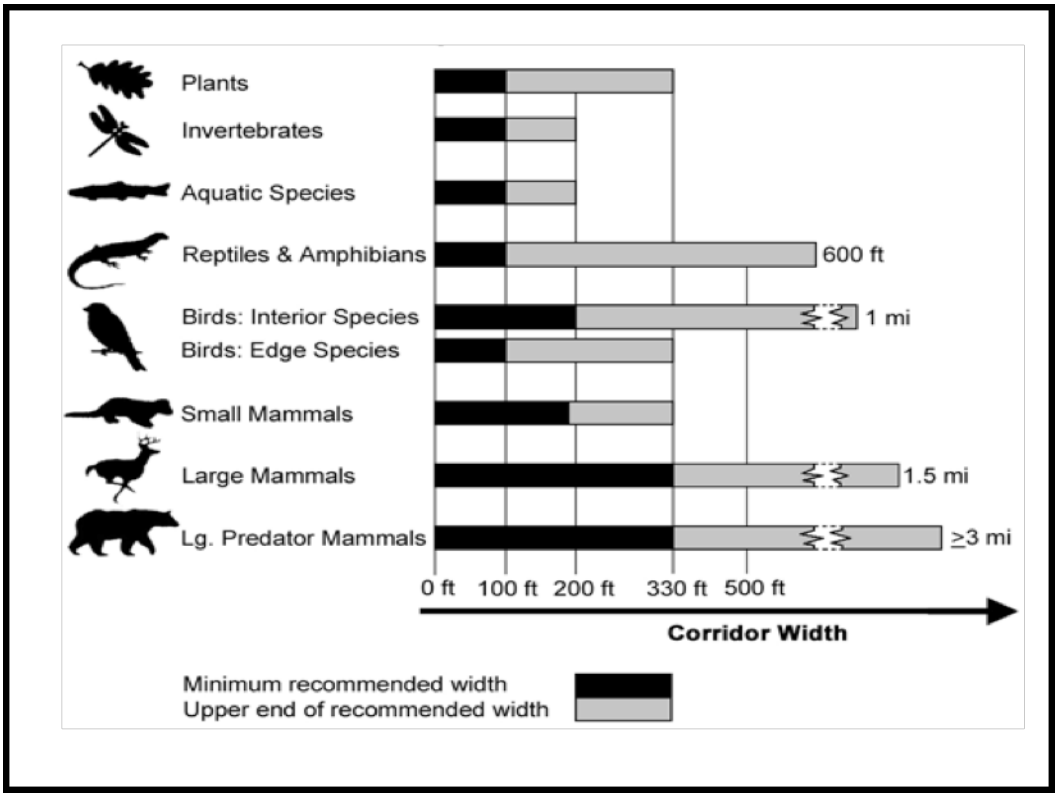
APPENDIX B. Minimum Patch Area for Animal and Plant Species

Minimum patch area requirements found within the scientific literature 2001) to maintain populations or communities of animal or plant species in the United States. One hectare is about 2.5 acres, (condensed from Conservation Thresholds for Land Use Planners. 2003).

TAXA	PATCH AREA	FINDING	CITATION
Birds			
	> 1	Five species of brush/chaparral-requiring birds were supported by census plots larger than 1 HA.	Soulé et al. 1992
	> 2 ha (1seed-eating birds) > 40 ha (insect-eating birds)	Insect-eating birds need at least 40 HA. Seed-eating birds need 2 HA. This is interpreted as the habitat size needed to support a representative bird community.	Forman et al. 1976 Galli et al. 19762
Mammals			
	> 1 ha	Control plots larger than 1 HA supported most rodent species.	Soulé et al. 1992
	> 5 ha	Cottontail rabbits may be vulnerable to extinction if large patches of > 5 HA are not maintained.	Barbour and Litvaitis 1993
	> 10 ha	Fragments < 10 HA did not support populations of native rodents.	Bolger et al. 1997
	> 900 HA	More than 80% of bear sightings occurred in blocks of undisturbed habitat > 900 HA.	Mace e. al. 1996
	> 220,000 HA	Cougars.	Beier 1993
Invertebrates			
	> .0004 HA	Vegetation patches > 43 ft2 and open areas important to the distribution and abundance of carabid beetles.	Crist and Ahern 1999

APPENDIX C. Corridor Width Summary

(From Conservation Buffers, Design Guidelines for Buffers, Corridors, and Greenways. 2008).



APPENDIX D. Riparian (Arroyo) Buffer Width.

Recommended minimum riparian and wetland buffer widths to maintain water quality and wildlife functions within ecoregions of the United States, as found within the scientific literature), (Condensed from Conservation Thresholds for Land Use Planners. 2003).

FUNCTION	TAXA/ SUBJECT	BUFFER WIDTH	CITATION
Bank Stabilization			
	Bank Stabilization	32 – 65 ft.	Fischer and Fischenich 2000
	Stream/channel stabilization	65 – 98 ft.	Corbett and Lynch 1985
	Stream stabilization/sediment control	> 125 ft.	Cederholm 1994
	Bank Stabilization	> 171 ft.	Spence et al. 1996
Flood Attenuation			
	Floodplain storage	65 – 492 ft.	Fischer and Fischenich 2000
Sediment Removal			
	Sediment removal	> 3m (sand), > 15 m (silt), > 122m (clay)	
	Sediment removal	5–30 m	Fischer and Fischenich 2000
Wildlife and Plant Species			
	Wildlife habitat	328 ft.	Fischer, Martin, and Fischenich 2000; Fischer and Fischenich 2000
	General species diversity	133 –328 ft.	Castelle et. al. 1994
	General bird habitat	> 49 ft.	Milligan 1985
	Birds	> 49 – 656 ft.	Stauffer and Best 1980
	Birds (Willow flycatcher nesting) Species of Concern	> 123 ft.	Knutson and Naef 1997
	Birds (yellow-billed cuckoo breeding habitat) Species of Concern	> 328 ft.	Gaines 1974
	Birds (diversity and assemblages)	> 100 ft.	Hagar 1999
	Birds (neotropical migrants, interior species)	> 164 ft.	Tassone 1981
	Birds (raptors)	164 ft. – 1968 ft.	Richardson and Miller 1997
	Mammals (small)	73 – 101 ft.	Jones et al. 1985
	Mammals (deer)	> 200 ft.	NRCS 1995
	Mammals (fawning of mule deer)	> 600 ft.	Knutson and Naef 19973
	Mammals (large)	> 328 ft.	Jones et al. 1988
	Reptiles (Western pond turtle nesting habitat)	> 328 ft. (stream buffer)	Knutson and Naef 1997
	Aquatic wildlife habitat	65 – 492 ft.	Fischer and Fischenich 2000
	Plants (vascular plant diversity)	> 99 ft.	Spackman and Hughs1995
	Plants (to minimize non-native vegetation)	> 649 ft.	Hennings 2013

Appendix E: Chihuahuan Desert Species of Greatest Conservation Need (sourced from the Texas Parks and Wildlife State Conservation Action Plan of 2012)

Mapping and research are needed on all the remaining and potential habitats for the following:

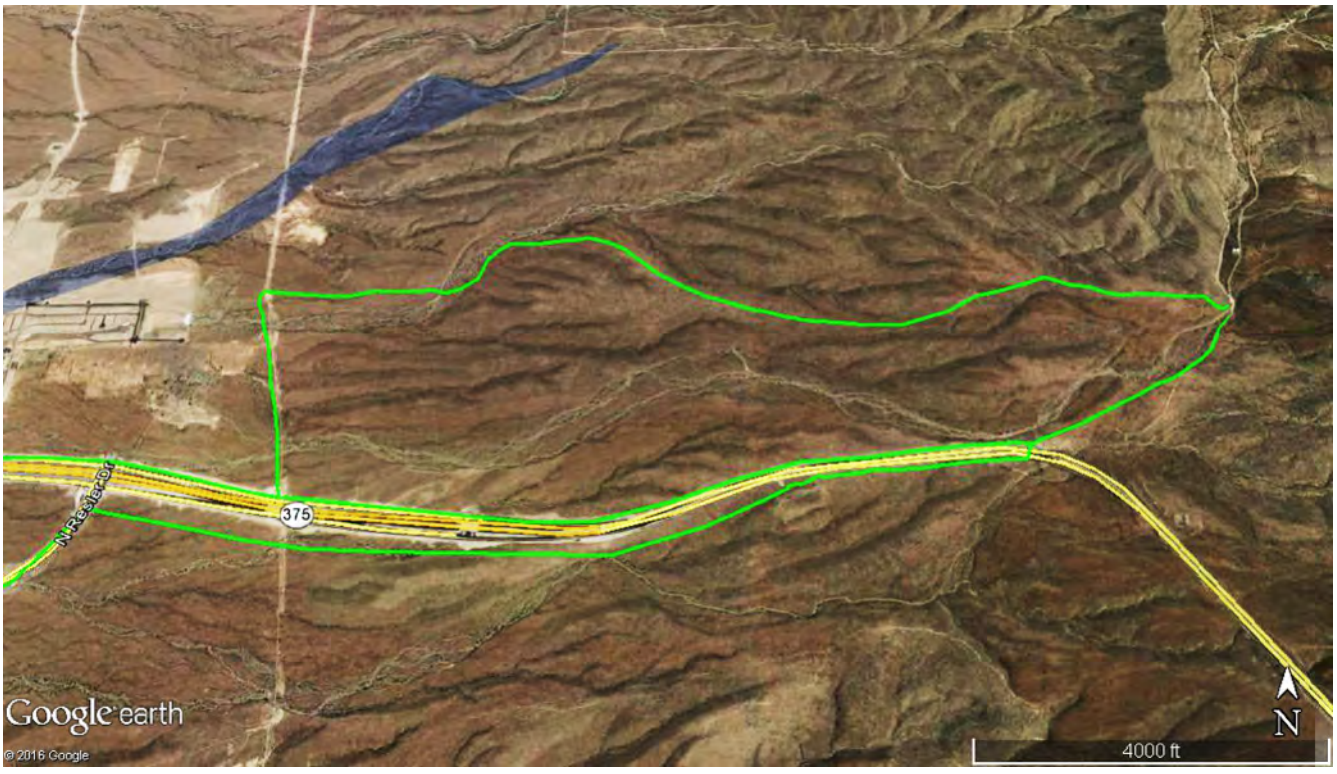
Birds					
Western burrowing owl	Golden eagle	American kestrel	Peregrine falcon	Long-billed curlew	Yellow-billed cuckoo
Bell's vireo	Cassin's sparrow	Painted bunting	Eastern meadowlark	Summer tanager	Loggerhead shrike
Mammals					
Black-tailed prairie dog	Black-footed ferret	Swift fox	Texas antelope squirrel	Pronghorn	Chihuahuan Desert pocket mouse
Hog-nosed skunk	Banner-tailed kangaroo rat	Big brown bat	Desert pocket gopher	Hooded skunk	Long-tailed weasel
Mearn's grasshopper mouse	Northern rock mouse	Mountain lion	Western spotted skunk	Gray-footed chipmunk	American badger
Nelson's pocket mouse	Desert shrew	Black bear			
Reptiles					
Woodhouse's toad	Spiny softshell turtle	Dixon's whiptail	Reticulated gecko	Western diamondback rattlesnake	Prairie rattlesnake

Appendix F: Detailed Stakeholder Feedback Chart

Please note: This wll be inserted after public comment period.

Appendix G: Newly-Proposed Mountain-to-River Trail

These images were created by the Open Space Advisory Board as a newly proposed mountain to river trail initiative.



Appendix H: Examples of different development densities that could be allowed under the recommended conservation development area

Figure 10: Base Map Example of the Criteria Process for Conservation of 200 Acres of PSB Land

Figure 11: Make overlay of primary conservation areas including wetlands, archaeology sites, arroyos and steep slopes, etc.

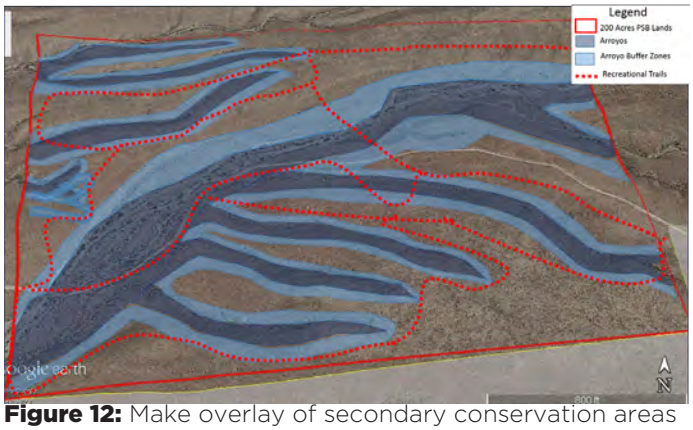


Figure 12: Make overlay of secondary conservation areas including buffer zones, important ecological habitats, historical, recreational, and views, etc.

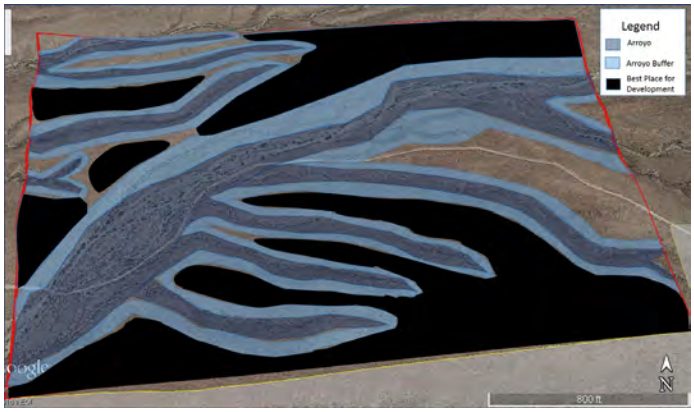


Figure 13: Make overlay of best areas for development (black)

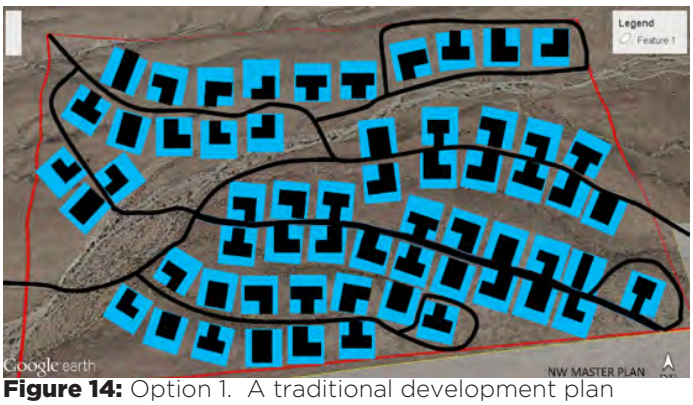


Figure 14: Option 1. A traditional development plan without conservation design, 60 3-acre lots, 87.5% Development' 13% NOS,

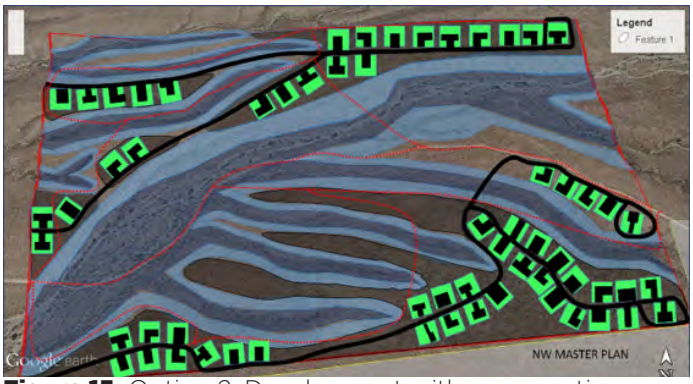


Figure 15: Option 2. Development with conservation design. 60 one-acre lots, 32.6% Development, 67.5% NOS, Common amenities (NOS and trails)

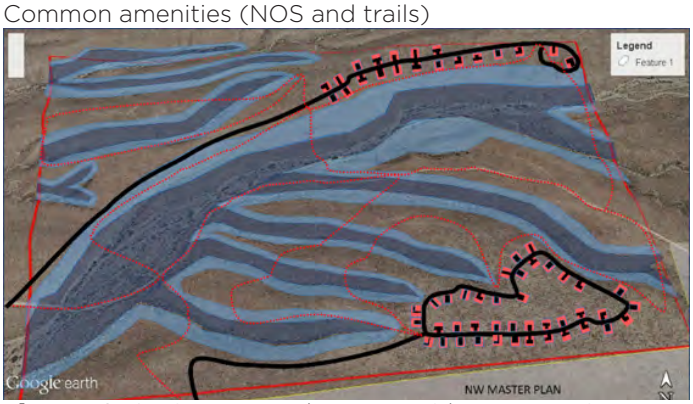


Figure 16: Option 3. Development with conservation design. 60 quarter-acre lots, 23% Development, 77% NOS, Common amenities (NOS and trails).

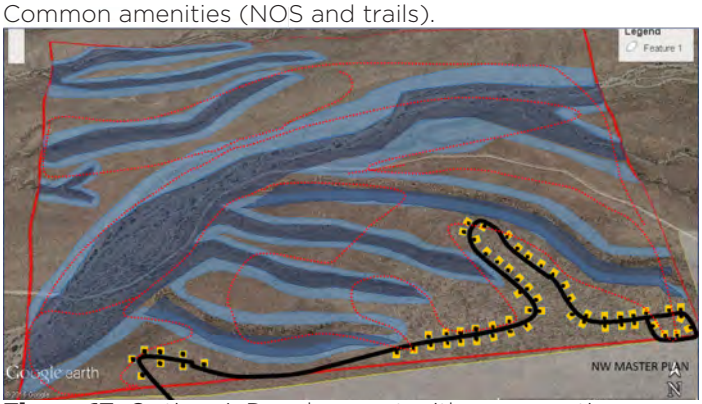


Figure 17: Option 4. Development with conservation design. 60 eighth-acre lots, 10% Development, 90% NOS, Common amenities (NOS and trails).

NOTE: These conceptual diagrams illustrate connectivity between dwelling units and their open space network. All the dwelling units are contiguous with open space in terms of blocks of dwelling units and individual dwelling units. Individual dwelling units have open space alleys ways between the units. This level of connectivity creates the maximum opportunity for homeowners to benefit from conservation development.

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APPENDIX I:

OPEN SPACE BENEFITS IN THE CITY OF EL PASO

August 2016

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The authors are responsible for the content of this report.

Cover image: TBD

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Executive Summary

El Paso's abundant natural capital is a critical part of the regional ecosystem and the economy. The shrublands surrounding the Franklin Mountains support rich biodiversity, capture water for the Hueco Bolson aquifer, and provide many other ecosystem benefits, from erosion control to moderation of flood events. El Paso's natural capital also provides direct benefits to local residents, including increased property values and improved health via recreation. All of these benefits are called **ecosystem services**, and they represent significant, long-term contributions to the local economy. This is the first study to estimate the dollar value associated with these critical ecosystem services within El Paso.

Across the country, planners and policy makers are starting to include the value of natural capital assets (watersheds, forests, shrublands) and ecosystem services in their analyses. Though the techniques to identify, quantify, and monetize these economic contributions are still evolving, the values available today can immediately be used to gain a better understanding of the **symbiotic relationship between a healthy environment, a resilient economy, and a thriving community**. Including these values in planning and policy-making yields a more complete and accurate understanding of restoration and stewardship projects or policies and ultimately fosters more practical, cost-effective outcomes.

Natural capital within the study area contributes $3.3 million to $6.5 million in ecosystem service benefits each year.

This analysis finds that the natural capital within the study area contributes **$3.3 million to $6.5 million in ecosystem service benefits *each year***. El Paso's shrubland can also be viewed as a natural capital asset that provides a flow of benefits over time, similar to a building or a bridge. When measured like an asset with a lifespan of 100 years and a three percent discount rate, **El Paso's natural capital has an asset value between $106 million and $209 million**. With sufficient stewardship to maintain the health and function of El Paso's natural capital, this economic contribution will continue in perpetuity. These are highly conservative estimates that will grow as more detailed data becomes available and economic methods are developed.

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Introduction

For many years, our natural capital (watersheds, forests, shrublands) has been treated very differently than our built assets. While constructing roads, bridges, and water conveyance systems is nearly always discussed as a vital investment with significant benefits to the economy, dollars allocated to ecosystem restoration and stewardship are often considered as costs or lost opportunities to be minimized. One reason for this disconnect is that, until relatively recently, it has not been cost-effective to identify and monetize the benefits that people receive from nature (ecosystem services). Advances in ecological economics and a rapidly growing cache of primary academic research on the value of natural systems and functions has facilitated more reliable estimates of nature's value. These values can now be combined with traditional economic data to conduct important financial analyses such as benefit-cost or return on investment calculations.

When ecosystem services are lost, communities pay. Loss of natural flood protection, wildlife habitat, and clean drinking water often requires that communities build facilities to replace lost ecosystem services. Shrublands, riparian buffers, and wetlands all provide flood protection. These ecosystems are able to slow, absorb, and store large amounts of rainwater and runoff during storms. Changes in land use and the potential for more frequent storm events due to climate change make **mitigation of extreme events one of the most important services for economic development.** Built structures in the floodplain such as houses, businesses, and wastewater treatment plants all depend on the flood protection services provided upstream. Retaining natural, permeable cover and restoring natural features contributes to flood risk reduction in these areas. Enhanced flood and storm protection can reduce the devastating effects of floods, including property damage, lost work time, and human casualties. Real ongoing costs are incurred by the community and taxpayers to replace services that nature previously provided for free.

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Site Overview

El Paso is located in the corner of west Texas between New Mexico and Mexico (Figure 1 and **Error! Reference source not found.**). The city has a rapidly growing population of 680,000 residents that is expected to increase to 1.1 million by 2040.[1,2,3] The City of El Paso has been selected to participate in the 100 Resilient Cities (100RC) Initiative, which helps participating cities build resilience and mitigate future shocks and stresses.[4] El Paso's challenges are drought, flooding, poor health infrastructure, and social inequity. Over the coming years, El Paso will work with local stakeholders and 100RC partners to design solutions to these challenges.

The area evaluated in this report includes a series of parcels owned by the El Paso Public Service Board (PSB) that total 7,756 acres (7,711 which provide ecosystem services) to the east and west of the Franklin Mountains, all within an hour to the north of downtown El Paso. The study area is near Franklin Mountains State Park (27,000 acres), the largest urban park in the nation.[5] Also of interest is the neighboring Castner Range (7,081 acres), a U.S. Army-owned area which is currently being petitioned to be converted into a National Monument to preserve the nearly pristine ecosystems within the protected area.[6]

The Franklin Mountains and surrounding open space provide opportunities for hiking, mountain biking, and rock climbing. The region is also a popular destination for birdwatchers as it provides extensive bird habitat for birds, including a variety of endangered and threatened species such as the southwestern willow flycatcher, the wood stork, and the white-faced ibis.[7] The study area also sits atop the Hueco Bolson aquifer, which provides a third of El Paso's water supply.[8]

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Figure 1 - El Paso / Franklin Mountain Region (Google Maps)

Figure 2. El Paso / Franklin Mountain Region (Google Earth)

Study Objectives

The ***Open Space Benefits in the City of El Paso*** study was conducted by Earth Economics, a 100RC Platform Partner, in collaboration with the City of El Paso. The study's purpose was to estimate natural capital and ecosystem service values in parcels of publicly held land to better inform preservation and development decisions. The study also provides a conceptual model for how El Paso's open space and economy are connected.

Valuation Approach

The study involved four major steps:

Step 1. Identification and Quantification of Land Cover Classes: Geographic Information Systems (GIS) data, including the National Land Cover Database (NLCD-2011), was used to calculate the number of acres of each land cover type (e.g. shrubland, grassland, and developed open space) within the study area.

Step 2. Identification and Valuation of Ecosystem Services: The value of each ecosystem service/land cover combination (e.g. water storage/shrubland) was estimated using the benefit transfer method

(described in detail below) to find and apply appropriate values. In many cases, low and high values are provided if included in the original study. In cases where no published studies were available for a particular ecosystem service/land cover combination, no value is provided in this report.

Step 3. Annual Value of Ecosystem Services: The total high and total low annual values of ecosystem services for a particular land cover class were multiplied by the acreage of that land cover class found in the study area to calculate total annual values. The total high and low values of all land cover classes were then summed to generate a total annual value that represents the annual contribution of these lands to the local economy.

Step 4. Net Present Value Calculations: Net present values were calculated for the study site over 100 years at two discount rates: zero percent and three percent. The net present value calculation and application of a discount rate allows benefits accrued over many years to be compared in current dollars.

Ecosystem Services Framework and Valuation Methods

Like other forms of capital, natural capital provides a flow of goods and services. Ecosystem goods and services are the benefits that nature provides to people. These benefits are the basis of all economic activity as they provide a clean water supply, breathable air, nourishing food, flood risk reduction, waste treatment, and a stable climate. Without natural capital, many of the services (benefits) that we generally take for granted (and receive for free) could not exist, or would need to be replaced at a very high cost. Figure 3 illustrates the relationship between natural capital assets, ecosystem functions, and the production of ecosystem goods and services. The natural capital assets in a watershed serve many functions. A watershed collects, stores, and transports water that ultimately provides people with a valuable water supply benefit.

Figure 3 - Ecosystem Services Example

Some of these ecosystem services can be valued in dollars when economists and ecologists work together to identify the presence, quantity, and economic value of a service in a particular location. A variety of valuation techniques can be employed depending on the specific circumstances, including:

- **Market Pricing**: The current market value of items produced in the ecosystem (e.g., water, fish, and wood).
- **Replacement Cost**: The cost of replacing a functioning natural system with man-made infrastructure (e.g. natural water filtration versus a water treatment plant).
- **Avoided Cost**: Services allow society to avoid costs that would have been incurred in the absence of those services (e.g. reduction in flood damage due to natural water storage and flood mitigation provided by wetlands and riparian buffers).
- **Production Approaches**: Services that enhance incomes (e.g. productivity of crops after irrigation in agricultural systems).
- **Travel Cost**: Service demands may require travel, which have costs that can reflect the implied value of the service; a recreation area can be valued at least by what visitors are willing to pay to travel to it, including the imputed value of their time (e.g. tourists driving long distances to visit national parks).

- **Hedonic Pricing**: The change in property value by virtue of being within proximity of a service (e.g., a beautiful grassland or a mountain view typically increases the value of neighboring homes).
- **Contingent Valuation**: Value estimates based on surveys of individual preferences and the value assigned to activities (e.g., people's willingness to pay to protect watersheds).

Valuation of some ecosystem services can be quite straightforward using these methods, while others are still lacking accepted methodology and can only be described subjectively. The service descriptions and categorizations used in this report, shown in Table 1, were derived from work by DeGroot et al. (2002) and Sukhdev et al. (2010). [9,10]

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Table 1 - Ecosystem Services Definitions

Provisioning Services	
Food	Producing crops, fish, game, and fruits
Medicinal Resources	Providing traditional medicines, pharmaceuticals, and assay organisms
Ornamental Resources	Providing resources for clothing, jewelry, handicraft, worship, and decoration
Energy and Raw Materials	Providing fuel, fiber, fertilizer, minerals, and energy
Water Supply	Provisioning of surface and groundwater for drinking water, irrigation, and industrial use
Regulating Services	
Biological Control	Providing pest and disease control
Climate Stability	Supporting a stable climate at global and local levels through carbon sequestration and other processes
Air Quality	Providing clean, breathable air
Moderation of Extreme Events	Preventing and mitigating natural hazards such as floods, hurricanes, fires, and droughts
Pollination	Pollination of wild and domestic plant species
Soil Formation	Creating soils for agricultural and ecosystems integrity; maintenance of soil fertility
Soil Retention	Retaining arable land, slope stability, and coastal integrity
Waste Treatment	Improving soil, water, and air quality by decomposing human and animal waste and removing pollutants
Water Regulation	Providing natural irrigation, drainage, groundwater recharge, river flows, and navigation
Supporting Services	
Habitat and Nursery	Maintaining genetic and biological diversity, the basis for most other ecosystem functions; promoting growth
Genetic Resources	Improving crop and livestock resistance to pathogens and pests
Cultural Services	
Natural Beauty	Enjoying and appreciating the scenery, sounds, and smells of nature
Cultural and Artistic Inspiration	Using nature as motifs in art, film, folklore, books, cultural symbols, architecture, and media
Recreation and Tourism	Experiencing the natural world and enjoying outdoor activities
Science and Education	Using natural systems for education and scientific research
Spiritual and Historical	Using nature for religious and spiritual purposes

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Benefit Transfer Method

The benefit transfer method (BTM) is broadly defined as "...the use of existing data or information in settings other than for what it was originally collected".[11] This method is used to indirectly estimate the value of ecological goods or services, especially as it can generate reasonable ecosystem services estimates quickly and at a fraction of the cost of conducting local, primary studies, which may require more than $50,000 per service/land cover combination. BTM plays an important role in the field of ecosystem services valuation, as it is often the most practical option available for producing reasonable estimates.[12]

The BTM process involves taking ecosystem service values from comparable ecosystems as found in peer-reviewed journals and transferring them to a study site, in this case, the open space bordering El Paso's Franklin Mountains. [13] The BTM process is similar to a home appraisal, in which the value and features of comparable, neighboring homes (two bedrooms, a garage, one acre, recently remodeled) are used to estimate the value of another home. As with home appraisals, BTM results can be somewhat rough, yet the process quickly generates reasonable values appropriate for policy and project analysis.

The process begins by finding published, peer-reviewed primary studies with comparable climate and land cover classifications as those within the study area. Any primary studies deemed to have incompatible assumptions or land cover types are excluded from further analysis. Individual primary study values are adjusted and standardized for units of measure, inflation, and land cover classification to ensure an "apples-to-apples" comparison. Frequently, primary studies offer a range of values that reflect the uncertainty or variability within the research area. As such, high and low dollars per acre values are included for each estimate provided in this report.

In some cases, the published values can be adjusted to more accurately reflect conditions in the study area. Income is one factor that greatly affects people's ability and willingness to pay for ecosystem services.[14] Adjusting ecosystem services for differences in income between study sites improves estimates. For this analysis, the median household income from El Paso ($42,037) and the average per capita income ($20,050) were used.[15] Incomes of beneficiaries in the primary studies were derived directly from each study itself or gathered from the U.S. Census Bureau.

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Study Findings

Identification and Quantification of Land Cover Classes

The study area comprises several parcels bordering the Franklin Mountains that total 7,757 acres (7,711 acres provide ecosystem services) , as shown below in Figure 4. Within the study area, the project team identified six different land covers with the vast majority (97%+) of land characterized as shrubland.

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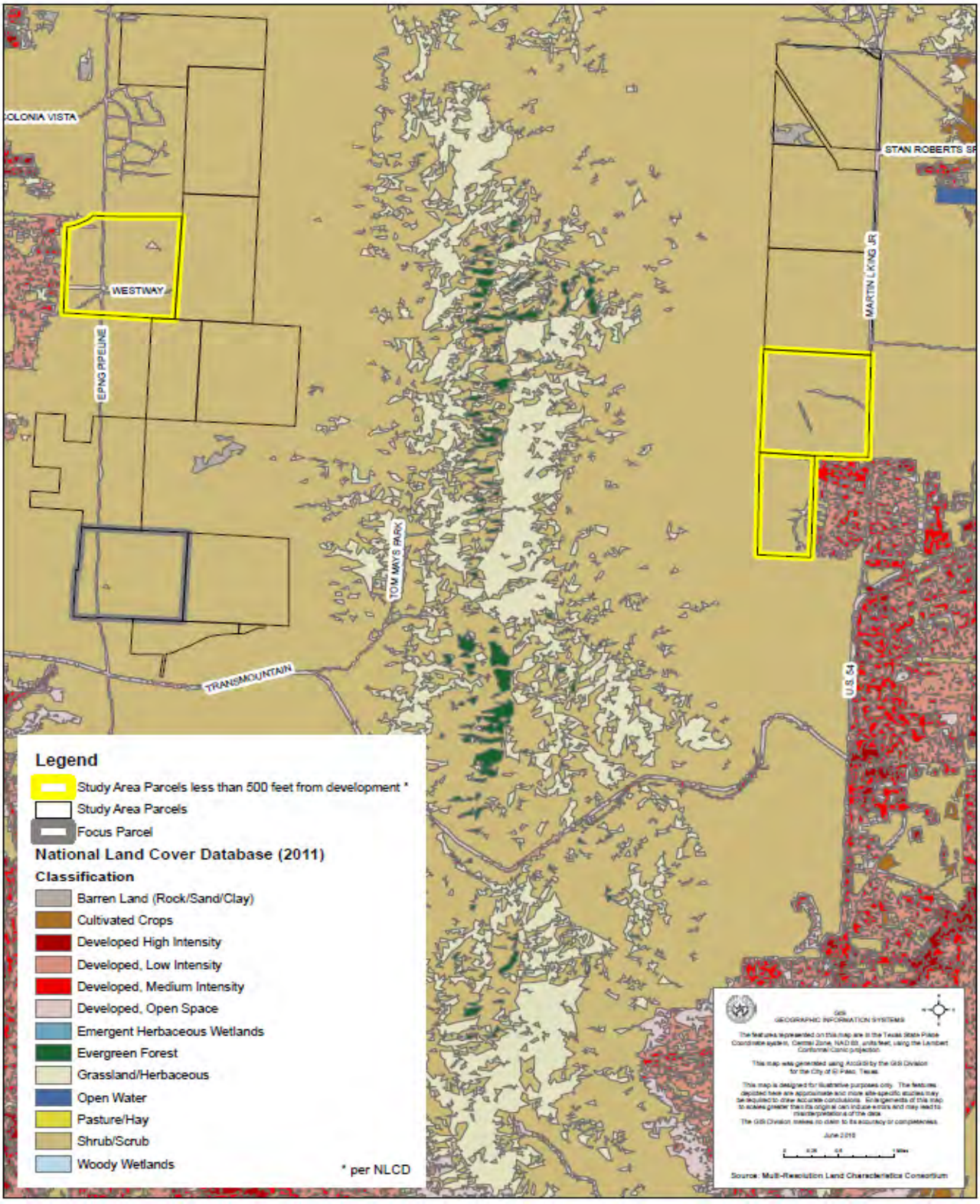

Figure 4: El Paso Study Area and Parcels within 500 feet of development

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Table 2: Acres by Land Cover Type

Land Cover Desciption	Proximity to Development w/I 500' (Acres)	Outside 500' (Acres)	Total	%
Grassland	0.25	18	18	0.2%
Shrubland	106	7,449	7,555	97.4%
Developed: Open Space		138	138	1.8%
Developed: Low, Medium, High Intensity		9	9	0.1%
Barren Land (Rock, Sand, Clay)		37	37	0.5%
TOTAL ACREAGE	106	7,650	7,756	100%
TOTAL STUDY AREA (Excluding Developed & Barren)	**106**	**7,559**	**7,711**	

Table 3 - Land Cover Definitions

Grassland	Dominated by grammanoid or herbaceous vegetation
Shrubland	Dominated by shrubs; less than 5 meters tall. Includes true shrubs, young trees in an early successional stage
Developed Open Space	A mixture of some constructed materials, but mostly vegetation in the form of lawn grasses
Developed (low, med, high Intensity)	A mixture of constructed materials (21-79% cover) and vegetation, such as single-family housing units Highly developed areas where people reside or work in high numbers such as apartment complexes, row houses and commercial/industrial
Barren land	Characterized by bare rock, gravel, sand, silt, clay, or other earthen material, with little or no "green" vegetation

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Valuation of Ecosystem Services Across Land Cover Classes

Although there are a total of 21 ecosystem services in existence (see Table 1 on page 7), this section focuses solely on those services for which values are available in the literature. Table 3 shows the annual ecosystem services by land cover for the study area. Shaded table cells indicate that a service is likely present in a land cover area, but could not be valued in dollars. Clearly, filling in these knowledge gaps would significantly increase the overall values. Several features of the analysis require additional explanation:

Natural Beauty: Also referred to as "aesthetic information," natural beauty reflects the value that people place on having a view of or access to nature. This value tends to be highest for land in close proximity to development and then decreases with distance. In this study, a $13,000 value for natural beauty was applied to each acre of undeveloped land within 500 feet of development. A significantly lower value, $0.20 - $59, was applied to land outside of this buffer. In reality, the natural beauty of shrubland does not end abruptly at the 500-foot mark but these were criteria used in the original study. With additional analysis, a more nuanced application of this value may be possible.

Grassland and Shrubland: The same per acre values were used for both shrubland and grassland for both disaster risk reduction and recreation. The disaster risk reduction value of $39 - $54 per acre/per year comes from a study that was originally based upon the flood mitigation capacity of shrubland. Given the increased vegetation density and root structure of grassland relative to shrubland, it is assumed that the water absorption (and flood protection) capacity offered by grassland is at least equal to that of shrubland. Similarly, the $30 per acre recreation value comes from research on hiking in shrublands. It is assumed that encountering "grassland" on a hike through what is primarily shrubland would be equally enjoyable, and thus was given the same value.

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Table 4 - Annual Ecosystem Service Values by Land Cover ($/Acre/Year)

Ecosystem Service	Grasslands		Shrublands		Open Space (Developed)	
($/Acre/Year)	Low	High	Low	High	Low	High
Air Quality			$ 1	$ 1		
Climate Stability	$ 134	$ 150	$ 15	$ 24		
Disaster Risk Reduction	$ 39	$ 54	$ 39	$ 54		
Food	$ 12	$ 85				
Habitat	$ 35	$ 35	$ 2	$ 2		
Natural Beauty	$ 0.2	$ 59	$ 36	$ 59		
Natural Beauty (w/I 500 ft of Developed)	$ 13,710	$ 13,710	$ 13,710	$ 13,710		
Recreation	$ 30	$ 30	$ 30	$ 30	$ 738	$ 738
Soil Retention	$ 6	$ 6	$ 9	$ 9		
Water Storage			$ 106	$ 494		
TOTAL	**$ 13,967**	**$ 14,129**	**$ 13,948**	**$ 14,383**	**$ 738**	**$ 738**

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Annual Value of the El Paso Study Area

Using the values identified in Table **4,** a summation of all ecosystem services present for each land cover type is provided in **Table 5** and Table 6. The total low and high values for each land cover was multiplied by the acreage associated with that combination to calculate the total low and high values in dollars per year. Results are given in both dollars per-acre per-year and the total dollar value of the annual flow of ecosystem services for each land cover type and ecosystem service, respectively. **The annual value of ecosystem services within the El Paso study area is estimated to be between $3.3 million and $6.5 million**.

Table 5 - Ecosystem Services in the Study Area by Land Cover

		($/Acre/Year)		($/Year)	
	Acres	Low	High	Low	High
Grasslands	18	$ 257	$ 419	$ 4,631	$ 7,547
Grasslands (w/i 500 ft. of Developed)	0.25	$ 13,710	$ 13,710	$ 3,428	$ 3,428
Shrublands	7,449	$ 238	$ 673	$ 1,772,435	$ 5,014,860
Shrublands (w/i 500 ft. of Developed)	106	$ 13,710	$ 13,710	$ 1,453,260	$ 1,453,260
Open Space: Developed	138	$ 738	$ 738	$ 101,814	$ 101,814
TOTAL	**7,711**			**$ 3,335,569**	**$ 6,580,909**

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Table 6 - Ecosystem Services in the Study Area by Service

Ecosystem Service ($/Year)	Low	High
Air Quality	$6,912	$6,912
Climate Stability	$117,867	$180,095
Disaster Risk Reduction	$293,174	$405,423
Food	$219	$1,535
Habitat	$15,068	$15,068
Natural Beauty	$264,883	$443,941
Natural Beauty (w/I 500 ft of Developed)	$1,456,688	$1,456,688
Recreation	$327,345	$327,345
Soil Retention	$67,151	$67,151
Water Storage	$786,262	$3,676,752
TOTAL	**$3,335,569**	**$6,580,909**

Net Present Value Calculations

In addition to the annual flow of ecosystem service benefits detailed in **Error! Reference source not found.** and Table 6, these economic data were used to calculate an "asset value" for the study site's natural capital. Specifically, the value was calculated as the net present value of its expected future benefits (or future flows of ecosystem services). The asset value provides policy makers with a sense of the total worth of an asset over time and helps to plan investment and stewardship activities at an appropriate scale.

The value of stored carbon, carbon stock, is included in the asset value. A forest provides an annual carbon sequestration service via growth that draws carbon from the atmosphere. The forest also holds a great deal of carbon within the trees, the stock. Similarly, shrublands in El Paso hold carbon in the plant material and soil. Table 7 shows this carbon stock value. Carbon sequestration and storage is a critical, natural process that reduces the amount of carbon in the atmosphere and slows climate

change. Carbon markets are now emerging around the world where land owners are paid to protect and expand forests to increase the amount of carbon removed from the atmosphere and offset fossil fuel emissions.[16]

Table 7. Value of Carbon Stored in the Study Area

Carbon Storage	Acres	Per Acre Value		Total Value	
		Low	High	Low	High
Grasslands	18	$ 696	$ 1,532	$ 12,533	$ 27,578
Shrublands	7,555	$ 126	$ 126	$ 952,794	$ 952,794
TOTAL	**7,573**	-	-	**$ 965,327**	**$ 980,372**

The asset value of the of natural capital in the study area (Table 8) is between **$106 million and $209 million when valued at a three percent discount rate over the next 100 years. At a zero percent discount rate, El Paso's asset value is estimated between $335 million and $659 million.**

The discount rate represents what economists call the "time preference for money". In short, this preference reflects the fact that a person would typically prefer to have a dollar in-hand today rather than a dollar promised at a later time. A stronger preference for today's dollars suggests a higher discount rate. On the other hand, a zero percent discount rate indicates that a benefit today would be equally valued as a future dollar. A three percent discount rate used here is in the range proposed by many economists for valuation of natural capital. The purpose and application of discount rates is a topic of much debate in the field and further discussion is beyond the scope of this study.

Table 8: Total Asset Value of the Study Area's Natural Capital

	Asset Value ($)	
Discount Rate	Low	High
0%	$335 M	$659 M
3%	$106 M	$209 M

Natural capital assets within the study area, such as shrublands and grasslands, provide enormous value to the regional economy and the local community. Importantly, these values are highly conservative estimates due to the many data gaps. Furthermore, while this asset value analysis considers a 100-year analysis period, this ecosystem should, with appropriate stewardship, continue to provide benefits far into the future.

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Valuation Discussion

The findings of this study can be considered a starting point for further discussion and research on the connection between El Paso's natural capital and the local economy. The following observations should be considered as these numbers are put into practice and future research is planned:

- **Natural Capital in El Paso Provides Significant Value to the Local Economy**: Even though shrubland is less valuable than land covers like forests and wetlands, El Paso's vast shrubland landscape nevertheless contributes substantial economic value to the regional economy. This study only touches on this broader value.

- **These Values are Highly Conservative**: As indicated in **Error! Reference source not found.**, many land cover/ecosystem service combinations cannot yet be valued due to a lack of values appropriate to the arid southwest. Primary research and values related to arid shrubland are especially sparse. As new data for the region emerges, these values will continue to improve, and the total recognized value will increase.

- **Population Growth Increases Ecosystem Service Values:** As the population of El Paso grows, more people will benefit from the ecosystem services within the study area. As urban areas expand and suburban sprawl increases, access to open space will become more precious. A small riparian park near the city center provides more access to recreation, more aesthetic value, and most likely more valuable flood protection than a similar tract of land in a remote area.

- **Contiguous Habitat and Habitat Corridors Provide Many Co-Benefits**: Much research has been done on the value of contiguous habitat and the preservation of corridors that allow birds, animals, and even plants to migrate to obtain resources, mix populations, and mitigate climate change. [17,18] Functional, regional ecosystems are especially important as climate and precipitation patterns change. The dollar value of these features is highly dependent on the complex interactions of many local variables, and monetization via benefit transfer is difficult.

- **A Strong Link Between the Economy, the Community, and the Natural Environment Builds Long-term Resilience:** As temperatures rise, rainfall intensifies, and droughts deepen, ecosystem services become an even more vital tool for adaptation. Without the services nature provides, an increasing percentage of taxpayer dollars will be required to replace lost services with built infrastructure, which is often costlier and less resilient.

- **The Impact of Development on Water Supply and Aquifer Health is Challenging to Value**. The complex physical nature of aquifers and their relationship to surface waters makes valuation using benefit transfer difficult. Conversion of shrubland to impervious surfaces will most likely reduce infiltration and overall water supply from the aquifer. Localized research will be needed to estimate the cost of lost shrubland in terms of water supply and ecological health of riparian areas and other water-dependent ecosystems.

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Opportunities for Additional Economic Analysis

This analysis provides a framework for discussing ecosystem services and valuation data available through published studies by applying the benefit transfer method. Further economic analysis may enable policy makers to build a more detailed and holistic picture of the shrublands' value and connection to the local economy.

Generate More Values Using Function Transfer

One way to compensate for the lack of primary data applicable to El Paso's shrubland is to identify opportunities to transfer values from published work using function transfer. Function transfer is an approach that combines a function defined in a published study with local information about the new study site to estimate the value of an ecosystem service at the new site. A function transfer involves analysis that is more detailed, but it can fill in important holes in existing data.

Economic Impact Analysis of Recreation

Formal recreation areas such as Franklin Mountains State Park and informal recreation such as walking and birding throughout the surrounding shrublands play a significant role in the local economy. User-day recreation data and specialized economic impact models can be used to model the flow of direct and indirect dollars from recreation opportunities. For example, a family visiting El Paso for bird watching may buy lunch, gas, and perhaps a hotel room. These investments will have a trickle-down benefit to local businesses and residents in the form of increased business sales and employee earnings. This type of study can be very helpful to illustrate how preservation and stewardship of open space can have wide-ranging benefits in different economic sectors. This is especially true as a region becomes a destination recreation area with visitors and dollars flowing into the region.

Holistic Benefit-Cost Analysis (BCA) of Development Options

Traditional BCAs have often had a narrow scope, only including items such as home construction costs, sale prices, tax revenue, and other common project measures. A holistic BCA attempts to capture a much wider range of project or land use policy implications, and it can help in comparing the benefits and costs of different options.

In addition to the ecosystem services described in this study, other benefits of open space may include reduced healthcare costs via better access to outdoor recreation, reduced stormwater management costs, reduced heat island impacts, and increased home values. Amenities like trails can even provide better employment opportunities by easing the cost and time of commuting, especially

for low income residents. Some of these benefits can be monetized and others can be described qualitatively.

A holistic benefit-cost analysis gives decision makers more complete data to inform their project and policy options. In 2015, the Department of Housing and Urban Development (HUD) pioneered this type of analysis with their $1 billon National Disaster Resilience Competition that required holistic BCA analyses from all applicants.

Health Benefit of Open Space Analysis

Substantial data is available that correlates access to open space with physical and mental health. Economically, these benefits translate into lower healthcare costs for individuals and the community as a whole. Economic methods are now becoming available to put dollar values, often substantial, to these benefits.

Analysis of Open Space for Groundwater Recharge

Pioneering work in Santa Cruz County, California has shown that carefully constructed rapid infiltration zones and open space preservation can provide a high return on investment (ROI) for utilities in the form of increased water supply. This analysis captures both the value of water added to the aquifer for water supply and the reduction in flooding and runoff from severe weather events.

Better Data Yields Better Long-term Decisions

For many decades, decision makers have been missing critical data: the contribution of their natural capital and ecosystem services to the local economy. When natural capital is undervalued, BCA and ROI calculations show natural capital restoration and stewardship projects to be relatively less worthy of investment. Insufficient investment begins a long cycle of natural system decline that, in turn, compromises local economic and social function and productivity. For example, when natural systems are compromised, communities must pay a larger proportion of their tax revenue to compensate for the services that nature no longer provides for free. Building levees and stormwater controls and paying an increasing amount for flood damages mirrors the loss of function along the riparian corridor due to impervious development, floodplain disconnection, and vegetation loss.

Communities throughout the nation are seeking the best ways to restore balance and save tax dollars over the long term. In many instances, the solution is to restore the environment to the state it was in 50 or 100 years prior. Within riparian areas, this often means restoring river flow, rebuilding riparian vegetation, and reconnecting floodplains to mitigate the damage due to increased frequency of extreme precipitation events. In many cases, this return to fully functional natural systems offers the most cost-effective, resilient, and durable solution to these critical problems. Anecdotal evidence

indicates that healthy natural capital is good for business and helps to attract and maintain a highly skilled, engaged workforce. Work to protect and steward open space requires ingenuity, persistence, access to emerging data and techniques, and collaboration amongst partners that have not typically worked together.

The values included in this report are highly conservative, but still demonstrate the substantial value of El Paso's natural capital and the interconnection between the undisturbed land and the region's economy. These values can immediately be integrated into a variety of policy and planning efforts to provide decision makers with the most comprehensive data available to inform the best long-term choices for El Paso.

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Appendix A - Study Limitations

Valuation exercises have limitations, although these limitations should not detract from the core finding that ecosystems produce significant economic value for society. Like any economic analysis, the benefit transfer method (BTM) has strengths and weaknesses. Some arguments against benefit transfer include:

- Every ecosystem is unique; per-acre values derived from another location may be of limited relevance to the ecosystems under analysis.

- Even within a single ecosystem, the value per acre depends on the size of the ecosystem; in most cases, as the size decreases, the per-acre value is expected to increase and vice versa. (In technical terms, the marginal cost per acre is generally expected to increase as the quantity supplied decreases; a single average value is not the same as a range of marginal values).

- Gathering all the information needed to estimate the specific value for every ecosystem within the study area is not currently feasible. Therefore, the full value of all of the shrubland, grassland, et cetera in a large geographic area cannot yet be ascertained. In technical terms, far too few data points are available to construct a realistic demand curve or estimate a demand function.

- The prior studies upon which calculations are based encompass a wide variety of time periods, geographic areas, investigators, and analytic methods. Many of them provide a range of estimated values rather than single-point estimates. The present study preserves this variance; no studies were removed from the database because their estimated values were deemed too high or too low. In addition, only limited sensitivity analyses were performed. This approach is similar to determining an asking price for a piece of land based on the prices of comparable parcels ("comps"): Even though the property being sold is unique, realtors and lenders feel justified in following this procedure to the extent of publicizing a single asking price rather than a price range.

- The objection to the absence of even an imaginary exchange transaction was made in response to the study by Costanza et al. (1997) of the value of all of the world's ecosystems. Even this is not necessary if one recognizes the different purpose of valuation at this scale–a purpose that is more analogous to national income accounting than to estimating exchange values.[19]

This report displays study results in a way that allows one to appreciate the range of values and their distribution. It is clear from inspection of the tables that the final estimates are not precise. However, they are much better estimates than the alternative of assuming that ecosystem services have zero value, or, alternatively, of assuming they have infinite value. Pragmatically, in estimating the value of ecosystem services, it would be better to be approximately right than precisely wrong.

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Appendix B - Valuation Data Sources

Land Cover Type	Ecosystem Service	Reference	Low Value	High Value
Grasslands	Natural Beauty	Sengupta and Osgood 2003	$ 55	$ 55
Grasslands	Natural Beauty	Mast 2002	$ 0.2	$ 0.5
Grasslands	Climate Stability	DeLonge et al. 2013	$ 134	$ 150
Grasslands	Climate Stability	Liu et al. 2012 (Asset Value)	$ 696	$ 1,532
Grasslands	Food	Shaw et al. 2009	$ 12	$ 85
Grasslands	Soil Retention	Gascoigne et al. 2011	$ 6	$ 6
Grasslands	Habitat	Gascoigne et al. 2011	$ 35	$ 35
Grasslands	Recreation and Tourism	Breffle et al. 1997	$ 13,710	$ 13,710
Shrublands	Air Quality	Delfino et al. 2007	$ 1	$ 1
Shrublands	Climate Stability	Liu et al. 2012	$ 15	$ 24
Shrublands	Disaster Risk Reduction	Zavaleta 2000	$ 39	$ 54
Shrublands	Water Storage	Zavaleta 2000	$ 106	$ 494
Shrublands	Recreation & Tourism	Richer 1995	$ 61	$ 61
Shrublands	Recreation & Tourism	Weber 2007	$ 30	$ 30
Shrublands	Soil Retention	Richardson 2005	$ 9	$ 9
Shrublands	Water Storage	Zavaleta 2000	$ 106	$ 494
Shrublands	Climate Stability	Wilson 2008	$ 126	$ 126
Shrublands	Natural Beauty	Rosenberger & Walsh 1997	$ 36	$ 59
Shrubland	Habitat	Sala et al. 1998	$ 2	$ 2
Open Space	Recreation & Tourism	Brander and Koetse 2011	$ 738	$ 738

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