Volcano Heights Sector Development Plan

RAC Meeting #2

May 29, 2013

Agenda

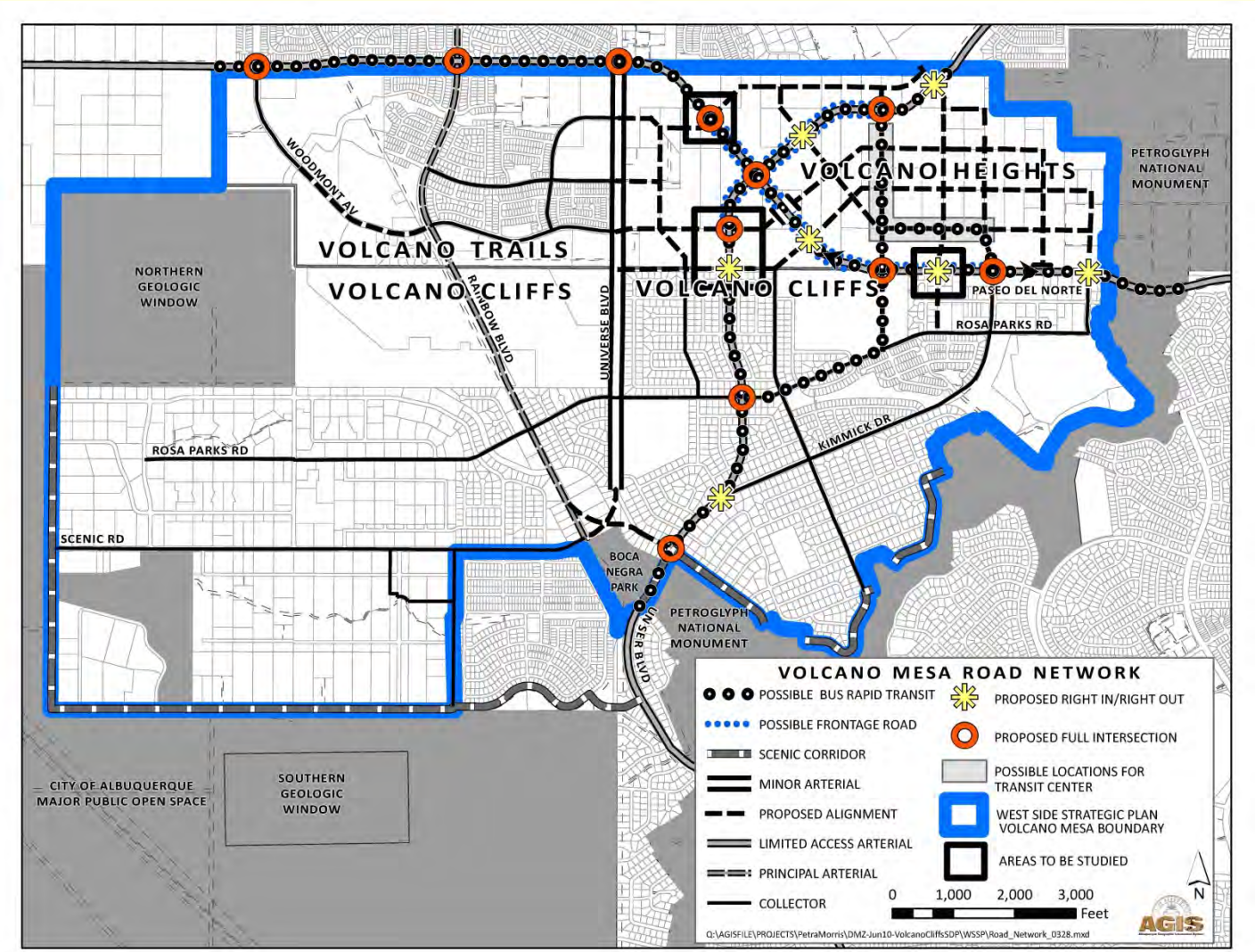
- 1: **Intersection Spacing Constraints**
- 2: **Spacing Schemes & Analysis**
  - Vehicular Traffic Analysis
  - Pedestrian Analysis
- 3: **Conclusions: Justification for Access Request**

Changes to Access Modification Request:
Intersection Spacing Constraints

- Prior planning efforts
- Checkerboard ownership
- Irregular parcels
- Limited access roads at 45 degree angles to property lines
- Some parcels without 20-foot access easement along Paseo (City purchases)
- City-owned Unser vs. State-owned Paseo

Constraint 1:

Volcano Mesa Transportation Network



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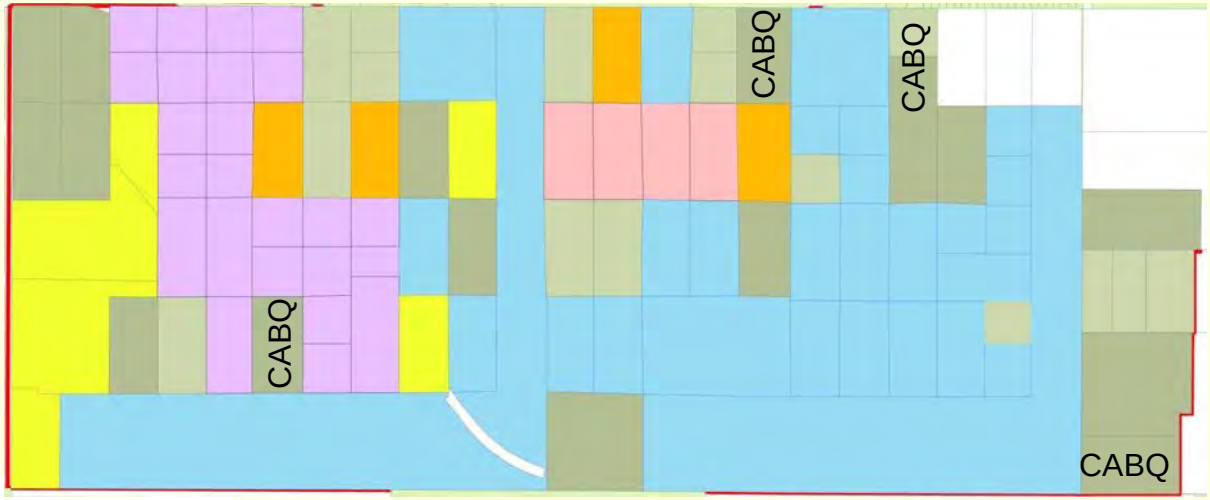
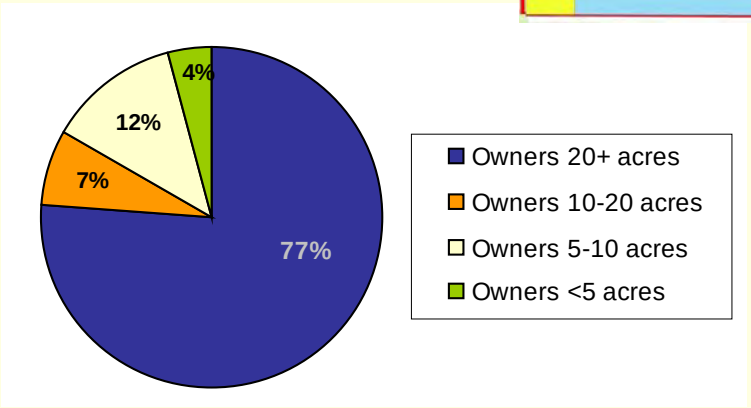
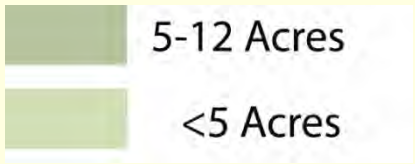
Constraint 2:
Checkerboard Ownership

- 570 acres
- ~ 5-acre lots
- 34 owners
- 99 properties
- 5 owners = 413 acres







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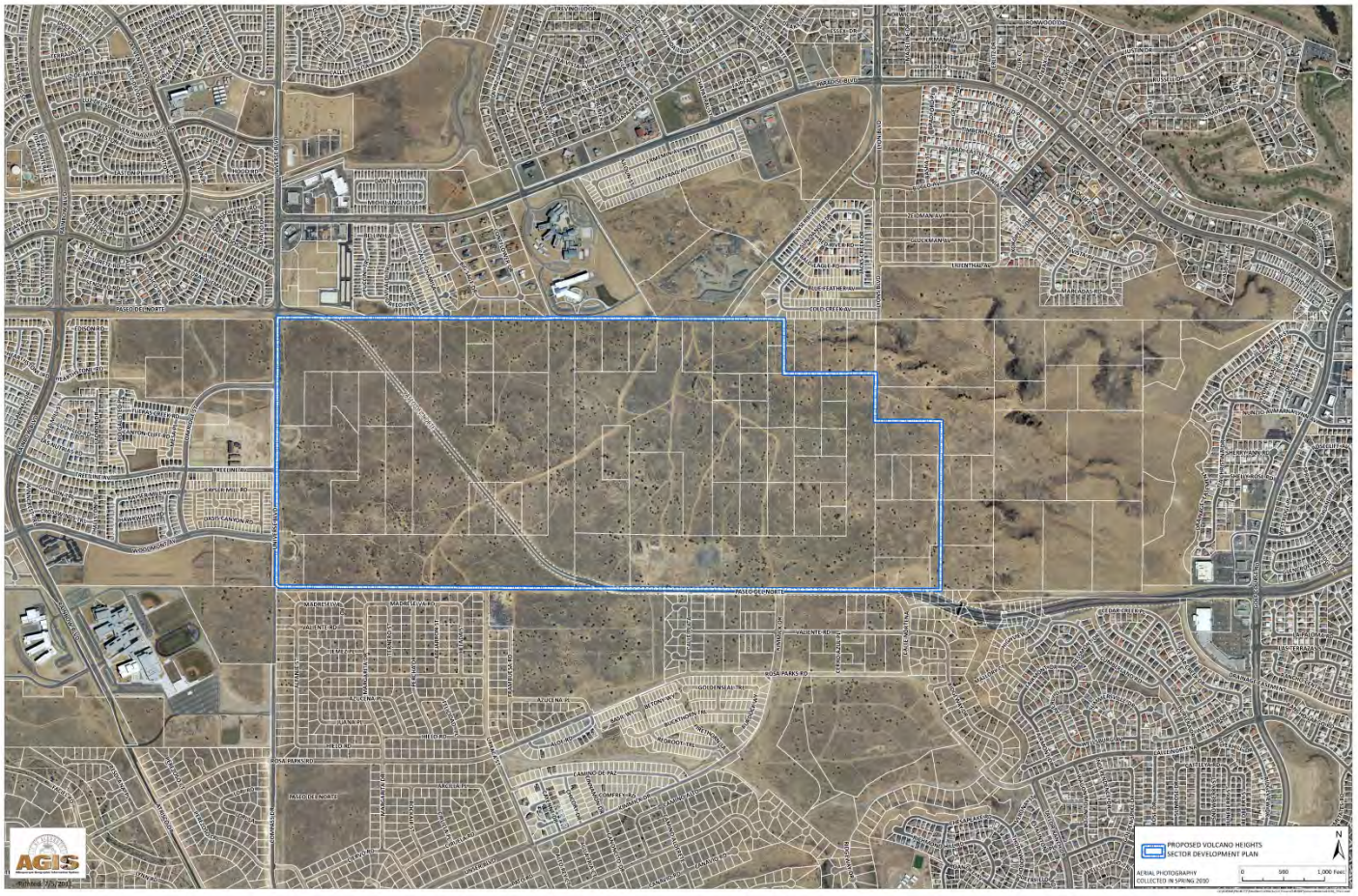
Constraint 3:
Irregular Parcels



Changes to Access Modification Request:
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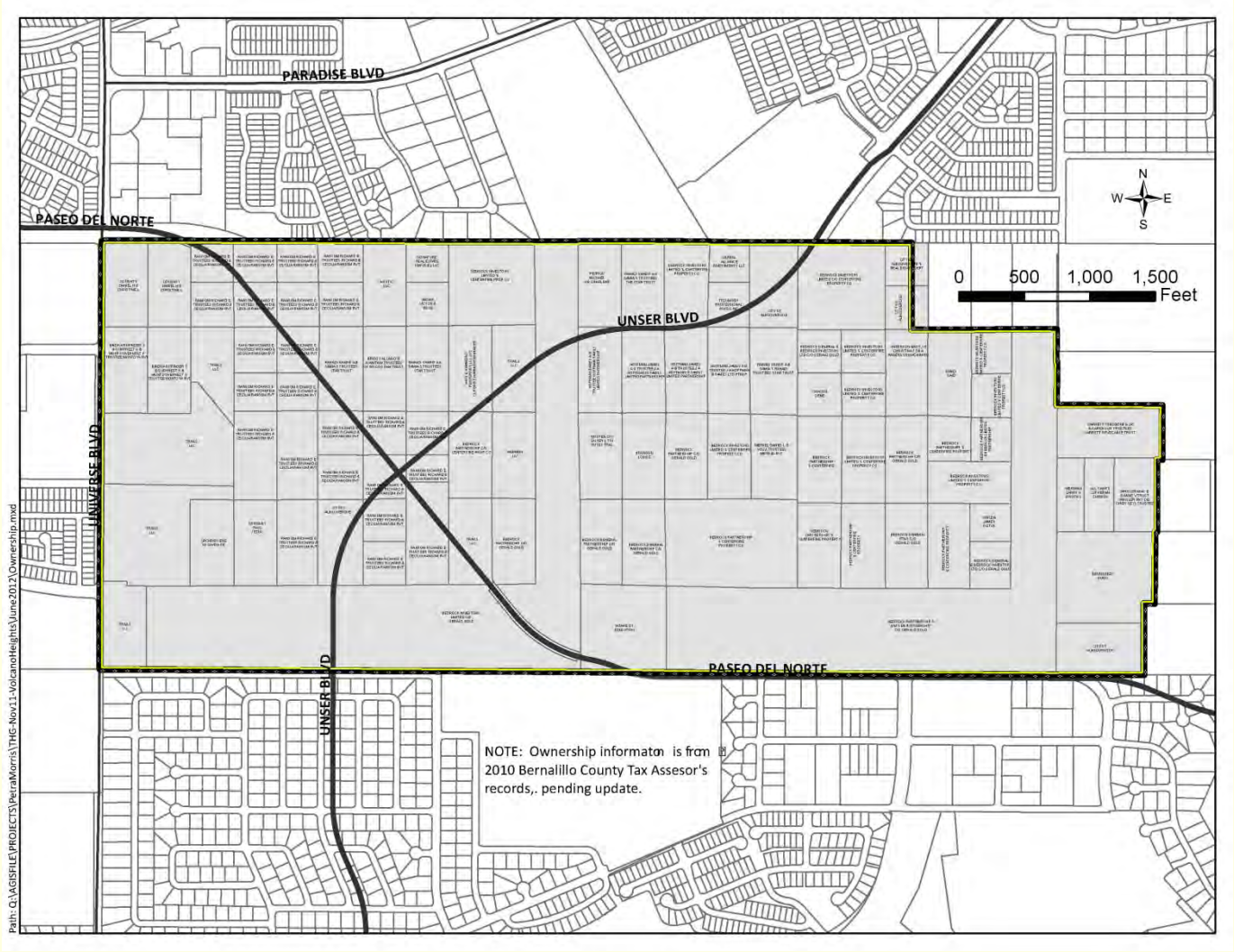
Constraint 4:

Limited access roads at 45 degree angles to property lines



Changes to Access Modification Request:
Intersection Spacing Constraints

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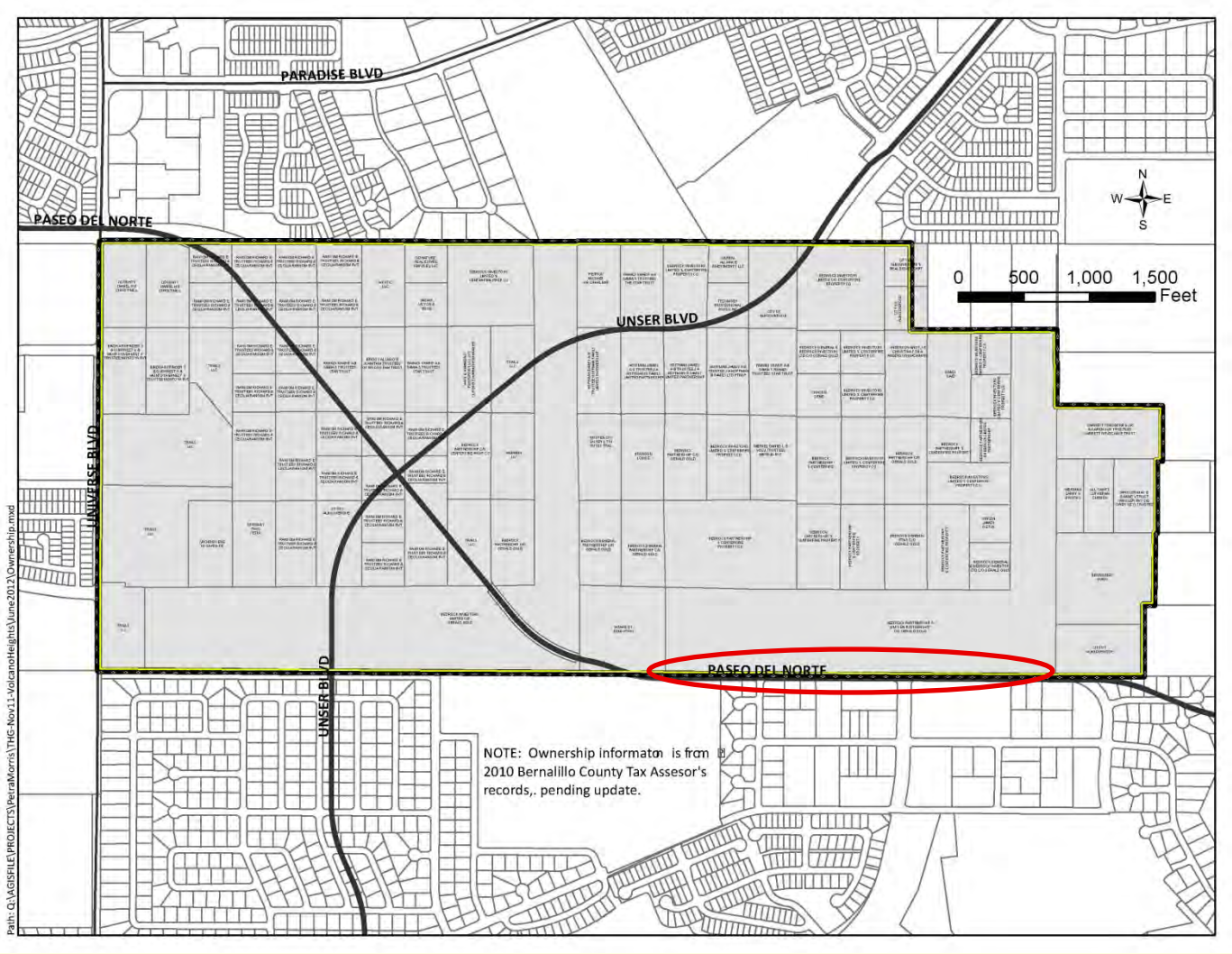
Constraint 5:

Parcel without 20-foot access easement



Changes to Access Modification Request:
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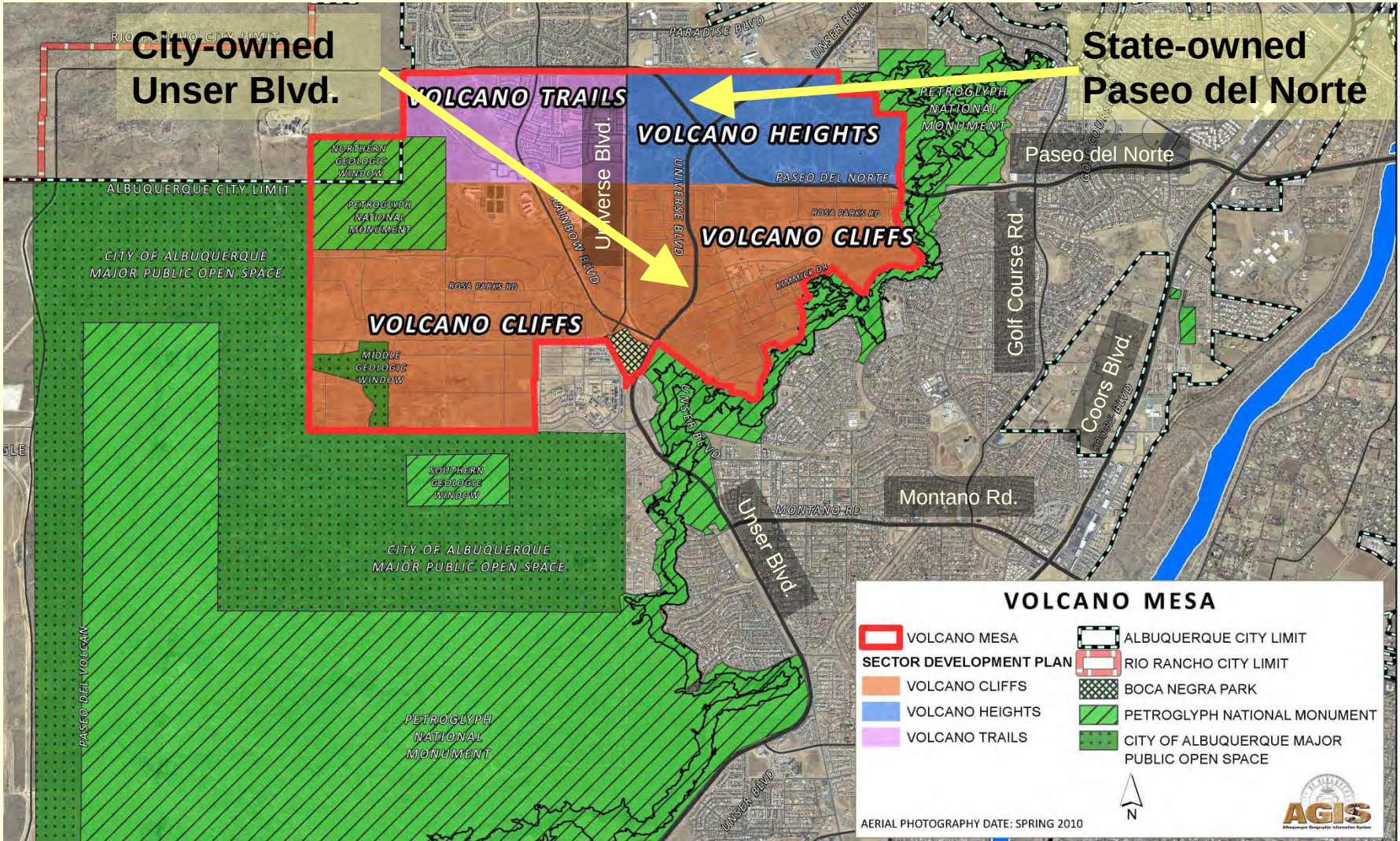
Constraint 6:

City-owned Unser vs. State-owned Paseo



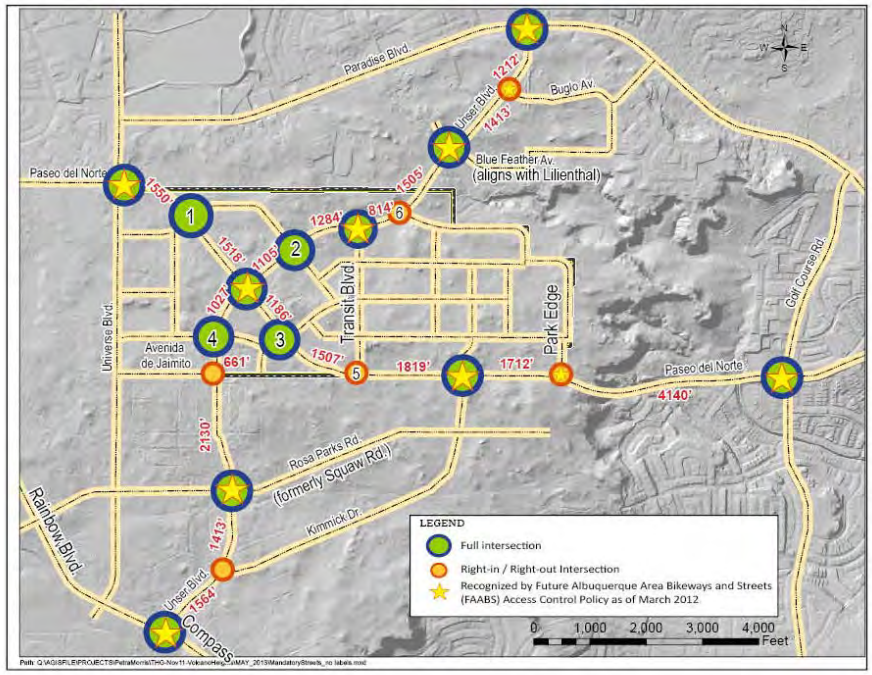
Changes to Access Modification Request:
City Decision Rules

- Best spacing to coordinate land use and transportation
- Best spacing to support job creation and economic development goals
- Best spacing to support multi-modal transportation and transit-supportive land uses
- Best spacing to provide access to all properties within Volcano Heights
- Best spacing to provide best traffic outcomes for both regional and local trips

Access Schemes:

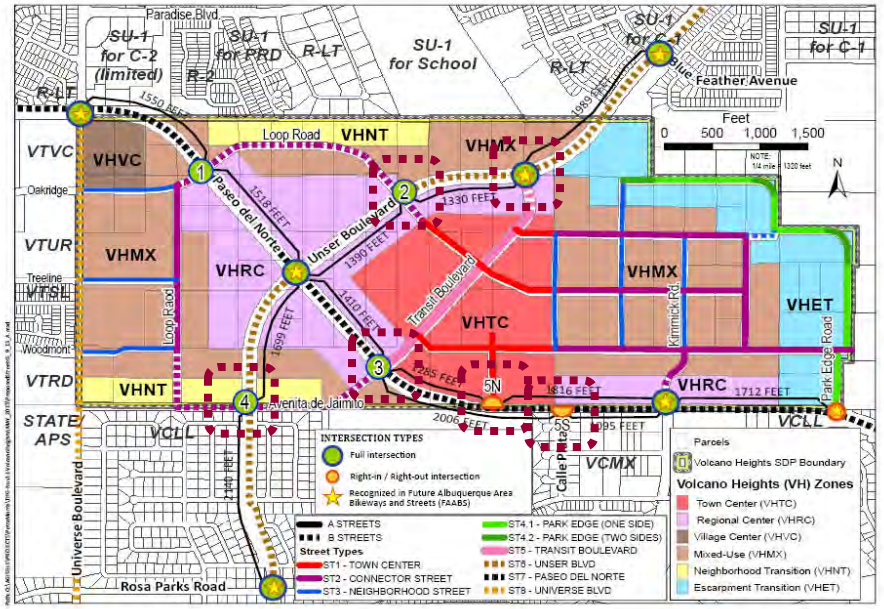
New Intersections

Scheme A: Volcano Heights Sector Development Plan & Volcano Mesa WSSP Amendment



* 1/4 mile = 1320 feet
1/3 mile = 1760 feet
1/2 mile = 2640 feet

Scheme C: Official City Request



Note: 1/2 mile = 2640 feet
1/3 mile = 1760 feet
1/4 mile = 1720 feet

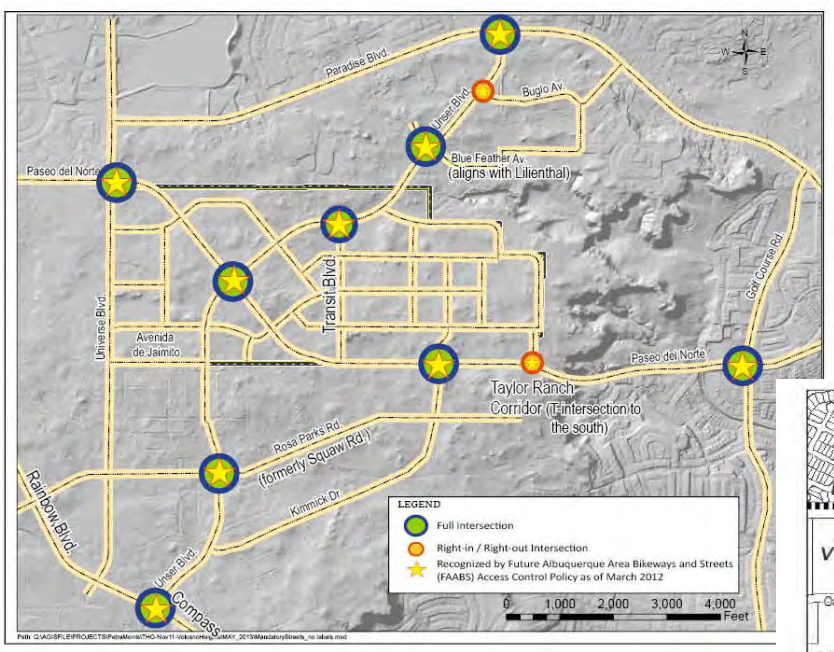
Indicates change

DRAFT

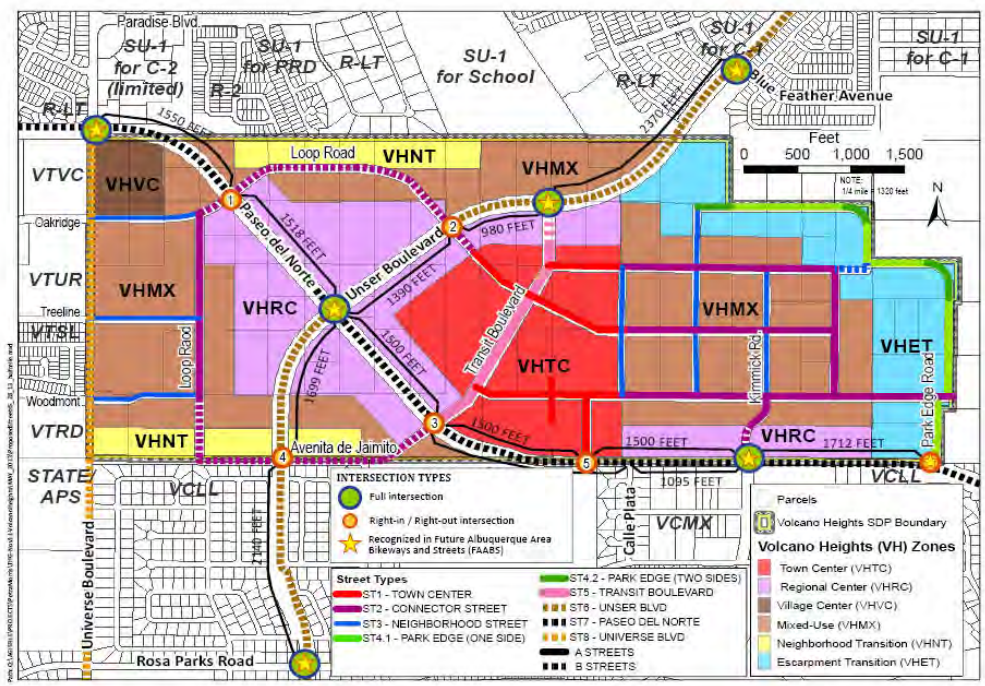
Access Schemes: *(cont'd)*

Per Limited-access Policies

Intersections Recognized by FAABS



Scheme B: Allowed by Policy



FAABS – Roadway Access 2012

Unser Boulevard

4. Dellyne Avenue to Paradise Boulevard	a. limited to full access at-grade intersections at the specified locations:	1) Montano Road
		2) Santo Domingo Street (T-intersection to the east)
		3) 81st Street (T-intersection to the west)
		4) Compass Drive
		5) Squaw Road
		6) Paseo del Norte
		7) A point approximately halfway between Paseo del Norte and Lilienthal
		8) Lilienthal
		9) Paradise Boulevard
	b. Partial access intersections shall be provided at the specified locations:	1) Flor del Sol Place (right in/right out)
		2) Buglo Avenue (right in/right out/left in) ***R-07-02 TCC***
		3) Bogart Street (right in/right out)

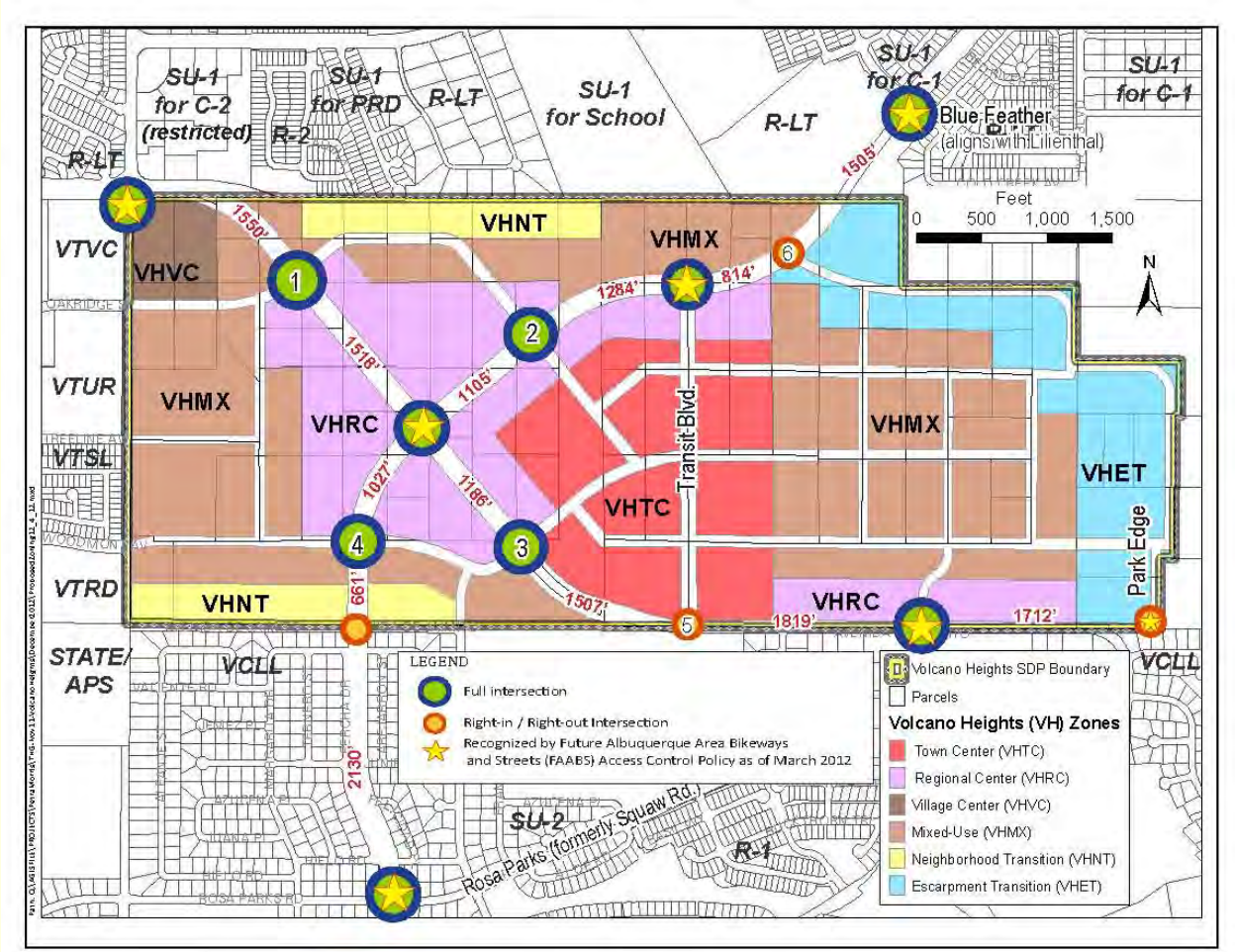
FAABS – Roadway Access 2012

Paseo del Norte

Paseo del Norte (NM 423)	
F. Paseo del Norte (R-85-3, R-86-8, R-86-15, R-86-17, R-86-24, R-88-6, R-01-24, R-03-26, R-05-13, R-06-01 TCC)	
A potential future freeway type facility from Coors Boulevard to Louisiana Boulevard, Paseo del Norte shall be a limited access Principal Arterial. Access to Paseo del Norte shall be permitted only as specified by resolution of the MTB and shall be limited to one of the following three types of interchange intersections. These three types are defined and locations of access are specified below. TYPE A: Interchange configuration TYPE B: At-grade dedicated street intersection with median opening TYPE C: At-grade dedicated street intersection without median opening	
TYPE A: Interchange configuration	1. Coors Boulevard
	2. I-25
	3. 2nd Street
TYPE B: At-grade dedicated street intersection with median opening and traffic signalization, as warranted. At approximately one-half mile intervals, or as identified on the Long Range Roadway System, and specifically located at the following intersections. Additional Type B intersections may be permitted if they subsequently are added to the Long Range Roadway System and meet the approximate one-half mile interval criteria.	1. Paseo del Volcan
	2. Boulevard del Oeste, extended
	3. Woodmont Avenue-Ventana Parkway ***R-06-01 TCC***
	4. Rainbow Boulevard
	5. Universe Boulevard
	6. Unser Boulevard
	7. Kimmick Drive
	8. Taylor Ranch Corridor (T-intersection to the south)
	9. Golf Course Road
	10. Unnamed Collector midway between Eagle Ranch Road and Golf Course Road
	11. Eagle Ranch Road
	12. Jefferson Street
	13. San Pedro Drive
	14. Louisiana Boulevard
	15. Wyoming Boulevard
	16. Mid block between Wyoming& Barstow (right in/right out) ***R-05-13 MTB***
	17. Barstow Street
	18. Ventura Street
	19. Holbrook Street
	20. Eubank Boulevard
	21. Browning Street
	22. Lowell Street
	23. Tramway Blvd
TYPE C: At-grade dedicated street intersection without median opening	1. Rancho de Palomas (south side of Paseo del Norte between Wyoming and Louisiana)
	2. Between I-25 and San Pedro Boulevard, to serve the south side parcel to and from Paseo del Norte

Access Schemes: *(cont'd)*

Scheme A with Zoning



Scheme Spacing Comparisons:
Paseo del Norte Intersections

Proposed Intersections	Scheme A - VHSDP	Scheme B - Policy	Scheme C - Compromise
Paseo/Universe to Loop Road #1	1550	1550	1550
Loop Road #1 to Paseo/Unser	1518	1518	1518
Paseo/Unser to Loop Road #3	1186	1500	1410
Loop Road #3 to Paseo #5	1507	1500	To 5N: 1285 To 5S: 2006
Paseo #5 to Kimmick	1819	1500	From 5N: 1816 From 5S: 1095
Kimmick to Park Edge Road	1712	1712	1712

Scheme Spacing Comparisons:
Unser Blvd. Intersections

Proposed Intersections	Scheme A - VHSDP	Scheme B - Policy	Scheme C - Compromise
Compass to Kimmick	1564	1564	1564
Kimmick to Rosa Parks (formerly Squaw)	1413	1413	1413
Rosa Parks to Avenida de Jaimito	2130	2130	2130
Avenida de Jaimito to Loop #4	661	0	0
Loop #4 to Paseo/Unser	1027	1699	1699
Paseo/Unser to Loop #2	1105	1390	1390
Loop #2 to Transit Blvd.	1284	980	1330
Transit Blvd. to Park Edge #6	814	N/A	N/A
Park Edge #6 to Blue Feather (formerly Lilienthal)	1505	N/A	N/A
Transit Blvd. to Blue Feather	N/A	2370	1989
Blue Feather to Buglo Ave.	1413	1413	1413
Buglo Ave. to Paradise Blvd.	1212	1212	1212

Vehicular Traffic Study:

Travel Speeds

DRAFT Travel Speed Comparison (through Volcano Heights) PM Peak Hour (Year 2035 Volumes)	Scheme B	Scheme A
Paseo del Norte		
Eastbound	25 mph	24 mph
Westbound	21 mph	22 mph
Overall	22 mph	23 mph
Unser		
Northbound	22 mph	17 mph
Southbound	20 mph	17 mph
Overall	21 mph	17 mph

Vehicular Traffic Study:

Travel Delay & Level of Service

Year 2035 Intersection Level of Service - DRAFT PM Peak Hour	Scheme A		Scheme B		Scheme C	
	Level of Service (LOS)	Avg. Delay *(seconds)*	Level of Service (LOS)	Avg. Delay *(seconds)*	Level of Service (LOS)	Avg. Delay *(seconds)*
Paseo del Norte						
Universe			C	29	C	26
#1 Loop Rd -- WEST (proposed – 1518' west of Unser)					C	33
Unser			E	78	C	31
Transit Blvd (proposed – 1410' east of Unser)					D	44
Kimmick Rd			E	74	C	33
Unser Boulevard						
#4 Loop Road – South Intersection (proposed 1699' south of Paseo del Norte)			N/A		C	29
Paseo del Norte			E	78	C	31
#2 Loop Road – North Intersection (proposed 1390' north of Unser)			N/A		D	40
Transit Blvd.			D	40	?	?

Vehicular Traffic Study:

Analysis Summary

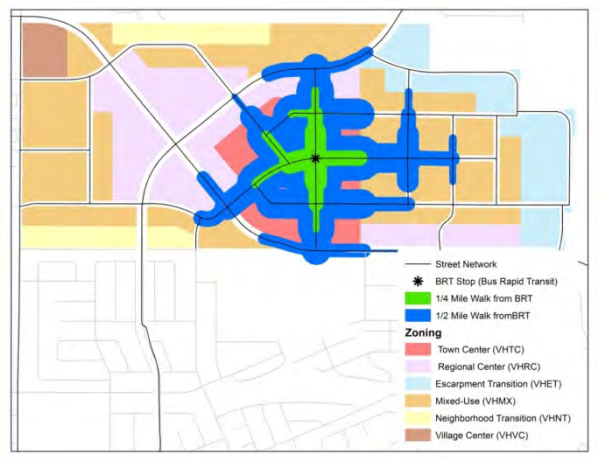
- Travel speed on Paseo improves (!) by 1 mph, due to dispersal of turning movements to multiple locations
- Individual intersections also operate better with dispersal (eliminates failing LOS E at several locations).
- As shown: Unser travel time degrades.

Pedestrian Analysis:

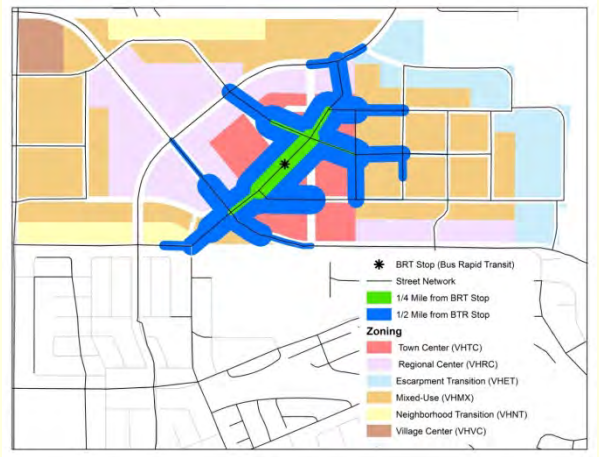
Scenario 1: Single Bus Rapid Transit Stop

TABLE 1: Single Bus Rapid Transit Stop Scenario		
	Scheme A	**Scheme B**
Total accessible acres in a 1/2 mile walk or less	75.6	55.7
Total acres accessible in Town Center	50.8	37.1
Percent of Town Center Accessible	75%	55%

Scheme A



Scheme B

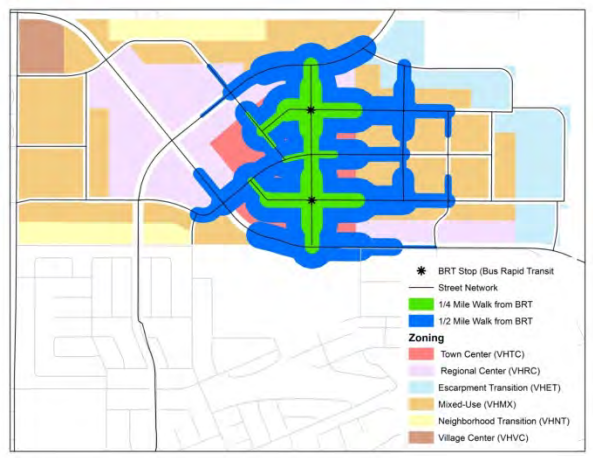


Pedestrian Analysis:

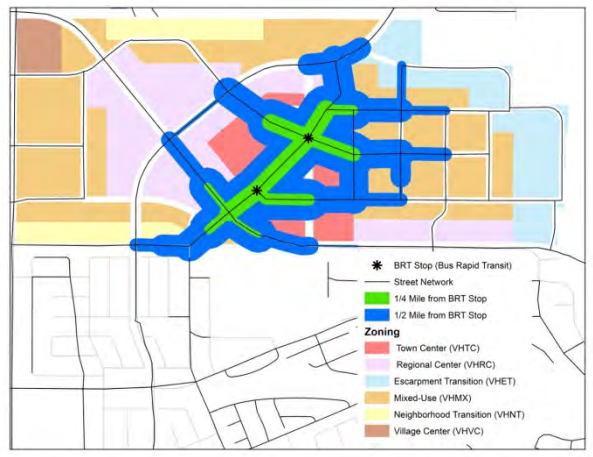
Scenario 2: Two Bus Rapid Transit Stops

TABLE 1: Single Bus Rapid Transit Stop Scenario		
	Scheme A	**Scheme B**
Total accessible acres in a 1/2 mile walk or less	102.7	92.0
Total acres accessible in Town Center	57.4	47.0
Percent of Town Center Accessible	85%	70%

Scheme A



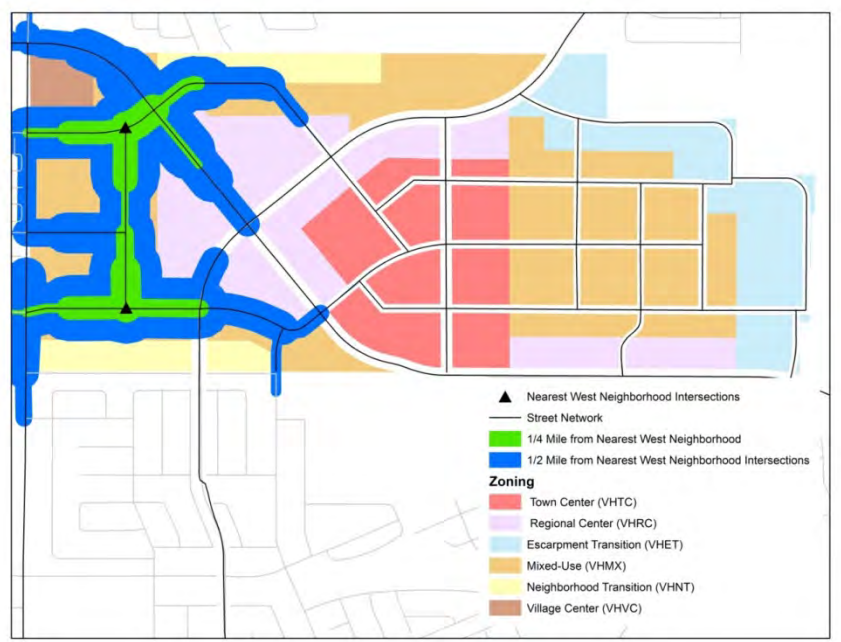
Scheme B



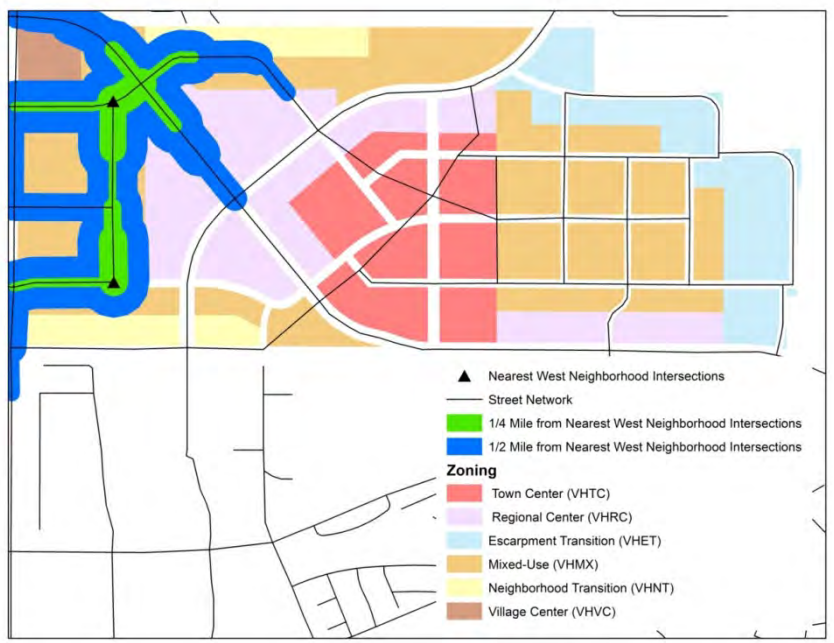
Pedestrian Analysis:

Scenario 3: Ped Access fr. West of Paseo/Unser

Scheme A



Scheme B

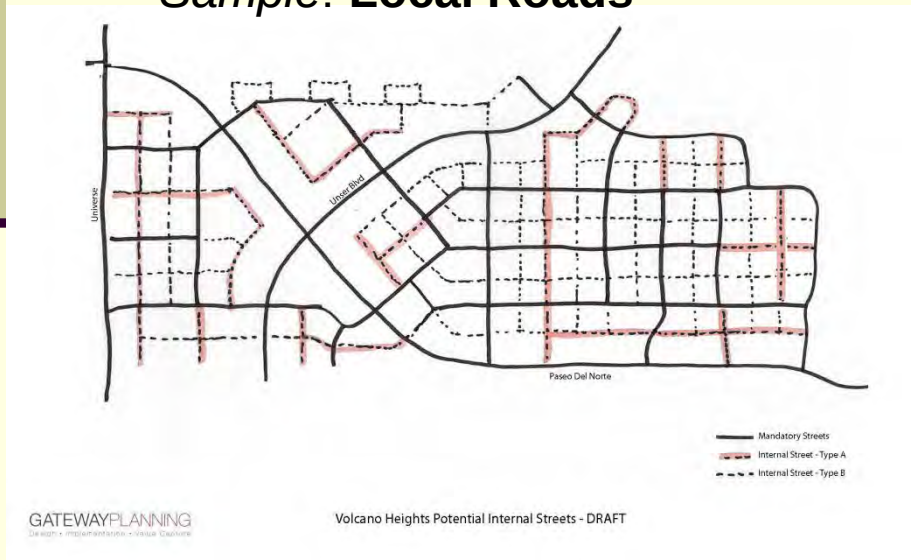


Justification for Access Request:

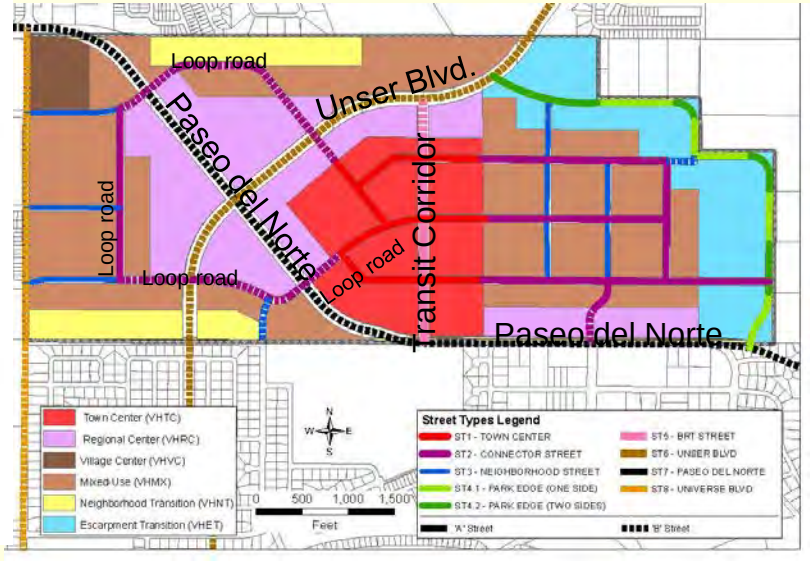
Benefits Outweigh the Costs

- Backbone Grid to disperse traffic, offer redundancy
- Loop road to alleviate pressure on Paseo/Unser intersection
- Predictable access for local development (no more curb cut requests!)
- Local roads to serve local development
- Access that supports Major Activity Center

Sample: **Local Roads**



Backbone Grid



Justification for Access Request:

Access Management Guidelines for Activity Centers

- **Chapter 4 E. ACCESS CATEGORY: Urban Principal Arterial (UPA)**
- **(1) Functional Description**: The urban principal arterial system serves the major centers of activity of urbanized areas, the highest traffic volume corridors, the longest trip desires, and carries a high proportion of the total urban area travel on a minimum of mileage. The system is integrated both internally and between major rural connections. The principal arterial system carries most of the trips entering and leaving an urban area, as well as most of the through movements bypassing central city areas. In addition, significant intra-area travel, such as between central business districts and outlying residential areas, between major inner city communities, and between major suburban centers, is served by this class of highway. In urbanized areas, this system provides continuity for all rural arterials that intercept the urban boundary.
- **(2) General Access Characteristics**: The primary functional responsibility of urban principal arterials is through traffic movement. Many urban principal arterials are fully or partially access controlled. Direct access service to abutting properties is subordinate to providing service to through traffic movements. Access location and spacing standards are strictly enforced.
- **(3) Performance**: The operational performance of UPA facilities should meet LOS D standards at a minimum. See Sub-Section 15.C, Table 15.C-1.

Justification for Access Request:
NMDOT Access Management Manual

- Specifically exempts "business districts" from spacing requirements.
  - **18.31.6.7 Business District**-- A business district occurs along a highway when within 300 feet along such highway there are buildings in use for business or industrial purposes (including but not limited to hotels, banks or office buildings, railroad stations and public buildings) which occupy at least fifty percent of the frontage on one side or fifty percent of the frontage collectively on both sides of the highway *(page 2).*
  - **18.31.6.18 C (3) Business Districts.** The spacing of access points within business districts on urban or rural highways may be adjusted based on site-specific conditions consistent with the requirements for the access category of the highway *(page 23).*
  - Refers to *Access Management Guidelines for Activity Centers, NCHRP 348, 1992.* http://www.accessmanagement.info/pdf/348NCHRP.pdf

Justification for Access Request:

Access Management Guidelines for Activity Centers (1992)

- Signalized spacing (pg. 4):
  - The spacing guidelines should minimize the need for variances or exceptions, while simultaneously protecting arterial traffic flow. They should view driveways to major activity centers as intersecting arterial roads rather than as curb cuts.
  - To assure efficient traffic flow, new signals should be limited to locations where the progressive movement of traffic will not be impeded significantly. The “optimum” distance between signals - where there is no loss in the through band width-depends on the cycle length and the prevailing speed. When signals are placed at other locations, there is a loss in band width and delay increases
- Unsignalized spacing (pg. 5):
  - *Strict application of traffic engineering criteria may push spacing requirements to 500 ft or more.* However, such spacings may be unacceptable for land use and perceived economic reasons in many suburban and urban environments where *development pressures opt for 100- to 200-ft spacing*. Spacing guidelines should achieve a reasonable balance between these conflicting requirements.

Next Steps:
Timelines

- **Volcano Heights Sector Development Plan**
  - June 3, 2013: City Council
- **Paseo del Norte High-Capacity Transit Study**
  - Summer 2013
- **Access Request**
  - TCC June 7, 2012 (and July 12, 2013?)
  - MTB June 21, 2013 or July 19, 2013

Volcano Heights Sector Development Plan

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City's Project Webpage:

http://www.cabq.gov/planning/residents/sector-development-plans/volcano-mesa-area-sector-development-plans/volcano-heights-sector/