

Prewitt-Milan Transportation Master Plan (PMTMP)

Technical Working Group Meeting #2

August 31st, 2021

Introductions

Northwest New Mexico Council of Governments

- Robert (Bob) Kuipers

Consultant: Wilson & Company

- Ben Bachwirtz
- Paige Wolfrom
- Ty Nagle

Technical Working Group Members

Policy Advisory Committee Members

Agenda

1. Welcome & Introductions
2. Review of Study Area/Project Objectives
3. I-40 Corridor Issues & Opportunities
 - a) Interchanges
 - b) Outer roads
 - c) Railroad crossings
 - d) Electric vehicle infrastructure
4. Project Website
5. Project Schedule & Next Steps
6. Adjourn

Review of Study Area/Project Objectives

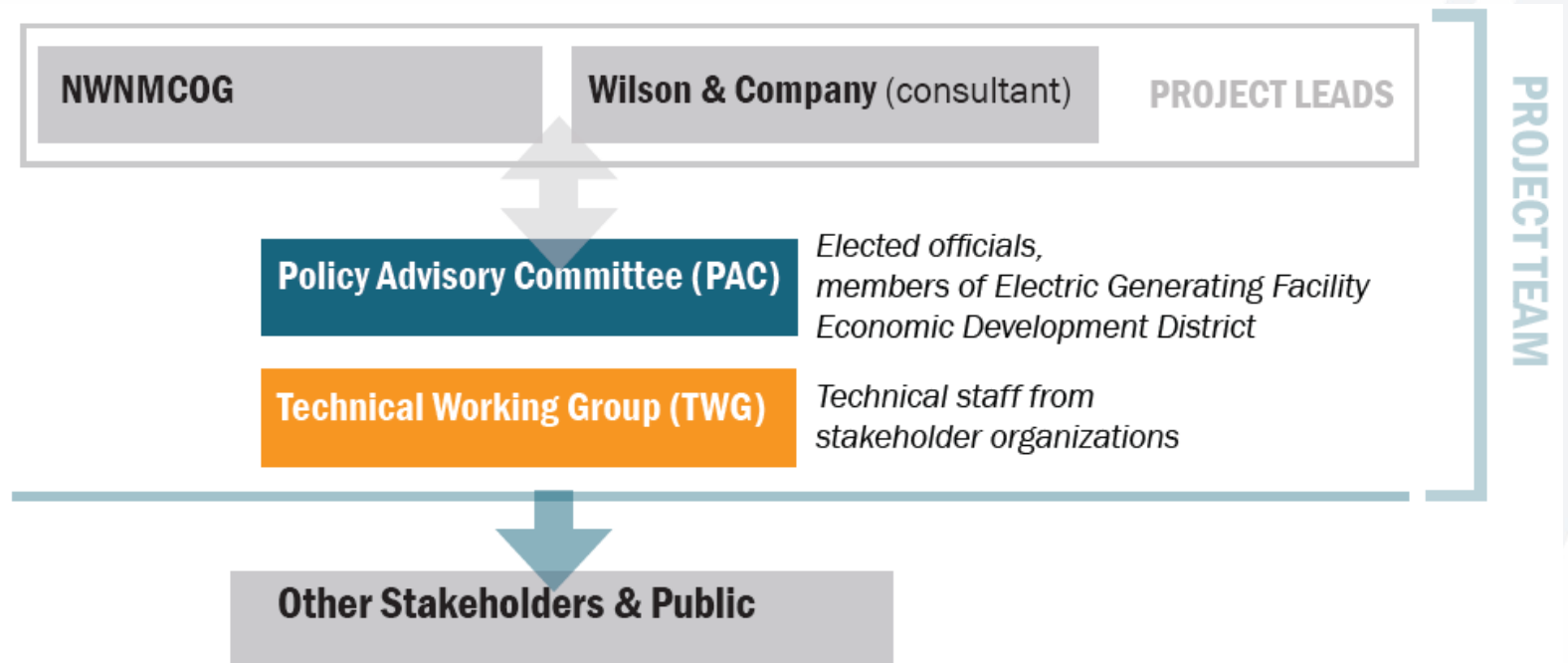
Study Area

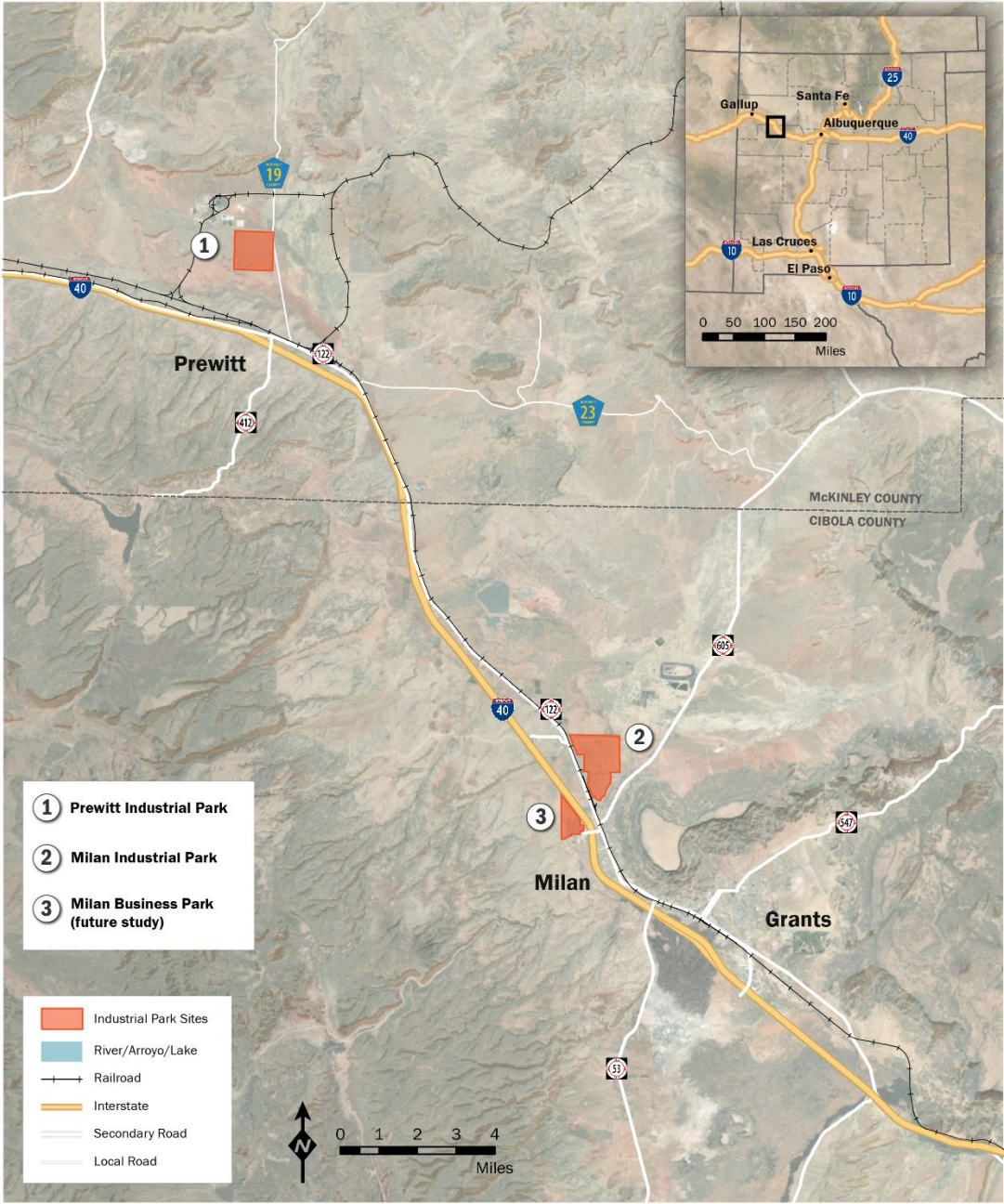


Project Objective

- The Prewitt-Milan Transportation Master Plan (PMTMP) will coordinate the planning and delivery of projects to improve access to the Milan and Prewitt industrial parks
- This TMP will analyze the multimodal transportation system to support industrial and economic development needs between Prewitt and Milan
- The purpose of the PMTMP is to plan and identify next-step design needs and opportunities, and outline funding in order to construct the infrastructure needed to serve an emerging economic boom in Northwest New Mexico

TWG and PAC





**Economic Development Sites
under Study by NWNMCOG**

Milan Industrial Park
MASTER PLAN AND PRELIMINARY DESIGN



Prewitt Industrial Park

Prewitt Industrial Park (2020)

- 626-acre site north of the community of Prewitt, in McKinley County, New Mexico
- Commonly referred to as the County Road 19 Site, just south of the Escalante power plant in Prewitt
- Good access to I-40 and BNSF Transcon



Conceptual Land Use – Prewitt Industrial Park Site

Milan Industrial Park

Milan Industrial Park

- 913-acre master planned industrial park
- Directly along BNSF Transcon
- Near I-40, truck stop & Grants-Milan Airport
- Phase I design is underway



1st TWG and PAC Meetings

- First meeting of the groups
- TWG discussion topics:
 - Future Sawmill Road interchange near Milan
 - Need for improved or reduced # of rail crossings
 - Deficiencies at Thoreau I-40 interchange
 - Transit service between Thoreau and Grants
- PAC: Grants projects should also be included

August Focus Groups

- Milan Industrial Park
 - Reviewed progress on the MIP
 - Discussed other potential development near Horizon Blvd
 - Overpass?
- Prewitt Industrial Park
 - Discussed future of Escalante Station
 - Reviewed overpass and NM 371 options

Project Website

<http://www.nwnmcog.com/>

HOME

PROGRAMS

FEATURED PROJECTS

The Prewitt-Milan Transportation Master Plan

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PROJECT OVERVIEW

STUDY AREA AND MAP

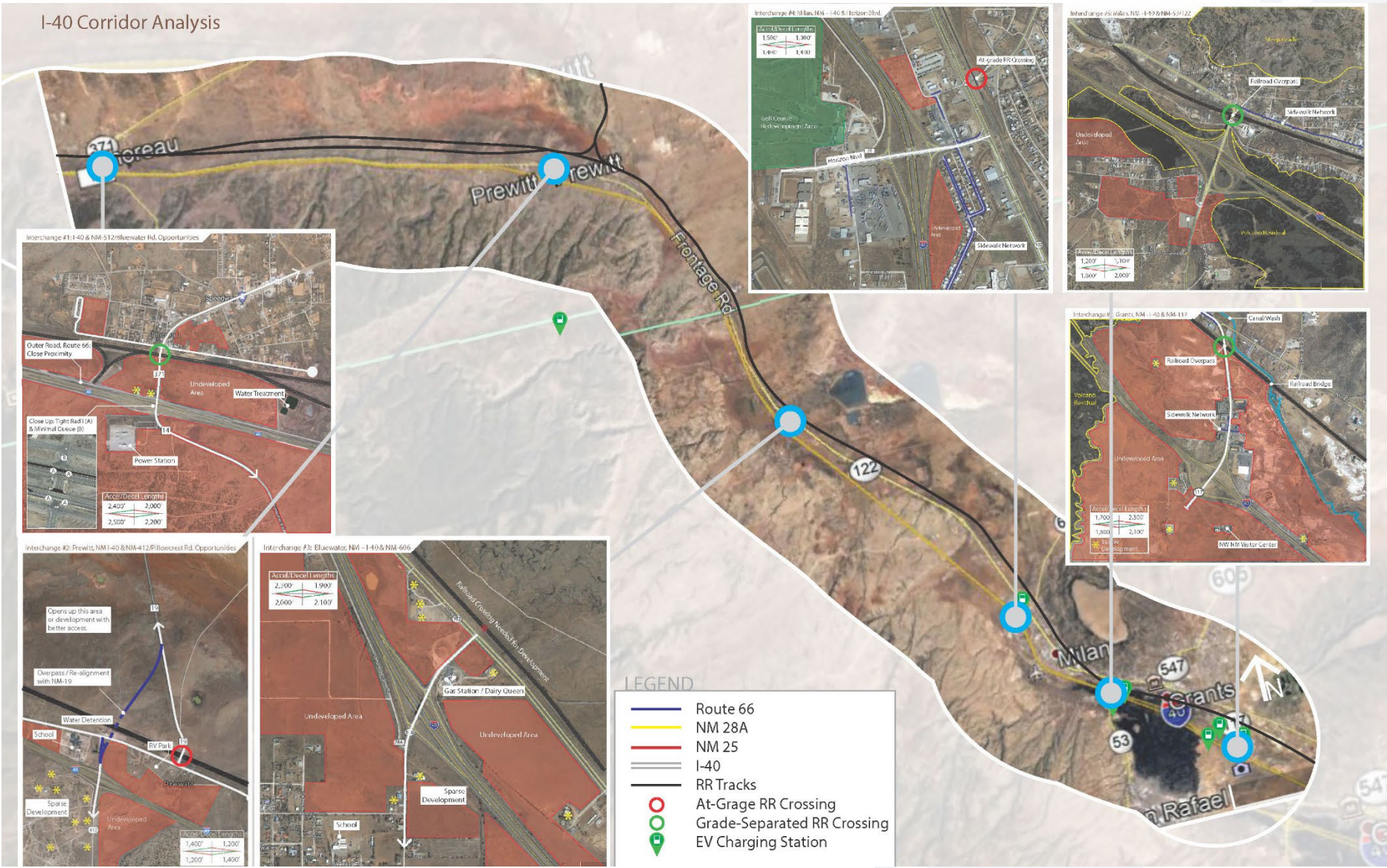
PROJECT UPDATES & DOCUMENTS

INTERACTIVE MAP - ADD THE TRANSPORTATION PROJECTS YOU WANT TO SEE

PROJECT SCHEDULE

I-40 Corridor Issues & Opportunities

I-40 Corridor Issues & Opportunities



AASHTO Acceleration & Deceleration Guidelines

75 mph corridor

‘Merge speed’

Ratio multiplier for
slopes: 1.2, 1.4 / 0.9,
0.6

Less than 3 Percent

U.S. Customary										
Acceleration Lane Length, L_a (ft) for Design Speed of Controlling Feature on Ramp, V' (mph)										
Highway	Stop Condition	15	20	25	30	35	40	45	50	
Design Speed, V (mph)	Merge Speed, V_a (mph)	Average Running Speed (i.e., Initial Speed) at Controlling Feature on Ramp, V'_a (mph)								
		0	14	18	22	26	30	36	40	44
30	23	180	140	—	—	—	—	—	—	—
35	27	280	220	160	—	—	—	—	—	—
40	31	360	300	270	210	120	—	—	—	—
45	35	560	490	440	380	280	160	—	—	—
50	39	720	660	610	550	450	350	130	—	—
55	43	960	900	810	780	670	550	320	150	—
60	47	1200	1140	1100	1020	910	800	550	420	180
65	50	1410	1350	1310	1220	1120	1000	770	600	370
70	53	1620	1560	1520	1420	1350	1230	1000	820	580
75	55	1790	1730	1630	1580	1510	1420	1160	1040	780
80	57	2000	1900	1800	1750	1680	1600	1340	1240	980

More than 3 Percent

U.S. Customary										
Deceleration Lane Length, L_d (ft) for Design Speed of Controlling Feature on Ramp, V' (mph)										
Highway Design Speed, V (mph)	Diverge Speed, V_a (mph)	Stop Condition	15	20	25	30	35	40	45	50
		Average Running Speed at Controlling Feature on Ramp, V'_a (mph)								
		0	14	18	22	26	30	36	40	44
30	28	235	200	170	140	—	—	—	—	—
35	32	280	250	210	185	150	—	—	—	—
40	36	320	295	265	235	185	155	—	—	—
45	40	385	350	325	295	250	220	—	—	—
50	44	435	405	385	355	315	285	225	175	—
55	48	480	455	440	410	380	350	285	235	—
60	52	530	500	480	460	430	405	350	300	240
65	55	570	540	520	500	470	440	390	340	280
70	58	615	590	570	550	520	490	440	390	340
75	61	660	635	620	600	575	535	490	440	390
80	64	705	680	665	645	620	580	535	490	440

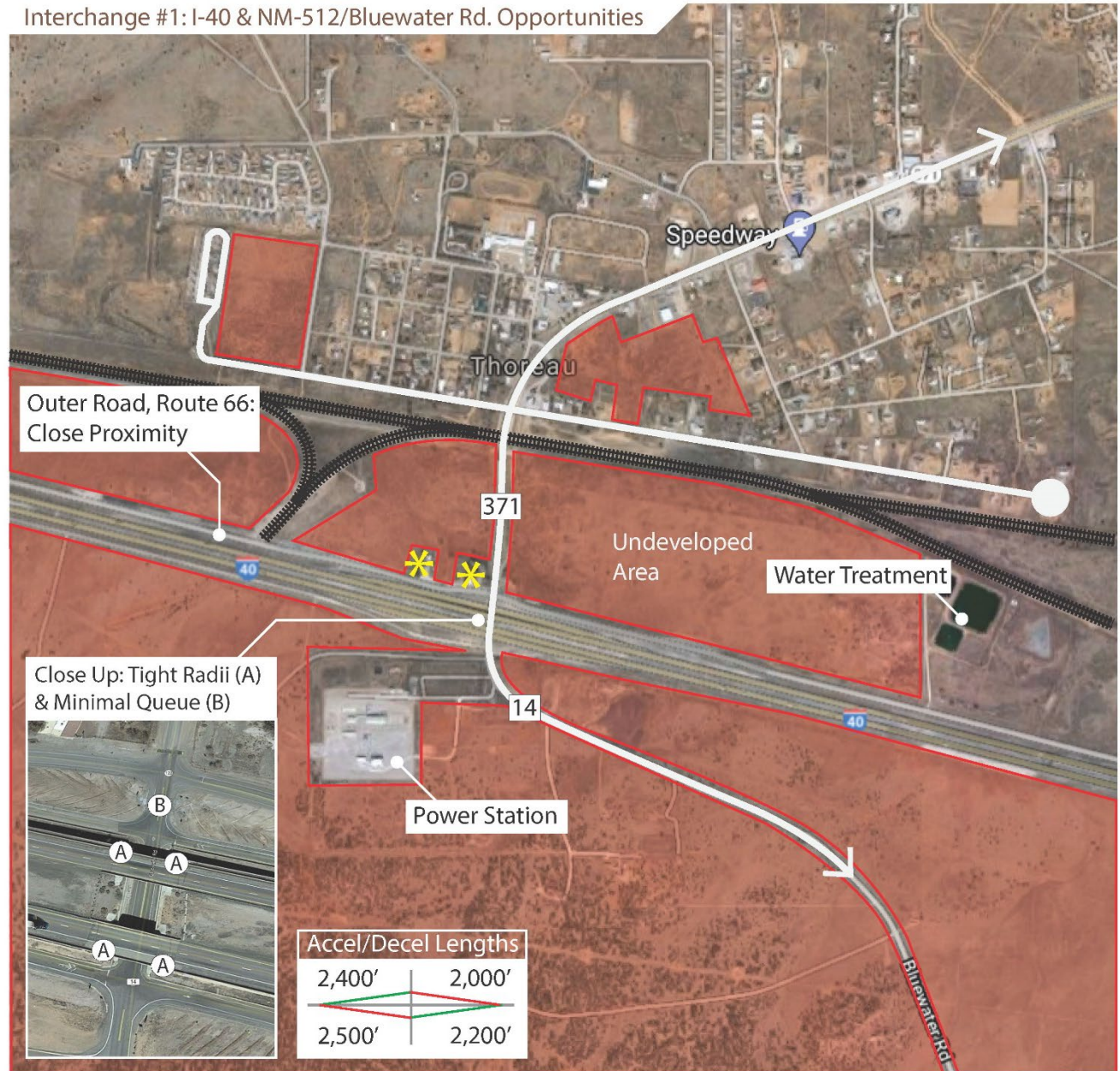
#1: Bluewater Road

Outer Road close proximity ~75'

Tight on/off ramp radii & queue lengths

Power Station at SW quadrant

Grade separated RR crossing



I-40 Corridor Issues & Opportunities

I-40 & Bluewater Road Interchange in Thoreau, NM



#2: Pillowcrest Road

At-grade RR crossing &
minimal SB queue (280')

Overpass opportunity to
realign & remove 2
intersections

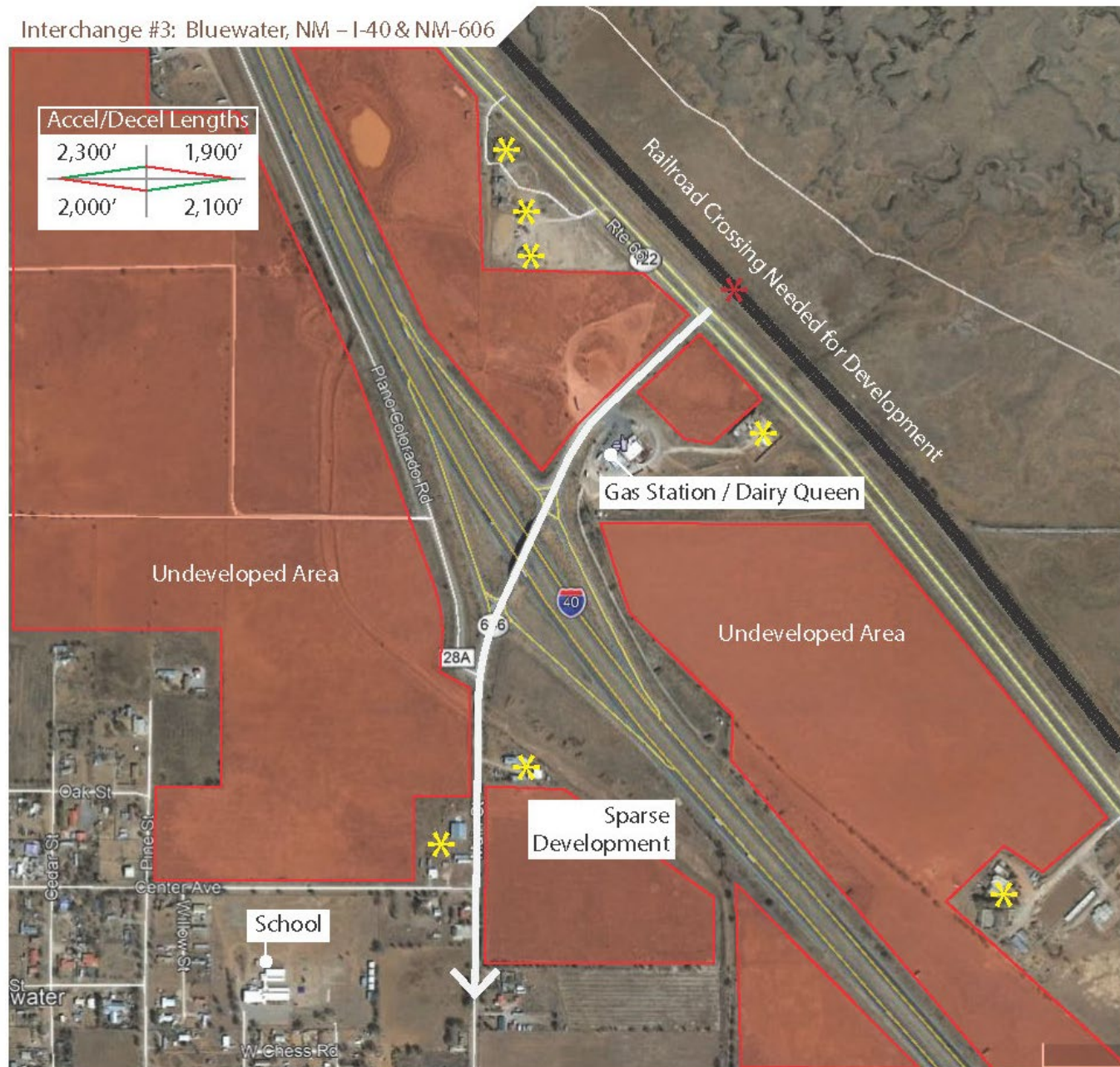


#3: NM-606

Lacking
connection to the
NE across RR
tracks

At-grade RR
crossing 1 mile
north

Surrounding
residential
development



#4: Horizon Boulevard

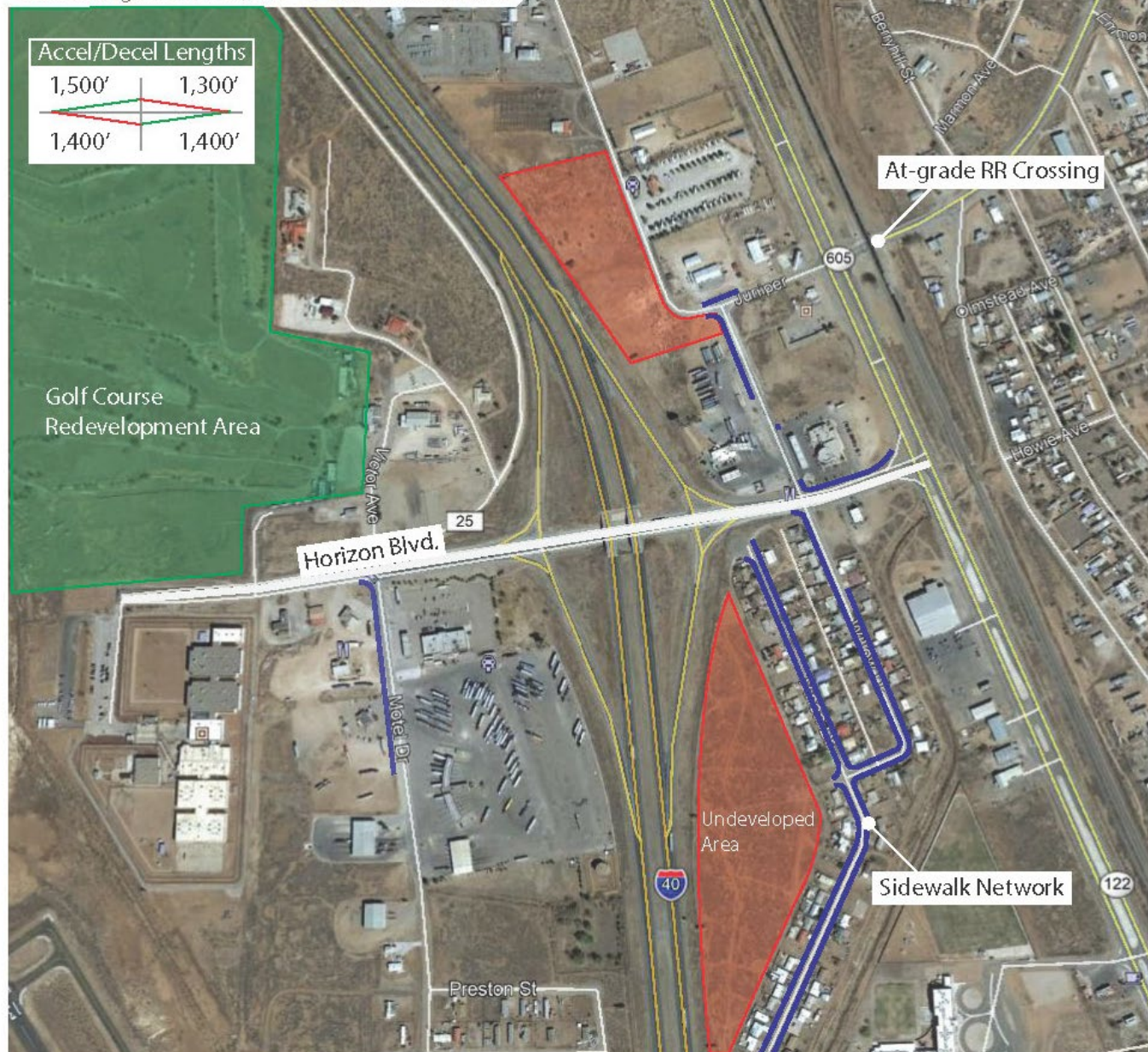
Most continuous sidewalk network present

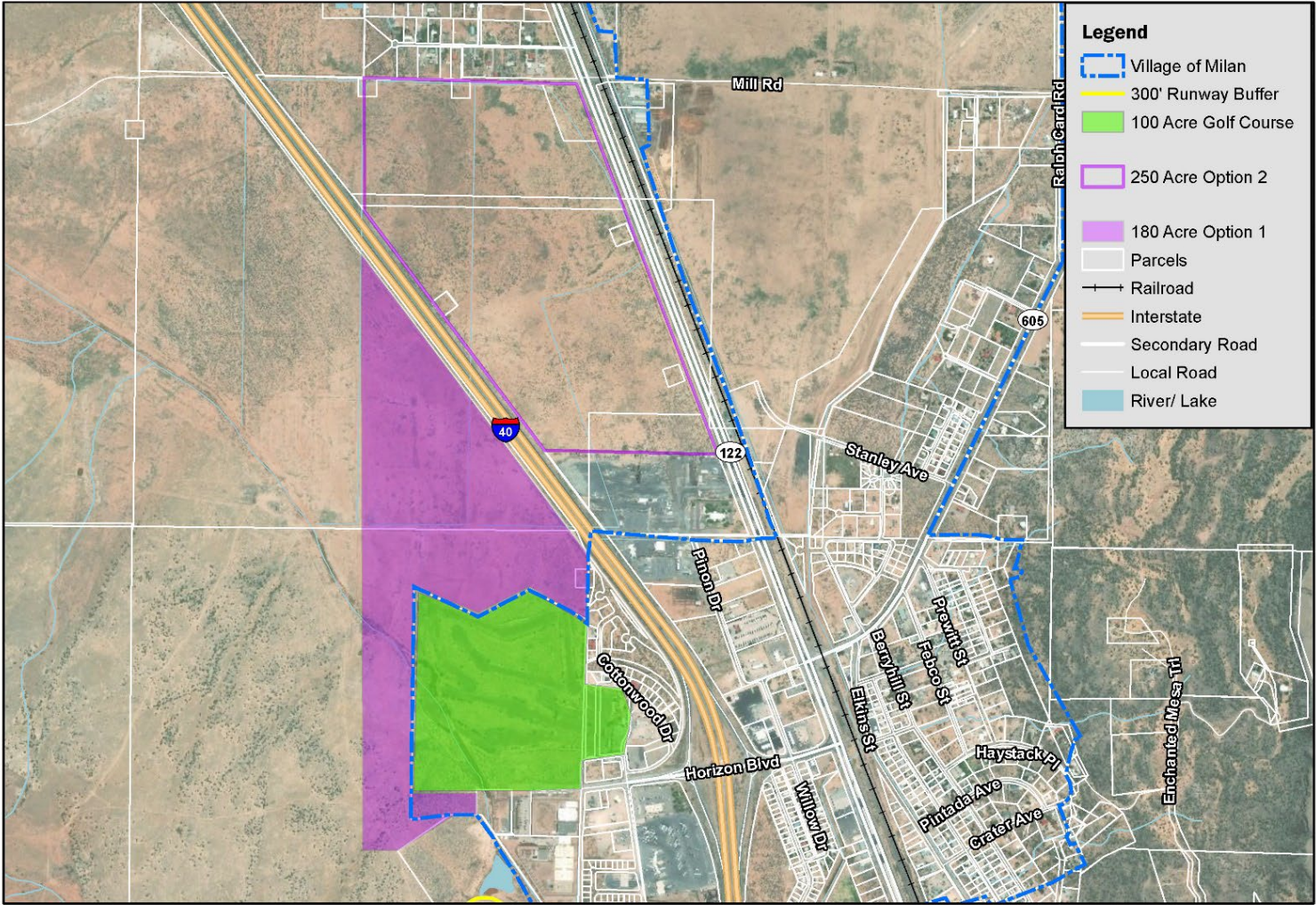
Redevelopment opportunity present with the Golf Course property

Conceptual study completed

Need improved lighting before we push a ped network

Interchange #4: Milan, NM – I-40 & Horizon Blvd.





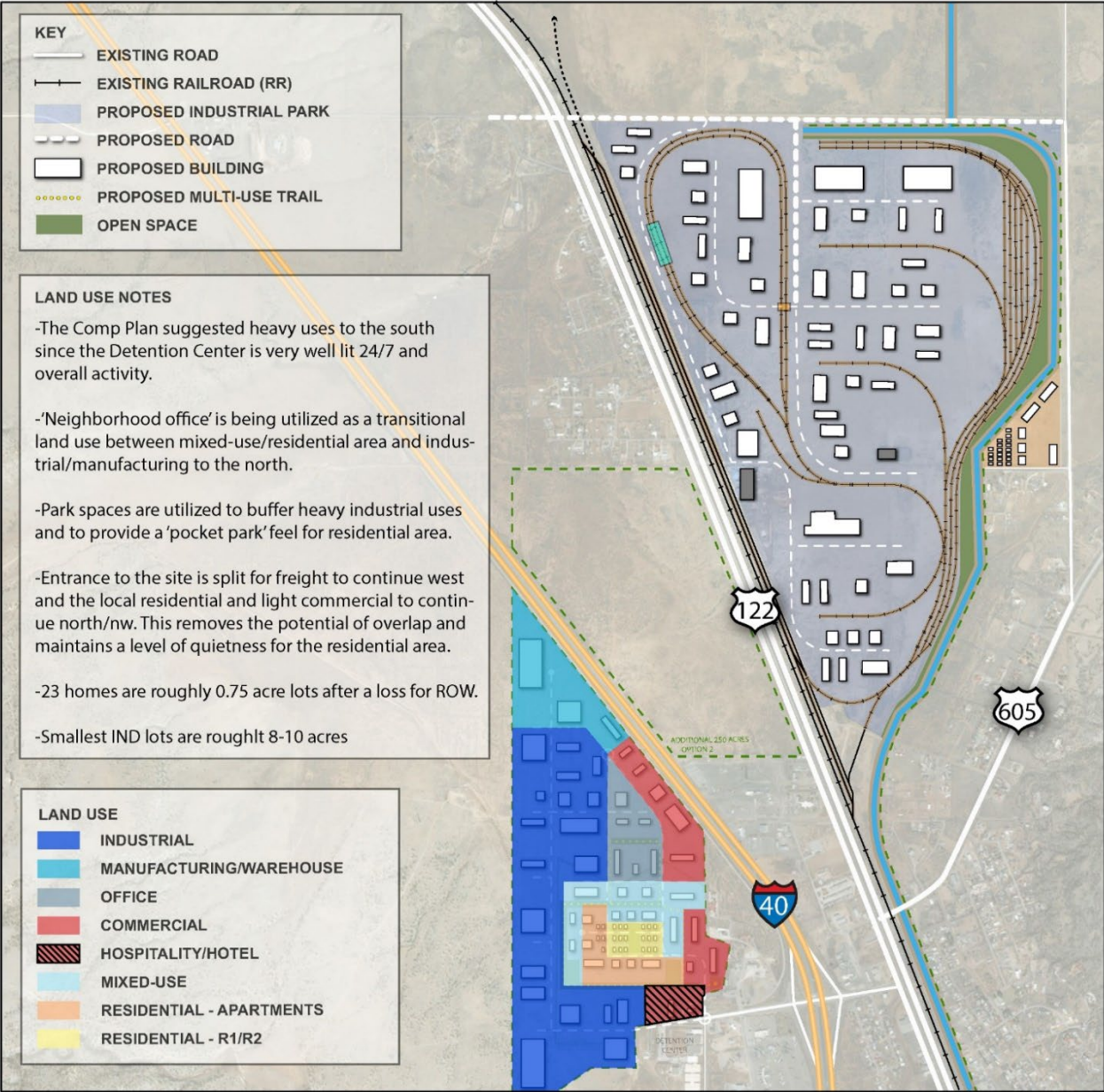
Village of Milan - 680 Acre Site Options
Village of Milan

00.250.5

1" = 1 Mile

N

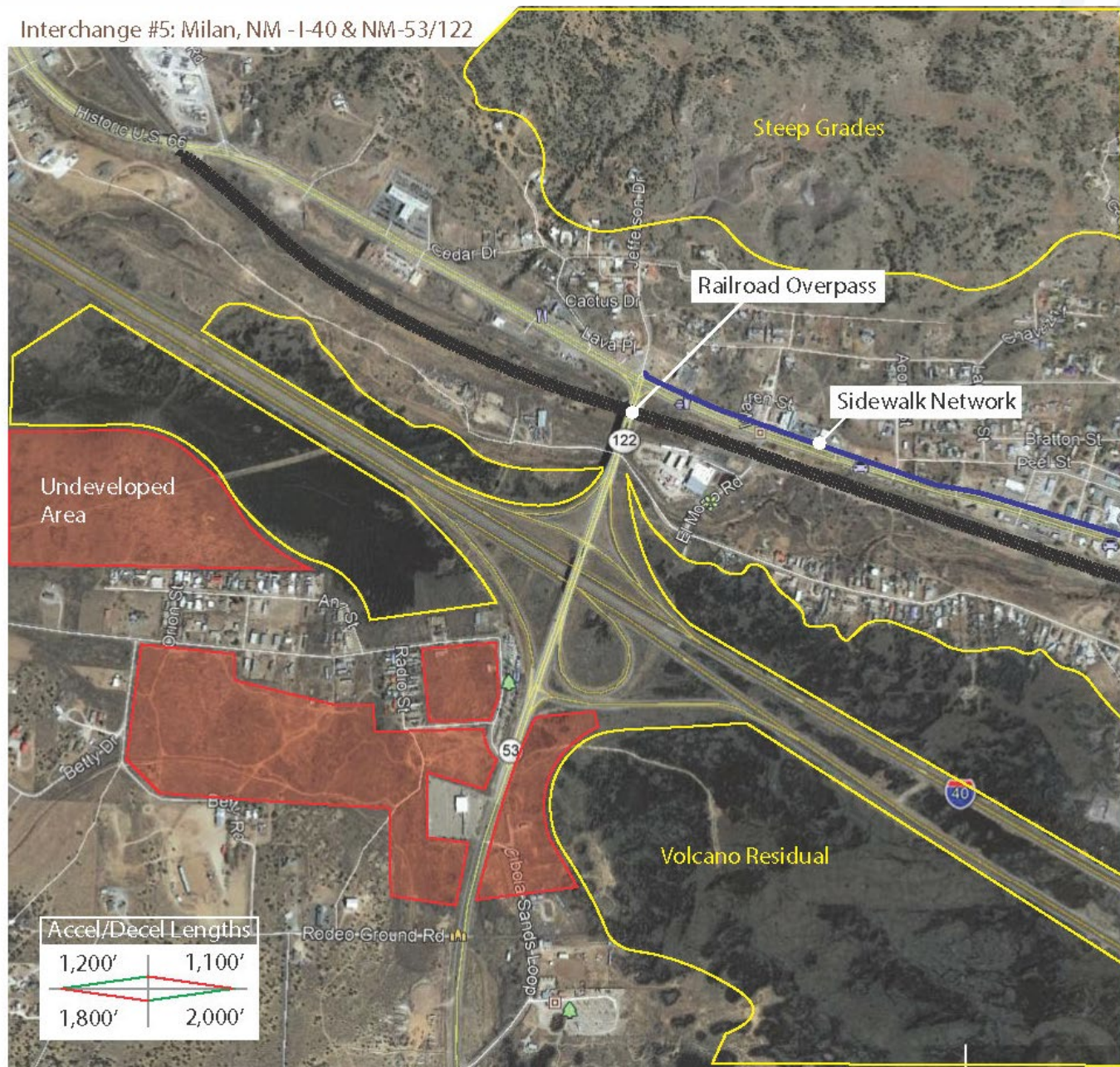
WILSON
& COMPANY





#5: NM-122 & 53

Limited developable area with volcanic rock, steep grades and nearby residential development



#6: NM-117

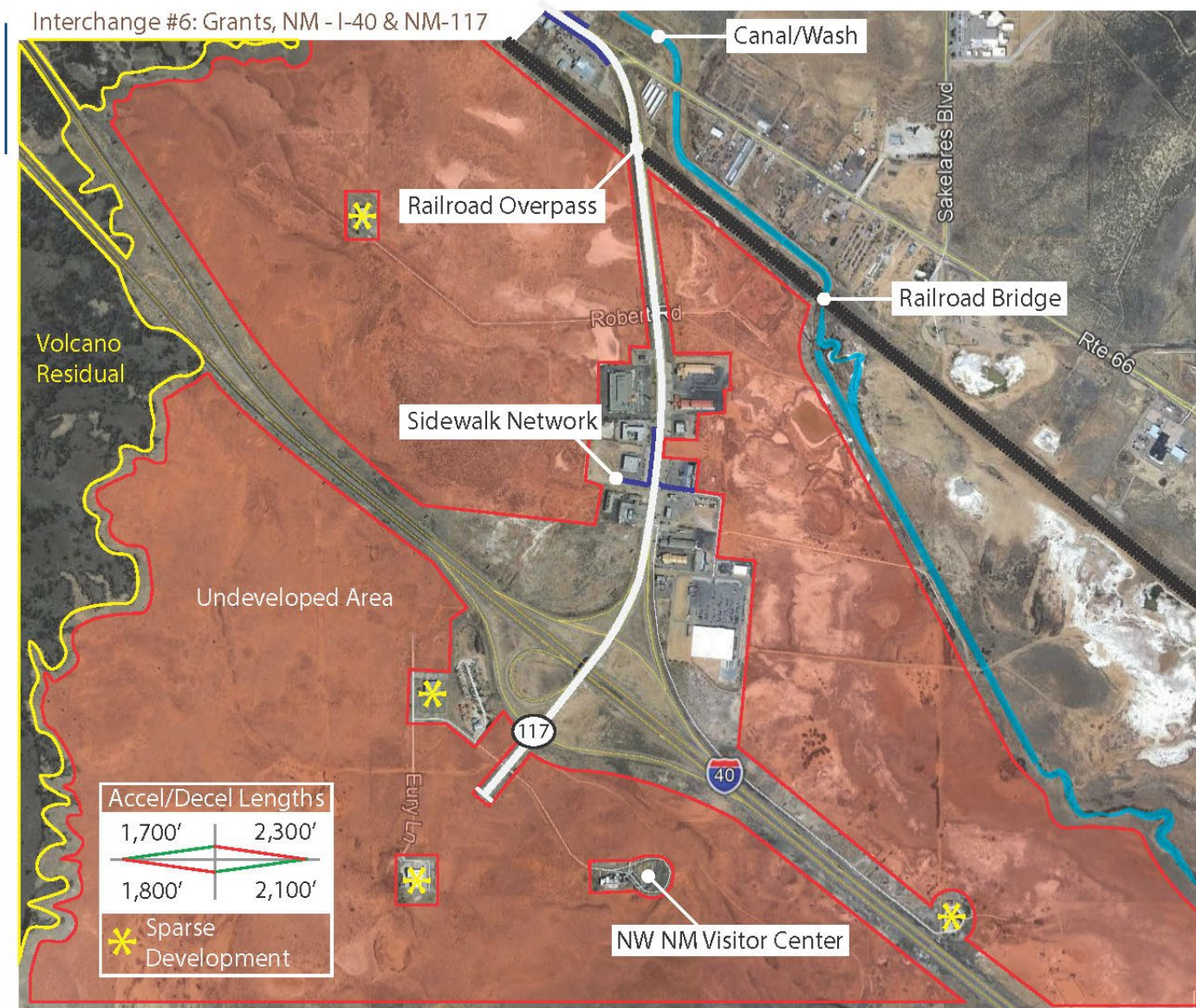
Ample
development
opportunity

Limited railroad
access

Infrastructure not
in place to grow to
the SW

30-75mph =
1,510'/3,130'

590' = ~52mph



I-40 Outer Roads:
Maintaining emergency access benefit – not hindrance

Route 66 provides a continuous route that parallels I-40 to the north/east

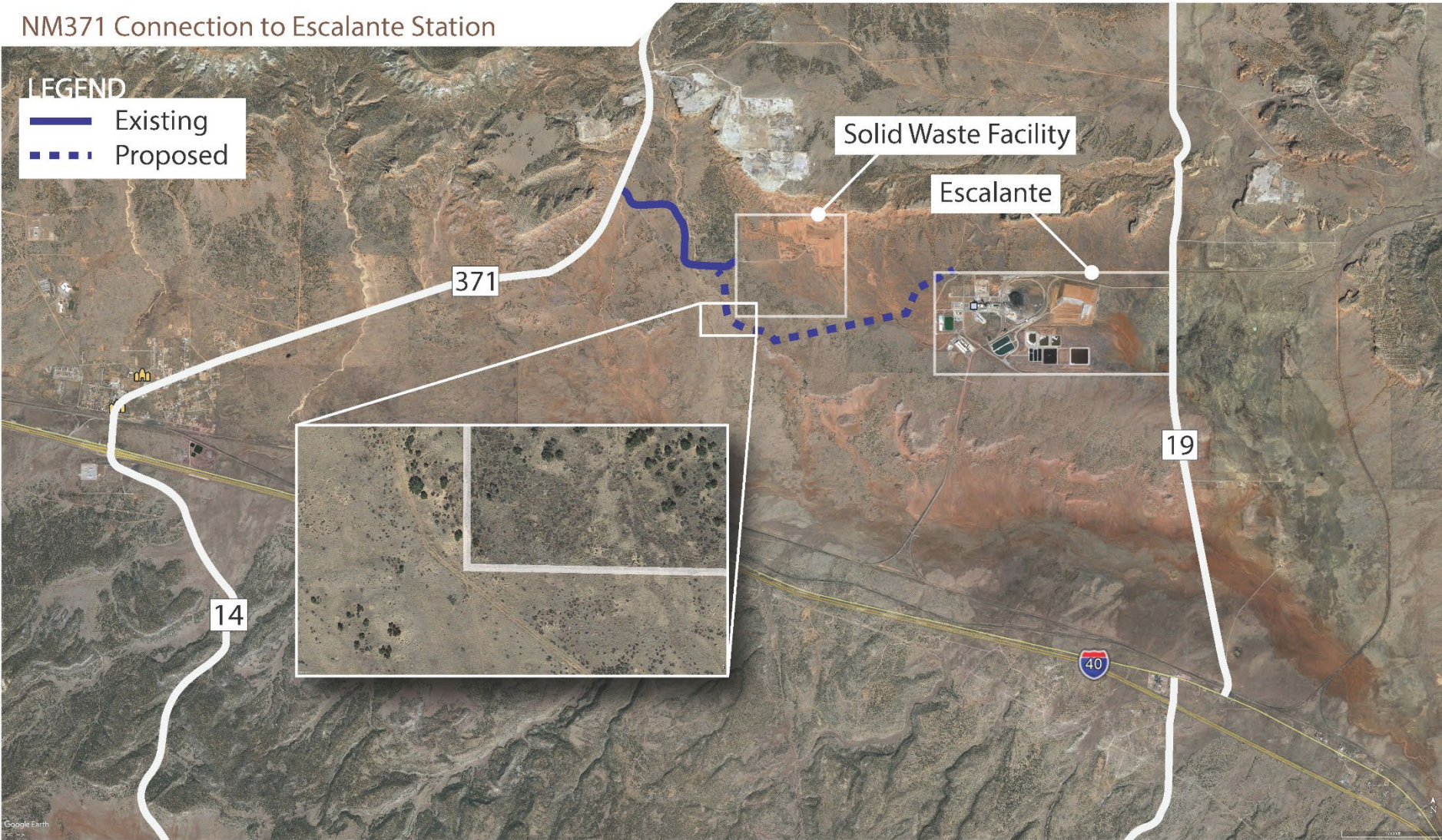
NM-28A & NM-25 provide limited alternate access



NM-317 Connection for Escalante Plant:

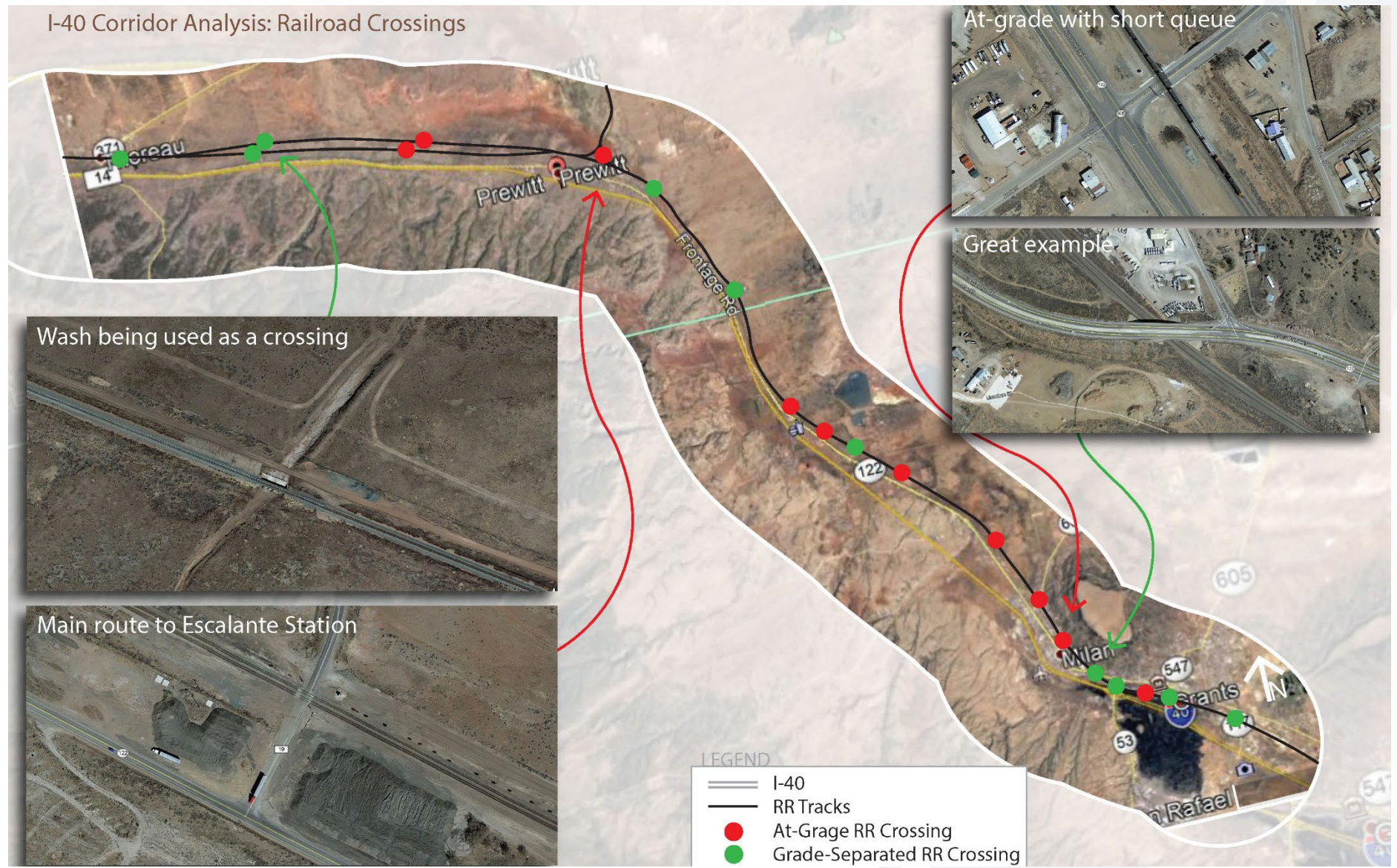
Provides an access point from the east to relieve traffic flow from NM-19 and the dangerous at-grade RR crossing / short queue (280').

NM371 Connection to Escalante Station



Railroad crossings

10 (8) grade-separated & 10 at-grade



Electric Vehicle Charging Stations

6 in the corridor area

Significant factor to an
industrial park?

Regional draw to consider for
future park?



What did we miss?

- Other economic development areas?
- Locations with road safety issues?
- Railroad-related issues?

Project Website

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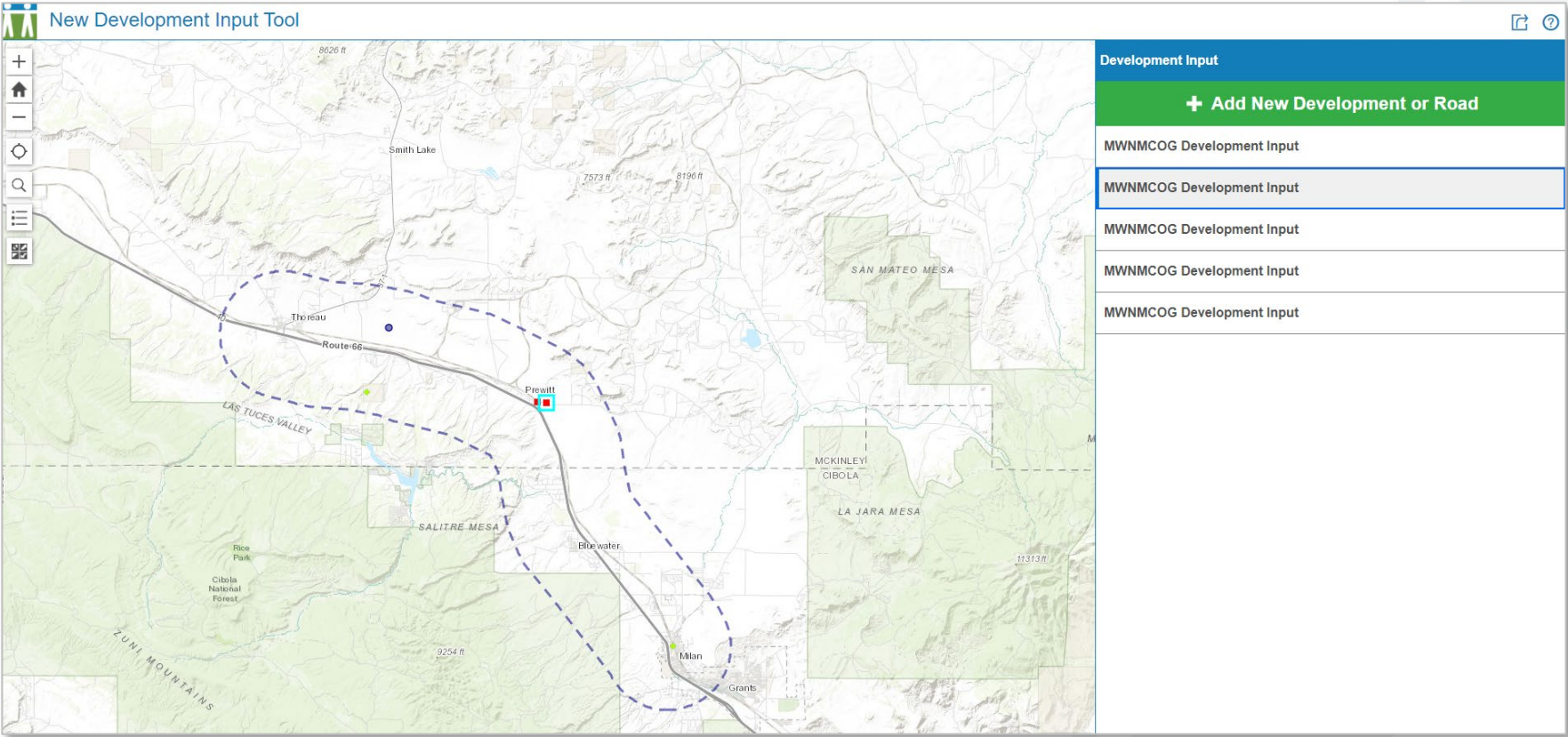
STUDY AREA AND MAP

PROJECT UPDATES & DOCUMENTS

INTERACTIVE MAP - ADD THE TRANSPORTATION PROJECTS YOU WANT TO SEE

PROJECT SCHEDULE

Interactive Map




Project Website

[HOME](#) [PROGRAMS](#) [FEATURED PROJECTS](#)

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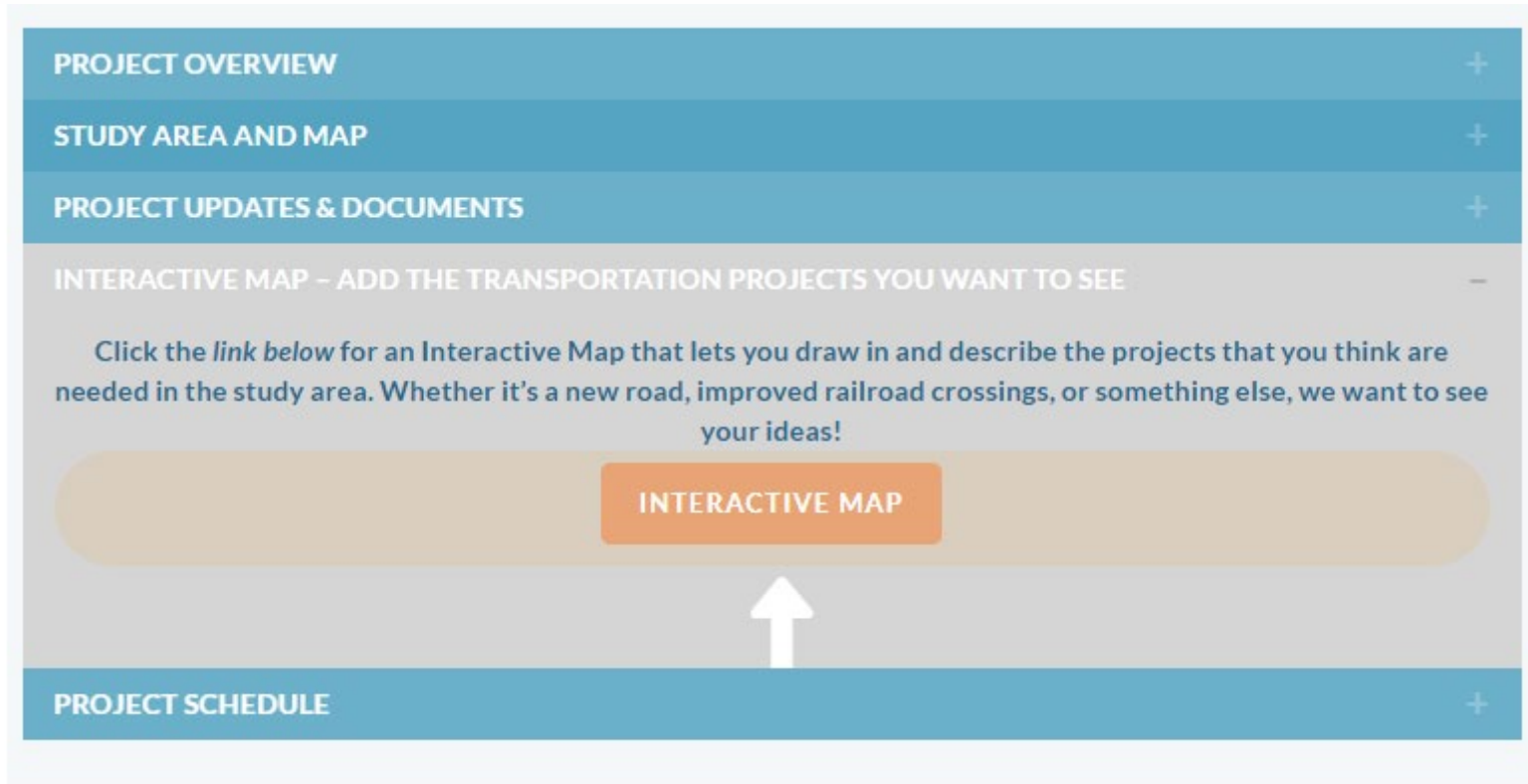
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PROJECT SCHEDULE +

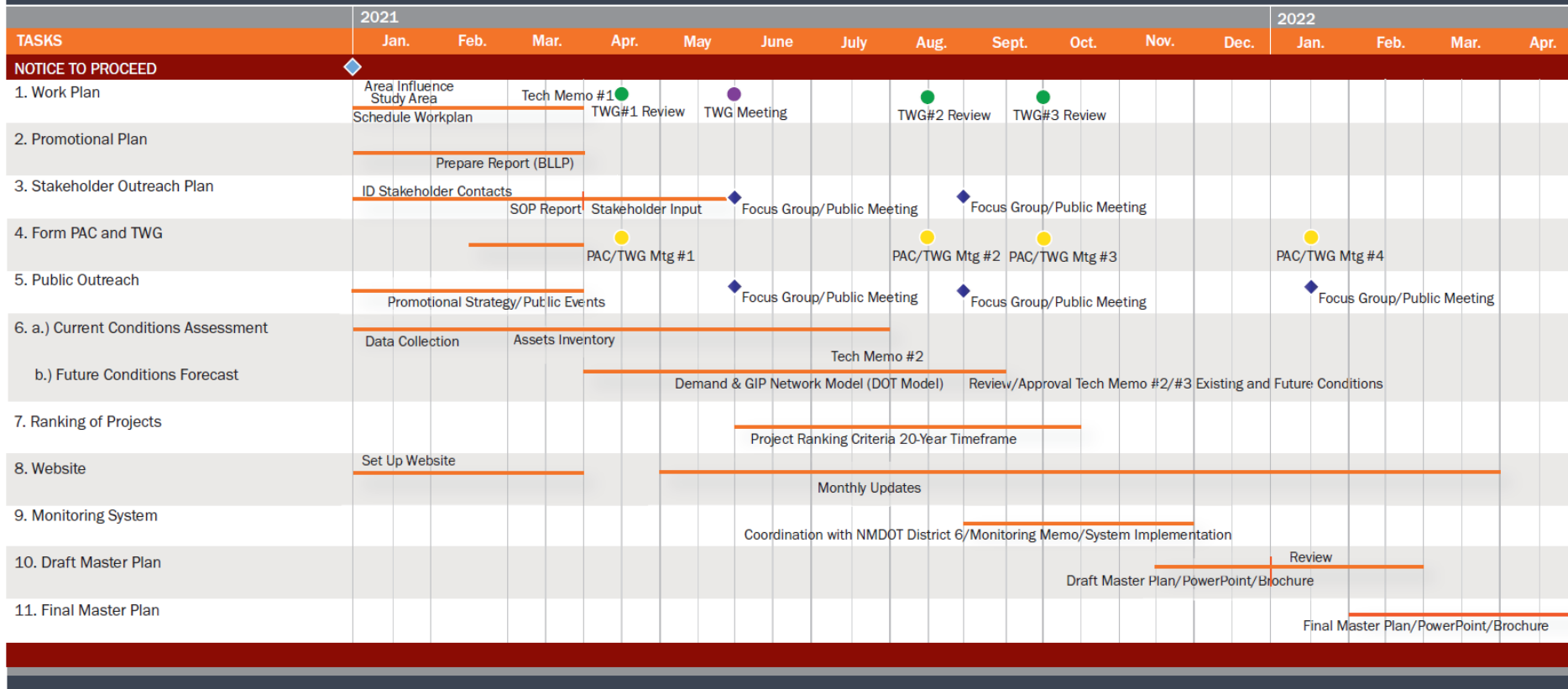
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Project Schedule

Schedule

PROJECT SCHEDULE: Prewitt-Milan Transportation Master Plan



Next Steps

- Technical memo #2 – summary of analysis so far, initial list of projects
- TWG meeting #3 – late October

Thank you!

Ben Bachwirtz

bbachwirtz@wilsonco.com

505.348.4008

Bob Kuipers

rkuipers@nwnmcog.org

505.722.4237

Previous Recommendations & Studies

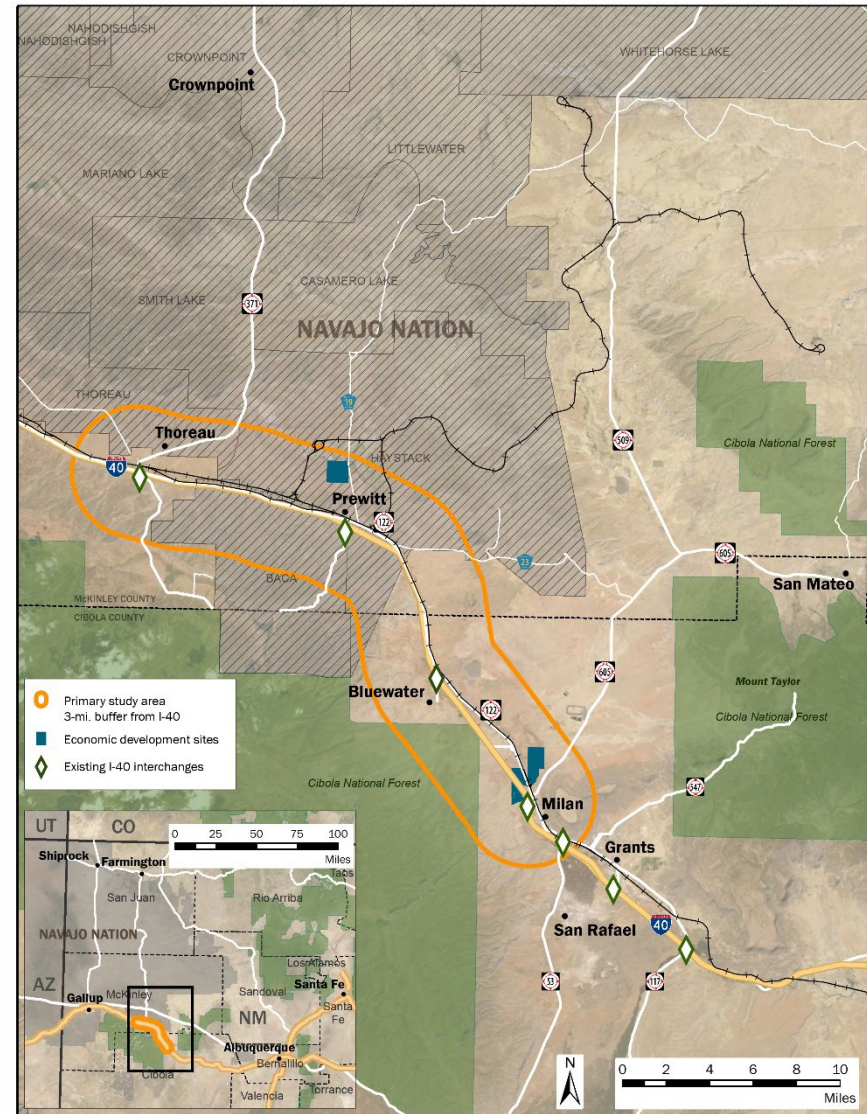
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- 626-acre site north of the community of Prewitt, in McKinley County, New Mexico
- Commonly referred to as the County Road 19 Site, just south of the Escalante power plant in Prewitt



TWG Vision

When you look at the Study Area, what types of transportation investments would help you achieve your economic development goals?



Previous Recommendations & Studies

Statewide/Regional Plans

New Mexico 2040 Plan (statewide LRTP)

New Mexico Freight Plan

New Mexico Statewide Freight Plan

New Mexico DOT STIP

NW New Mexico Regional Transportation Plan

Navajo Nation Plans

Navajo Nation LRTP & TTIP

Navajo Nation Inland Port

Chapter Community Land Use Plans (CLUPs)

Local Plans

Village of Milan Comprehensive Plan (2017)

Comprehensive Plan for Cibola County (2015)

McKinley County Comprehensive Plan Update (2012)

Development Plans/Site Reports

Prewitt & Milan industrial park master plans

Solid Waste Authority Site Report

I-40 & Bluewater Road Interchange in Thoreau, NM



I-40 & Horizon Blvd in Milan





At-grade crossing, NM 605, Milan



NM 371 overpass, Thoreau

Alternative Acceleration Calculations

75 mph corridor

AASHTO vs
NCHRP

‘Speed Reached’
for merging

US Customary										
Acceleration length, L (ft) for entrance curve design speed (mph)										
Highway	Stop	15	20	25	30	35	40	45	50	
Design	condition									
speed, V	reached, V_a									
(mph)	(mph)	0	14	18	22	26	30	36	40	44
30	23	180	140	—	—	—	—	—	—	—
35	27	280	220	160	—	—	—	—	—	—
40	31	360	300	270	210	120	—	—	—	—
45	35	560	490	440	380	280	160	—	—	—
50	39	720	660	610	550	450	350	130	—	—
55	43	960	900	810	780	670	550	320	150	—
60	47	1200	1140	1100	1020	910	800	550	420	180
65	50	1410	1350	1310	1220	1120	1000	770	600	370
70	53	1620	1560	1520	1420	1350	1230	1000	820	580
75	55	1790	1730	1630	1580	1510	1420	1160	1040	780

TABLE 2 Acceleration Lane Lengths Calculated in NCHRP Report 505 using the TSPM for a 180 lb/hp Truck on a Zero Percent Grade (3)

Hwy Design Speed, mph	Speed Reached, mph	Acceleration Length, ft, for Entrance Curve Design Speed, mph								
		Stop	15	20	25	30	35	40	45	50
		Entrance Curve Initial Speed, mph								
		0	14	18	22	26	30	36	40	44
30	23	275	160							
35	27	400	300	230						
40	31	590	475	400	310	170				
45	35	800	700	630	540	400	240			
50	39	1100	1020	950	850	720	560	200		
55	43	1510	1400	1330	1230	1100	920	580	240	
60	47	2000	1900	1830	1740	1600	1430	1070	760	330
65	50	2490	2380	2280	2230	2090	1920	1560	1220	800
70	53	3060	2960	2900	2800	2670	2510	2140	1810	1260
75	55	3520	3430	3360	3260	3130	2960	2590	2290	1850

U.S. Customary					
Design Speed of Highway (mph)	Deceleration Lanes				
	Ratio of Length on Grade to Length on Level for Design Speed of Turning Curve (mph) ^a				
	3 to 4% upgrade 0.9		3 to 4% downgrade 1.2		
All Speeds	5 to 6% upgrade 0.8		5 to 6% downgrade 1.35		
Design Speed of Highway (mph)	Acceleration Lanes				
	Ratio of Length on Grade to Length on Level for Design Speed of Turning Curve (mph) ^a				
	20	30	40	50	All Speeds
3 to 4% Upgrade					3 to 4% Downgrade
40	1.3	1.3	—	—	0.7
45	1.3	1.35	—	—	0.675
50	1.3	1.4	1.4	—	0.65
55	1.35	1.45	1.45	—	0.625
60	1.4	1.5	1.5	1.6	0.6
65	1.45	1.55	1.6	1.7	0.6
70	1.5	1.6	1.7	1.8	0.6
75	1.6	1.7	1.8	2.0	0.6
80	1.7	1.8	2.0	2.1	0.6
5 to 6% Upgrade					5 to 6% Downgrade
40	1.5	1.5	—	—	0.6
45	1.5	1.6	—	—	0.575
50	1.5	1.7	1.9	—	0.55
55	1.6	1.8	2.05	—	0.525
60	1.7	1.9	2.2	2.5	0.5
65	1.85	2.05	2.4	2.75	0.5
70	2.0	2.2	2.6	3.0	0.5
75	2.15	2.35	2.8	3.25	0.5
80	2.3	2.5	3	3.5	0.5