

Point C. SOI Rollback Verdi/Mogul Traffic

Complex, dangerous and outdated intersection

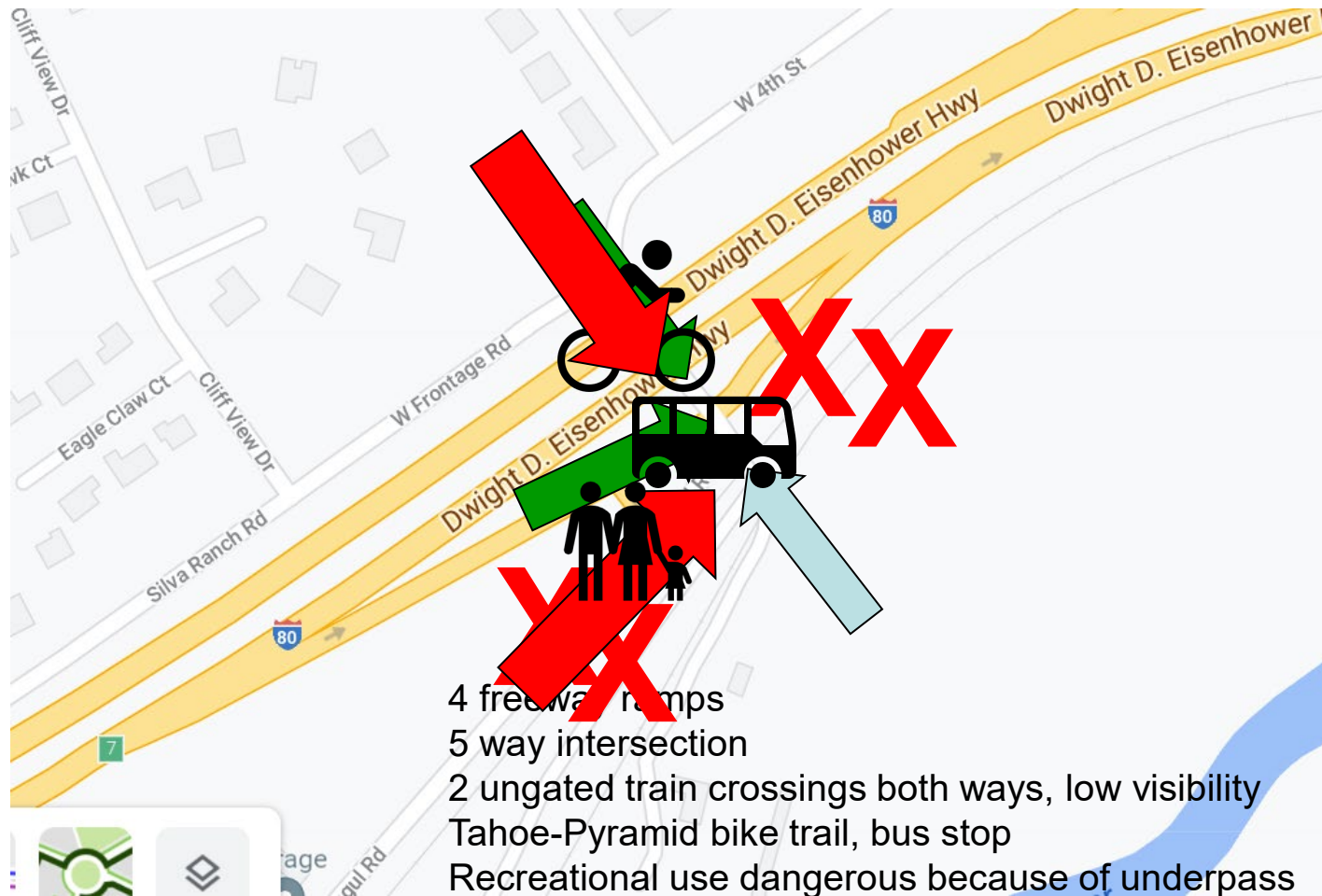


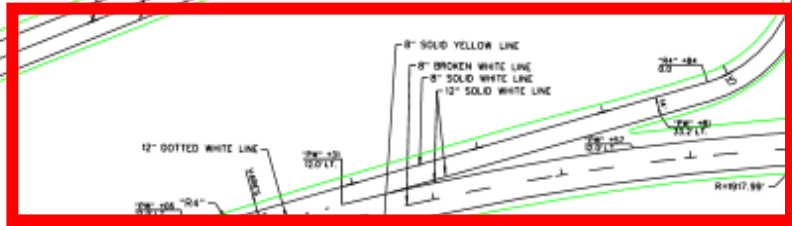
Bad visibility, trains from both sides





Industrial traffic detrimental





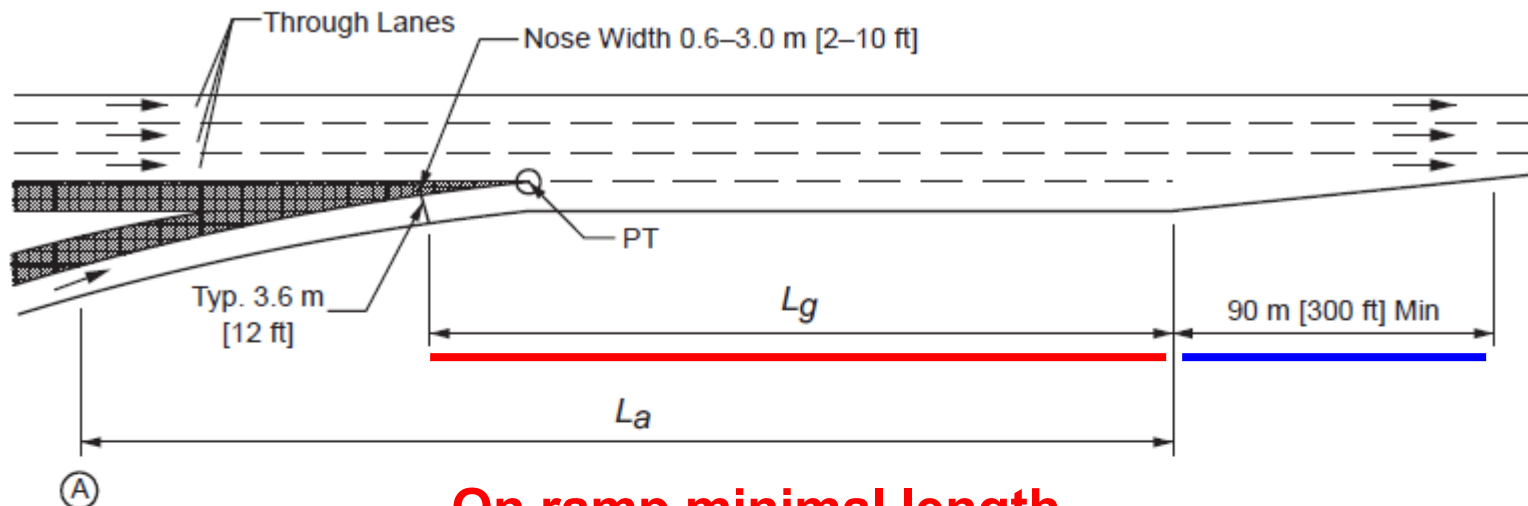
TRISTAR
AASHTO

A Policy on Geometric Design of Highways and Streets

2018
7th Edition



The “Green Book” by the American Association of State Highway Transportation Officials (AASHTO)



On ramp minimal length

Parallel Design

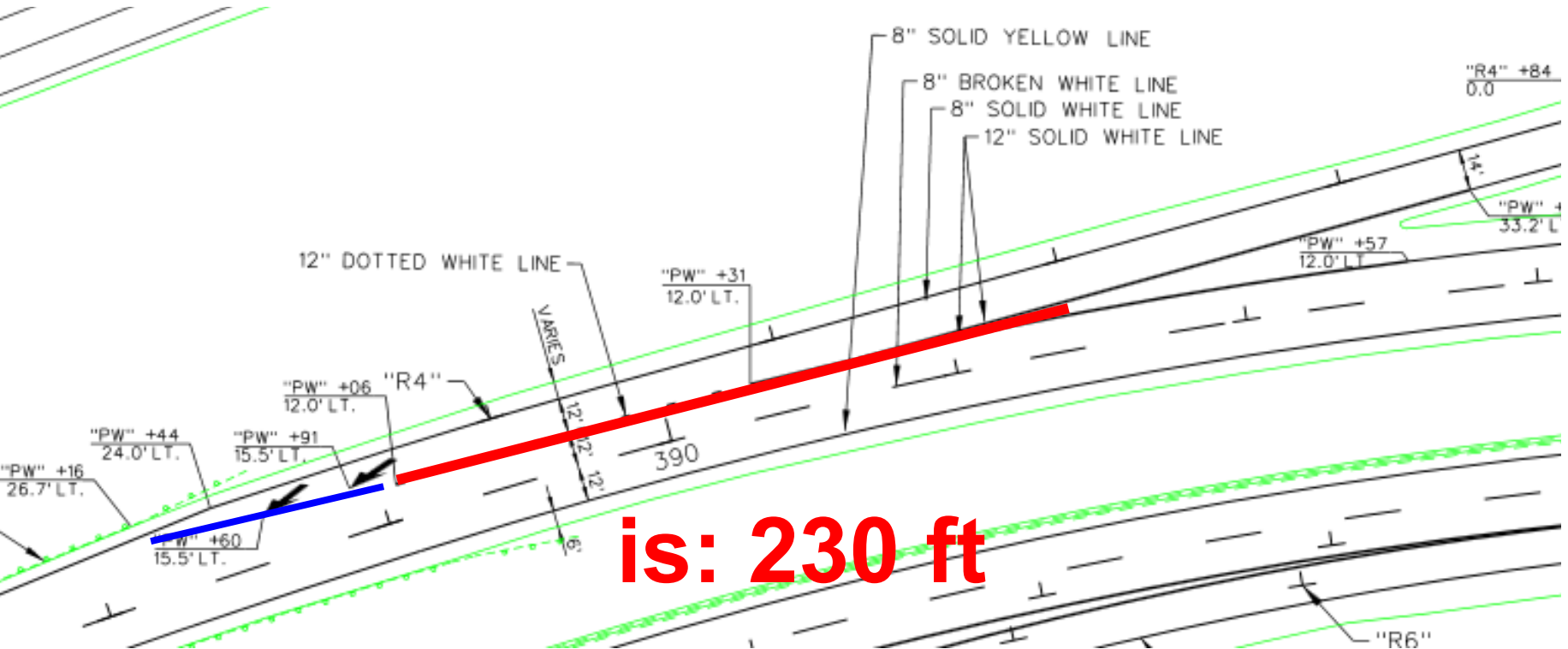
– B –

Notes:

1. L_a is the required acceleration length as shown in Table 10-3 or as adjusted by Table 10-4.
2. Point A controls speed on the ramp. L_a should not start back on the curvature of the ramp unless the radius equals 300 m [100 ft] or more.
3. L_g is the required gap acceptance length. L_g should be a minimum of 150 m [300 ft to 500 ft] depending on the nose width.
4. The value of L_a or L_g , whichever produces the greater distance downstream from where the nose equals 0.6 m [2 ft], is suggested for use in the design of the ramp distance.

Figure 10-69. Typical Single-Lane Entrance Ramps

Westbound on-ramp not up to minimal safety standards



is: 230 ft

<300-500 ft requirement

Table 10-3 in “The Green Book”

U.S. Customary										
Acceleration Length, L (ft) for Entrance Curve Design Speed (mph)										
Highway		Stop Condition	15	20	25	30	35	40	45	50
Design Speed, V (mph)	Speed Reached, V_a (mph)	and Initial Speed, 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	1030	940	830	550	420	180
<u>65</u>	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

Note: Uniform 50:1 to 70:1 tapers are recommended where lengths of acceleration lanes exceed 1,300 ft.

Table 10-4. Speed Change Lane Adjustment Factors as a Function of Grade (Continued)

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				
All Speeds	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 of 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
	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

X 1.5

Minimal length of acceleration lane

Should be:

0 - 2 % uphill: 1120 ft

3-4 % uphill: $1120 \text{ ft} \times 1.5 = 1680 \text{ ft}$

Is: 230 ft, no shoulder

cars, not trucks

Recommended Merging Speed:

60 mph

4. The value of L_a or L_g , whichever produces the greater distance downstream from where the nose equals 0.6 m [2 ft], is suggested for use in the design of the ramp distance.

Figure 10-69. Typical Single-Lane Entrance Ramps

The geometrics of the ramp proper should be such that motorists may attain a speed that is within 10 km/h [5 mph] of the operating speed of the freeway by the time they reach the point where the left edge of the ramp joins the traveled way of the freeway. For consistency of application, this point of convergence of the left edge of the ramp and the right edge of the through lane may be assumed to occur where the right edge of the ramp traveled way is 3.6 m [12 ft] from the right edge of the through lane of the freeway.

The distance needed for acceleration in advance of this point of convergence is governed by the speed differential between the operating speed on the entrance curve of the ramp and the operating speed of the highway. Table 10-3 shows minimum lengths of acceleration distances for entrance terminals.

$$\Delta E_{pot} = m \cdot g \cdot h$$

$$\Delta E_{kin} = \frac{1}{2} m \cdot (v_1^2 - v_0^2)$$

$$W_{max} = F \cdot l = m \cdot a_{max} \cdot l$$

$$W_{max} \geq \Delta E_{pot} + \Delta E_{kin}$$

$$m \cdot a_{max} \cdot l \geq m \cdot g \cdot h + \frac{1}{2} m \cdot (v_1^2 - v_0^2)$$

$$v_1 = \sqrt{2 \cdot (a_{max} \cdot l - g \cdot h) + v_0^2} \quad \mathbf{v1=30 \text{ mph}}$$

$$\mathbf{a_{max} = 1 \text{ m/s}}$$

$$\mathbf{l = 230 \text{ ft}}$$

$$\mathbf{g = 9.81 \text{ m/s}^2}$$

$$\mathbf{h = 1 \text{ m}}$$

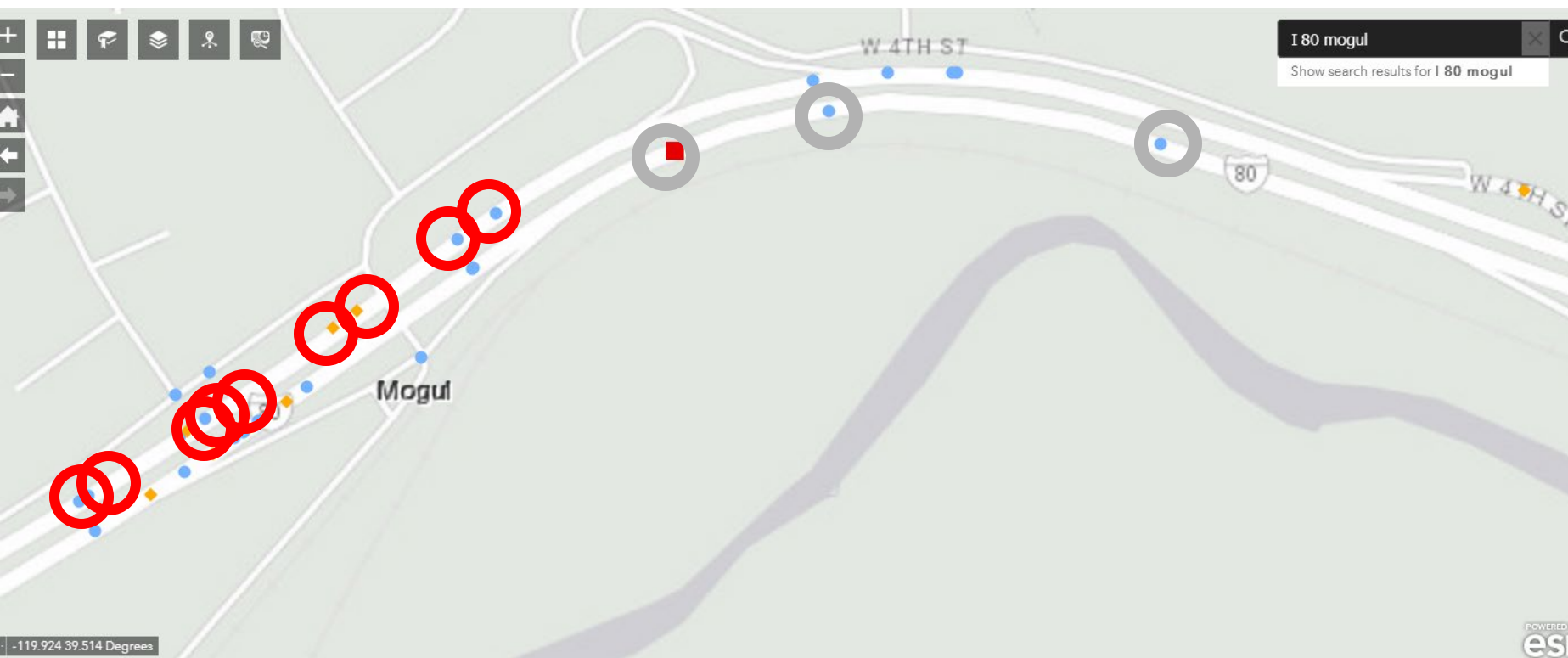
$$\mathbf{v = 20 \text{ mph (9 m/s)}}$$

Trucks merging onto I-80 west at 30 mph

Recommended speed: 60 mph

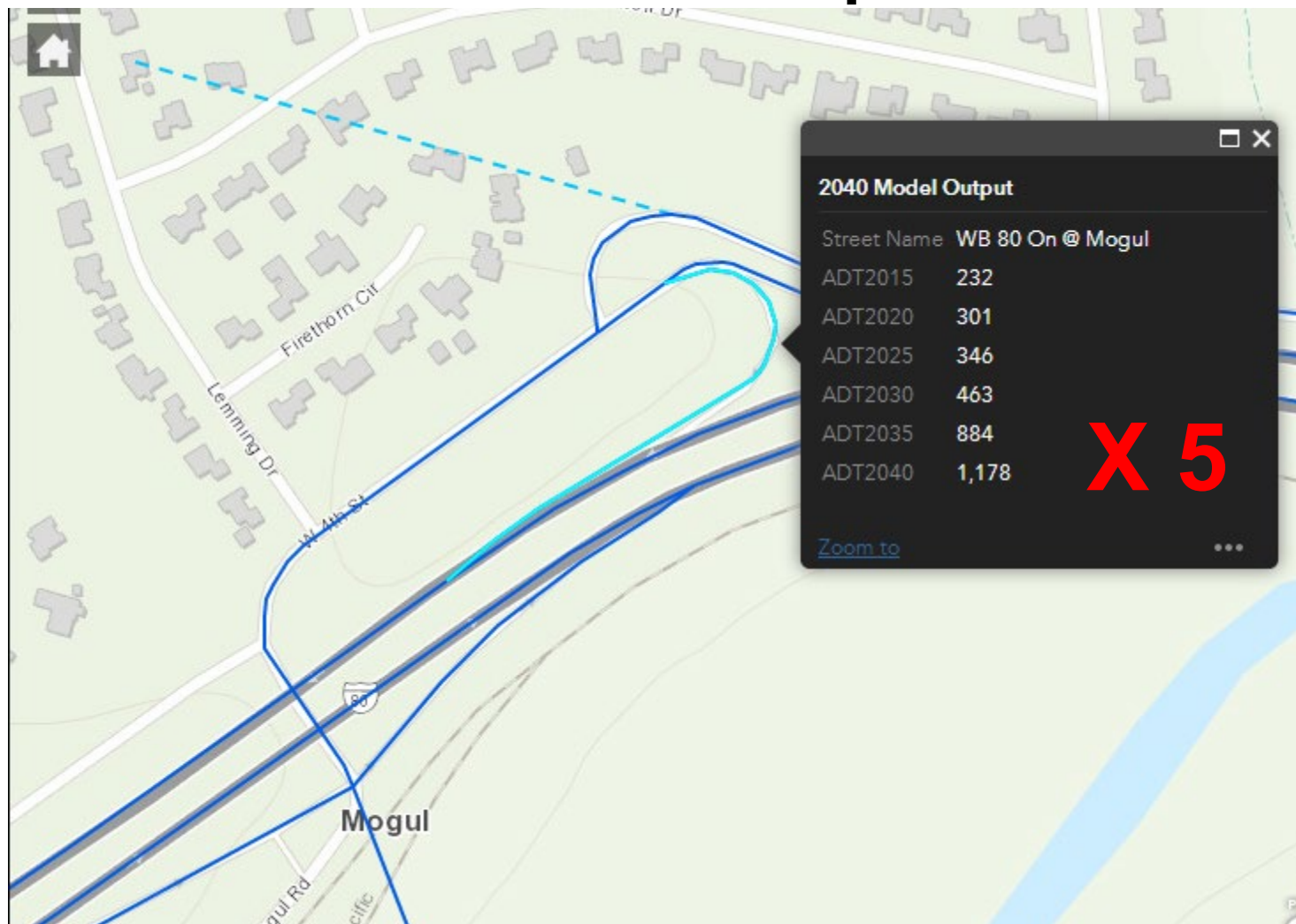
Photo: 10-15-19 at 3 pm

Crash data exit 7 2015-2017



Cluster of crashes around this ramp, 3x more than on the opposite on-ramp

RTC (Regional Transportation commission) predicts 5 fold traffic increase of the westbound on-ramp



Industrial zoning incompatible with infrastructure

- West bound on-ramp needs to be elongated to avoid future liability
- Underpass needs to be updated (\$\$\$)
- Who's going to pay for this? The developer?
- County: federal relief money?
- => We need independent, non-biased traffic study BEFORE zoning decision!

A More Complete Background of Parcels

038-181-01

038-172-14

Dr. Paul MacNeilage

Land-use history for these parcels

- Native peoples inhabited these lands (State historical marker #62)
- Zoned Industrial in the 80s
 - In the meantime, surrounded by residential and open space
- Added to Reno SOI; shows regional significance
- Reimagine Reno 2017: Mixed-employment overlay

Development in Reno SOI Denied

- 2017, removal from Reno SOI denied
 - Concerns about lack of public input in the county.
- 2018, Reno SUP for Industrial development denied
 - Incompatibility with surrounding uses
 - Traffic safety
 - “a challenging piece of dirt”

Enter S3 Development

- 2021, City of Reno approves removal from SOI
 - Advocated by S3 Development, potential buyer
- 2022, Truckee Meadows Regional Planning Agency approves SOI removal

Mixed Employment

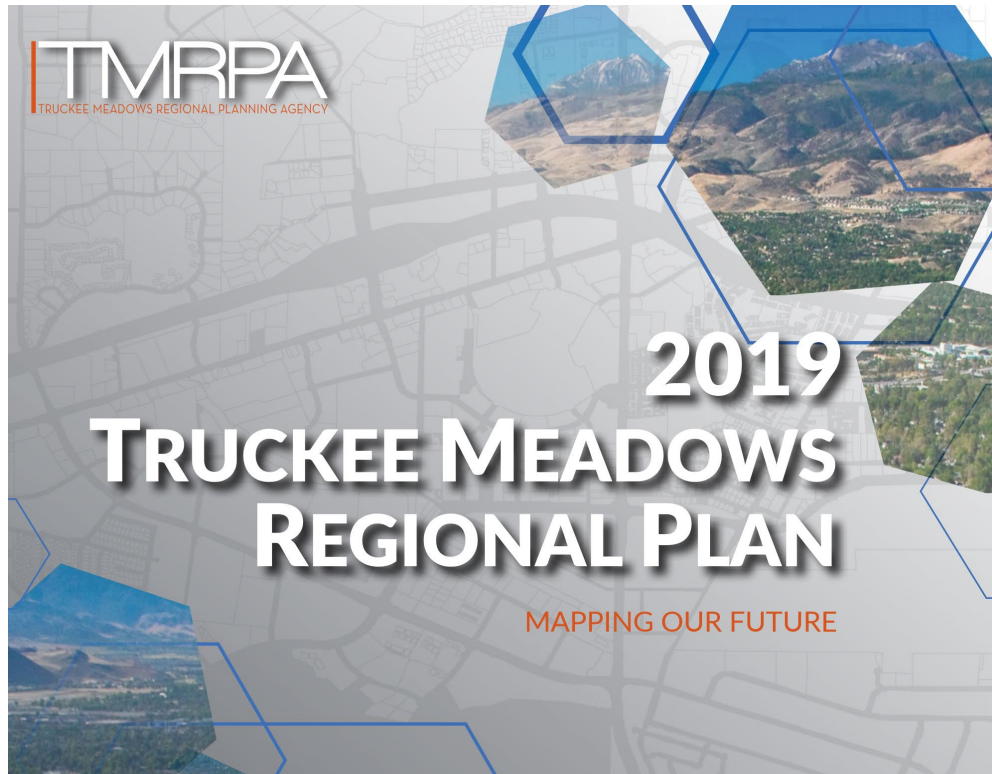


Table 3.3 – Jurisdictional Master Plan Land Use Translation Table

Washoe County	Reno	Sparks
Rural	Unincorporated Transition	Rural Reserve
Rural Residential	Large-Lot Neighborhood Unincorporated Transition	Large Lot Residential Rural Reserve
Suburban Residential	Large-Lot Neighborhood Single-Family Neighborhood	Large Lot Residential Low Density Residential Intermediate Density Residential
Urban Residential	Mixed Neighborhood Multi-Family Neighborhood Downtown Mixed-Use Urban Mixed-Use Suburban Mixed-Use	Intermediate Density Residential Multi-Family Residential (MF14) Multi-Family Residential (MF24) High Density Residential Mixed Use Mixed Use District- Residential Neighborhood Mixed Use District- Mixed-Resi- dential Mixed Use District- Downtown/ Victorian Square Mixed Use District- Mixed-Use Commercial Mixed Use District- Employment Mixed Use District- Civic
Open Space	Parks, Greenways, and Open Space Public/Quasi-Public	Open Space Community Facilities
Commercial	Mixed-Employment Suburban Mixed-Use	Commercial Tourist Commercial Employment Center
Industrial	Industrial	Industrial

Washoe County Staff Report: Background

Table 110.106.30.1

**TABLE OF COMPARABLE REGULATORY ZONES AND
PRE-1993 ZONING ORDINANCE DISTRICTS**

- Contradicts TMRPA Table 3.3
- Instead, references WCC Table 110.106.30.1
- Pre-1993 Zoning

Regulatory Zone	Comparable Pre-1993 Zoning Ordinance District
Low Density Rural	A-5, A-6, A-7, A-8, A-9, A-10, A-11, M-3
Medium Density Rural	A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, M-3, E-5
High Density Rural	A-2, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, M-3, E-4, E-5
Low Density Suburban and Low Density Suburban Two	A-1, A-2, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, M-3, E-3, E-4, E-5, C-1
Medium Density Suburban and Medium Density Suburban Four	A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, M-3, E-1, E-2, E-4, E-5, C-1
High Density Suburban	R-1, R1-a, R-1b, A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, M-3, E-1, E-2, E-4, E-5, C-1
Low Density Urban	R-1, R-1a, R-1b, R-2, R-2a, R-3, A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, M-3, E-1, E-2, E-4, E-5, C-1
Medium Density Urban	R-1, R-1a, R-1b, R-2, R-2a, R-3, A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, M-3, E-1, E-2, E-4, E-5, C-1
High Density Urban	R-1, R-1a, R-1b, R-2, R-2a, R-3, A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, M-3, E-1, E-2, E-4, E-5, C-1
General Commercial	C-1, C-2
Neighborhood Commercial/Office	C-1, C-2
Tourist Commercial	R-H, TC, C-2
Industrial	M-1, ME, MS, MW, C-2
Public/Semi-Public Facilities	A-R, L-R
Parks and Recreation	A-R, L-R
General Rural	A-7, A-8, A-9, A-10, A-11, M-3
General Rural Agricultural	A-7, A-8, A-9, A-10, A-11

Forward-looking or stuck in the past?

- Staff report: “Master plan amendments ensure that the Master Plan remains timely, dynamic, and responsive to community values.”
- Revert to pre-1993 regulatory zone?
- Reimagine Reno and Washoe County? Deny this MP amendment!

Community Values

or

Wealthy Landowners



Mogul is NOT appropriate, nor safe for industrial development

Mogul is a residential area and provides public access to outdoors.



Currently over 400 households with another 106 in new residential developments using the Mogul Exit. No-thru options for truck traffic.



Mogul is a residential community and gateway to outdoor recreation.



“Community Values” according to City of Reno 2015 public survey

Top tier: 3.5+ average on a -5 to 5+ scale

- ▶ 1. ~~Safety~~ (pedestrians, drivers, cyclists)
- ▶ 2. Well-maintained (roads, buildings, street lights, street landscaping)
- ▶ 3. Affordability
- ▶ 4. ~~Sense of community~~

Second tier: 2.5+ average

- ▶ 1. Local shopping and dining
- ▶ 2. ~~Ease of driving~~
- ▶ 3. ~~Low noise levels~~
- ▶ 4. Access to outdoors
- ▶ 5. Education
- ▶ 6. Local food



Community Vision:

On a scale from 1 to five, here are “phrases that could describe Reno in the next 20 years”:



A base for outdoor activities (3.6 average)



An arts and culture center (2.9 average)



A university town and a technology center (both 2.7 average)



Majority (62%) desire walkable neighborhoods



“Community Values” according to City of Reno 2015 public survey

- ▶ **Safety**
(pedestrians, drivers, cyclists)
- ▶ **Sense of community**
- ▶ **Low noise levels**
- ▶ **Access to outdoors**



Video included in PowerPoint presentation; not supported by Adobe PDF.





Frequent parking area for outdoor recreation.

Two sets of railroad tracks and complicated intersection are dangerous for higher traffic.

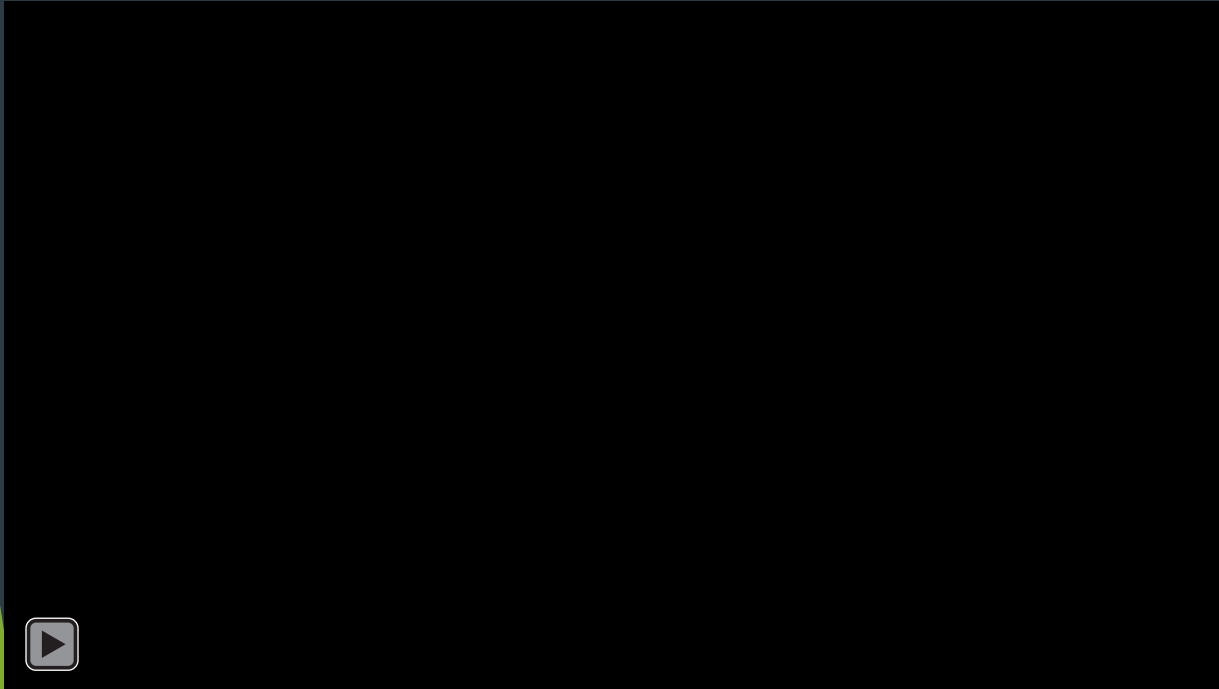


Photo: Vehicle hit by train in 2017 at this crossing.
(Leonard, 2017)

Industrial Zoning is NOT
suitable nor safe in Mogul.

Mogul is a residential area
and provides public access
to outdoors.

