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Prepared for:
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Date: 11-15-2023

Job number: 2023-8-1-Varko

Traffic Memo for 1185 N Curtis Rd

This is a Traffic Memo for 1185 N Curtis Rd. The objective of this report is to determine the impact a variance of use for this property will have on the traffic flow through N Curtis Road.

Milosh Engineering has prepared this Traffic Memo for the proposed self-storage and recreational vehicle (RV) storage facility (project) in El Paso County, Colorado. The proposed project is at 1185 N Curtis Rd. The proposed project will gravel cover a 99,276-gross-square-foot land area, creating 34 RV/self-storage spaces on the currently residential property. The project site is north of State Highway 94, South of Falcon Hwy, and east (adjacent) to N Curtis Rd. Access to the site is currently provided at the west property line adjacent to N Curtis Rd. The purpose of this analysis is to identify the proposed project trip generation and determine how the project will impact traffic in the surrounding area according to the Traffic Impact Analysis (TIA) Guidelines.

Study Area

The site is located at 1185 N Curtis Rd and this study examines the traffic on N Curtis Rd from Falcon Hwy to State Highway 94.



Please move certification and signature page to front with Title page.

Please state what the sight distance is for every affected access and whether it can be met. If it cannot be met, state the required modifications so that it can be met. Refer to Table 2.35 of the ECM Single Unit truck design vehicle

State whether the MTCP or other approved corridor study calls for the construction of improvements in the immediate area. Refer to 2016 MTCP Project ID #U1 <https://publicworks.elpasoco.com/road-bridge-planning/>

TRAFFIC

Development Description

1185 N Curtis Rd is currently a just under 5-acre plot of land with a one story residential single-family dwelling. The variance of use for this land will allow public storage use (RV and container storage). The site will be fenced and covered with gravel. The intensity of land use is minimal, as this is long term storage use and the traffic flow to the site will be sparse, sporadic, and non-concentrated.

The site is currently zoned as residential and will continue to be zoned as residential with a variance of use.

Existing Condition

SH 94 is an Expressway with traffic volumes of 9,300 daily trips at Curtis Road. SH 94 at peak flow is rated as LOS C, with restricted flow that remains stable but with significant interactions with others in the traffic stream. The general level of comfort and convenience declines noticeably at this level.

Curtis Road is a Minor Arterial Road with peak flow traffic of 15 vehicles per hour (VPH). Curtis Road Level of Service (LOS) at peak flow is rated as LOS B, with Stable traffic flow with a high degree of freedom to select speed and operating conditions but with some influence from other users.

Trip Generation

The potential trip generation of the proposed project was calculated using trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition for self-storage use (Land Use Code 151: Mini-Warehouse). Although ITE does not have trip rates for RV storage use, the trip-generating characteristics of an RV storage use closely resemble those of a self-storage (mini-warehouse) use. Table 1 presents the trip generation estimate using the ITE (Land Use Code 151) trip rates for the proposed project of 24 self-storage closed container units and 10 RV storage spaces (considered “units” for purposes of the trip generation).

Table 1: Project Trip Generation (ITE Trip Rates)

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates									
Mini-Warehouse (Self-Storage and RV Storage) ¹		100 storage units (100 RV spaces)	17.96	0.71	0.68	1.39	0.98	0.97	1.95
Project Trip Generation									
Self-Storage and RV Storage ²	0.34	100 storage units (100 RV spaces)	6.11	0.24	0.23	1.00	0.33	0.33	1.00

¹ Trip rates referenced from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11 Edition.
Land Use Code (151) - Mini Warehouse

² Proposed project includes 24 self storage containers and 10 RV storage spaces (34 total units and spaces).

ADT = average daily traffic

RV = recreational vehicle

Table 4: 2040 Roadway Improvement Projects

Project ID	Road Segment	Segment		PPRTA Project	Urban vs. Rural	Existing Conditions		Future Conditions		Total Cost
		Beginning	End			Lanes	Functional Class	Lanes	Functional Class	
County Road Upgrades										
U1	Curtis Rd	Judge Orr Rd.	SH 94		Rural	2	Unimproved County Road	2	Principal Arterial	\$35,549,000

As shown in Table A, the proposed project is estimated to generate 6 daily trips, 1 of which would occur in the a.m. peak hour and 1 of which would occur in the p.m. peak hour, using ITE trip rates

As an alternative method to calculating trips for the self-storage and RV storage uses, Milosh Engineering also applied trip rates developed from gate data (vehicle entries and exits) recorded in 2023 at a self-storage and RV storage facility in Fruita, CO (1960 US-6), as well as between November 2019 and January 2020 for a self-storage facility in Moreno Valley (14150 Grant Street) and a self-storage and RV storage facility in Desert Hot Springs (15305 Little Morongo Road). The gate data is provided as an attachment. Table B presents the trip generation estimate for the proposed project using the gate trip rates for the 24 self-storage Conex Container spots and 10 RV storage spaces.

Table 2: Project Trip Generation (Gate Trip Rates)

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates ¹									
Self Storage		100 storage units	12.9	0.53	0.40	0.93	0.93	0.79	1.72
RV Storage		100 RV spaces	17.23	0.50	0.47	0.97	0.93	1.12	2.05
Project Trip Generation									
Self Storage	0.24	100 storage units	4.00	0.13	0.10	0.22	0.22	0.19	0.41
RV Storage	0.1	100 RV spaces	2.00	0.05	0.05	0.10	0.09	0.11	0.21
Total			6.00	0.20	0.20	1.00	0.40	0.40	1.00

¹ Trip rates developed from gate data for A Storage Place in Fruita, CO, Moreno Valley Self Storage and Desert Hot Springs Self Storage and RV Storage facilities.

ADT = average daily traffic

RV = recreational vehicle

As shown in Table B, the proposed project is estimated to generate 6 daily trips, 1 of which would occur in the a.m. peak hour and 1 of which would occur in the p.m. peak hour, using trip rates developed from gate data of existing self-storage facilities and existing self-storage and RV storage facilities.

Turn Lane Analysis

The need for auxiliary lanes was based on the turn lane warrants listed in the State Highway Access Code (SHAC). The following table shows the data and criteria necessary to identify the need for exclusive right-turn and left-turn deceleration lanes at the intersections in the Study area or directly to the property. SH 94 is an east-west Colorado State Highway with milepost markings increasing from west to east and is classified by CDOT as R-A.

SH 94 & Curtis Rd.			
Access Speed Limit = 55 mph			
Auxiliary Lane	Turning Volume (VPH)	CDOT Auxiliary Lane Requirements	Lane Required?
Left Turn Deceleration Lane (inbound)	1 (PM)	Greater than 10 vph	EXISTS
Right Turn Deceleration Lane (inbound)	1 (PM)	Greater than 25 vph	EXISTS
Left Turn Acceleration Lane (outbound)	1 (PM)	Generally not required if speed <45 mph	EXISTS
Right Turn Acceleration Lane (outbound)	1 (PM)	More than 50 vph, with speed limit over 40 mph	EXISTS
Curtis Rd. & Property			
Access Speed Limit = 45 mph			
Auxiliary Lane	Turning Volume (VPH)	CDOT Auxiliary Lane Requirements	Lane Required?
Left Turn Deceleration Lane (inbound)	1 (PM)	Greater than 10 vph	NO
Right Turn Deceleration Lane (inbound)	1 (PM)	Greater than 25 vph	NO
Left Turn Acceleration Lane (outbound)	1 (PM)	Generally not required if speed <45 mph	NO
Right Turn Acceleration Lane (outbound)	1 (PM)	More than 50 vph, with speed limit over 40 mph	NO

It is concluded that no auxiliary lanes are required for the increase in VPH caused by the project.

Area of significant traffic impact



The locations chosen to be closely examined for significant traffic impact are:

- Intersection State Hwy 94 & N Curtis Rd
- Intersection Falcon Hwy & N Curtis Rd
- Immediate area in front of 1185 N Curtis Rd

The Intersection State Hwy 94 & N Curtis Rd was chosen to be evaluated for significant impact due to it being a possible entry point of any additional traffic onto N Curtis Rd. The avg existing turn traffic onto N Curtis Rd at this intersection is light and congestion free (avg. 15 VPH). Since any additional traffic going to the site would be very sporadic and infrequent, the avg right turn traffic is not expected to change due to the variance of use at the site. The site would contribute at most one additional trip during peak hours to this intersection.

The intersection Falcon Hwy & N Curtis Rd was chosen to be evaluated for significant impact due to it being the other possible entry point of any additional traffic onto N Curtis Rd. The average existing turn traffic onto N Curtis Rd at this intersection is light and congestion free (avg. 10 VPH). Since any additional traffic going to the site would be very sporadic and infrequent, the avg turn traffic is not expected to change due to the variance of use at the site. The project would only contribute at most one additional trip at peak hours to this intersection.

The immediate area in front of 1185 N Curtis Rd was chosen to be evaluated for significant impact due to it being a possible area of congestion or traffic impediment from vehicles turning onto the site. This risk of traffic blockage or congestion at the site's location is mitigated by the existence of a large paved apron and driveway extending onto the property that will serve as a waiting area for a vehicle or trailer turning into the property. This area allows any incoming traffic to stop while opening the gate, while keeping N Curtis Rd completely clear of obstructions, allowing normal, uninterrupted traffic flow. The driveway is centered on the midpoint of the property line to allow ergonomic traffic flow through the site with storage areas along the sides of the property.

Overall, there was no significant impact observed at any of the essential locations that were focused on for this study, as the site is only expected to generate an average of 6 daily trips.

Projected Traffic

Since this variance of use will be to for long term self-storage, any traffic to the site will be to drop off or pick up a trailer, meaning that an individual customer may only travel to the site twice per couple months or even per year. This means that the overall avg projected traffic will on average be the same as it was as a single family residential. The maintenance of the similar projected traffic along with the mitigating feature of the extra wide paved driveway area guarantees no impact to traffic through N Curtis Rd.

Principal Findings

The variance of use of this property will not have any significant effect on the traffic flow through N Curtis Rd. Although the public storage lot will attract more vehicles to the site to drop off and pick up items for storage, this traffic will not be concentrated. Any traffic flow to the property will not impede traffic flow along N Curtis Rd due to there being a large paved driveway for traffic incoming to the property to pull completely off of the road while normal traffic through N Curtis Rd can continue unaffected.

The general public in close proximity to the project had no concerns or comments to the road impact of the project.

The existing roadway infrastructure, markings, and signage is adequate and can accept the impact of the project. There are no visual obstructions along Curtis Rd in the vicinity of the site entrance that would warrant additional signage. No additional signage or markings will be required.

Conclusions

The conclusion of this traffic study is that the variance of use and development of 1185 N Curtis Rd will not have a significant or noticeable effect on the normal traffic flow along N Curtis Rd.

Milosh Engineering analyzed the trip generation for the proposed project according to TIA Guidelines. Using ITE trip rates or trip rates developed from similar facilities currently in operation, the proposed project is anticipated to generate a maximum of 6 daily trips, including a maximum of 1 trip during the peak hours. The proposed project would generate only 6 trips per day, and it would generate fewer than 1 trip per peak hour. Because the proposed project would not contribute 50 or more trips per peak hour to any intersection, an intersection analysis is not required per the TIA Guidelines. A maximum project contribution of 1 peak-hour trip to the adjacent intersections is nominal, and the potential for an intersection impact is unlikely.

Access analysis determined that no auxiliary deceleration/acceleration lanes are required for this project.

Recommendations

This traffic study recommends that 1185 N Curtis Rd be granted the variance of use for a storage development due to little noticeable impact on normal traffic flow along N Curtis Rd. The traffic study also recommends that the civil plans for the development be carried out, to create/maintain the paved driveway adjoining the street which will serve as a safe location where trucks and RVs will have space to stage on the property while opening the gate without impeding traffic.

Any gates must be set back from ROW as detailed in the LDC for proper setback to not block the ROW. Gate shall be centered on the west lot line. The gate shall be 28 feet wide. Gates shall be located a minimum of 30 feet from the public right-of-way and shall not open outward. The opening provided through a gate shall be 2 feet wider than the traveled way.

Road impact fees are calculated per Resolution 16-454 of El Paso County according to the Road Impact Fee Schedule. The table below shows applicable road impact fees for this project based on use.

19-471

Land Use	Total Parking Area	Unit (sf)	Amount (Units)	Full Fee	Upfront Fee in 5 mill PID	Upfront Fee in 10 mill PID
Road Impact Fee Rates						
Mini Warehouse		1000	1	725	243	
Project Road Impact Fees						
Mini Warehouse (self storage)	6840	1000	6.84	4959	1662.12	

Not eligible for PID as no subdivide or plat

X Based on the Mini Warehouse Use, the project is subject to a full fee of \$4,959.00 with no mill Public Improvement District (PID) levy or an upfront fee of \$1,662.12 with a five mill (PID) levy on the property tax. A 10 mill PID levy is not available for this use.

Another applicable way of calculating the road impact fee is based on the number of trips generated by the project. Based on the trip generation analysis for this project, the total new trips generated is 6. As of January 2019, El Paso County charges a full fee of \$398.55 per trip. Based on 6 trips generated by this project, the applicable road impact fee for the project is \$2,391.30.

The Mini Warehouse approximation for Road Impact Fee based on the County's table is not representative of the RV/Self Storage use of this project. A trip generation analysis was done for this project, confirming actual number of trips that will be generated. For this reason, the County's definition for road impact fees (\$398.55 per trip) shall be used to calculate the fee for this project. The road impact fee of \$2,391.30 shall be accepted.

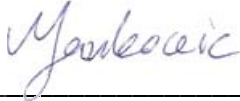
This method requires an independent traffic study request and submission per the implementation doc. Program administrator has already issued a determination for RV and container storage yards for applicable fee rate as mini-warehouse

Colorado Department of Transportation (CDOT) has been notified of this determination that no access permit is required at this time. CDOT's response

Road Impact fee for storage containers leased as self storage is based on the size and total # of the containers.
 Container storage per the site plan has x24 8x20ft containers for a total of 3840sqft at mini-warehouse rate of \$725/1000 = \$2784
 For RV storage that is based on area of the parking area x10 spaces designated and indicated on the site plan at 30x10ft =3000sqft at the min-warehouse rate = \$2175
 Example fee would be the combination ~ \$4959 for these designated spots

Traffic Engineer's Statement

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



Milan Jankovic, M.S., P.E #44321

11/15/2023

Date

Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.



Andrii Varko, Owner Developer
265 Harris Rd
Idaho Springs, CO 80452

11/16/2023

Date

Prepared By:



Milan Jankovic, M.S., P.E.

Civil Engineer

720-210-4213

msmilanjankovic@hotmail.com



mj@MiloshENG.com

From: Andrii Varko <andriivarko@gmail.com>
Sent: Wednesday, November 15, 2023 8:26 PM
To: mj@milosheng.com
Subject: Fwd: El Paso Co project - Access permit, file #VA235

Begin forwarded message:

From: "Gonzales - CDOT, Arthur" <arthur.gonzales@state.co.us>
Date: November 13, 2023 at 11:38:26 AM MST
To: andriivarko@gmail.com
Cc: Edward Schoenheit <EdwardSchoenheit@elpasoco.com>, Ashlyn Mathy <AshlynMathy2@elpasoco.com>
Subject: Re: El Paso Co project - Access permit, file #VA235

Mr. Varko

Thank you for reaching out to us here at CDOT. I have done some due diligence checks and a CDOT Access Permit will not be required for the mentioned land use.

If you decide to change land uses and traffic increases to more than 20% of an increase to State Highway 94 then a CDOT Access Permit may be required.

Thank you,

Arthur Gonzales - Access Manager



R2 - Permits - Access - Traffic and Safety

5615 Wills Blvd., Suite A Pueblo, CO 81008

P(719)546-5732 | arthur.gonzales@state.co.us | www.coloradodot.info | www.cotrip.org

On Mon, Nov 13, 2023 at 10:45 AM Andrii Varko <andriivarko@gmail.com> wrote:

Good afternoon,

My name is Andrii Varko, and I am at the helm of a new venture in property development, located just 10 minutes east of Colorado Springs. I am reaching out following a recommendation from Edward Schoenheit of the E.P.C. Department of Public Works. Our current focus is on understanding the

necessary permits for our project, specifically regarding access, as guided by CDOT regulations.

Enclosed, you will have our preliminary site development plan. Please note that these documents are still under review by the county and may be subject to modifications based on their feedback.

Project Overview:

Location: 1185 N Curtis Rd, 80930

Current Zoning: R5 - Residential on a 4.8-acre parcel

Proposed Development: We aim to transform this space into a mixed-use facility, primarily focusing on public storage solutions. This includes an RV, boat, and trailer storage area (with an estimated capacity of 10-20 spots), alongside a section dedicated to enclosed storage using connex boxes (projected to house approximately 20-30 containers).

We kindly request your guidance on whether an access permit will be required for this type of business operation. Your prompt response to this inquiry, sent to this email address, would be greatly appreciated.

Thank you for your assistance and looking forward to your guidance.

Best regards, Andrii Varko Owner/Developer
720-739-0009

TRAFFIC MEMO FOR 1185 N CURTIS RD

Trip Generation

Day and Date	Size ¹	Daily	AM Peak Hour ²			AM Peak Hour ³		
			In	Out	Total	In	Out	Total
Tuesday 11/5/19		170	9	4	13	20	30	50
Wednesday 11/6/19		164	4	5	9	5	8	13
Thursday 11/7/19		194	8	6	14	10	10	20
Tuesday 11/12/19		167	9	14	23	17	10	27
Wednesday 11/13/19		209	11	9	20	17	15	32
Thursday 11/14/19		188	9	6	15	8	8	16
Tuesday 11/19/19		219	14	6	20	10	10	20
Wednesday 11/20/19		173	6	8	14	7	9	16
Thursday 11/21/19		183	15	9	24	11	12	23
Tuesday 12/3/19		182	8	7	15	21	11	32
Wednesday 12/4/19		162	9	10	19	9	8	17
Thursday 12/5/19		213	3	3	6	19	13	32
Tuesday 12/10/19		209	5	3	8	16	10	26
Wednesday 12/11/19		225	6	9	15	22	9	31
Thursday 12/12/19		206	8	4	12	19	18	37
Tuesday 12/17/19		174	13	6	19	8	7	15
Wednesday 12/18/19		242	9	7	16	16	13	29
Thursday 12/19/19		188	5	2	7	17	14	31
Tuesday 1/7/20		213	13	8	21	16	16	32
Wednesday 1/8/20		195	3	2	5	24	10	34
Thursday 1/9/20		210	5	4	9	22	7	29
Tuesday 1/14/20		202	10	11	21	13	14	27
Wednesday 1/15/20		218	13	8	21	10	13	23
Thursday 1/16/20		195	5	6	11	18	14	32
Tuesday 1/28/20		162	7	5	12	6	7	13
Wednesday 1/29/20		204	4	5	9	14	14	28
Thursday 1/30/20	15.12	203	6	4	10	6	11	17
Average	15.12	195	8	6	14	14	12	26

Trip Rates

Land Use Type	Size	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Self Storage	1	12.9	0.53	0.4	0.93	0.93	0.79	1.72

¹ Size is the total number of self storage unit of the Moreno Valley and Desert Hot Springs self storage facilities (in hundreds)

² AM Peak Hour is the one-hour period between 7:00 and 9:00 a.m. with the highest trip generation (7:00-8:00, 7:15-8:15, 7:30-8:30, 7:45-8:45, 8:00-9:00 a.m.)

³ PM Peak Hour is the one-hour period between 4:00 and 6:00 p.m. with the highest trip generation (4:00-5:00, 4:15-5:15, 4:30-5:30, 4:45-5:45, 5:00-6:00 p.m.)

TRAFFIC MEMO FOR 1185 N CURTIS RD

Trip Generation

Day and Date	Size ¹	Daily	AM Peak Hour ²			AM Peak Hour ³		
			In	Out	Total	In	Out	Total
Tuesday 11/5/19		50	0	0	0	0	3	3
Wednesday 11/6/19		57	1	2	3	4	2	6
Thursday 11/7/19		49	1	1	2	5	5	10
Tuesday 11/12/19		37	0	0	0	3	5	8
Wednesday 11/13/19		38	1	0	1	0	0	0
Thursday 11/14/19		52	2	1	3	2	2	4
Tuesday 11/19/19		41	3	2	5	1	2	3
Wednesday 11/20/19		49	3	3	6	3	7	10
Thursday 11/21/19		55	3	3	6	4	3	7
Tuesday 12/3/19		43	1	1	2	3	3	6
Wednesday 12/4/19		24	0	0	0	0	1	1
Thursday 12/5/19		65	3	4	7	1	2	3
Tuesday 12/10/19		52	0	0	0	4	4	8
Wednesday 12/11/19		44	1	0	1	1	2	3
Thursday 12/12/19		44	2	2	4	3	5	8
Tuesday 12/17/19		38	1	1	2	2	3	5
Wednesday 12/18/19		54	1	1	2	2	3	5
Thursday 12/19/19		49	3	3	6	3	2	5
Tuesday 1/7/20		70	1	1	2	6	4	10
Wednesday 1/8/20		32	1	1	2	0	1	1
Thursday 1/9/20		35	0	0	0	2	2	4
Tuesday 1/14/20		39	2	2	4	4	3	7
Wednesday 1/15/20		58	2	2	4	5	7	12
Thursday 1/16/20		57	3	2	5	7	5	12
Tuesday 1/28/20		48	1	2	3	2	3	5
Wednesday 1/29/20		50	1	0	1	1	2	3
Thursday 1/30/20	15.12	63	1	1	2	2	3	5
Average	15.12	48	1	1	3	3	3	6

Trip Rates

Land Use Type	Size	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
RV Storage	1	17.23	0.5	0.47	0.97	0.93	1.12	2.05

¹ Size is the total number of self storage unit of the Moreno Valley and Desert Hot Springs self storage facilities (in hundreds)

² AM Peak Hour is the one-hour period between 7:00 and 9:00 a.m. with the highest trip generation (7:00-8:00, 7:15-8:15, 7:30-8:30, 7:45-8:45, 8:00-9:00 a.m.)

³ PM Peak Hour is the one-hour period between 4:00 and 6:00 p.m. with the highest trip generation (4:00-5:00, 4:15-5:15, 4:30-5:30, 4:45-5:45, 5:00-6:00 p.m.)