ADAMS COUNTY
COLORADO

Community & Economic Development Department
4430 S. Adams County Pkwy.
1st Floor, Suite W2000B
Brighton, CO 80601
PHONE 720.523.6800
EMAIL epermitcenter@adcogov.org
adcogov.org

Request for Comments

Case Name: Riverdale RV Park
Case Number: PRC2025-00015

November 26, 2025

The Adams County Planning Commission is requesting comments on the following application: **1.) Zoning Map Amendment (Rezone) to change the zone district designation of approximately 22 acres from Agricultural-1 to Planned Unit Development; 2.) Major Subdivision Preliminary Plat; 3.) Preliminary Development Plan to establish a recreational vehicle park within the Proposed Riverdale RV Park Planned Unit Development.** This request is located at 14600 Riverdale Rd. The Assessor's Parcel Numbers are: 0157114301001, 0157114301002.

Please forward any written comments on this application to the Community and Economic Development Department at 4430 South Adams County Parkway, Suite W2000A Brighton, CO 80601 or call (720) 523-6800 by 12/23/2025 in order that your comments may be taken into consideration in the review of this case. If you would like your comments included verbatim please send your response by way of e-mail to GJBarnes@adamscountyco.gov.

Once comments have been received and the staff report written, the staff report and notice of public hearing dates may be forwarded to you upon request. The full text of the proposed request and additional colored maps can be obtained by contacting this office or by accessing the Adams County web site at www.adamscountyco.gov/landuse.

Si usted tiene preguntas, por favor escribanos un correo electrónico a cedespanol@adcogov.org para asistencia en español. Por favor incluya su dirección o número de caso para poder ayudarle major.

Thank you for your review of this case.

Greg Barnes
Principal Planner

Community & Economic
Development Department
www.adcogov.org

ADAMS COUNTY
COLORADO

4430 South Adams County Parkway
1st Floor, Suite W2000
Brighton, CO 80601-8204
PHONE 720.523.6800
FAX 720.523.6998

PROJECT NAME: Riverdale RV Park

APPLICANT

Name(s):	Darin Peterson	Phone #:	303-434-6356
Address:	14600 Riverdale Road		
City, State, Zip:	Brighton, CO, 80602		
2nd Phone #:		Email:	darin@riverdalervpark.com

OWNER

Name(s):	MDC HOLDNGS, LLC	Phone #:	573-239-3511
Address:	1108 Northshore Drive		
City, State, Zip:	Columbia, MO, 65203		
2nd Phone #:		Email:	mcurry@bbpllab.com

TECHNICAL REPRESENTATIVE (Consultant, Engineer, Surveyor, Architect, etc.)

Name:	Chadwin F. Cox	Phone #:	720-685-9951
Address:	127 South Denver Avenue		
City, State, Zip:	Fort Lupton, CO, 80621		
2nd Phone #:	303-913-7341	Email:	chadwin.cox@westerneci.com

Accela Case Type: PUD – Planned Unit Development Overall Development Plan

DESCRIPTION OF SITE

Address:	14600 Riverdale Road
City, State, Zip:	Brighton, CO, 80602
Area (acres or square feet):	22.05 acres
Tax Assessor Parcel Number	0157114301001 and 0157114301002
Existing Zoning:	A-1
Existing Land Use:	Farmland/ Nursery
Proposed Land Use:	RV Living Park

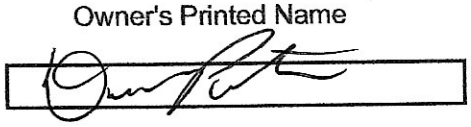
Have you attended a Conceptual Review? YES [X] NO [ ]

If Yes, please list PRE#: 2023-00068

I hereby certify that I am making this application as owner of the above described property or acting under the authority of the owner (attached authorization, if not owner). I am familiar with all pertinent requirements, procedures, and fees of the County. I understand that the Application Review Fee is non-refundable. All statements made on this form and additional application materials are true to the best of my knowledge and belief.

Name: Darin Peterson Date: 10/07/2024

Owner's Printed Name

Name: 

Owner's Signature

Accela Case Type: PUD – Planned Unit Development Overall Development Plan

WESTERN ENGINEERING CONSULTANTS, Inc LLC
127 S Denver Ave. Fort Lupton, CO 80621
2501 Mill Street, Brush, CO 80723
Office: 720-685-9951 Cell. 303-913-7341
Email: chadwin.cox@westerneci.com

June 02, 2025

Adams County
Community and Economic Development Department
4430 S. Adams County Parkway,
1st Floor Suite W2000
Brighton, CO 80601

RE: RIVERDALE RV PARK PUD, REZONE, AND PLAT CORRECTION - WRITTEN NARRATIVE

Community and Economic Development Department:

Western Engineering Consultants Inc. LLC (WEC) has prepared this narrative for the Riverdale RV Park proposed project.

MDC, LLC wishes to rezone the property to a Planned Unit Development (PUD) site and Vacate a Lot Line to develop the property as an RV Living Park. The subject property is located primarily in the south 1/4 of section 14, township 1 south, range 67 west of the 6th principal meridian, Adams County, State of Colorado.

The site address is 14600 Riverdale Road, Brighton CO, 80602.

The project includes two adjacent parcels off of Riverdale Road (Parcel Numbers: 0157114301001 & 0157114301002). A Plat Correction – Lot Line Vacation is proposed to vacate the shared lot line to create one lot for the overall project.

BACKGROUND AND PURPOSE

MDC, LLC desires to develop the property as an RV Park. The property has historically been farmland / vacant land, and it is currently zoned A-1 in Adams County.

Per comments from the Conceptual Review, the applicant has decided to move forward with the PUD option for the flexibility of creating a specific zone district.

The Site Plan includes 154 stalls: 122 back-In, 24 pull-thru, 4 ADA accessible back-in, and 4 ADA accessible pull-thru.

The proposed amenities include the following:

- Mailboxes
- Playground / games area
- Dog Park
- Laundry Facility
- Dishwashing station
- Trash areas
- Vending machines
- Restrooms/Showers
- Propane gas
- Maintenance Garage
- Snow Removal

ADJACENT USES

Northwest of the property is currently farmland with one rural residence, zoned RE and A-1.

The Brantner Ditch runs just inside the west property boundary which abuts Riverdale Road. An Oil and Gas facility lies southwest of Riverdale Road, zoned A-1.

To the east is an A-3 zoned parcel owned by the City of Thornton. A gravel pit pond exists on the City of Thornton property.

South of the property are rural residences and farmland, zoned A-2 and A-3.

See Figure 1 below.

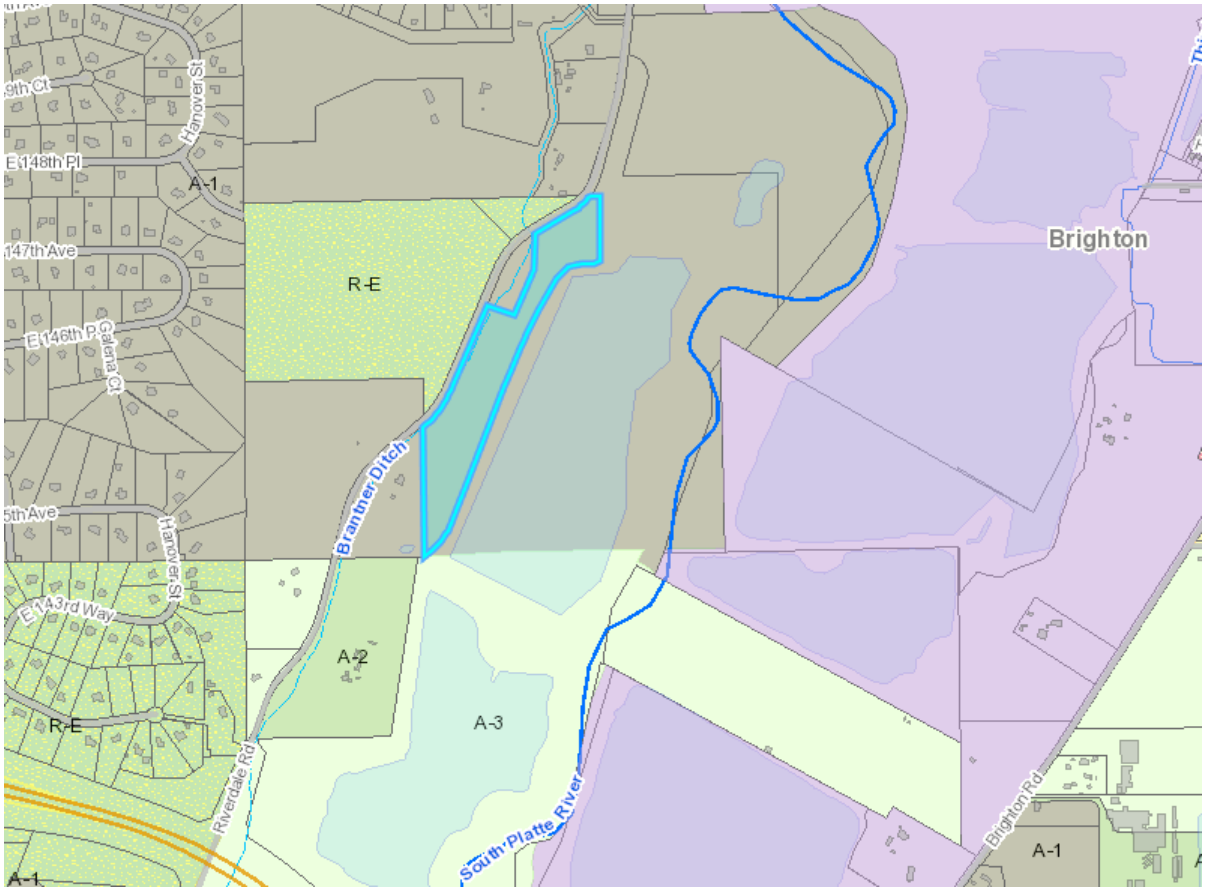


Fig. 1

RELATIONSHIP TO & IMPACT UPON ADJACENT USES

The existing building on the property will be removed.

The proposed building will consist of one for an office, laundry room, restrooms/showers, and a maintenance garage.

The site will be screened to minimize the impact to Riverdale Road and the adjacent residences. A 30-foot landscape buffer is proposed along the south side of the site and a wood fence is proposed along the north side of the site. A playground area is proposed on the west side of the site adjacent to Riverdale Road, with the Brantner Ditch running along the remainder of the west side of the site.

COMPREHENSIVE PLAN

The Adams County Comprehensive Plan shows this area as an Agricultural Small Scale Area zone A-2.

See Figure 2 below.

Adams County Future Land Use 2022

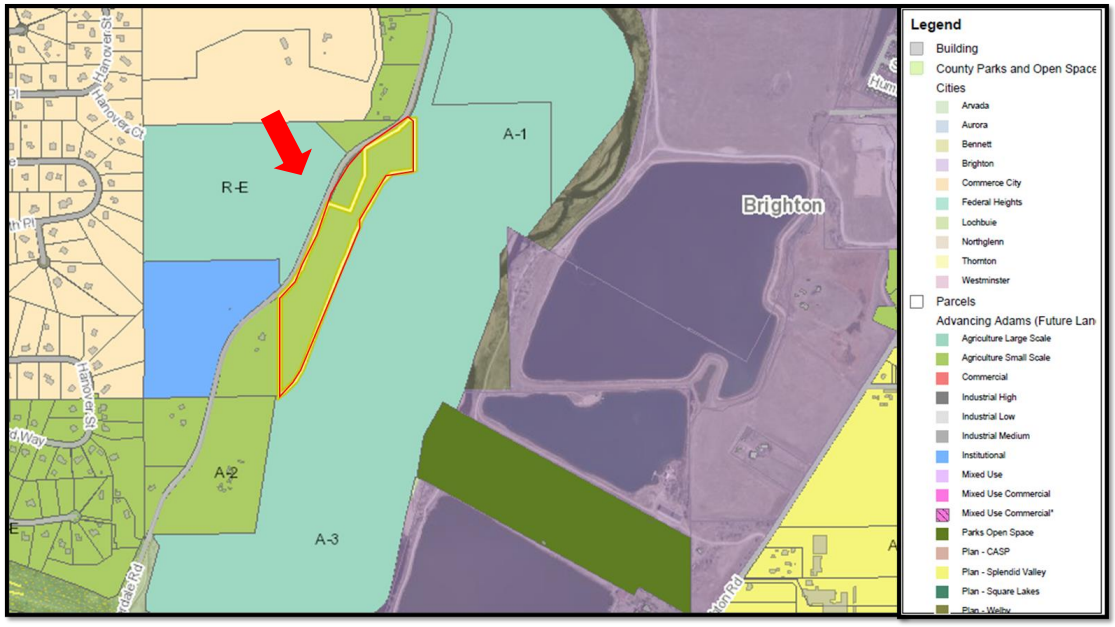


Fig. 2

RIVERDALE ROAD CORRIDOR PLAN

The property is within the limits of the Riverdale Road Corridor Plan, and the proposed RV Park meets the criteria for future land development and will be screened as required. See Fig. 3 below.

Riverdale Road Corridor Map

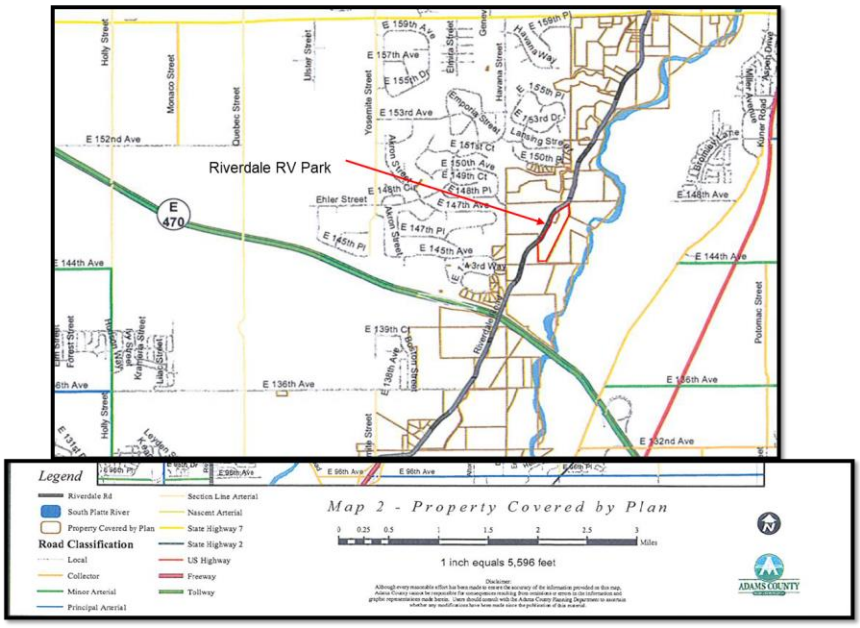


Fig. 3

ACCESS LAYOUT

The property currently has access off of Riverdale Road on the north side of the site. The existing access is proposed to be improved and utilized as the site access. Riverdale Road and 138th Place is the nearest intersection, 5,420 ft to the south of the property.

WATER, SEWER, ELECTRICITY, & NATURAL GAS

- Currently the property has a Water Well Permit No. 138802.
- A will serve letter has been provided from Todd Creek Village Metro District for water and sanitary service.
- United Power Electricity is currently serving the property.
- A propane gas tank is proposed.

SOILS DESCRIPTION AND LIMITATION

According to the USDA-NRCS Soils Report, no known limitation conditions are present in the site, it is classified as **UlD**—Ulm loam, 5 to 9 percent slopes, and **Wt**—Wet alluvial land, No prime farmland.

KNOWN HAZARDS & ENVIRONMENTAL CONDITIONS

Currently no hazards or environmental conditions are known to have occurred on site. However, a preliminary ESA report (enclosed) indicated a potential upstream gradient spill from an offsite property that provides an Elevated Risk as noted by the ESA Table below.

Professional Opinion		
Elevated Risk	Based on the records reviewed in this report, it is A3E's opinion that the environmental risk level for the Subject Property is ELEVATED.	✔
Low Risk	Based on the records reviewed in this report, it is A3E's opinion that the environmental risk level for the Subject Property is LOW.	

ON-SITE GAS/OIL FACILITIES

No Oil and Gas facilities currently exist on the site; however, one does exist west of this property along the west side of Riverdale Road.

DOCUMENTS ENCLOSED:

PUD – Preliminary Development Plan:

1. Development Application	Enclosed
a. Application Fees	When required
2. Written Narrative	This document
3. Site Plan	Enclosed
4. Rezoning Application	See Below
5. Plat Correction Application	See Below
6. Proof of Ownership	Enclosed
a. Statement of Authority	Enclosed

Riverdale RV Park
14600 Riverdale Rd.

RIVERDALE
Park

Proposed Regulations and Purpose,

I am delighted to provide this narrative for Riverdale RV Park. The goal in providing this RV Park is to offer a unique, affordable, and luxurious living experience. We are all aware of the affordable housing crisis spreading across the country. Recreational Vehicles are unique in that the average cost to purchase a new one ranges from $20,000 to $100,000+. RVs can also be financed for 20 years or more, providing affordable payment options.

Since the COVID-19 pandemic, there has been a growing trend towards working remotely from home and adopting an environmentally minimalist lifestyle. We will provide a professionally managed, clean, luxury RV park option. Research has shown that the full-time RV living community generally does not enjoy visits to Colorado. This is primarily due to poorly maintained and managed parks that charge astronomical rates, driving the affordable housing option out of balance.

The location of this specific lot was chosen with consideration for the surrounding environment. Most of the lot is 20 -30 feet below Riverdale Road's elevation. This allows for a simple landscape barrier to provide seclusion and privacy from the surrounding areas while enhancing the natural beauty and environment of the Riverdale Road Corridor.

Enclosed will be our concept rules & regulations:

- Navigating Local RV Park Regulations and Code Requirements
- Rights and Responsibilities of RV Park Owners
- Ensuring Fire Safety and Emergency Preparedness
- HOA / Management policy outline

Sincerely,

Darin Peterson

Navigating Local RV Park Regulations and Code Requirements

RV park regulations and code requirements are not a standard building practice noted in the ICC. We will, at a minimum, uphold the standards outlined in NFPA 1194 – Standard for Recreational Vehicle Parks and Campgrounds (2026 edition).

In addition to any local regulations and code requirements, we will instate Noise limitations, Signage rules, and Occupancy limits.

Rights and Responsibilities of RV Park Owners

RV Park owners carry significant legal responsibilities and obligations towards their tenants. In addition to complying with the various RV Park Legal Regulations, they must maintain a safe and healthy living environment for their residents. This entails regular inspections, prompt repairs, and proper waste management.

Owners must conduct regular background checks on potential tenants and ensure that they respect the tenant's privacy and personal information. They are also expected to have clearly defined guest policies and visitor regulations to ensure the safety and comfort of their tenants.

In the event of disputes or conflicts with tenants, owners must follow established dispute resolution processes and maintain clear and transparent communication. They must remain fair and unbiased, avoiding discrimination against any tenants based on their race, ethnicity, gender, religion, or disability.

Ensuring Fire Safety and Emergency Preparedness

The RV park's emergency plan will be posted and made available to all residents. The plan will include information on how to evacuate the RV park in the event of an emergency, emergency contact numbers, and procedures for any required sheltering or relocation.

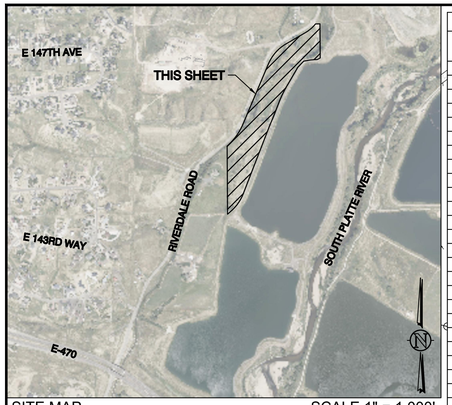
Regular inspections of all fire safety and suppression systems should be conducted to ensure that they are in proper working order. Smoke detectors and fire alarms should be installed in all units. Additionally, fire extinguishers should be readily available throughout the RV park.

All staff members will be trained in emergency response procedures and should be well-versed in the RV park's emergency plan. All staff will comply with sanitation regulations related to the disposal of hazardous materials, in accordance with guidelines from the Environmental Protection Agency.

HOA / Management policy outline

The Ownership group and its partners will manage Riverdale RV Park. We will provide Colorado with its first luxury RV park. To ensure the luxury lifestyle and aesthetics, we will implement HOA policies such as:

- Noise ordinances
- Storage policies
- RV exterior aesthetic requirements
- Playground equipment
- Walking trails
- Environmental Protection Requirements
- Neighborhood policies for the protection of surrounding lots, Bratner ditch, and the Thornton ponds
- RV skirting and exterior landscape policies
- Percentage of spaces available to short-term residents, first responders, military, and potential emergency spaces for disaster relief available to FEMA / government.
- Secure gate access and security cameras
- Dog park
- Common areas and community events
- Occupancy regulations per RV
- Pet policies
- Maintenance of the park
- Traffic and parking regulations
- Personal property and general safety regulations
- Visitor policies



SITE MAP SCALE 1" = 1,000'

SHOWN VICINITY MAP TAKEN FROM AUTOCAD GEOLOCATION

LOT DATA TABLE

DESCRIPTION	AREA	AREA (ac)	EXISITNG %	PROPOSED %
LOT	960,539 SF	22.05	100 %	100 %
EXISTING BUILDINGS	0 SF	0.00	0.00 %	
EX BUILDING TO BE REMOVED	0 SF	0.00	0.00 %	
PROPOSED BUILDINGS	3,500 SF	0.08		0.36 %
TOTAL BUILDINGS	**3,500 SF**	**0.08**		**0.36 %**
EXISTING CONCRETE	525 SF	0.01	0.05 %	
EX CONCRETE TO BE REMOVED	525 SF	0.01	0.05 %	
PROPOSED CONCRETE	130,085 SF	2.99		13.54 %
TOTAL CONCRETE	**130,085 SF**	**2.99**		**13.54 %**
EXISTING ASPHALT	0 SF	0.00	0.00 %	
EX ASPHALT TO BE REMOVED	0 SF	0.00	0.00 %	
PROPOSED ASPHALT	139,170 SF	3.19		14.49 %
TOTAL ASPHALT	**139,170 SF**	**3.19**		**14.49 %**
EXISTING GRAVEL	43,421 SF	1.00	4.52 %	
EX GRAVEL TO BE REMOVED	43,421 SF	1.00	4.52 %	
PROPOSED GRAVEL	17,103 SF	0.39		1.78 %
TOTAL GRAVEL	**17,103 SF**	**0.39**		**1.78 %**
EXISTING LANDSCAPE AREA	**916,593 SF**	21.04	95.42 %	
PROPOSED LANDSCAPE AREA	**670,681 SF**	**15.40**		**69.82 %**
LOT COVERAGE			4.58 %	**30.18 %**

PARKING DATA TABLE

BUILDING	PARKING REQUIREMENT	QTY REQ	QTY PROP
PROPOSED OFFICE (900 SF)	1/300 SF	3	3
PROPOSED LAUNDRY FACILITY (600 SF)	1/300 SF	2	2
PROPOSED MAINTENANCE GARAGE (2,000 SF)	1/1,000 SF	2	2
REQUIRED ACCESSIBLE STALLS	1/25 SPACES	1	2
PROPOSED PARK	N/A		18
ADDITIONAL STALLS ADJACENT TO RV STALLS	N/A		189
ADDITIONAL ADA STALLS ADJACENT TO RV STALLS	N/A		8
TOTAL STALLS		**13 (1 HC)**	214 (12 HC)

RV PARKING DATA TABLE

STALL DIMENSIONS	TOTAL
10' x 50'	82
12' x 50'	25
12' x 60'	15
10' x 50' PULL-THRU	24
20' x 50' (ADA)	4
20' x 50' (ADA) PULL-THRU	4
TOTAL RV STALLS	**154**

1 9'x20' STALLS
ADA 11'x20' STALLS
1 10'x50' STALLS W/ 8'x20' STALLS
1 12'x50' STALLS W/ 8'x20' STALLS
1 10'x50' PULL-THRU STALLS W/ 8'x20' STALLS
1 20'x50' ADA STALLS W/ 8'x20 STALLS
1 12'x60' STALLS W/ 8'x20' STALLS

SETBACK DATA TABLE

PROPERTY LINE	BUILDING SETBACK
FRONT	30.00'
REAR	20.00'
SIDE	10.00'

C W 1/16 SEC 14, 3.25" CAP STAMPED "C W 1/16 2001 LS 23027"

1244.71' S 88°45'16" W BASIS OF BEARINGS

100 50 0 100 200
FULL SCALE: 1" = 100'
HALF SCALE: 1" = 200'

VILLABOS PROPERTIES LLC
PARCEL NO.: 0157114300002
ZONE: R-E

PLUGGED & ABANDONED WELL API NO.: 05-001-08444

Δ=37°00'28" R=585.65' L=378.28' ChB=S41°25'27"W ChL=371.74'

DANNY & HAZEL WIRTH
14831 RIVERDALE ROAD
PARCEL NO.: 0157114000007
ZONE: A-1

Δ=22°09'24" R=466.46' L=180.38' ChB=S48°42'36"W ChL=179.26'

N 00°19'25" W 1680.85'

PDC ENERGY INC
14781 RIVERDALE ROAD
PARCEL NO.: 0157114300003
ZONE: R-E

22.05 AC. +/- (960,539 SF)
MDC HOLDINGS, LLC
14600 RIVERDALE ROAD
PARCEL NO. 0157114301002
ZONE: PUD

S 59°49'25" W 320.47'

FUTURE OSP, STORM SYSTEM BY OTHERS

RIVERDALE ROAD (70' ROW)

S 22°53'55" W 914.30'

PARK / GAMES PLAYGROUND

SR

EMERGENCY ACCESS

PEDESTRIAN CROSSING

OFFICE/MAINTENANCE GARAGE 3,500 SF

TE

SITE ACCESS

S 88°45'16" W 62.94'

20' GAS EASEMENT BK 4420, PG 151

20' UTILITY EASEMENT REC. NO. _____

ADAMS COUNTY
PARCEL NO.: 0157114000009
ZONE: A-1

EX WATER WELL PERMIT NO.: 138802 (PERMITTED LOCATION NOT LOCATED)

80' BRANTNER DITCH ACCESS EASEMENT REC. NO. 2010000088066

Δ=25°41'45" R=852.36' L=382.26' ChB=S35°45'16"W ChL=379.07'

CITY OF THORNTON
14790 RIVERDALE ROAD
PARCEL NO.: 0157123201003
ZONE: A-1

Δ= 06°24'45" W 477.38'

S 00°20'52" E 952.39'

30' LANDSCAPE BUFFER

GREGG MCALEXANDER
14400 RIVERDALE ROAD
PARCEL NO.: 0157114000010
ZONE: A-1

EX MONITORING WELL PERMIT NO.: 259507 (PERMITTED LOCATION NOT LOCATED)

N 48°05'36" E 81.90'

N 21°15'03" E 329.91'

Δ=25°11'11" R=632.54' L=278.06' ChB=N34°32'42"E ChL=275.82'

20' GAS LINE EASEMENT BK 2798, PG 884

CITY OF THORNTON
14790 RIVERDALE ROAD
PARCEL NO.: 0157123201003
ZONE: A-3

FLOODWAY
PANEL NO.: 08001C0328H
EFFECTIVE DATE: 03/05/2007

100-YEAR FLOODPLAIN
PANEL NO.: 08001C0328H
EFFECTIVE DATE: 03/05/2007

500-YEAR FLOODPLAIN

277.88'

PLUGGED & ABANDONED WELL API NO.: 05-001-08430

100-YEAR FLOODPLAIN

FLOODWAY

N 43°48'35" E 120.16'

N 80°29'14" E 95.83'

N 86°03'03" E 96.06'

S 00°24'40" E 136.62'

N 61°34'30" E 45.84'

N 30°09'41" E 274.76'

N 21°14'06" E 209.02'

N 23°28'36" E 103.89'

Δ=11°32'03" R=1511.23' L=304.22' ChB=N25°51'15"E ChL=303.71'

N 21°11'52" E 711.05'

EX MONITORING WELL

100-YEAR FLOODPLAIN
PANEL NO.: 08001C0328H
EFFECTIVE DATE: 03/05/2007

CITY OF THORNTON
14790 RIVERDALE ROAD
PARCEL NO.: 0157123201003
ZONE: A-1

PRONE BAR UNDER ASPHALT. ID'ED WITH NAIL + 1" DISC STAMPED "LS 35595"

FUTURE DRAINAGE CHANNEL PER TODD CREEK AND DFA 0052 OSP BY OTHERS

DETENTION POND A
WQCV=4989.59 (VOL.=8,636 CF)
100 YR=4993.00 (VOL.=60,049 CF)
TOP=4994.00 (VOL.=88,478 CF)

DETENTION POND B
WQCV=4986.01 (VOL.=4,173 CF)
100 YR=4989.00 (VOL.=39,134 CF)
TOP=4990.00 (VOL.=59,187 CF)

NOTES

THIS PLAN IS INTENDED AS THE SITE PLAN FOR RIVERDALE RV PARK.

ALL IMPROVEMENTS ARE PROPOSED UNLESS NOTED AS EXISTING.

IT IS THE OWNER AND/OR THE CONTRACTOR'S RESPONSIBILITY TO ATTAIN ALL APPROPRIATE PERMITS AND REVIEW APPROVALS FROM THE STATE OF COLORADO AND ADAMS COUNTY RESPECTIVELY.

SEE COVER SHEET FOR BASIS OF BEARING & BENCHMARK.

ANY REFERENCE TO EASEMENTS, SURVEY POINTS, OR EXISTING UTILITIES AND FEATURES ARE BASED SOLELY FROM IMPROVEMENT SURVEY PLAT & TOPOGRAPHY SURVEY PROVIDED BY GEODESK USA, LLC ON JUNE 13, 2023 & AERIAL DRONE SURVEY BY WEC, DATED AUGUST 15, 2024 (HORIZONTAL & VERTICAL CONTROL PROVIDED BY GEODESK USA, LLC).

NOT ALL UNCC UTILITY LOCATES HAVE BEEN PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES ARE LOCATED AND SURVEY PROVIDED TO THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION DRAWING RELEASE.

SYMBOL LEGEND

- 45 DEG BEND
- 22.5 DEG BEND
- RESTRAINED PLUG
- RESTRAINED TEE
- WATER WELL
- RESTRAINED CROSS
- FIRE HYDRANT
- RESTRAINED VALVE
- MANHOLE
- TRANSFORMER
- COMM PEDESTAL
- ELECTRIC METER
- SR SNOW REMOVAL AREA
- TE TRASH ENCLOSURE
- OH OVERHEAD DOOR
- UTILITY POLE
- LIGHT POLE
- BUILDING LIGHT
- EX TREES /SHRUBS
- THRUST BLOCK TB
- GATE VALVE GV
- CURB STOP
- PIPE CROSSING
- SURVEY MONUMENT AS DENOTED
- C 1/4 SEC 14, 3.25" CAP STAMPED "C 1/4 1996"
- W 1/16 SEC 14, 3.25" CAP STAMPED "W 1/16 LS 24960"
- 1.25" YELLOW PLASTIC CAP STAMPED "EPP ASSOC PLS 14815"
- 1.25" YELLOW PLASTIC CAP STAMPED "EPP ASSOC PLS 14815" 0.70' WEST OF CIVIL ARTS CAP
- 2.25" METAL CAP STAMPED "CIVIL ARTS PLS 25379"
- 1.25" YELLOW PLASTIC CAP STAMPED "QUEST LS 16825"
- #5 REBAR

EXISTING LANDSCAPE
EXISTING GRAVEL
EXISTING CONCRETE
EXISTING ASPHALT
PROPOSED LANDSCAPE
PROPOSED GRAVEL
PROPOSED CONCRETE
PROPOSED ASPHALT

LINETYPE LEGEND

- LOT / PROPERTY / SECTION LINE
- RIGHT OF WAY LINE
- EASEMENT
- SETBACK
- FEMA FLOODZONE
- EXISTING BUILDING, CURB
- EDGE of ASPHALT or GRAVEL RD
- WOOD OR METAL FENCE
- CHAINLINK FENCE
- WIRE FENCE
- POND WQ W/S
- SWALE
- EXISTING OVERHEAD ELEC
- EXISTING ELECTRICAL LINE
- EXISTING STORM LINE
- EXISTING SANITARY LINE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING FIBER OPTIC LINE
- EXISTING TELEPHONE LINE
- PROPOSED SANITARY LINE
- PROPOSED SANITARY SERVICE
- PROPOSED STORM LINE
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE
- PROPOSED GAS LINE
- PROPOSED ELECTRIC LINE
- PROPOSED TELEPHONE LINE

127 S. DENVER AVE
FT. LUPTON, CO 80621
www.westernec.com
email@westernec.com
(720) 685-9951
FAX (720) 294-1330
Western Engineering Consultants, inc LLC

No.	REVISION	DATE	BY
0	INITIAL RELEASE	06/02/25	CFC

MDC HOLDINGS, LLC
CONTACT:
DARIN PETERSON
1108 NORTHSHORE DR
COLUMBIA, MO 65203-2998
(303)434-6356
DARIN@RIVERDALERVPARK.COM

SITE PLAN
RIVERDALE RV PARK
14600 RIVERDALE ROAD
ADAMS COUNTY, COLORADO

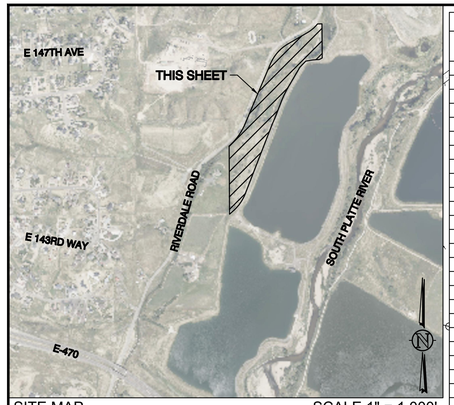
Dig Safely.
CALL UNCC
THREE WORKING DAYS BEFORE YOU DIG
1-800-922-1987
www.uncc.org
UTILITY NOTIFICATION CENTER OF COLORADO

FOR REVIEW

ONLY VALID FOR CONSTRUCTION IF SEAL & ORIGINAL SIGNATURE ARE ON EACH SHEET

INITIAL PLAN RELEASE: 06/02/25
DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0504.001.00
DOC CON # C1.00-SITE
SHEET C1.00

T:\0504_001_00-PETERSON\Dwg\CD\0504-001-WEC-CDS-0.00-1.00.dwg, C1.00-SITE, 5/30/2025 4:47:27 PM, DWG To PDF.pc3



SITE MAP SCALE 1" = 1,000'

SHOWN VICINITY MAP TAKEN FROM AUTOCAD GEOLOCATION

LOT DATA TABLE

DESCRIPTION	AREA	AREA (ac)	EXISITNG %	PROPOSED %
LOT	960,539 SF	22.05	100 %	100 %
EXISTING BUILDINGS	0 SF	0.00	0.00 %	
EX BUILDING TO BE REMOVED	0 SF	0.00	0.00 %	
PROPOSED BUILDINGS	3,500 SF	0.08		0.36 %
TOTAL BUILDINGS	**3,500 SF**	**0.08**		**0.36 %**
EXISTING CONCRETE	525 SF	0.01	0.05 %	
EX CONCRETE TO BE REMOVED	525 SF	0.01	0.05 %	
PROPOSED CONCRETE	130,085 SF	2.99		13.54 %
TOTAL CONCRETE	**130,085 SF**	**2.99**		**13.54 %**
EXISTING ASPHALT	0 SF	0.00	0.00 %	
EX ASPHALT TO BE REMOVED	0 SF	0.00	0.00 %	
PROPOSED ASPHALT	139,170 SF	3.19		14.49 %
TOTAL ASPHALT	**139,170 SF**	**3.19**		**14.49 %**
EXISTING GRAVEL	43,421 SF	1.00	4.52 %	
EX GRAVEL TO BE REMOVED	43,421 SF	1.00	4.52 %	
PROPOSED GRAVEL	17,103 SF	0.39		1.78 %
TOTAL GRAVEL	**17,103 SF**	**0.39**		**1.78 %**
EXISTING LANDSCAPE AREA	**916,593 SF**	21.04	95.42 %	
PROPOSED LANDSCAPE AREA	**670,681 SF**	**15.40**		**69.82 %**
LOT COVERAGE			4.58 %	**30.18 %**

PARKING DATA TABLE

BUILDING	PARKING REQUIREMENT	QTY REQ	QTY PROP
PROPOSED OFFICE (900 SF)	1/300 SF	3	3
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PROPOSED PARK	N/A		18
ADDITIONAL STALLS ADJACENT TO RV STALLS	N/A		189
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TOTAL STALLS		**13 (1 HC)**	214 (12 HC)

RV PARKING DATA TABLE

STALL DIMENSIONS	**TOTAL**
10' x 50'	82
12' x 50'	25
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10' x 50' PULL-THRU	24
20' x 50' (ADA)	4
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TOTAL RV STALLS	**154**

1 9'x20' STALLS
ADA 11'x20' STALLS
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SETBACK DATA TABLE

PROPERTY LINE	BUILDING SETBACK
FRONT	30.00'
REAR	20.00'
SIDE	10.00'

C W 1/16 SEC 14, 3.25" CAP STAMPED "C W 1/16 2001 LS 23027"

1244.71' S 88°45'16" W BASIS OF BEARINGS

100 50 0 100 200
FULL SCALE: 1" = 100'
HALF SCALE: 1" = 200'

VILLAPOS PROPERTIES LLC PARCEL NO.: 0157114300002 ZONE: R-E

DANYY & HAZEL WIETH 14831 RIVERDALE ROAD PARCEL NO.: 0157114000007 ZONE: A-1

PLUGGED & ABANDONED WELL API NO.: 05-001-08444

Δ=37°00'28" R=585.65' L=378.28' ChB=S41°25'27"W ChL=371.74'

22.05 AC. +/- (960,539 SF) MDC HOLDINGS, LLC 14600 RIVERDALE ROAD PARCEL NO. 0157114301002 ZONE: PUD

PDC ENERGY INC 14781 RIVERDALE ROAD PARCEL NO.: 0157114300003 ZONE: R-E

N 00°19'25" W 1680.95'

OHE

Δ=22°09'24" R=466.46' L=180.38' ChB=S48°42'36"W ChL=179.26'

S 59°49'25" W 320.47'

RIVERDALE ROAD (70' ROW)

S 22°53'55" W 914.30'

FUTURE OSP STORM SYSTEM BY OTHERS

PARK / GAMES PLAYGROUND

SR

TE

EMERGENCY ACCESS

PEDESTRIAN CROSSING

OFFICE/MAINT. GARAGE 3,500 SF

SITE ACCESS

S 88°45'16" W 62.94'

20' GAS EASEMENT BK 4820, PG 151

20' UTILITY EASEMENT REC. NO.

CITY OF THORNTON 14790 RIVERDALE ROAD PARCEL NO.: 0157123201003 ZONE: A-1

ADAMS COUNTY PARCEL NO.: 0157114000009 ZONE: A-1

Δ=25°41'45" R=852.36' L=382.26' ChB=S35°45'16"W ChL=379.07'

EX WATER WELL PERMIT NO.: 138802 (PERMITTED LOCATION NOT LOCATED)

80' BRANTNER DITCH ACCESS EASEMENT REC. NO. 2010000088066

S 00°20'52" E 952.39'

30' LANDSCAPE BUFFER

GREGG MCALEXANDER 14400 RIVERDALE ROAD PARCEL NO.: 0157114000010 ZONE: A-1

EX MONITORING WELL PERMIT NO.: 259507 (PERMITTED LOCATION NOT LOCATED)

N 48°05'36" E 81.80'

N 21°15'03" E 329.97'

Δ=25°11'11" R=632.54' L=278.06' ChB=N34°32'42"E ChL=275.82'

20' GAS LINE EASEMENT BK 2798, PG 884

CITY OF THORNTON 14790 RIVERDALE ROAD PARCEL NO.: 0157123201003 ZONE: A-3

500-YEAR FLOODPLAIN

277.88'

PLUGGED & ABANDONED WELL API NO.: 05-001-08430

100-YEAR FLOODPLAIN PANEL NO.: 08001C0328H EFFECTIVE DATE: 03/05/2007

100-YEAR FLOODPLAIN

FLOODWAY

FLOODWAY PANEL NO.: 08001C0328H EFFECTIVE DATE: 03/05/2007

N 30°09'41" E 274.76'

Δ=11°32'03" R=1511.23' L=304.22' ChB=N25°51'15"E ChL=303.71'

N 21°14'06" E 209.02'

N 23°28'36" E 103.89'

N 21°11'52" E 711.05'

EX MONITORING WELL

DETENTION POND A
WQCV=4989.59 (VOL.=8,636 CF)
100 YR=4993.00 (VOL.=60,049 CF)
TOP=4994.00 (VOL.=88,478 CF)

N 43°48'35" E 120.16'

N 80°29'14" E 95.83'

N 86°03'03" E 96.06'

S 00°24'40" E 136.62'

N 61°34'30" E 45.84'

100-YEAR FLOODPLAIN PANEL NO.: 08001C0328H EFFECTIVE DATE: 03/05/2007

CITY OF THORNTON 14790 RIVERDALE ROAD PARCEL NO.: 0157123201003 ZONE: A-1

PRONE BAR UNDER ASPHALT. ID'ED WITH NAIL + 1" DISC STAMPED "LS 35595"

DETENTION POND B
WQCV=4986.01 (VOL.=4,173 CF)
100 YR=4989.00 (VOL.=39,134 CF)
TOP=4990.00 (VOL.=59,187 CF)

FUTURE DRAINAGE CHANNEL PER TODD CREEK AND DFA 0052 OSP BY OTHERS

4984.5

4985.0

4986.0

4987.0

4988.0

NOTES

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SYMBOL LEGEND

- 45 DEG BEND
- 22.5 DEG BEND
- RESTRAINED PLUG
- RESTRAINED TEE
- WATER WELL
- RESTRAINED CROSS
- FIRE HYDRANT
- RESTRAINED VALVE
- MANHOLE
- TRANSFORMER
- COMM PEDESTAL
- ELECTRIC METER
- SR SNOW REMOVAL AREA
- TE TRASH ENCLOSURE
- OH OVERHEAD DOOR
- UTILITY POLE
- LIGHT POLE
- BUILDING LIGHT
- EX TREES /SHRUBS
- THRUST BLOCK TB
- GATE VALVE GV
- CURB STOP
- PIPE CROSSING
- SURVEY MONUMENT AS DENOTED
- C 1/4 SEC 14, 3.25" CAP STAMPED "C 1/4 1996"
- W 1/16 SEC 14, 3.25" CAP STAMPED "W 1/16 LS 24960"
- 1.25" YELLOW PLASTIC CAP STAMPED "EPP ASSOC PLS 14815"
- 1.25" YELLOW PLASTIC CAP STAMPED "EPP ASSOC PLS 14815" 0.70' WEST OF CIVIL ARTS CAP
- 2.25" METAL CAP STAMPED "CIVIL ARTS PLS 25379"
- 1.25" YELLOW PLASTIC CAP STAMPED "QUEST LS 16825"
- #5 REBAR

EXISTING LANDSCAPE
EXISTING GRAVEL
EXISTING CONCRETE
EXISTING ASPHALT
PROPOSED LANDSCAPE
PROPOSED GRAVEL
PROPOSED CONCRETE
PROPOSED ASPHALT

LINETYPE LEGEND

- LOT / PROPERTY / SECTION LINE
- RIGHT OF WAY LINE
- EASEMENT
- SETBACK
- FEMA FLOODZONE
- EXISTING BUILDING, CURB
- EDGE of ASPHALT or GRAVEL RD
- WOOD OR METAL FENCE
- CHAINLINK FENCE
- WIRE FENCE
- POND WQ W/S
- SWALE
- EXISTING OVERHEAD ELEC
- EXISTING ELECTRICAL LINE
- EXISTING STORM LINE
- EXISTING SANITARY LINE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING FIBER OPTIC LINE
- EXISTING TELEPHONE LINE
- PROPOSED SANITARY LINE
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Western Engineering Consultants, inc LLC
127 S. DENVER AVE
FT. LUPTON, CO 80621
www.westernec.com
email@westernec.com
(720) 685-9951
FAX (720) 294-1330

No.	REVISION	DATE	BY
0	INITIAL RELEASE	06/02/25	CFC

MDC HOLDINGS, LLC
CONTACT: DARIN PETERSON
1108 NORTHSHORE DR
COLUMBIA, MO 65203-2998
(303)434-6356
DARIN@RIVERDALERVPARK.COM

SITE PLAN W/ AERIAL
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LOT DATA TABLE

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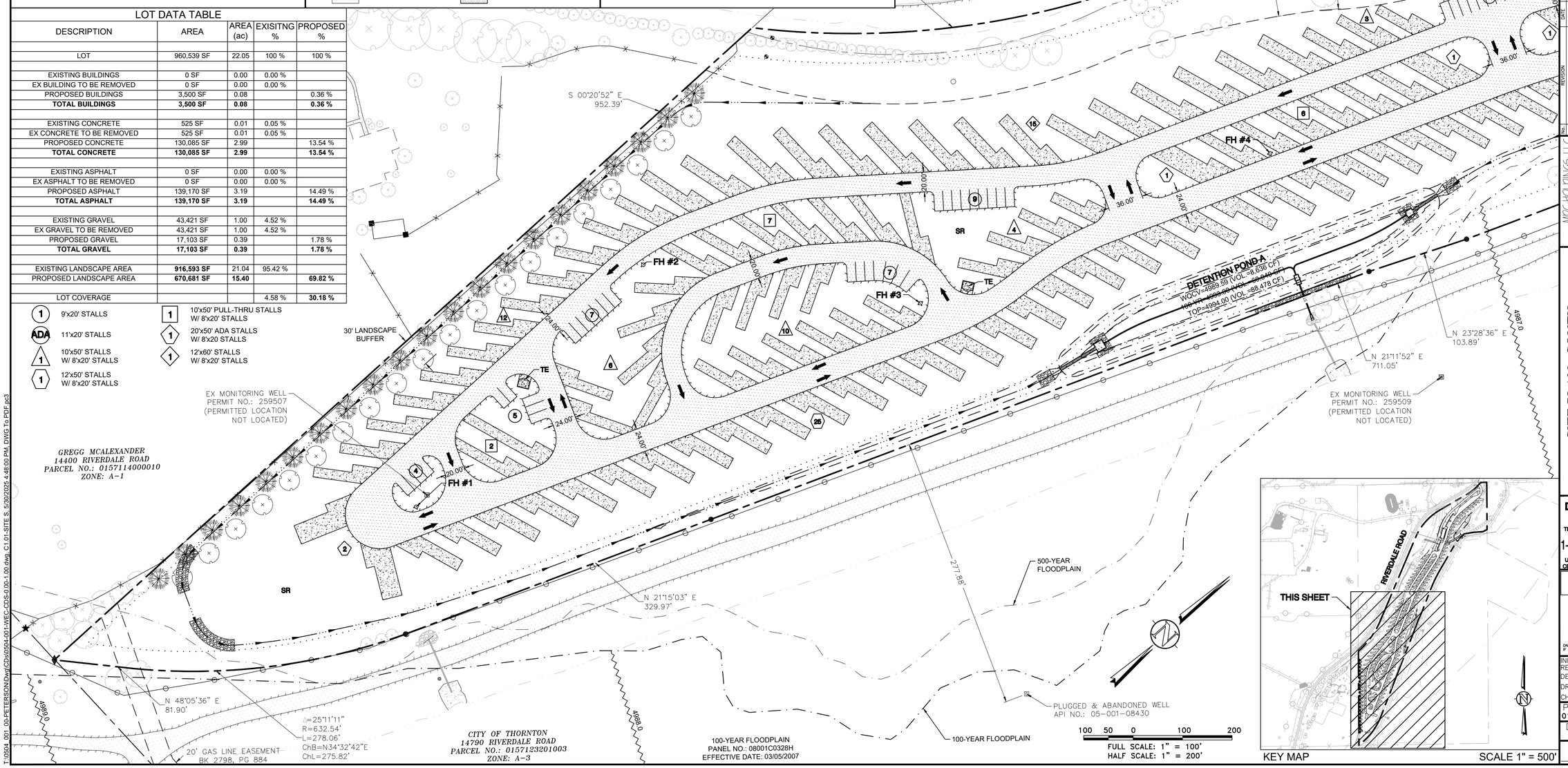

KEY MAP

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SITE PLAN - NORTH
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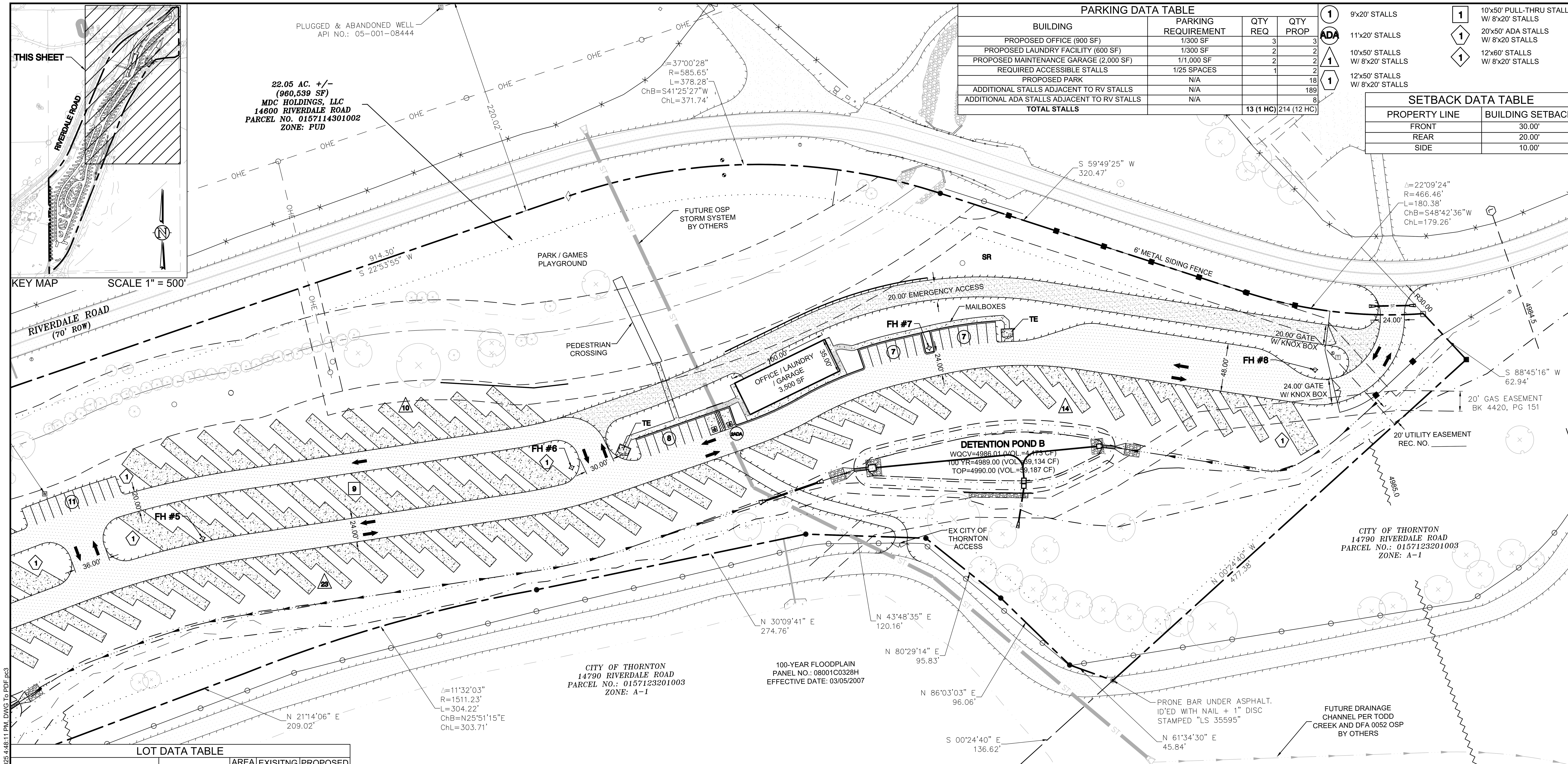

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SEE COVER SHEET FOR BASIS OF BEARING & BENCHMARK.

ANY REFERENCE TO EASEMENTS, SURVEY POINTS, OR EXISTING UTILITIES AND FEATURES ARE BASED SOLELY FROM IMPROVEMENT SURVEY PLAT & TOPOGRAPHY SURVEY PROVIDED BY GEODESK USA, LLC ON JUNE 13, 2023 & AERIAL DRONE SURVEY BY WEC, DATED AUGUST 15, 2024 (HORIZONTAL & VERTICAL CONTROL PROVIDED BY GEODESK USA, LLC).

NOT ALL UNCC UTILITY LOCATES HAVE BEEN PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES ARE LOCATED AND SURVEY PROVIDED TO THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION DRAWING RELEASE.

SYMBOL LEGEND

- 45 DEG BEND
- 22.5 DEG BEND
- RESTRAINED PLUG
- RESTRAINED TEE
- WATER WELL
- RESTRAINED CROSS
- FIRE HYDRANT
- RESTRAINED VALVE
- MANHOLE
- TRANSFORMER
- COMM PEDESTAL
- ELECTRIC METER
- SR SNOW REMOVAL AREA
- TE TRASH ENCLOSURE
- OH OVERHEAD DOOR
- UTILITY POLE
- LIGHT POLE
- BUILDING LIGHT
- EX TREES /SHRUBS
- THRUST BLOCK TB
- GATE VALVE GV
- CURB STOP
- PIPE CROSSING
- SURVEY MONUMENT AS DENOTED
- C 1/4 SEC 14, 3.25" CAP STAMPED "C 1/4 1996"
- W 1/16 SEC 14, 3.25" CAP STAMPED "W 1/16 LS 24960"
- 1.25" YELLOW PLASTIC CAP STAMPED "EPP ASSOC PLS 14815"
- 1.25" YELLOW PLASTIC CAP STAMPED "EPP ASSOC PLS 14815" 0.70' WEST OF CIVIL ARTS CAP
- 2.25" METAL CAP STAMPED "CIVIL ARTS PLS 25379"
- 1.25" YELLOW PLASTIC CAP STAMPED "QUEST LS 16825"
- #5 REBAR

- EXISTING LANDSCAPE
- PROPOSED LANDSCAPE
- EXISTING GRAVEL
- PROPOSED GRAVEL
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING ASPHALT
- PROPOSED ASPHALT

LINETYPE LEGEND

- LOT / PROPERTY / SECTION LINE
- RIGHT OF WAY LINE
- EASEMENT
- SETBACK
- FEMA FLOODZONE
- EXISTING BUILDING, CURB
- EDGE of ASPHALT or GRAVEL RD
- WOOD OR METAL FENCE
- CHAINLINK FENCE
- WIRE FENCE
- POND WQ W/S
- SWALE
- OHE EXISTING OVERHEAD ELEC
- EL EXISTING ELECTRICAL LINE
- ST EXISTING STORM LINE
- SA EXISTING SANITARY LINE
- WA EXISTING WATER LINE
- GA EXISTING GAS LINE
- FO EXISTING FIBER OPTIC LINE
- T EXISTING TELEPHONE LINE
- SA PROPOSED SANITARY LINE
- SS PROPOSED SANITARY SERVICE
- ST PROPOSED STORM LINE
- WA PROPOSED WATER LINE
- WAS PROPOSED WATER SERVICE
- GA PROPOSED GAS LINE
- EL PROPOSED ELECTRIC LINE
- T PROPOSED TELEPHONE LINE

127 S. DENVER AVE
FT. LUPTON, CO 80621
www.westernecl.com
email@westernecl.com
(720) 685-9951
FAX (720) 294-1330
Western Engineering Consultants, inc LLC

MDC HOLDINGS, LLC
CONTACT:
DARIN PETERSON
1108 NORTHSHORE DR
COLUMBIA, MO 65203-2998
(303)434-6356
DARIN@RIVERDALERVPARK.COM

No.	REVISION	DATE	BY
1	INITIAL RELEASE	06/02/25	CFC

FOR REVIEW

ONLY VALID FOR CONSTRUCTION IF SEAL & ORIGINAL SIGNATURE ARE ON EACH SHEET

INITIAL PLAN RELEASE: 06/02/25
DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0504.001.00
DOC CON # C1.02-SITE N
SHEET C1.02

T:\0504_001_00-PETERSON\Dwg\CDs\0504-001-WEC-CDS-0.00-1.00.dwg, C1.02-SITE N, 5/30/2025 4:48:11 PM, DWG To PDF.pc3

EQUITY TITLE OF COLORADO

710 Kipling Street, Suite 100
Lakewood, CO 80215
Phone: (303) 563-4640 ● Fax: (303) 563-4650

Date: August 21, 2023
Our File Number: 00028163 KR

C-3 Added deletions of 1-3

Re: Aggregate Resources, a Colorado General Partnership / MDC Holdings LLC, Missouri Limited Liability Company
Property Address: TBD Riverdale Road Brighton, CO 80602

Escrow Officer:	*Debbie Evans*	*(303) 563-4640*	*devans@equitycol.com*
Escrow Assistant:	*Josh Reynolds*	*(303) 563-4640*	*jreynolds@equitycol.com*

Delivery List

Listing Broker:
RE/MAX 100, Inc.
710 KIPLING ST, SUITE 110
LAKEWOOD, CO 80125
Attn: Jim Weichselbaum
Ph: (303) 232-4444 Fax: (303) 232-6919
Email: jmweichselbaum@gmail.com
SENT VIA EMAIL

Seller:
Aggregate Resources, a Colorado General Partnership
Email:
Email:
SENT VIA LISTING BROKER

Selling Broker:
VIP Real Estate Co
50 S. Steele St. Ste. 500
Denver, CO 80209
Attn: Brian A. Furer
Ph: (720) 251-0778 Fax: (877) 655-8051
Email: Brian@VIPRealEstateCo.com
SENT VIA EMAIL

Buyer:
MDC Holdings LLC, Missouri Limited Liability Company
Email:
Email:
SENT VIA SELLING BROKER

Lender:
CASH

Attn:
Ph: Fax:
Email:
SENT VIA EMAIL

Copy to: Accommodator 1
Laura Prinzi

Attn:
Ph: Fax
Email: laurap.remax100@gmail.com
SENT VIA EMAIL

ALTA COMMITMENT FOR TITLE INSURANCE (07-01-2021)
ISSUED BY
Stewart Title Guaranty Company

NOTICE

IMPORTANT—READ CAREFULLY: THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACONTRACTUAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANY'S OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON.

COMMITMENT TO ISSUE POLICY

Subject to the Notice; Schedule B, Part I—Requirements; Schedule B, Part II—Exceptions; and the Commitment Conditions, Stewart Title Guaranty Company, a Texas (the "Company"), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Amount of Insurance and the name of the Proposed Insured.

If all of the Schedule B, Part I—Requirements have not been met within six months after the Commitment Date, this Commitment terminates and the Company's liability and obligation end.

Countersigned by:

Authorized Signature

Equity Title of Colorado
Company Name

Lakewood, CO 80215
City, State

STEWART TITLE GUARANTY COMPANY INCORPORATED 1908 TEXAS

Frederick H. Eppinger
President and CEO

David Hisey
Secretary

This page is only a part of a 2021 ALTA Commitment for Title Insurance. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I—Requirements; and Schedule B, Part II—Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

COMMITMENT CONDITIONS

1. DEFINITIONS
   a. "Discriminatory Covenant": Any covenant, condition, restriction, or limitation that is unenforceable under applicable law because it illegally discriminates against a class of individuals based on personal characteristics such as race, color, religion, sex, sexual orientation, gender identity, familial status, disability, national origin, or other legally protected class.
   b. "Knowledge" or "Known": Actual knowledge or actual notice, but not constructive notice imparted by the Public Records.
   c. "Land": The land described in Item 5 of Schedule A and improvements located on that land that by law constitute real property. The term "Land" does not include any property beyond that described in Schedule A, nor any right, title, interest, estate, or easement in any abutting street, road, avenue, alley, lane, right-of-way, body of water, or waterway, but does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.
   d. "Mortgage": A mortgage, deed of trust, trust deed, security deed, or other real property security instrument, including one evidenced by electronic means authorized by law.
   e. "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.
   f. "Proposed Amount of Insurance": Each dollar amount specified in Schedule A as the Proposed Amount of Insurance of each Policy to be issued pursuant to this Commitment.
   g. "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.
   h. "Public Records": The recording or filing system established under state statutes in effect at the Commitment Date under which a document must be recorded or filed to impart constructive notice of matters relating to the Title to a purchaser for value without Knowledge. The term "Public Records" does not include any other recording or filing system, including any pertaining to environmental protection, planning, permitting, zoning, licensing, building, health, public safety, or national security matters.
   i. "State": The state or commonwealth of the United States within whose exterior boundaries the Land is located. The term "State" also includes the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Virgin Islands, and Guam.
   j. "Title": The estate or interest in the Land identified in Item 3 of Schedule A.

2. If all of the Schedule B, Part I—Requirements have not been met within the time period specified in the Commitment to Issue Policy, this Commitment terminates and the Company's liability and obligation end.

3. The Company's liability and obligation is limited by and this Commitment is not valid without:
   a. the Notice;
   b. the Commitment to Issue Policy;
   c. the Commitment Conditions;
   d. Schedule A;
   e. Schedule B, Part I—Requirements; and
   f. Schedule B, Part II—Exceptions; and
   g. a counter-signature by the Company or its issuing agent that may be in electronic form.

4. COMPANY'S RIGHT TO AMEND

   The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company is not liable for any other amendment to this Commitment.

5. LIMITATIONS OF LIABILITY

   a. The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:
      i. comply with the Schedule B, Part I—Requirements;
      ii. eliminate, with the Company's written consent, any Schedule B, Part II—Exceptions; or
      iii. acquire the Title or create the Mortgage covered by this Commitment.
   b. The Company is not liable under Commitment Condition 5.a. if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.
   c. The Company is only liable under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.
   d. The Company's liability does not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Condition 5.a. or the Proposed Amount of Insurance.
   e. The Company is not liable for the content of the Transaction Identification Data, if any.
   f. The Company is not obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I—Requirements have been met to the satisfaction of the Company.
   g. The Company's liability is further limited by the terms and provisions of the Policy to be issued to the Proposed Insured.

6. LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT; CHOICE OF LAW AND CHOICE OF FORUM

   a. Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
   b. Any claim must be based in contract and is restricted to the terms and provisions of this Commitment.
   c. This Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.
   d. The deletion or modification of any Schedule B, Part II—Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
   e. Any amendment or endorsement to this Commitment must be in writing and authenticated by a person authorized by the Company.
   f. When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. IF THIS COMMITMENT IS ISSUED BY AN ISSUING AGENT

   The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. PROFORMA POLICY

   The Company may provide, at the request of a Proposed Insured, a proforma policy illustrating the coverage that the Company may provide. A proforma policy neither reflects the status of Title at the time that the proforma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

9. CLAIMS PROCEDURES

This Commitment incorporates by reference all Conditions for making a claim in the Policy to be issued to the Proposed Insured. This Commitment Condition does not modify the limitations of liability in Commitment Conditions 5 and 6.

10. CLASS ACTION

ALL CLAIMS AND DISPUTES ARISING OUT OF OR RELATING TO THIS COMMITMENT, INCLUDING ANY SERVICE OR OTHER MATTER IN CONNECTION WITH ISSUING THIS COMMITMENT, ANY BREACH OF A COMMITMENT PROVISION, OR ANY OTHER CLAIM OR DISPUTE ARISING OUT OF OR RELATING TO THE TRANSACTION GIVING RISE TO THIS COMMITMENT, MUST BE BROUGHT IN AN INDIVIDUAL CAPACITY. NO PARTY MAY SERVE AS PLAINTIFF, CLASS MEMBER, OR PARTICIPANT IN ANY CLASS OR REPRESENTATIVE PROCEEDING. ANY POLICY ISSUED PURSUANT TO THIS COMMITMENT WILL CONTAIN A CLASS ACTION CONDITION.

11. ARBITRATION

The Policy contains an arbitration clause. All arbitrable matters when the Proposed Amount of Insurance is $2,000,000 or less may be arbitrated at the election of either the Company or the Proposed Insured as the exclusive remedy of the parties. A Proposed Insured may review a copy of the arbitration rules at http://www.alta.org/arbitration.

STEWART TITLE GUARANTY COMPANY

All notices required to be given the Company and any statement in writing required to be furnished the Company shall be addressed to it at: Stewart Title Guaranty Company, P.O. Box 2029, Houston, Texas 77252-2029.

Transaction Identification Data, for which the Company assumes no liability as set forth in Commitment Condition 5.e.:

Issuing Agent:	Equity Title of Colorado
Issuing Office:	710 Kipling Street, Suite 100,Lakewood, CO 80215
ALTA® Universal ID:	None
Loan ID Number:	
Issuing Office File Number:	00028163-009-DE9-KR
Property Address:	TBD Riverdale Road, Brighton, CO 80602

SCHEDULE A

AMERICAN LAND TITLE ASSOCIATION COMMITMENT

1. Effective Date: **August 14, 2023**
2. Policy to be issued:
   (a) **ALTA Standard Owner's Policy (7-1-21)**
   Proposed Insured: **MDC Holdings LLC, Missouri Limited Liability Company**
   Proposed Amount of Insurance: **$995,000.00**
   The estate or interest to be insured: **FEE SIMPLE**
   (b) **ALTA Standard Loan Policy (7-1-21)**
   Proposed Insured: **CASH, its successors and/or assigns, as their interests may appear**
   Proposed Amount of Insurance: **$0.00**
   The estate or interest to be insured: **FEE SIMPLE**
   (c) None
   Proposed Insured:
   Proposed Amount of Insurance:
   The estate or interest to be insured:
3. The estate or interest in the Land at the Commitment Date is:
   FEE SIMPLE
4. The Title is, at the Commitment Date, vested in:
   Aggregate Resources, a Colorado General Partnership
5. The Land is described as follows:
   See Exhibit A attached hereto and made a part hereof.

TITLE PREMIUMS

Owner's Policy – Basic Rate	$	2756.00
CLTA 110.1 Deletions of 1-3	$	65.00
Bundled Loan Policy Rate (Basic $ TBD)	$	TBD
Form ALTA 9.10 Comprehensive	$	Included
Form ALTA 8.1 Environmental	$	Included
Chain of Title	$	Included
Tax Certificate	$	60.00
TOTAL Closing Protection Letter Fee (if applicable): $25.00	$	

EXHIBIT A
LEGAL DESCRIPTION

Lots 1 and 2,
Block 1,
Centennial Estates, Amendment No. 1,
County of Adams,
State of Colorado.

SCHEDULE B – PART I
REQUIREMENTS

All of the following Requirements must be met:

A. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

B. Pay the agreed amount for the estate or interest to be insured.

C. Pay the premiums, fees, and charges for the Policy to the Company.

D. Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.

i. Warranty Deed satisfactory to the Company, from Aggregate Resources, a Colorado General Partnership, vesting fee simple title in and to MDC Holdings LLC, Missouri Limited Liability Company.

ii. Deed of Trust satisfactory to the Company, from MDC Holdings LLC, Missouri Limited Liability Company, to the Public Trustee of Adams County, for the benefit of CASH.

E. The following requirements are made regarding Aggregate Resources, a Colorado General Partnership:

a. Record a Statement of Authority.
b. Review of the Partnership Agreement.

F. Item Deleted

G. If SELLER has any knowledge of current liens or open Deeds of Trust against the subject property, that are not disclosed by this Commitment, you must contact your closer immediately for further review prior to closing.

H. Item Received.

I. Evidence if any that all assessments for common expenses due under the Declaration referred to in Schedule B, Section 2 contained herein, have been paid.

J. Receipt by the Company of a satisfactory Final Affidavit, executed by Aggregate Resources, a Colorado General Partnership.

K. Receipt by the Company of a satisfactory Final Affidavit, executed by MDC Holdings LLC, Missouri Limited Liability Company.

L. Payment of all taxes and assessments now due and payable.

SCHEDULE B
PART I – REQUIREMENTS
(Continued)

END OF SCHEDULE B – Part I

SCHEDULE B – PART II

EXCEPTIONS

Some historical land records contain Discriminatory Covenants that are illegal and unenforceable by law. This Commitment and the Policy treat any Discriminatory Covenant in a document referenced in Schedule B as if each Discriminatory Covenant is redacted, repudiated, removed, and not republished or recirculated. Only the remaining provisions of the document will be excepted from coverage.

The Policy will not insure against loss or damage resulting from the terms and conditions of any lease or easement identified in Schedule A, and will include the following Exceptions unless cleared to the satisfaction of the Company:

1. Rights or claims of parties in possession not shown by the public records.
2. Easements or claims of easements, not shown by the public records.
3. Discrepancies, conflicts in boundary lines, shortages in area, encroachments, and any facts which a correct survey and inspection of the premises would disclose and which are not shown by the public records.

   NOTE: Upon receipt of final affidavits, as shown in Schedule B - Section 1, Exceptions 1 through 3 will not appear on the Owner's Policy (if any) to be issued hereunder.
4. Any lien, or right to a lien for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.
5. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date of which all of the Schedule B, Part I - Requirements are met.

   NOTE: Provided Equity Title of Colorado, LLC conducts the closing of this transaction, Exception 5 will be deleted.
6. Taxes and assessments which are a lien or are now due and payable; any tax, special assessment, charge or lien imposed for or by any special taxing district or for water or sewer service; any unredeemed tax sales.

   NOTE: Upon payment of all taxes and assessments now due and payable, as shown in Schedule B - Section 2, Exception 6 will be amended to read as follows: "Taxes and assessments for the year 2022 and subsequent years, a lien, not yet due or payable."
7. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water; (d) Minerals of whatsoever kind, subsurface and surface substances, in, on, under and that may be produced from the Land, together with all rights, privileges, and immunities relating thereto, whether or not the matters excepted under (a), (b), (c) or (d) are shown by the Public Records or listed in Schedule B.
8. Any water rights or claims or title to water, in, on or under the land.
9. Any existing leases or tenancies.
10. Right of Way for ditches or canals constructed by the authority of the United States as reserved in the United States Patent recorded October 5, 1928, in Book 172 at Page 36 and reserving, also, to the United States all coal in the lands so granted, and to it, or persons authorized by it, the right to prospect for, mine and remove coal from the same upon compliance with the conditions of and subject to the limitations of the Act of June 22, 1910 (36 Stat. 583), said Patent for the NW ¼ of SW ¼ of Section 14, Township 1 South, Range 67 West of the 6th P.M.

SCHEDULE B
PART II – EXCEPTIONS
(Continued)

11. Easement and right of way for telephone and telegraph purposes, granted to The Mountain States Telephone and Telegraph Company, by Gates Cyclo, Inc., by instrument recorded September 6, 1961, in Book 932 at Page 285.

12. Easement and right of way granted to Public Service Company of Colorado by Gates Cyclo, Inc., in instrument recorded July 19, 1962 in Book 999 at Page 259.

13. Terms, conditions and provisions of the Oil and Gas Lease by and between United Bank of Denver National Association and Texas American Oil Corporation recorded October 31, 1980 in Book 2503 at Page 979.

    Amendment of Oil and Gas Lease recorded October 28, 1985 in Book 3066 at Page 255.

14. Terms, conditions and provisions of the Right-of-Way Contract by and between Aggregate Resources and Vessels Gas Processing, Ltd. recorded September 27, 1983 in Book 2794 at Page 727.

15. Terms, conditions and provisions of the Stipulation of Interest and Corrective Cross Conveyance of Interest recorded February 15, 1990 in Book 3648 at Page 294.

16. Terms, conditions and provisions of the Right-of-Way Contact recorded October 11, 1983 in Book 2798 at Page 884.

17. Terms, conditions, provisions and easements as contained in the Right of Way Easement recorded November 6, 1984 in Book 2941 at Page 790.

18. Terms and conditions as set forth in the Gas Pipeline Easement Grant, recorded November 7, 1994, in Book 4420 at Page 151.

19. Terms and conditions as set forth in the Short Form Lease, recorded March 27, 1995, in Book 4485 at Page 997.

    Assignment of Leases recorded May 10, 1999 at Reception No. C0540653.

20. Terms and conditions as set forth in the Right of Entry, recorded May 11, 2004, as Reception No. 20040511000341220.

    Partial Assignment and Assumption Agreement recorded June 6, 2008 at Reception No. 2008000045773.

SCHEDULE B
PART II – EXCEPTIONS
(Continued)

21. Easements, notes, covenants, restrictions and rights-of-way as shown on the plat of Centennial Estates, recorded April 16, 1984, in Book F16 at Page 68, as Reception No. B497857 and the plat of Centennial Estates, Amendment No. 1 recorded December 20, 2010, in Book F26 at Page 102, as Reception No. 2010000088066.

21. Any increase or decrease in the area of the land and any adverse claim to any portion of the land which has been created by or caused by accretion or reliction, whether natural or artificial; and the effect of the gain or loss of area by accretion or reliction upon the marketability of the title of the land.

22. The following encroachments as disclosed by the Improvement Survey Plat and Topography, dated June 13, 2023, prepared by Geodesk USA LLC,:

    a. Asphalt Service Road and Fence overlap on the Northeasterly corner of the land.
    b. Any loss or damage arising from the fact that the fence lines on or near the perimeter of subject property do not coincide with the exact property lines.

END OF SCHEDULE B – PART II

DISCLOSURES

Pursuant to C.R.S. 10-11-122, notice is hereby given that:

A. THE SUBJECT REAL PROPERTY MAY BE LOCATED IN A SPECIAL TAXING DISTRICT;
B. A CERTIFICATE OF TAXES DUE LISTING EACH TAXING JURISDICTION SHALL BE OBTAINED FROM THE COUNTY TREASURER OR THE COUNTY TREASURER'S AUTHORIZED AGENT;
C. INFORMATION REGARDING SPECIAL DISTRICTS AND THE BOUNDARIES OF SUCH DISTRICTS MAY BE OBTAINED FROM THE BOARD OF COUNTY COMMISSIONERS, THE COUNTY CLERK AND RECORDER, OR THE COUNTY ASSESSOR

Note: Colorado Division of Insurance Regulations 8-1-2, Section 5, Paragraph G requires that "Every title entity shall be responsible for all matters which appear of record prior to the time of recording whenever the title entity conducts the closing and is responsible for recording or filing of legal documents resulting from the transaction which was closed." Provided that Equity Title of Colorado, LLC conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception number 1 will not appear on the Owner's Title Policy and the Lender's Title Policy when issued.

Note: Affirmative Mechanic's Lien Protection for the Owner may be available (typically by deletion of Exception No. 4 of Schedule B, Section 2 of the Commitment from the Owner's Policy to be issued) upon compliance with the following conditions:

A. The land described in Schedule A of this commitment must be a single-family residence, which includes a condominium or townhouse unit.
B. No labor or materials have been furnished by mechanics or materialmen for purposes of construction on the land described in Schedule A of this Commitment within the past 6 months.
C. The Company must receive an appropriate affidavit indemnifying the Company against unfiled Mechanic's and Materialmen's Liens.
D. The Company must receive payment of the appropriate premium.
E. If there has been construction, improvements or major repairs undertaken on the property to be purchased, within six months prior to the Date of the Commitment, the requirements to obtain coverage for unrecorded liens will include: disclosure of certain construction information; financial information as to the seller, the builder and/or the contractor; payment of the appropriate premium; fully executed Indemnity agreements satisfactory to the company; and, any additional requirements as may be necessary after an examination of the aforesaid information by the Company.

No coverage will be given under any circumstances for labor or material for which the insured has contracted for or agreed to pay.

To comply with the provisions of C.R.S. 10-11-123, the Company makes the following disclosure:

a. That there is recorded evidence that a mineral estate has been severed, leased or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and
b. That such mineral estate may include the right to enter and use the property without the surface owner's permission.

NOTE: THIS DISCLOSURE APPLIES ONLY IF SCHEDULE B, SECTION 2 OF THE TITLE COMMITMENT HEREIN INCLUDES AN EXCEPTION FOR SEVERED MINERALS.

Notice of Availability of a Closing Protection Letter: Pursuant to Colorado Division of Insurance Regulation 8-1-3, Section 5, Paragraph C (11)(f), a closing protection letter is available to the consumer.

NOTHING HEREIN CONTAINED WILL BE DEEMED TO OBLIGATE THE COMPANY TO PROVIDE ANY OF THE COVERAGES REFERRED TO HEREIN, UNLESS THE ABOVE CONDITIONS ARE FULLY SATISFIED.

Orange Coast Title Family of Companies
PRIVACY POLICY

We are committed to Safeguarding Customer Information
In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information – particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information that you provide to us. Therefore, we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability
This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity.

Types of Information
Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information we receive from providers of services to us, such as appraisers, appraisal management companies, real estate agents and brokers and insurance agencies (this may include the appraised value, purchase price and other details about the property that is the subject of your transaction with us).
- Information about your transactions with us, our Affiliated Companies, or others; and
- Information we receive from a consumer reporting agency.

Your California Rights (see attachments) or you may visit our website at https://www.titleadvantage.com/privacypolicy.htm or call toll-free at (866) 241-7373. *Only applies to CA residents*

Use of Information
We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security
We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Other Important Information
We reserve the right to modify or supplement this Privacy Policy at any time. If our Privacy Policy changes, we will post the updated Privacy Policy on our website and provide the ability to opt out (as required by law) before the new policy becomes effective.

If you have any questions or comments regarding our Privacy Policy you may contact us at our toll free number (866) 241-7373 or email us at dataprivacy@octitle .com.

Privacy Policy Last Revision 12/26/2019
Effective on 1/1/2020

Your California Rights

If you are a California resident, you may have certain rights under California law, including but not limited to the California Consumer Privacy Act ("CCPA"). All phrases used herein shall have the same meaning as those phrases used under relevant California law, including but not limited to the CCPA.

Right to Know
You have the right to know:

- The categories of personal information we have collected about or from you;
- The categories of sources from which we collected your personal information;
- The business or commercial purpose for collecting or sharing your personal information;
- The categories of third parties with whom we have shared your personal information; and
- The specific pieces of your personal information we have collected.

Process to Submit a Request. To submit a verified request for this information you may visit our website at https://www.titleadvantage.com/privacypolicy.htm or call toll-free at (866) 241-7373. You may also designate an authorized agent to submit a request on your behalf by visiting our website https://www.titleadvantage.com/privacypolicy.htm or calling toll-free at (866) 241-7373 and then also submitting written proof of such authorization via e-mail to dataprivacy@octitle .com.

Verification Method. In order to ensure your personal information is not disclosed to unauthorized parties, and to protect against fraud, we will verify your identity before responding to your request. To verify your identity, we will generally match the identifying information provided in your request with the information we have on file about you. Depending on the sensitivity of the personal information requested, we may also utilize more stringent verification methods to verify your identity, including but not limited to requesting additional information from you and/or requiring you to sign a declaration under penalty of perjury.

Right of Deletion
You have a right to request that we delete the personal information we have collected from or about you.

Process to Submit a Request. To submit a verified request to delete your information you may visit our website at https://www.titleadvantage.com/privacypolicy.htm or call toll-free at (866) 241-7373. You may also designate an authorized agent to submit a request on your behalf by clicking here or calling toll-free at (866) 241-7373 and then also submitting written proof of such authorization via e-mail to dataprivacy@octitle .com.

Verification Method. In order to ensure we do not inadvertently delete your personal information based on a fraudulent request, we will verify your identity before we respond to your request. To verify your identity, we will generally match the identifying information provided in your request with the information we have on file about you. Depending on the sensitivity of the personal information requested to be deleted, we may also utilize more stringent verification methods to verify your identity, including but not limited to requesting additional information from you and/or requiring you to sign a declaration under penalty of perjury.

Right to Opt-Out
We do not sell your personal information to third parties, and do not plan to do so in the future.

Right of Non-Discrimination
You have a right to exercise your rights under the CCPA without suffering discrimination. Accordingly, OC Title & family of Companies will not discriminate against you in any way if you choose to exercise your rights under the CCPA.

California Minors
If you are a California resident under the age of 18, California Business and Professions Code § 22581 permits you to request and obtain removal of content or information you have publicly posted on any of our Applications or Websites. To make such a request, please send an email with a detailed description of the specific content or information to dataprivacy@octitle .com. Please be aware that such a request does not ensure complete or comprehensive removal of the content or information you have posted and there may be circumstances in which the law does not require or allow removal even if requested.

Collection Notice
The following is a list of the categories of personal information we may have collected about California residents in the twelve months preceding the date this Privacy Notice was last updated, including the business or commercial purpose for said collection, the categories of sources from which we may have collected the personal information, and the categories of third parties with whom we may have shared the personal information:

Categories of Personal Information Collected
The categories of personal information we have collected include, but may not be limited to:

- real name
- signature
- alias
- SSN
- physical characteristics or description, including
- protected characteristics under federal or state law
- address
- telephone number
- passport number
- driver's license number
- state identification card number
- IP address
- policy number
- file number
- employment history
- bank account number

- credit card number
- debit card number
- financial account numbers
- commercial information
- professional or employment information

Categories of Sources
Categories of sources from which we've collected personal information include, but may not be limited to:
- the consumer directly
- public records
- governmental entities
- non-affiliated third parties
- affiliated third parties

Business Purpose for Collection
The business purposes for which we've collected personal information include, but may not be limited to:
- completing a transaction for our Products
- verifying eligibility for employment
- facilitating employment
- performing services on behalf of affiliated and non-affiliated third parties
- protecting against malicious, deceptive, fraudulent, or illegal activity

Categories of Third Parties Shared
The categories of third parties with whom we've shared personal information include, but may not be limited to:
- service providers
- government entities
- operating systems and platforms
- non-affiliated third parties
- affiliated third parties

Sale Notice
We have not sold the personal information of California residents to any third party in the twelve months preceding the date this Privacy Notice was last updated, and we have no plans to sell such information in the future. We also do not, and will not sell the personal information of minors under sixteen years of age without affirmative authorization.

Disclosure Notice
The following is a list of the categories of personal information of California residents we may have disclosed for a business purpose in the twelve months preceding the date this Privacy Notice was last updated.
- real name
- Signature
- Alias
- SSN
- physical characteristics or description, including protected characteristics under federal or state law
- address
- telephone number
- passport number
- driver's license number
- state identification card number
- IP address
- policy number
- file number
- employment history
- bank account number
- credit card number
- debit card number
- financial account numbers
- commercial information
- professional or employment information

If you have any questions and/or comments you may contact us:

Call Us at our toll free number (866) 241-7373
Email Us at dataprivacy@octitle .com

Revised on 1/24/2020 / Effective on 1/1/2020

STG Privacy Notice 1 (Rev 01/26/09) Stewart Title Companies

WHAT DO THE STEWART TITLE COMPANIES DO WITH YOUR PERSONAL INFORMATION?

Federal and applicable state law and regulations give consumers the right to limit some but not all sharing. Federal and applicable state law regulations also require us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand how we use your personal information. This privacy notice is distributed on behalf of the Stewart Title Guaranty Company and its affiliates (the Stewart Title Companies), pursuant to Title V of the Gramm-Leach-Bliley Act (GLBA).

The types of personal information we collect and share depend on the product or service that you have sought through us. This information can include social security numbers and driver's license number.

All financial companies, such as the Stewart Title Companies, need to share customers' personal information to run their everyday business—to process transactions and maintain customer accounts. In the section below, we list the reasons that we can share customers' personal information; the reasons that we choose to share; and whether you can limit this sharing.

Reasons we can share your personal information	Do we share?	Can you limit this sharing?
For our everyday business purposes— to process your transactions and maintain your account. This may include running the business and managing customer accounts, such as processing transactions, mailing, and auditing services, and responding to court orders and legal investigations.	Yes	No
For our marketing purposes— to offer our products and services to you.	Yes	No
For joint marketing with other financial companies	No	We don't share
For our affiliates' everyday business purposes— information about your transactions and experiences. Affiliates are companies related by common ownership or control. They can be financial and nonfinancial companies. *Our affiliates may include companies with a Stewart name; financial companies, such as Stewart Title Company*	Yes	No
For our affiliates' everyday business purposes— information about your creditworthiness.	No	We don't share
For our affiliates to market to you	Yes	No
For nonaffiliates to market to you. Nonaffiliates are companies not related by common ownership or control. They can be financial and nonfinancial companies.	No	We don't share

We may disclose your personal information to our affiliates or to nonaffiliates as permitted by law. If you request a transaction with a nonaffiliate, such as a third party insurance company, we will disclose your personal information to that nonaffiliate. We do not control their subsequent use of information, and suggest you refer to their privacy notices.

Sharing practices	
How often do the Stewart Title Companies notify me about their practices?	We must notify you about our sharing practices when you request a transaction.
How do the Stewart Title Companies protect my personal information?	To protect your personal information from unauthorized access and use, we use security measures that comply with federal and state law. These measures include computer, file, and building safeguards.
How do the Stewart Title Companies collect my personal information?	We collect your personal information, for example, when you • request insurance-related services • provide such information to us We also collect your personal information from others, such as the real estate agent or lender involved in your transaction, credit reporting agencies, affiliates or other companies.
What sharing can I limit?	Although federal and state law give you the right to limit sharing (e.g., opt out) in certain instances, we do not share your personal information in those instances.

Contact Us	If you have any questions about this privacy notice, please contact us at: Stewart Title Guaranty Company, 1980 Post Oak Blvd., Privacy Officer, Houston, Texas 77056

File No.: 00028163-009-DE9

THIS ADDENDUM IS MADE PART OF THE POLICY AND IS PERMANENTLY AFFIXED HERETO
COLORADO ANTI-FRAUD DISCLOSURE
PURSUANT TO C.R.S. 10-1-128 (6)

"It is unlawful to knowingly provide false, incomplete, or misleading facts or information to an insurance company for the purpose of defrauding or attempting to defraud the company. Penalties may include imprisonment, fines, denial of insurance and civil damages. Any insurance company or agent of an insurance company who knowingly provides false, incomplete or misleading facts or information to a policyholder or claimant for the purpose of defrauding or attempting to defraud the policyholder or claimant with regard to a settlement or award payable from insurance proceeds shall be reported to the Colorado Division of Insurance within the Department of Regulatory Agencies."

ENDORSEMENT

Attached to Commitment No. 00028163

Issued by

Stewart Title Guaranty Company

Order No.: 00028163

The company hereby assures the Proposed Insured listed in Schedule A, 2(a) or 2(b) of the Commitment as follows:

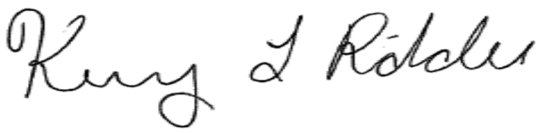
That according to Public Records, there have been no Deeds, other than the Deed(s) which vest title in the Owner(s) stated in Schedule A of the Commitment conveying the land described in this Commitment within a period of 24 months prior to the commitment date, except as follows:

NONE

This endorsement is made a part of the commitment and is subject to all of the terms and provisions thereof and of any prior endorsements thereto. Except to the extent expressly stated, it neither modifies any of the terms and provisions of the commitment and any prior endorsements, nor does it extend the effective date of the commitment and any prior endorsements, nor does it increase the face amount thereof.

IN WITNESS WHEREOF, the Company has caused this Endorsement to be signed and sealed, and valid when countersigned by an authorized officer or agent of the Company, all in accordance with its By-Laws.

Countersigned:



Authorized Signatory

MDC Holdings, LLC

Letter of Authorization

October 24, 2023

To Whom It May Concern,

By this statement Darin Peterson has the authority to sign on my behalf of MDC Holdings, LLC any application documents associated with the Adams County and Brighton, Colorado parcels ##0157114301002 and #0157114301001.

Respectfully,

MDC Holdings, LLC

Principal: Michael D. Curry

1108 Northshore Drive

Columbia, MO 65203

mcurry@bbpllab.com

Cell: 573-239-3511

Subscribed and sworn before me this 24th day of October 2023.

State of Missouri, County of Boone

Michele R. McLaren, Notary

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

MICHELE R. MCLAREN
My Commission Expires
May 17, 2024
Boone County
Commission #12541312

Commission #12541312, Expires 05/17/2024

When recorded return to:
MDC Holdings LLC, Missouri Limited Liability Company

SPECIAL WARRANTY DEED

THIS DEED, Made this 21st day of **August, 2023** between

Aggregate Resources LLC who Acquired title as Aggregate Resources, a Colorado General Partnership

of the said County of **Adams** and State of **COLORADO**, grantor(s), and

MDC Holdings LLC, Missouri Limited Liability Company whose legal address is

---

of the said County of **Adams**, State of **COLORADO**, grantee(s):

WITNESS, That the grantor(s), for and in consideration of the sum of **NINE HUNDRED NINETY-FIVE THOUSAND AND 00/100 DOLLARS** ($995,000.00), the receipt and sufficiency of which is hereby acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell, convey and confirm, unto the grantee(s), his heirs and assigns forever, all the real property together with improvements, if any, situate, lying and being in the said County of **Adams**, State of **COLORADO**, described as follows:

Lots 1 and 2,
Block 1,
Centennial Estates, Amendment No. 1,
County of Adams,
State of Colorado.

also known by street and number as TBD Riverdale Road, Brighton, CO 80602

TOGETHER with all and singular the hereditaments and appurtenances thereunto belonging, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof, and all the estate, right, title, interest, claim and demand whatsoever of the grantor(s), either in law or equity, of, in and to the above bargained premises, with the hereditaments and appurtenances.

TO HAVE AND TO HOLD the said premises above bargained and described, with the appurtenances, unto the grantee(s), his heirs, and assigns forever. The grantor(s), for himself, his heirs and personal representatives or successors, does covenant and agree that he shall and will WARRANT AND FOREVER DEFEND the above-bargained premises in the quiet and peaceable possession of the grantee(s), his heirs and assigns, against all and every person or persons claiming the whole or any part thereof, by, through or under the grantor(s), subject to statutory exceptions.

The singular number shall include the plural, the plural the singular, and the use of any gender shall be applicable to all genders.

IN WITNESS WHEREOF, the grantor(s) has executed this deed on the date set forth above.

SELLER:

Aggregate Resources, LLC who aquired title as Aggregate Resources, A Colorado General Partnership
By: Palmer Enterprises, Inc, Manager

By: Dennis L. Palmer, President

STATE OF **COLORADO** }ss:
COUNTY OF Jefferson

The foregoing instrument was acknowledged before me this 21st day of **August, 2023** by **Dennis L. Palmer as President for Palmer Enterprises, Inc as Manager for Aggregate Resources LLC who acquired title as Aggregate Resources, a Colorado General Partnership**

Deborah L Evans
Notary Public

Witness my hand and official seal.
My Commission expires: 4/19/25

DEBORAH L EVANS
NOTARY PUBLIC - STATE OF COLORADO
NOTARY ID 19974004903
MY COMMISSION EXPIRES APR 19, 2025

EQUITY TITLE OF COLORADO

710 Kipling Street, Suite 100, Lakewood, CO 80215
Phone: (303) 563-4640 Fax: (303) 563-4650

Buyers/Borrowers Settlement Statement
FINAL

Escrow No: 00028163 - 009 DE9 **Close Date:** 08/23/2023 **Proration Date:** **Disbursement Date:**

Buyer(s)/Borrower(s): MDC Holdings LLC, Missouri Limited Liability Company

Lender: CASH **Loan #:**

Property: TBD Riverdale Road
Brighton, CO 80602

Description	Debit	Credit
TOTAL CONSIDERATION:		
Sale Price of Property	995,000.00	
Deposit		50,000.00
NEW AND EXISTING ENCUMBRANCES:		
New Loan from CASH		
PRORATIONS AND ADJUSTMENTS:		
County Taxes from 1/1/2023 to 8/23/2023 based on the Annual amount of $2,350.71		1,507.03
County Taxes 1/1/2023-12/31/2023 from 1/1/2023 to 8/23/2023 based on the Annual amount of $180.59		115.78
CLOSING FEES		
Title - Real Estate Closing Fee to Equity Title of Colorado	200.00	
RECORDING FEES:		
Recording Fee For Deed to Equity Title	13.00	
Tax Stamp For County Deed to Equity Title	99.50	
Sub Totals	995,312.50	51,622.81
Balance Due From Buyer /Borrower		943,689.69
Totals	995,312.50	995,312.50

Sales or use taxes on personal property not included. EQUITY TITLE OF COLORADO assumes no responsibility for the adjustment of special taxes or assessments unless they are shown on the Treasurer's Certificate of Taxes Due. The condition of title to the property is to be determined by reference to the title evidence provided by Seller or by personal investigation. The above statement of settlement is approved as of the settlement date shown above and Escrow Holder is hereby authorized to disburse as Trustee funds as indicated.

Buyer(s)/Borrower(s):

MDC Holdings LLC, Missouri Limited Liability Company

Selling Agent:

VIP Real Estate Co

Settlement Agent:

EQUITY TITLE OF COLORADO

by Debbie Evans

TODD CREEK
METROPOLITAN DISTRICT
VILLAGE

10450 E 159th Ct.
Brighton, Co. 80602

Phone: 303-637-0344
Fax: 303-637-0423
www.toddcreekvillage.org

May 22, 2025

RE: Conditional Will-Serve Letter for the MDC HOLDINGS LLC properties in Adams County, Colorado

Dear Owner's Representative:

You are the owner's representative of the MDC HOLDINGS LLC parcels identified as Parcel numbers 0157114301002 and 0157114301001 (the "Owner") in Adams County, Colorado (the "Property"). The Property is generally located in the northeast quadrant of E-470 and Riverdale Rd. in Adams County, Colorado. The Property is located within the service area of Todd Creek Village Metropolitan District ("TCVMD" or the "District"). It is the understanding of TCVMD that the Owner wishes to develop certain sites within the Property (the "Site") and seek Service (as defined below) to the Site. Therefore, the Site is the subject of this Conditional Will-Serve Letter from TCVMD.

TCVMD is willing and able to provide potable and non-potable water service and sanitary sewer service to the Site (the "Service") for commercial uses to supply 150-175 full-time RV living sites and two commercial buildings subject to the following conditions, which shall be conditions precedent to any obligation on the part of TCVMD to provide such Service:

1. The Owner shall pay TCVMD's then current water and sewer tap fees and all other applicable fees, rates, tolls and charges imposed pursuant to TCVMD's then current Rules and Regulations, as may be amended from time-to-time.

2. The Owner shall dedicate all groundwater rights to the District as outlined in TCVMD's Rules & Regulations at such time the District requires.

3. This Conditional Will-Serve Letter, as it relates to sewer service availability, is subject to approvals from Metro Water Recovery (MWR) related to inclusion of the properties into the approved collection area map and a new tie-in location to the MWR system. On December 19, 2023 Metro Water Recovery and TCVMD executed the contract bringing in TCVMD as a Special Connector.

4. The Owner shall design, construct, acquire easements and install any and all infrastructure required or deemed necessary by TCVMD to provide Service to the Site (including but not limited to: service taps, service lines, mainlines or any other improvements and facilities required, including any permits or improvements required by Adams County). The Owner shall design all such Owner-installed infrastructure according TCVMD's design standards and in accordance with TCVMD's Rules and Regulations, in place at such time as the design is completed. The Owner shall reimburse TCVMD for any and all costs the District incurs related to its review of the infrastructure design, construction and installation, including reimbursement of

TODD CREEK
METROPOLITAN DISTRICT
VILLAGE

10450 E 159th Ct.
Brighton, Co. 80602

Phone: 303-637-0344
Fax: 303-637-0423
www.toddcreekvillage.org

its engineering, legal and other consultant fees.

5. The Owner will be required to pay for any off-site capital improvements deemed necessary by TCVMD to provide Service to the Site including, but not limited to, water storage tanks, pipelines, reservoir improvements, pumps, water treatment plant or upgrades needed to any other District infrastructure.

6. TCVMD will provide the Owner with non-monetary assistance in the acquisition of easements necessary to provide for offsite infrastructure that allows TCVMD to provide Service to the Site. In addition, TCVMD will provide the terms of, and administer, reimbursement or cost recovery agreements related to the installation or upsizing of offsite facilities or infrastructure designed and constructed by the Owner benefiting future development receiving service from TVCMD. The standard life span of such reimbursement agreements is fifteen years.

7. The Service will be provided to the Site, subject to and conditioned upon, compliance with the District's policies and Rules and Regulations as may be amended from time-to-time and the payment of all applicable fees, rates, tolls and charges imposed thereunder. This commitment shall run only to the Site and shall not be transferrable or assignable in any manner whatsoever.

This Conditional Will-Serve Letter shall not be effective until the Owner purchases Taps or execute a Tap Purchase Agreement with TCVMD indicating the Owner's willingness to be bound by the terms set forth therein.

If anyone has any follow-up questions or concerns, please do not hesitate to contact me.

Todd Creek Village Metropolitan District

Don Summers
General Manager,
Todd Creek Village Metropolitan District

cc: Blair Dickhoner, District Counsel
Todd Creek Village Metropolitan District - Board of Directors

LEGAL DESCRIPTION

Lots 1 and 2,

Block 1,

Centennial Estates, Amendment No. 1,

County of Adams,

State of Colorado.

ADAMS COUNTY COLORADO

TREASURER'S OFFICE RECEIPT OF PAYMENT

Account	Parcel Number	Receipt Date	Receipt Number
R0179856	0157114301002	Mar 7, 2025	2025-03-07-TML-5907

MDC HOLDINGS LLC
1108 NORTHSHORE DR
COLUMBIA, MO 65203-2998

Situs Address	Payor
0	MDC HOLDINGS LLC 200 PORTLAND ST COLUMBIA, MO 65201

Legal Description

CENTENNIAL ESTATES AMENDMENT NO 1 BLK 1 LOT 2

Property Code	Actual	Assessed	Year	Area	Mill Levy
UNIM LND 10-34.99 AC - 0540	81,638	22,780	2024	290	105.048

Payments Received

Check — Multi-Account Payment

Check Number 1102

Payor MDC HOLDINGS LLC 200 PORTLAND ST COLUMBIA, MO 65201

Payments Applied

Year	Charges	Billed	Prior Payments	New Payments	Balance
2024	Tax Charge	$2,393.00	$0.00	$2,393.00	$0.00
				$2,393.00	$0.00
			Balance Due as of Mar 7, 2025		**$0.00**

ALL CHECKS ARE SUBJECT TO FINAL COLLECTION. THANK YOU FOR YOUR PAYMENT!

EMAIL: treasurer@adcogov.org | PHONE: 720.523.6160 | WEBSITE: www.adcotax.com

ADAMS COUNTY COLORADO

TREASURER'S OFFICE RECEIPT OF PAYMENT

Account	Parcel Number	Receipt Date	Receipt Number
R0179855	0157114301001	Mar 7, 2025	2025-03-07-TML-5907

MDC HOLDINGS LLC
1108 NORTHSHORE DR
COLUMBIA, MO 65203-2998

Situs Address	Payor
0	MDC HOLDINGS LLC 1108 NORTHSHORE DR COLUMBIA, MO 65203-2998

Legal Description

CENTENNIAL ESTATES AMENDMENT NO 1 BLK 1 LOT 1

Property Code	Actual	Assessed	Year	Area	Mill Levy
UNIM LND 1-4.99 AC - 0520	6,272	1,750	2024	290	105.048

Payments Received

Check — Multi-Account Payment

Check Number 1102

Payor MDC HOLDINGS LLC 200 PORTLAND ST COLUMBIA, MO 65201

Payments Applied

Year	Charges	Billed	Prior Payments	New Payments	Balance
2024	Tax Charge	$183.84	$0.00	$183.84	$0.00
				$183.84	$0.00
			Balance Due as of Mar 7, 2025		**$0.00**

ALL CHECKS ARE SUBJECT TO FINAL COLLECTION. THANK YOU FOR YOUR PAYMENT!

EMAIL: treasurer@adcogov.org | PHONE: 720.523.6160 | WEBSITE: www.adcotax.com

Riverdale RV Park

Traffic Impact Study

MPC Properties

Adams County, Colorado

July 19, 2024

Prepared By:

Sustainable Traffic Solutions, Inc.
http://www.sustainabletrafficsolutions.com/

Joseph L. Henderson, PE, PTOE
303.589.6875
joe@sustainabletrafficsolutions.com

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Riverdale RV Park

Traffic Impact Study

1.0 Introduction

MPC Properties is proposing to develop the Riverdale RV Park south of SH 7 on the east side of Riverdale Road. The RV park will have a total of 180 spaces and be constructed in two phases. The first phase will include 63 spaces and the second phase will include 117 spaces. The vicinity map showing the location of the development is contained in Figure 1, and Figure 2 contains the site plan for the development. Two accesses are planned from Riverdale Road.

A Level 2 traffic impact study was prepared based on the Adams County Development Standards and Regulations[1].

2.0 Project Description

2.1 Study Area

The study area includes the following intersections on Riverdale Road.

- SH 7
- Site accesses on Riverdale Road

See Figure 3 for the existing laneage and traffic control.

2.2 Study Assumptions

The following assumptions were utilized for this study.

Scoping Meeting. A scoping meeting was held with Laurie Clark from Adams County on May 16, 2024. Traffic study assumptions along with the meeting minutes are contained in Appendix A.

Short-Term Planning Horizon. Phase 1 is expected to be completed in Year 2025, and Phase 2 in Year 2027. Considering the County requirement that the short-term planning horizon be five years following the completion of the development, the short-term planning horizons are Year 2030 and Year 2032.

Long-Term Planning Horizon. The long-term planning horizon is Year 2045 because it is 20 years in the future.

Growth in Background Traffic. Annual growth rates were developed for the roadways in the study area utilizing data from the DRCOG regional plan. The following growth rates were used to estimate future volumes.

- SH 7 – 1.8% per year

[1] Adams County Development Standards and Regulations – Section 8-02. September 12, 2005.

- Riverdale Road – 2.4% per year

The Year 2020 volumes and Year 2050 projections provided by DRCOG are contained in Appendix B.

Improvements to Study Area Corridors and Intersections. SH 7 has one through lane in each direction plus auxiliary lanes. The Adams County Transportation Plan[2] identifies SH 7 as a regional arterial. Arterial cross sections in Adams County all have four through lanes, so the study assumes that the corridor will be widened to four through lanes by the Year 2045.

Saturation Flow Rate. The saturation flow rate was assumed to be 1,900 passenger cars / hour / lane which is typical in urban areas.

Peak Hour Factor (PHF). For the existing and the short-term planning horizons, the PHF was based on the data collected for the traffic study. At new approaches, the PHF was assumed to be 0.85 for all movements in all of the planning horizons. In the long-term horizon, the PHF was assumed to be 0.92 unless the existing PHF is higher than 0.92. In that case, the existing PHF was used in the analysis of the long-term volumes.

Truck Percentage. Vehicle classification data were collected on SH 7 and Riverdale Road for this project. The following table contains the truck percentages that were calculated using the data. Based on these data, 3% trucks were assumed on SH 7, and 2% trucks were assumed on Riverdale Road. 2% trucks were also assumed at the site accesses. Refer to Section 3.0 for a discussion of the data collected for the project.

Roadway	Total	Trucks	% Trucks
SH 7	19,092	592	3%
Riverdale Road	3,017	66	2%

3.0 Existing Traffic Volumes

Traffic count data were collected for the project on Tuesday, June 4, 2024 by Sustainable Traffic Solutions. The data are contained in Appendix C. The existing peak hour volumes are summarized in Figures 4 and 5. Existing and future daily volumes are summarized in Table 1.

[2] Adams County Transportation Plan. Adopted December 2012.

4.0 Site Generated Traffic Volumes

4.1 Trip Generation

In order to estimate the traffic impacts associated with this development, the amount of traffic generated by the project was calculated using trip generation rates contained in the Institute of Transportation Engineers Trip Generation manual[3] (see Table 2).

4.2 Trip Distribution and Assignment

The trip distribution for the development is contained in Figure 6. It is based on the location of the site within the metro area and access to major transportation facilities. The morning and evening peak hour trip assignments are contained in Figures 7 through 10.

5.0 Level of Service Analysis

To evaluate the performance of the intersections within the study area, the level of service (LOS) was calculated using PTV VISTRO software. This software package utilizes criteria described in the Highway Capacity Manual[4]. LOS is a measure used to describe operational conditions at an intersection. LOS categories ranging from A to F are assigned based on the predicted delay in seconds per vehicle for the intersection as a whole, as well as for individual turning movements. LOS A indicates very good operations, and LOS F indicates poor, congested operations. In Adams County, acceptable intersection operation is LOS D, or better, during the peak hours.

The analysis of the intersections is summarized in Table 3 and a discussion of each intersection follows below. The traffic volume scenarios are contained in Figures 11 through 25. The VISTRO analysis results are contained in Appendix D.

SH 7 / Riverdale Road. This two-way stop-controlled intersection is currently operating at LOS F during both peak hours. It is expected to warrant signalization by the Year 2030 background traffic volume scenarios (refer to Section 8.0). As a signalized intersection it is expected to operate at LOS A and LOS B by the Year 2045 total traffic volume scenarios.

Riverdale Road Site Accesses. These intersections will have side-street stop control and are expected to operate at LOS B in the Year 2045 total traffic volume scenarios.

6.0 V/C Ratios

The existing and future volume to capacity ratios (V/C) were calculated for the key links in the study area (see Table 4). The capacity thresholds used for the analysis

[3] Trip Generation, 11th Edition. Institute of Transportation Engineers. September 2021.

[4] Highway Capacity Manual, 7th Edition. National Academy of Sciences, Engineering, and Medicine. 2022.

are contained in Table 8.16 of the Adams County Development Standards and Regulations. All of the existing V/C ratios are below 1.0. In the future, the V/C ratio for Riverdale Road east of SH 7 is expected to exceed 1.0 by the Year 2032. However, it will be less than 1.0 once SH 7 is widened to four through lanes.

7.0 Auxiliary Lanes

The need for auxiliary lanes at SH 7 / Riverdale Road and the site accesses to Riverdale Road were review based on the State Highway Access Code[5] and the Adams County Development Standards and Regulations. Table 5 contains a review of the standards for all of the intersections and the following bullets summarize the requirements for each lane.

SH 7 / Riverdale Road. The following is a summary for each auxiliary lane at the intersection.

- **Eastbound Left Turn Decel Lane.** This lane does not exist and is not warranted.
- **Eastbound Right Turn Decel Lane.** This lane is existing, however the analysis shows that it won't be warranted until the Year 2032. The length of the lane exceeds CDOT requirements, however, the taper length does not meet CDOT requirements. It could be extended by modifying pavement markings.
- **Westbound Left Turn Decel Lane.** This lane is existing and currently warranted. The existing geometry doesn't meet CDOT requirements because the decel length is too short. The lane could be extended by modifying pavement markings.
- **Westbound Right Turn Decel Lane.** This lane does not exist and is not warranted, however, motorists could use the shoulder as a decel lane.
- **Northbound to Eastbound Right Turn Accel Lane.** This lane is existing and currently warranted. The existing geometry doesn't meet CDOT requirements because the accel length is too short. The roadway will need to be widened and pavement markings modified to meet CDOT requirements.
- **Northbound Left Turn Decel Lane.** This lane is not expected to be required until the Year 2032. Considering the small number of northbound through vehicles, the left turn and through vehicles can be combined into one lane. Therefore, a separate left turn decel lane isn't necessary.
- **Northbound Right Turn Decel Lane.** This lane is currently warranted. The length of the lane does not meet Adams County requirements. It isn't

[5] State Highway Access Code. The Transportation Commission of Colorado. Amended in March 2002/

possible to extend the length of this lane due to the proximity of the Brighton Ditch.

Riverdale Road Site Accesses. No auxiliary lanes will be warranted at either intersection.

8.0 Traffic Signal Warrant Study

The peak hour traffic signal warrants were reviewed to determine if a traffic signal will be warranted at SH 7 / Riverdale Road. The requirements for a signal warrant study are contained in the Manual on Uniform Traffic Control Devices[6].

The following assumptions were used for the analysis.

Speed Limit. The posted speed limit is 50 MPH on SH 7.
Number of Main-Street Lanes. Two lanes were used in the analysis of the short-term volumes and four were used in the analysis of the Year 2045 volumes.
Number of Side-Street Lanes. One side-street lane was assumed on Riverdale Road.
Side-Street Right Turning Traffic. No right turning traffic was included in the signal warrant analysis because an acceleration lane exists for this movement. Therefore, right turning vehicles will have the ability to accelerate and merge into traffic without the aid of a traffic signal.

The analysis shows that a traffic signal is expected to be warranted during the evening peak hour in the Year 2030 background traffic volume scenario. In the Year 2045, a traffic signal will be warranted during the morning and evening peak hours with four through lanes on SH 7. The signal warrant analysis is contained in Appendix E. Refer to the fourth page of the warrant analysis to see the results.

9.0 Intersection Sight Distance

The intersection sight distance was estimated for the stop-controlled site accesses on Riverdale Road. The methodology for the analysis is contained in Section 9.5 of A Policy on the Geometric Design of Highways and Streets, 7th Edition[7]. AASHTO has sight distance criteria for three classes of vehicles including passenger vehicle, single unit truck, and combination truck. Considering that this development will be an RV park, the single unit truck is the appropriate vehicle to use to evaluate the sight distance because it would most closely match the typical RV. Figures 23 and 24 contain the sight distance evaluation. They show that it will be possible for a single unit truck to turn left from both accesses, however, there isn't enough sight distance for a single unit truck to turn right out of either access.

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6 Manual on Uniform Traffic Control Devices for Streets and Highways, 11th Edition. Federal Highway Administration. December 2023.

7 A Policy on the Geometric Design of Highways and Streets, 7th Edition. American Association of State Highway and Transportation Officials. 2018.

10.0 Conclusions

The following conclusions have been drawn based on the analysis performed for this project.

Intersection Operation. The following bullets describe the operation at the study area intersections.

- **SH 7 / Riverdale Road.** This intersection is currently operating at LOS F during both peak hours. It is expected to warrant signalization which will improve the level of service to LOS A and LOS B in the Year 2045 total traffic volume scenarios.
- **Riverdale Road / site accesses.** These intersections are expected to operate at LOS B in the Year 2045 total traffic volume scenarios.

V/C Ratios. The V/C ratios for the key links in the study area are all below 1.0. SH 7 east of Riverdale Road is expected to have a V/C in excess of 1.0 by the Year 2032, but it will be less than 1.0 once SH 7 is expanded to four through lanes.

Auxiliary Lanes. Refer to Section 7.0 for a detailed discussion of the auxiliary lanes at the study area intersections. None of the auxiliary lanes on SH 7 currently meet CDOT requirements.

Traffic Signal Warrant Study. SH 7 / Riverdale Road is expected to warrant signalization by the Year 2030 evening peak hour background traffic volume scenario.

Intersection Sight Distance. There is adequate sight distance at both accesses for a single unit truck to leave the site and turn left, however, there is insufficient sight distance for a single unit truck to turn right from the site at either access.

Tables

Table 1. Existing and Future Daily Volumes for Key Links in the Study Area

Link	Year 2024 [1]	Riverdale RV Park - Phase I	Year 2030 Background	Year 2030 Total	Riverdale RV Park - Phase II	Year 2032 Background	Year 2032 Total	Year 2045 Background	Year 2045 Total
SH 7 west of Riverdale Road	19,092	30	21,260	21,290	60	22,040	22,130	27,740	27,830
SH 7 east of Riverdale Road	21,930	90	24,420	24,510	160	25,310	25,560	31,710	31,960
Riverdale Road south of SH 7	3,017	120	3,470	3,590	220	3,630	3,970	4,570	4,910
Riverdale Road north of the north site access	2,862	120	3,290	3,410	220	3,450	3,790	4,320	4,660
Riverdale Road south of the south site access	2,862	50	3,290	3,340	90	3,450	3,590	4,520	4,660
North Site Access	0	170	0	170	160	170	330	0	330
South Site Access	0	0	0	0	160	0	160	0	160

1. Year 2024 volumes highlighted in yellow are based on data collected in the field. Other Year 2024 volumes were estimated assuming that the evening peak hour represents 10% of the daily traffic.

Table 2. Trip Generation Estimate

Land Use Description	ITE Code [1]	Size	Unit	Average Weekday Trips [2]				Morning Peak Hour Trips				Evening Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Campground / RV Park - Phase 1	416	63	Occupied Campsites	2.70	170	85	85	0.21	13	5	8	0.27	17	11	6
Campground / RV Park - Phase 2	416	117	Occupied Campsites	2.70	316	158	158	0.21	25	9	16	0.27	32	21	11
Total	**---**	**180**	**---**	**---**	**486**	**243**	**243**	**---**	**38**	**14**	**24**	**---**	**49**	**32**	**17**

Notes

1. The trip generation rates were obtained from Trip Generation, 11th Edition (Institute of Transportation Engineers, 2021).

2. Trip Generation, 11th Edition does not include a daily trip generation rate for this land use. The daily rate was estimated assuming that the evening peak hour rate is 10% of the daily rate.

Table 3. Intersection Operational Summary

Signalized Intersections [1]	Year 2024				Year 2030 Background				Year 2030 Total				Year 2032 Background				Year 2032 Total				Year 2045 Background				Year 2045 Total			
	Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 - SH 7 / Riverdale Road	---				3.7	A	4.8	A	4.0	A	4.9	A	4.2	A	5.2	A	4.5	A	5.6	A	6.4	A	11.1	B	7.0	A	12.3	B

Side-Street Stop-Controlled Intersections [2]	Year 2024				Year 2030 Background				Year 2030 Total				Year 2032 Background				Year 2032 Total				Year 2045 Background				Year 2045 Total			
	Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 - SH 7 / Riverdale Road	66.3	F	98.3	F	---		---		---		---		---		---		---		---		---		---		---		---	
	SBLT		NBLT																									
2 - Riverdale Road / North Site Access	---		---		---		---		10.0	A	11.0	B	10.1	B	11.1	B	10.3	B	11.5	B	---		---		10.7	B	12.4	B
									WBLT		WBLT		WBLT		WBLT		WBLT		WBLT						WBLT		WBLT	
3 - Riverdale Road / South Site Access	---		---		---		---		---		---		---		---		10.1	B	11.2	B	---		---		10.6	B	12.1	B
																	WBLT		WBLT						WBLT		WBLT	

Notes

1. The level of service for signalized intersections is based on the delay for the entire intersection.
2. The level of service for two-way stop controlled intersections is based on the movement with the highest delay value.

Table 4. Existing and Future V/C

Roadway Link	Facility Type	Year 2024		Year 2030 Background		Year 2030 Total		Year 2032 Background		Year 2032 Total		Year 2045 Background		Year 2045 Total	
		Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C
SH 7 west of Riverdale Road	Regional Arterial	19,092	0.80	21,260	0.89	21,290	0.89	22,040	0.92	22,130	0.92	27,740	0.58	27,830	0.58
SH 7 east of Riverdale Road	Regional Arterial	21,930	0.91	24,420	1.02	24,510	1.02	25,310	1.05	25,560	1.07	31,710	0.66	31,960	0.67
Riverdale Road south of SH 7	Minor Collector	3,017	0.25	3,470	0.29	3,590	0.30	3,630	0.30	3,970	0.33	4,570	0.38	4,910	0.41
Riverdale Road north of the north site access	Minor Collector	2,862	0.24	3,290	0.27	3,410	0.28	3,450	0.29	3,790	0.32	4,320	0.36	4,660	0.39
Riverdale Road south of the south site access	Minor Collector	2,862	0.24	3,290	0.27	3,340	0.28	3,450	0.29	3,590	0.30	4,520	0.38	4,660	0.39

Note

1. The volumes contained in this table are found in Table 1.

Table 5. Auxiliary Lane Evaluation

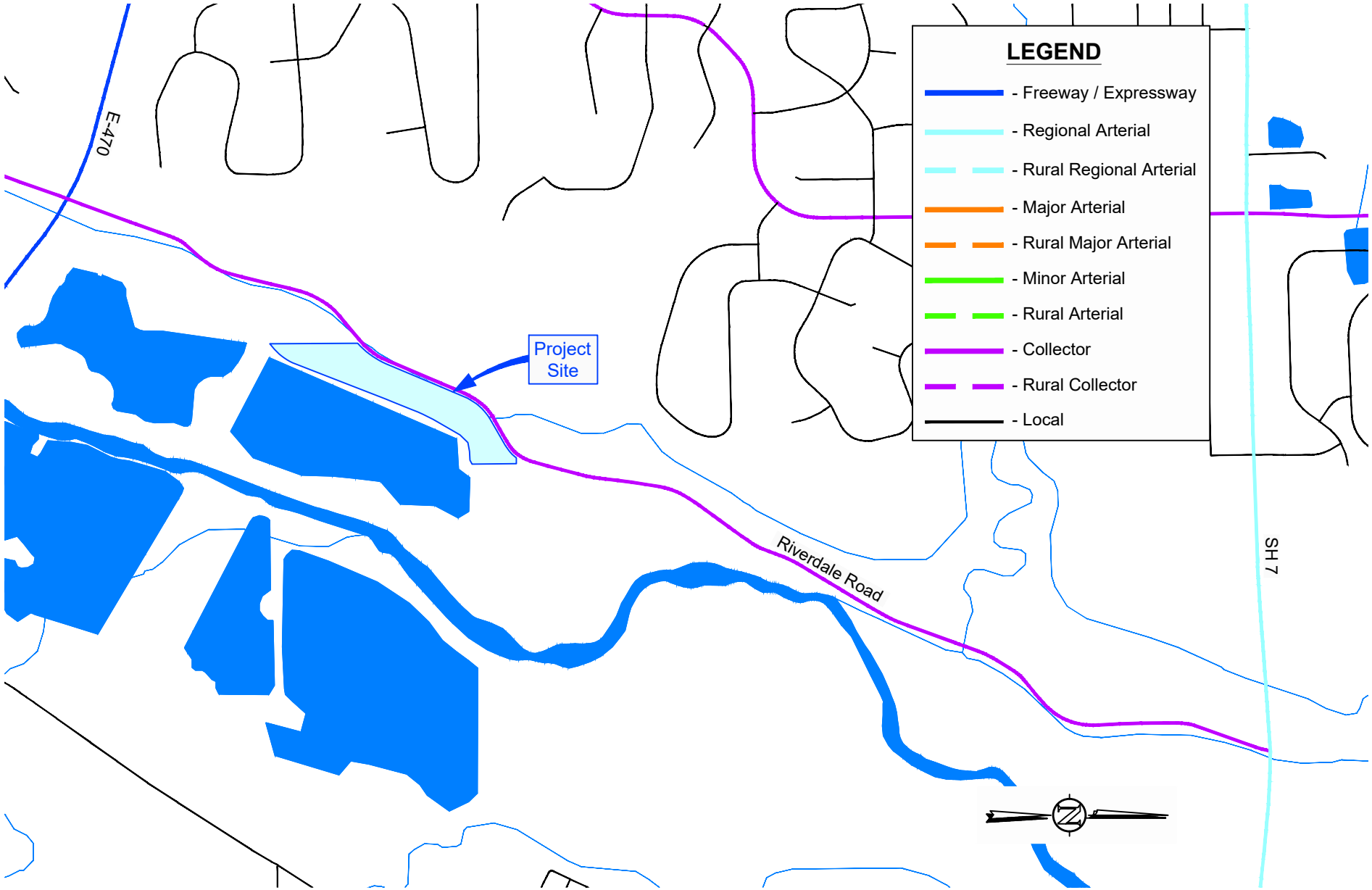
Intersection	Movement	Classification	Speed Limit	VPH Threshold [1]	Existing Traffic		Year 2032 Total Traffic		Lane Length			
					AM	PM	AM	PM	Decel/Accel	Taper [2]	Storage	Total
SH 7 / Riverdale Road	EBLT Decel Lane	CDOT R-A	50 MPH	>10	0	0	0	0	**Not Warranted**			
	EBRT Decel Lane			>25	21	15	28	22	500	180	0	500
				---	**Existing Geometry**				590	115	0	590
	WBLT Decel Lane			>10	88	121	112	152	500	180	152	652
				---	**Existing Geometry**				378	85	152	530
	WBRT Decel Lane			>25	2	0	2	0	**Not Warranted**			
	NB to EB RT Accel Lane			>50	146	140	180	183	760	180	0	760
				---	**Existing Geometry**				550	180	0	550
	NBLT Decel Lane	Adams County Minor Collector [3]	45 MPH	>10	3	6	8	16	0	162	16	178
				---	**Existing Geometry**				**Note 4**			
	NBRT Decel Lane [5]			>25	77	136	104	185	0	162	185	347
				---	**Existing Geometry**				0	50	75	125
Riverdale Road / North Site Access	SBLT Decel Lane	Adams County Minor Collector [2]	45 MPH	>10	0	0	7	15	**Not Warranted**			
	NBRT Decel Lane			>25	0	0	4	6	**Not Warranted**			
Riverdale Road / South Site Access	SBLT Decel Lane	Adams County Minor Collector [2]	45 MPH	>10	0	0	3	7	**Not Warranted**			
	NBRT Decel Lane			>25	0	0	2	3	**Not Warranted**			

Threshold Met or Exceeded **XX**

Notes

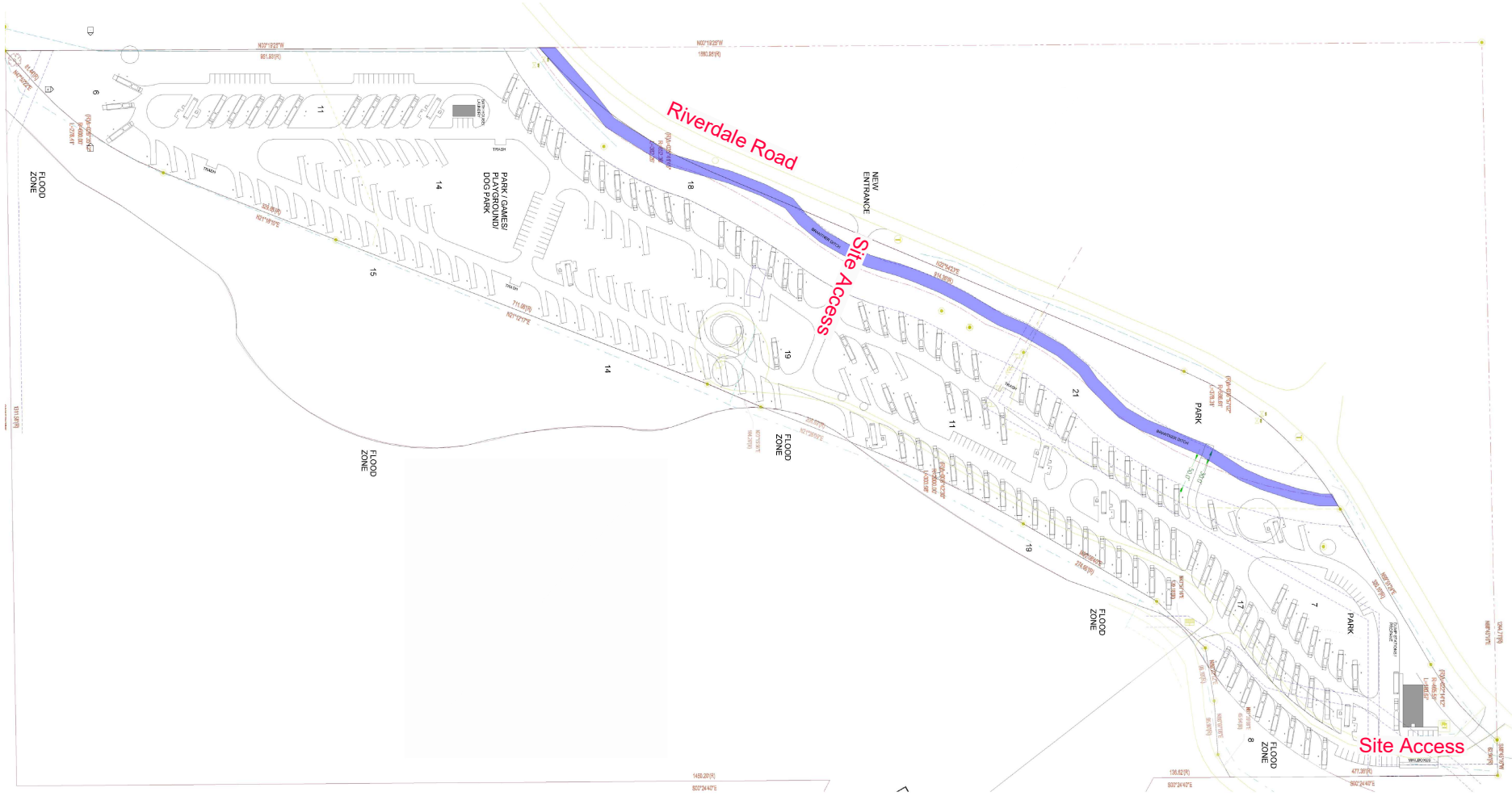
1. The need for the auxiliary lanes was determined based on Adams County criteria (Section 8-01-08-02).
2. On CDOT R-A roadways, the taper length is included in the decel and accel length. The taper length is based on a 12' wide lane.
3. Riverdale Road is a minor collector roadway, and the auxiliary lanes are comprised of taper plus storage.
4. Considering the low volume of the northbound through traffic, a separate left turn lane is not necessary.
5. The length of the northbound right turn lane is limited by the adjacent irrigation ditch.

Figures



Riverdale RV Park Traffic Impact Study
VICINITY MAP

Scale	1" = 1,500'	Date	July 19, 2024	Drawn by	JLH	Job #	MPC Properties	Figure	1



Riverdale RV Park Traffic Impact Study
SITE PLAN

Scale	NTS	Date	July 19, 2024	Drawn by	JLH	Job #	MPC Properties	Figure	2

Figure 3 – Laneage and Traffic Control – Existing

SH7/Riverdale

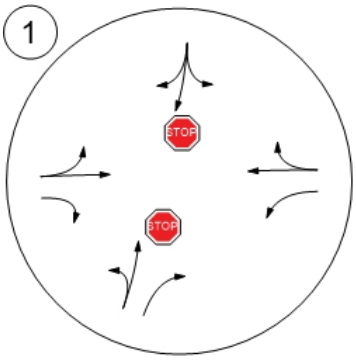


Figure 4 – Year 2024 Traffic Volumes – Morning Peak Hour

SH7/Riverdale

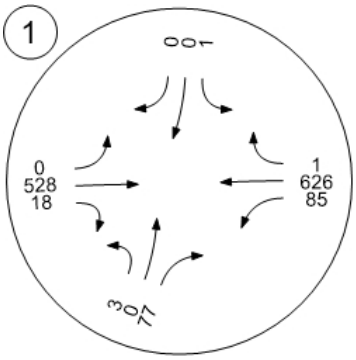
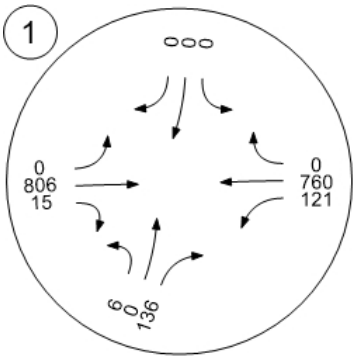
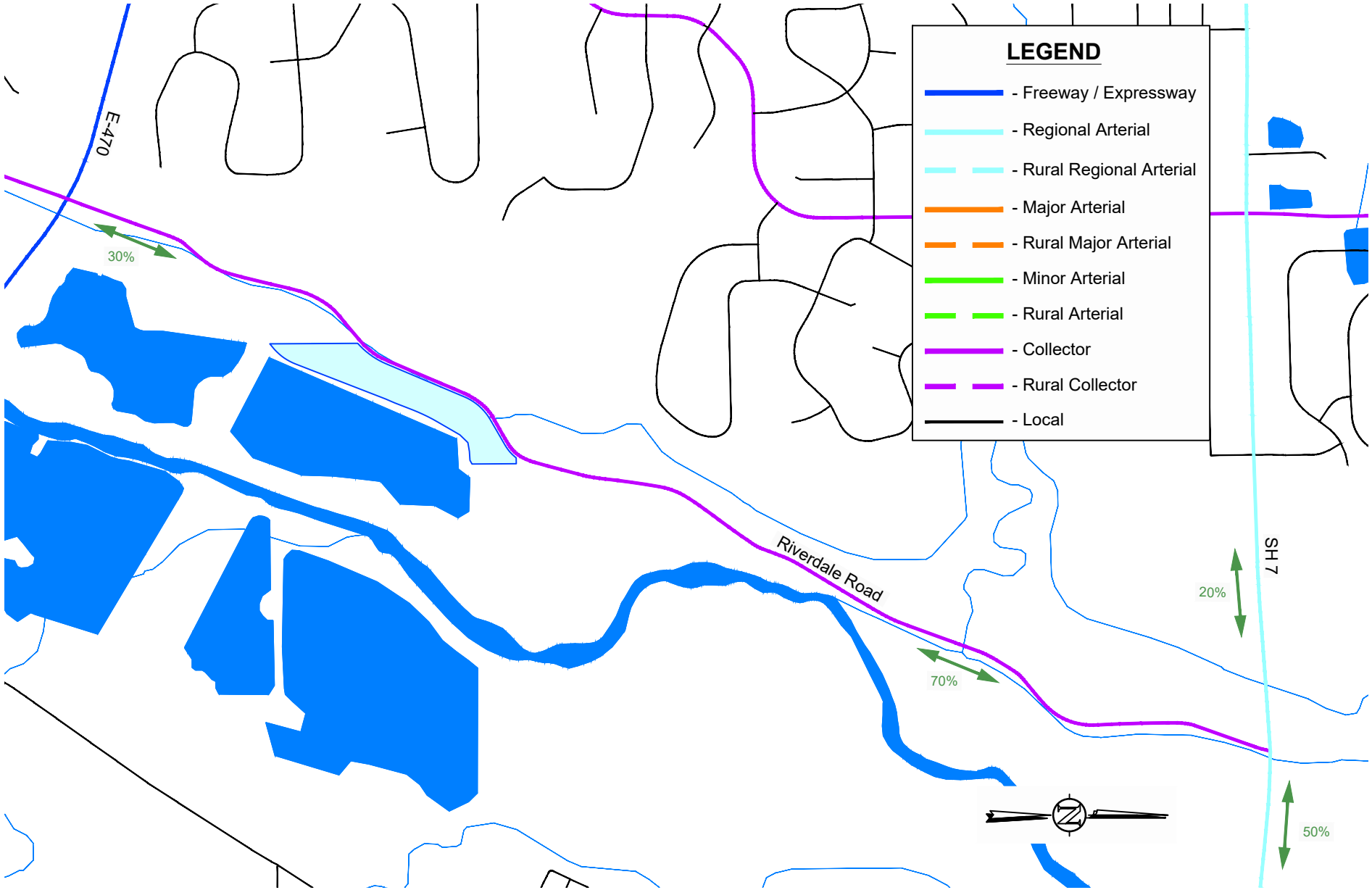


Figure 5 – Year 2024 Traffic Volumes – Evening Peak Hour

SH7/Riverdale





Riverdale RV Park Traffic Impact Study
TRIP DISTRIBUTION

Scale	1" = 1,500'	Date	July 19, 2024	Drawn by	JLH	Job #	MPC Properties	Figure	6

Figure 7 – Phase I Trip Assignment – Morning Peak Hour

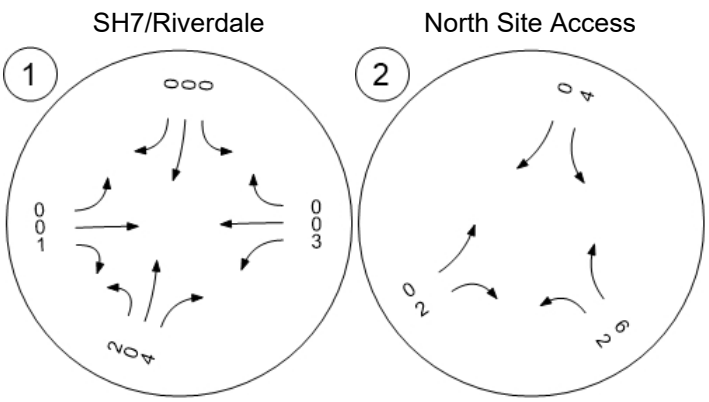


Figure 8 – Phase I Trip Assignment – Evening Peak Hour

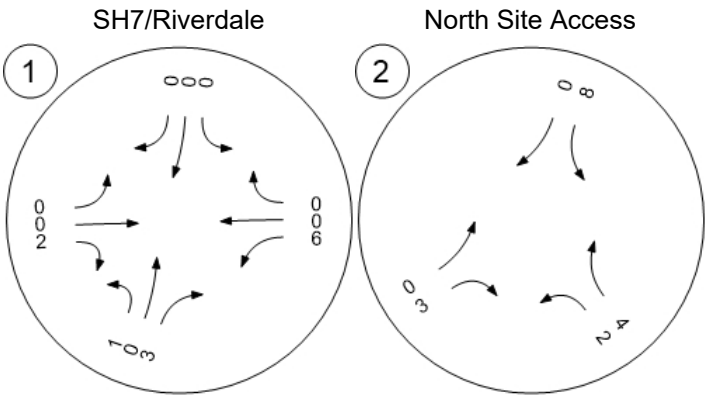


Figure 9 – Phase II Trip Assignment – Morning Peak Hour

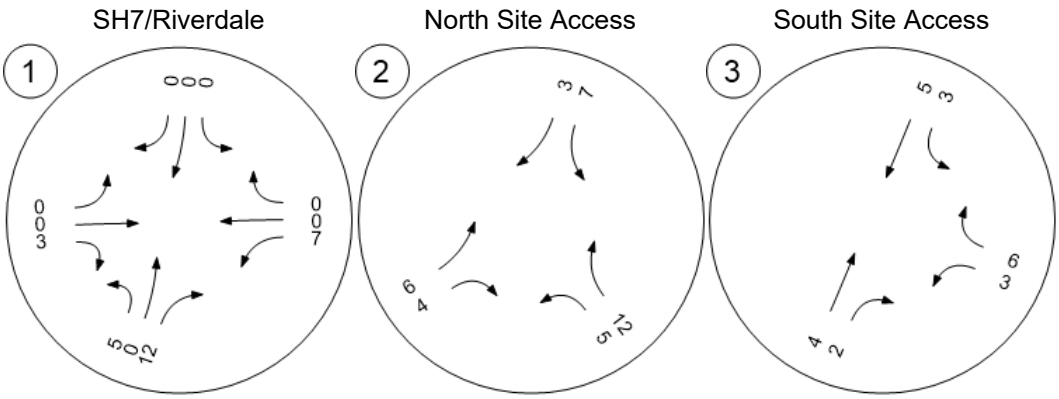


Figure 10 – Phase II Trip Assignment – Evening Peak Hour

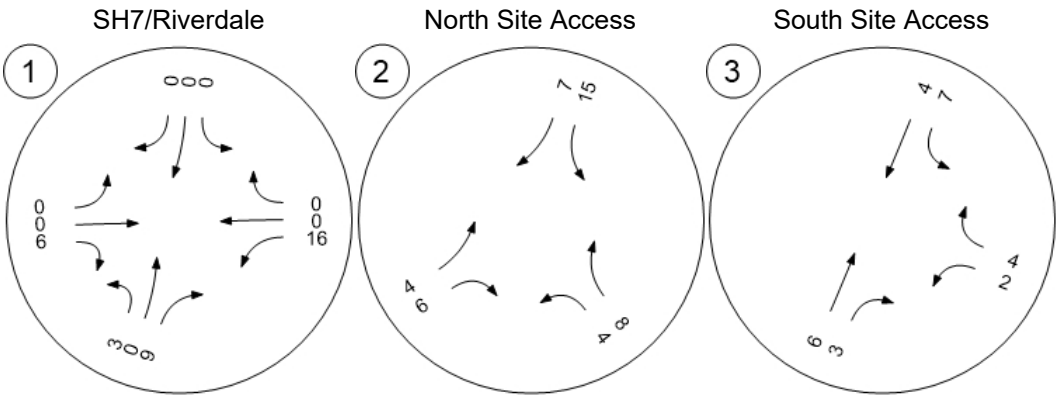


Figure 11 – Year 2030 Background Traffic Volumes – Morning Peak Hour

SH7/Riverdale

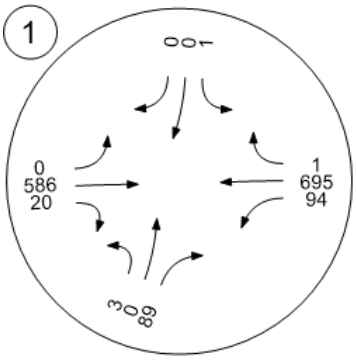


Figure 12 – Year 2030 Background Traffic Volumes – Evening Peak Hour

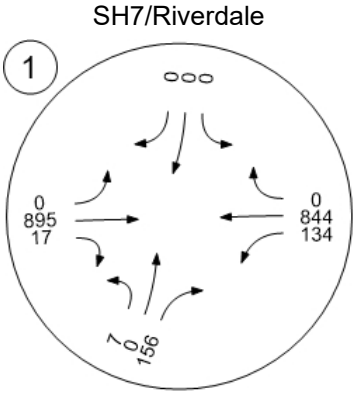


Figure 13 – Year 2030 Total Traffic Volumes – Morning Peak Hour

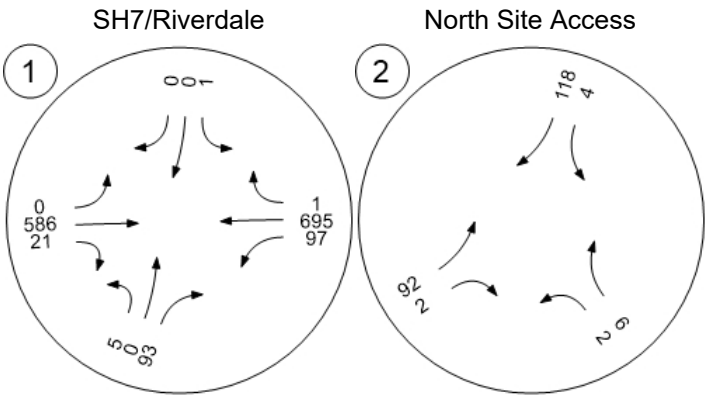


Figure 14 – Year 2030 Total Traffic Volumes – Evening Peak Hour

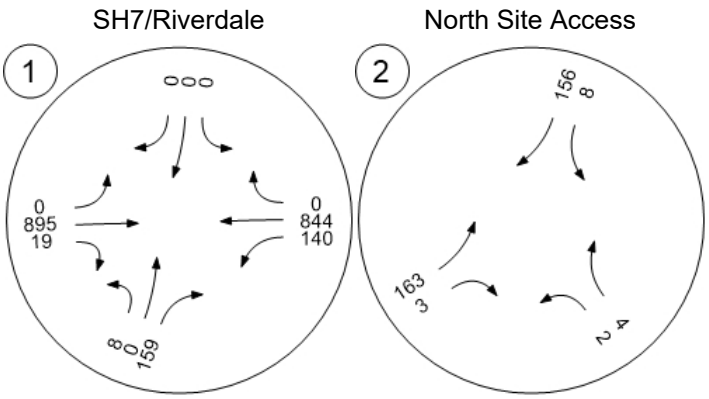


Figure 15 – Year 2032 Background Traffic Volumes – Morning Peak Hour

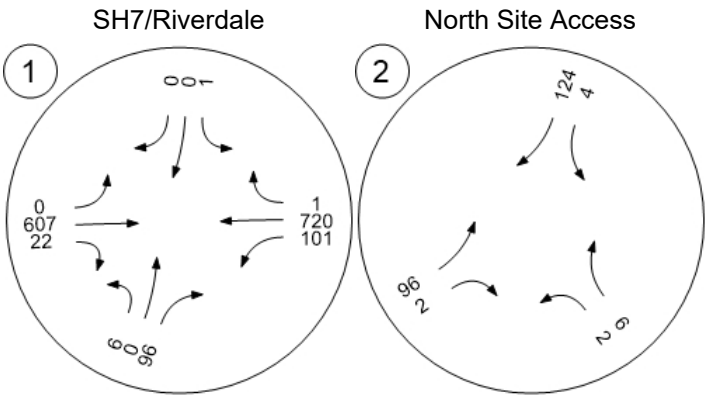


Figure 16 – Year 2032 Background Traffic Volumes – Evening Peak Hour

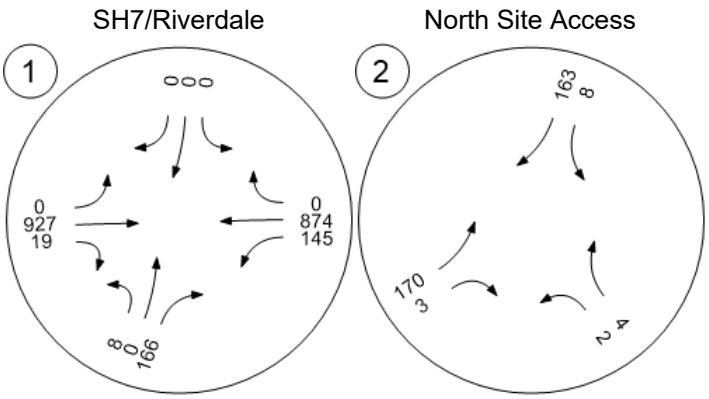


Figure 17 – Year 2032 Total Traffic Volumes – Morning Peak Hour

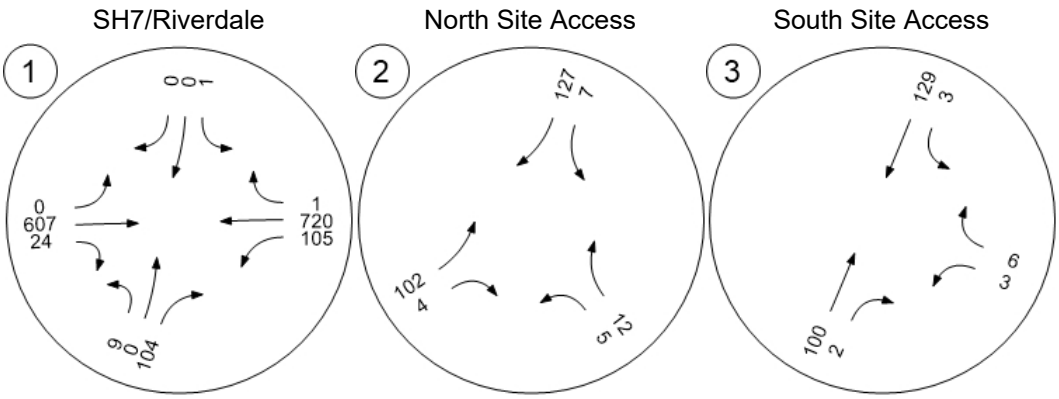


Figure 18 – Year 2032 Total Traffic Volumes – Evening Peak Hour

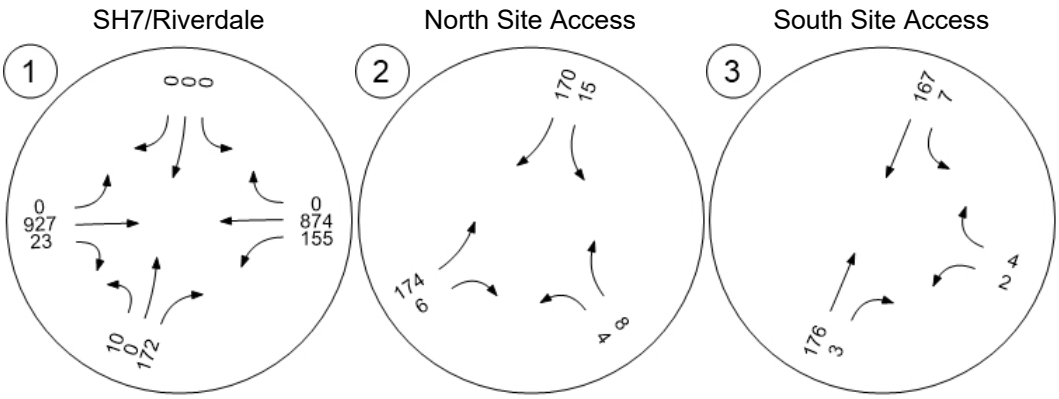


Figure 19 – Year 2045 Background Traffic Volumes – Morning Peak Hour

SH7/Riverdale

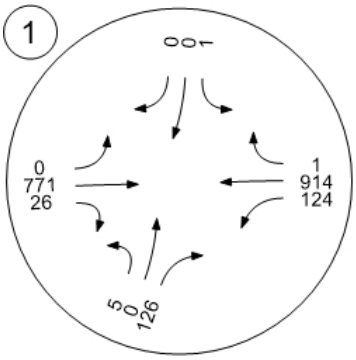


Figure 20 – Year 2045 Background Traffic Volumes – Evening Peak Hour

SH7/Riverdale

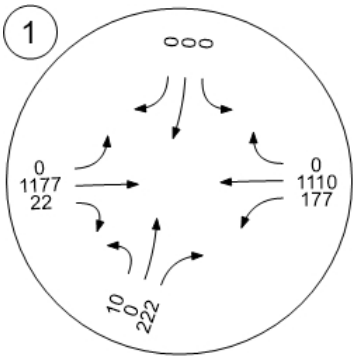


Figure 21 – Year 2045 Total Traffic Volumes – Morning Peak Hour

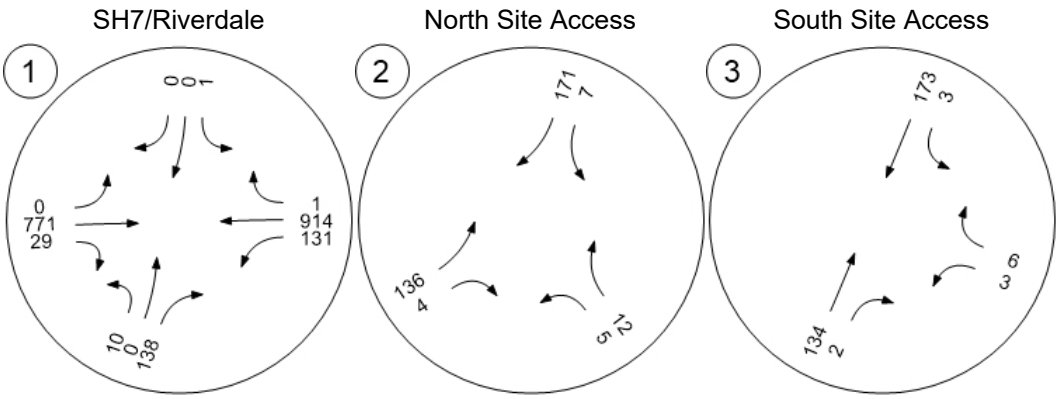
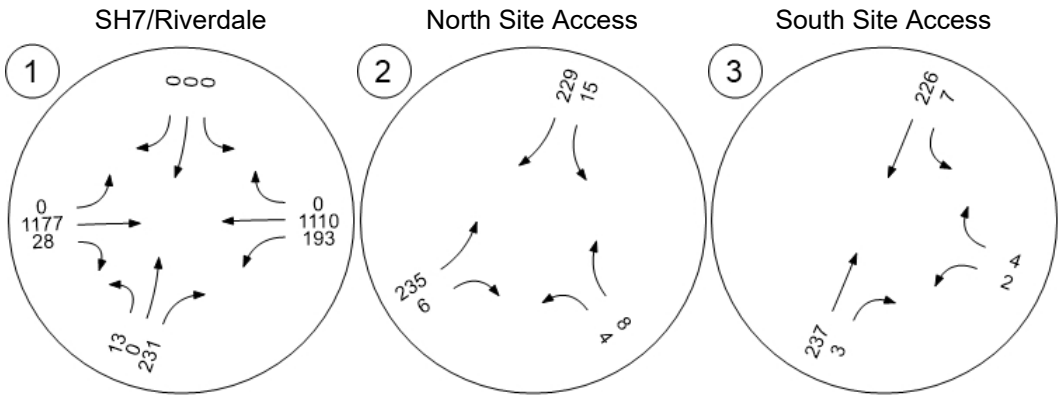
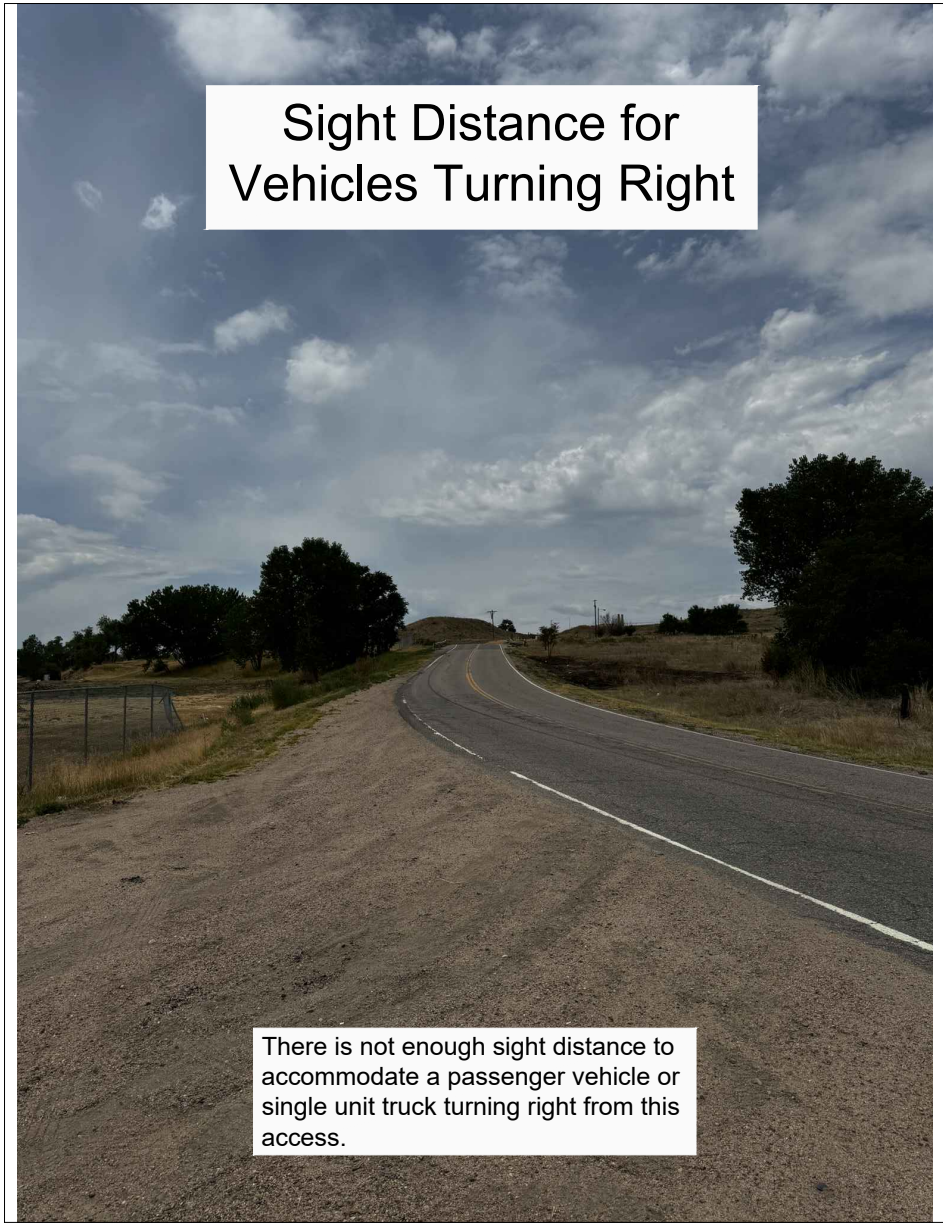
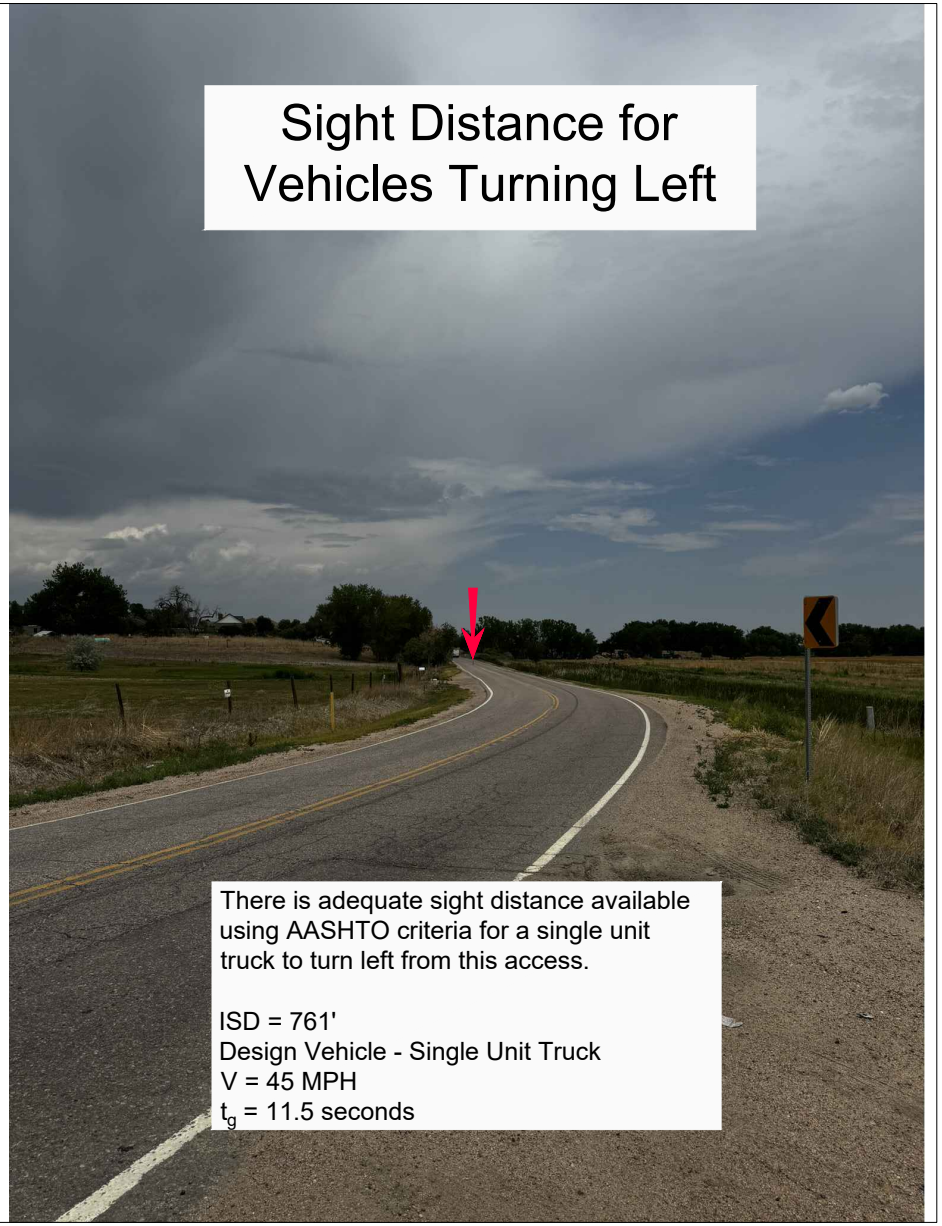


Figure 22 – Year 2045 Total Traffic Volumes – Evening Peak Hour



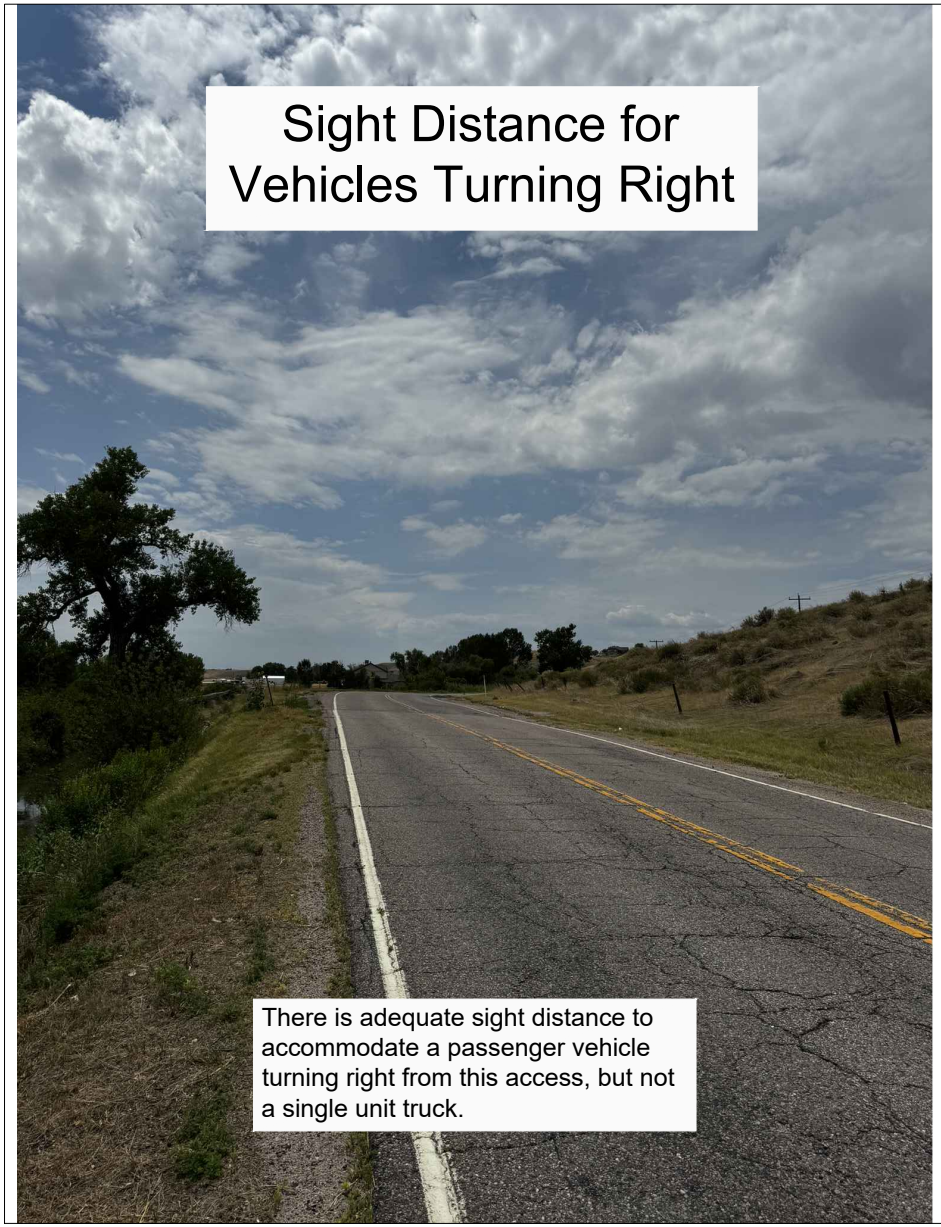


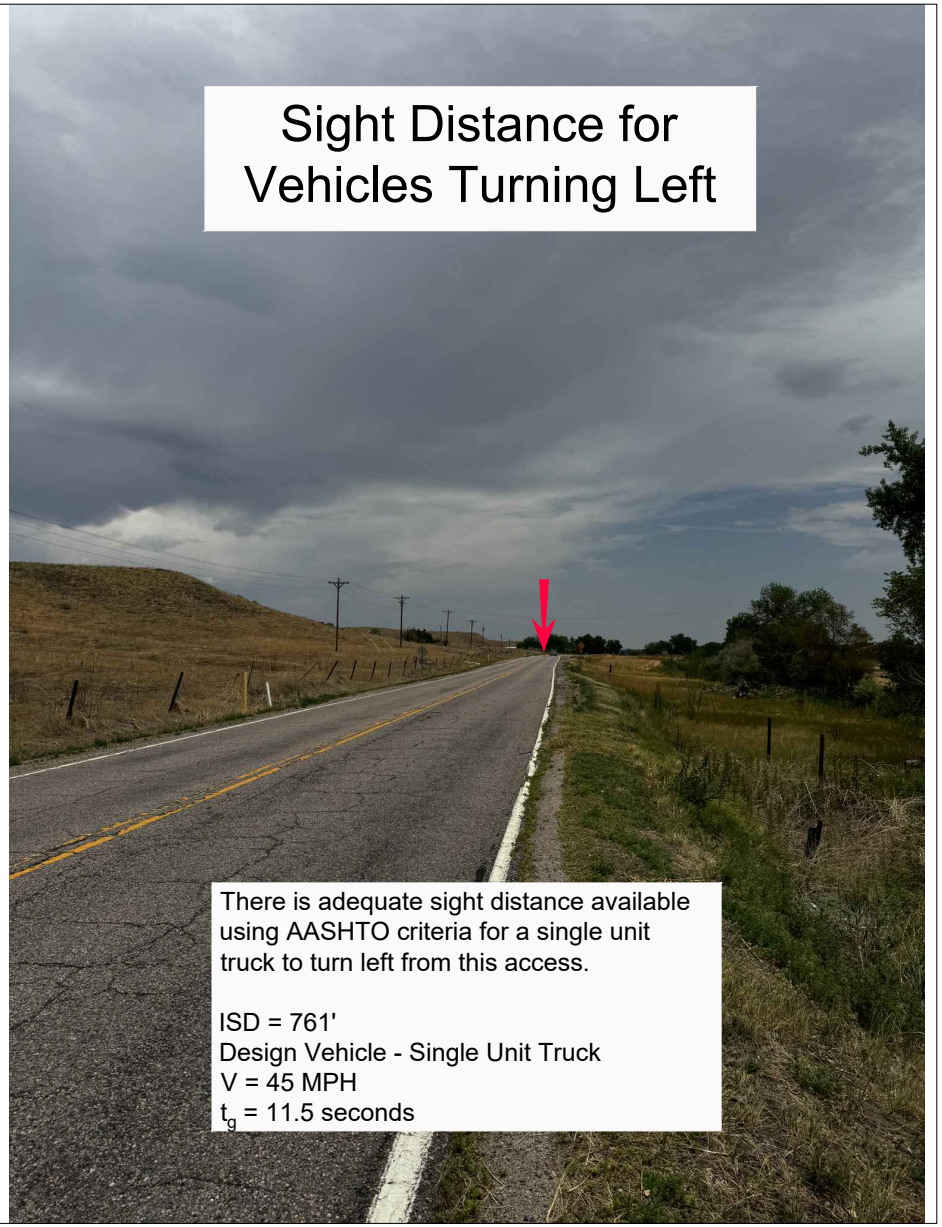


Riverdale RV Park Traffic Impact Study

INTERSECTION SIGHT DISTANCE - NORTH SITE ACCESS

Scale	NTS	Date	July 19, 2024	Drawn by	JLH	Job #	MPC Properties	Figure	23





Riverdale RV Park Traffic Impact Study
INTERSECTION SIGHT DISTANCE - SOUTH SITE ACCESS

Scale	NTS	Date	July 19, 2024	Drawn by	JLH	Job #	MPC Properties	Figure	24

Appendix A

Project Correspondence

Gmail Joe Henderson <thetrafficczar@gmail.com>

RE: Riverdale RV Park TIS Assumptions

6 messages

Laurie A. Clark <LAClark@adcogov.org> Thu, May 9, 2024 at 4:25 PM
To: Joe Henderson <joe@sustainabletrafficsolutions.com>

Hi Joe-

The person from Public Works that I needed to ask about the TIS parameters was unable to make it to the meeting today. I will talk with him next week and get back to you.

Thank you,
Laurie

Laurie Clark, PE, CFM

Senior Civil Engineer, *Community & Economic Development*

ADAMS COUNTY, COLORADO

4430 South Adams County Parkway, 1st Floor

Brighton, CO 80601

o: 720.523.6897 | *laclark@adcogov.org*

www.adcogov.org

My office hours are Monday through Thursday, 7 a.m. to 4:30 p.m.

From: Joe Henderson <joe@sustainabletrafficsolutions.com>
Sent: Tuesday, May 7, 2024 3:31 PM
To: Laurie A. Clark <LAClark@adcogov.org>
Subject: Re: Riverdale RV Park TIS Assumptions

Laurie,

I look forward to hearing from you.

Joe

On Tue, May 7, 2024 at 3:08 PM Laurie A. Clark <LAClark@adcogov.org> wrote:

> Hi Joe-
>
> Thanks for reaching out on the traffic study parameters for Riverdale RV Park.
>
> Please note that my email address is laclark@adcogov.org. Also, Layla Bajelan is no longer with Adams County.
>
> We will discuss the traffic study requirements for this development at our meeting with Public Works on Thursday afternoon and I will let you know what the next steps should be. If a scoping meeting is needed, we can schedule it after Thursday.
>
> Thank you,
> Laurie
>
> **Laurie Clark, PE, CFM**
>
> Senior Civil Engineer, *Community & Economic Development*
>
> ADAMS COUNTY, COLORADO
>
> 4430 South Adams County Parkway, 1st Floor
>
> Brighton, CO 80601
>
> o: 720.523.6897 | *laclark@adcogov.org*
>
> www.adcogov.org
>
> *My office hours are Monday through Thursday, 7 a.m. to 4:30 p.m.*
>
> ---
>
> **From:** Laleh Clark <LClark@adcogov.org>
> **Sent:** Tuesday, May 7, 2024 2:09 PM
> **To:** Laurie A. Clark <LAClark@adcogov.org>
> **Subject:** FW: Riverdale RV Park TIS Assumptions
>
> Hi Laurie here an email for you!
>
> ---
>
> **From:** Joe Henderson <joe@sustainabletrafficsolutions.com>
> **Sent:** Tuesday, May 7, 2024 1:36 PM
> **To:** Laleh Clark <LClark@adcogov.org>; lbajelan@adcogov.org
> **Subject:** Riverdale RV Park TIS Assumptions
>
>

Laurie & Layla,

I have attached assumptions for the Riverdale RV Park TIS. I'd like to schedule a traffic study scoping meeting. Please let me know when you are available to meet.

--

Joseph L. Henderson, PE, PTOE

Principal

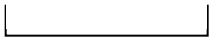
Sustainable Traffic Solutions, Inc.

303.589.6875

joe@sustainabletrafficsolutions.com

sustainabletrafficsolutions.com

Licensed in CO, WY, and IA



--

Joseph L. Henderson, PE, PTOE

Principal

Sustainable Traffic Solutions, Inc.

303.589.6875

joe@sustainabletrafficsolutions.com

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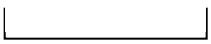


image001.jpg
9K

Joe Henderson <joe@sustainabletrafficsolutions.com> Thu, May 16, 2024 at 1:27 PM
To: "Laurie A. Clark" <LAClark@adcogov.org>

Laurie,

Do you have any feedback on the assumptions?

Joe
[Quoted text hidden]
[Quoted text hidden]
[Quoted text hidden]

Laurie A. Clark <LAClark@adcogov.org> Thu, May 16, 2024 at 3:44 PM
To: Joe Henderson <joe@sustainabletrafficsolutions.com>

In general, the assumptions are acceptable.

[Quoted text hidden]
[Quoted text hidden]
[Quoted text hidden]
[Quoted text hidden]

---

image001.jpg
9K

Joe Henderson <joe@sustainabletrafficsolutions.com> Thu, May 16, 2024 at 4:04 PM
To: "Laurie A. Clark" <LAClark@adcogov.org>

What does "in general" mean? Are there assumptions that the County doesn't like?
[Quoted text hidden]
[Quoted text hidden]
[Quoted text hidden]

Laurie A. Clark <LAClark@adcogov.org> Thu, May 16, 2024 at 4:07 PM
To: Joe Henderson <joe@sustainabletrafficsolutions.com>

No specific problems were identified.

[Quoted text hidden]
[Quoted text hidden]
[Quoted text hidden]
[Quoted text hidden]

2 attachments

image001.jpg
9K

image003.jpg
4K

Joe Henderson <joe@sustainabletrafficsolutions.com> Thu, May 16, 2024 at 4:22 PM
To: "Laurie A. Clark" <LAClark@adcogov.org>

Thank you. I'll proceed with the study based on the assumptions that I sent to you.

[Quoted text hidden]
[Quoted text hidden]
[Quoted text hidden]

Riverdale RV Park

Traffic Impact Study

1.0 Introduction

MPC Properties is proposing to develop the Riverdale RV Park south of SH 7 on the east side of Riverdale Road. The RV park will have a total of 180 spaces and be constructed in two phases. The first phase will include 63 spaces and the second phase will include 117 spaces. The vicinity map showing the location of the development is contained in Figure 1, and Figure 2 contains the site plan for the development. Two accesses are planned from Riverdale Road.

A Level 2 traffic impact study was prepared based on the Adams County Development Standards and Regulations[1].

2.0 Project Description

2.1 Study Area

The study area includes the following intersections on Riverdale Road.

- SH 7
- Site accesses

See Figure 3 for the existing laneage and traffic control.

2.2 Study Assumptions

The following assumptions were utilized for this study.

Scoping Meeting. A scoping meeting was held with xxxxx from Adams County on May xxx, 2024. Minutes from the meeting and other correspondence are contained in Appendix A.

Short-Term Planning Horizon. Phase 1 is expected to be completed in Year 2025, and Phase 2 in Year 2027. Considering the County requirement that the short-term planning horizon be five years following the completion of the development, the short-term planning horizons are Year 2030 and Year 2032.

Long-Term Planning Horizon. The long-term planning horizon is Year 2045 because it is 20 years in the future.

Growth in Background Traffic. Annual growth rates were developed for the roadways in the study area utilizing data from the DRCOG regional plan. The following growth rates were used to estimate future volumes.

- SH 7 – 1.8% per year

[1] Adams County Development Standards and Regulations – Section 8-02. September 12, 2005.

- Riverdale Road – 2.4% per year

The Year 2020 volumes and Year 2050 projections provided by DRCOG are contained in Appendix B. The DRCOG data can be found on the DRCOG website.

Improvements to Study Area Corridors and Intersections. SH 7 has one through lane in each direction plus auxiliary lanes. The Adams County Transportation Plan[2] identifies SH 7 as a regional arterial. The Adams County arterial cross sections all have four through lanes, so the study assumes that the corridor will be widened to four through lanes by the Year 2045.

Saturation Flow Rate. The saturation flow rate was assumed to be 1,900 passenger cars / hour / lane which is typical in urban areas.

Peak Hour Factor (PHF). The PHF was based on the data collected for the traffic study.

Truck Percentage. Vehicle classification data were collected on SH 7 and Riverdale Road for this project. The following table contains the truck percentages that were calculated using the data. Based on these data, xxxxx. Refer to Section 3.0 for a discussion of the data collected for the project.

3.0 Existing Traffic Volumes

Traffic count data were collected for the project on xxxday, xxxx, 2024 by Sustainable Traffic Solutions. The data are contained in Appendix C. The existing peak hour volumes are summarized in Figures 4 and 5. Existing and future daily volumes are summarized in Table 1.

4.0 Site Generated Traffic Volumes

4.1 Trip Generation

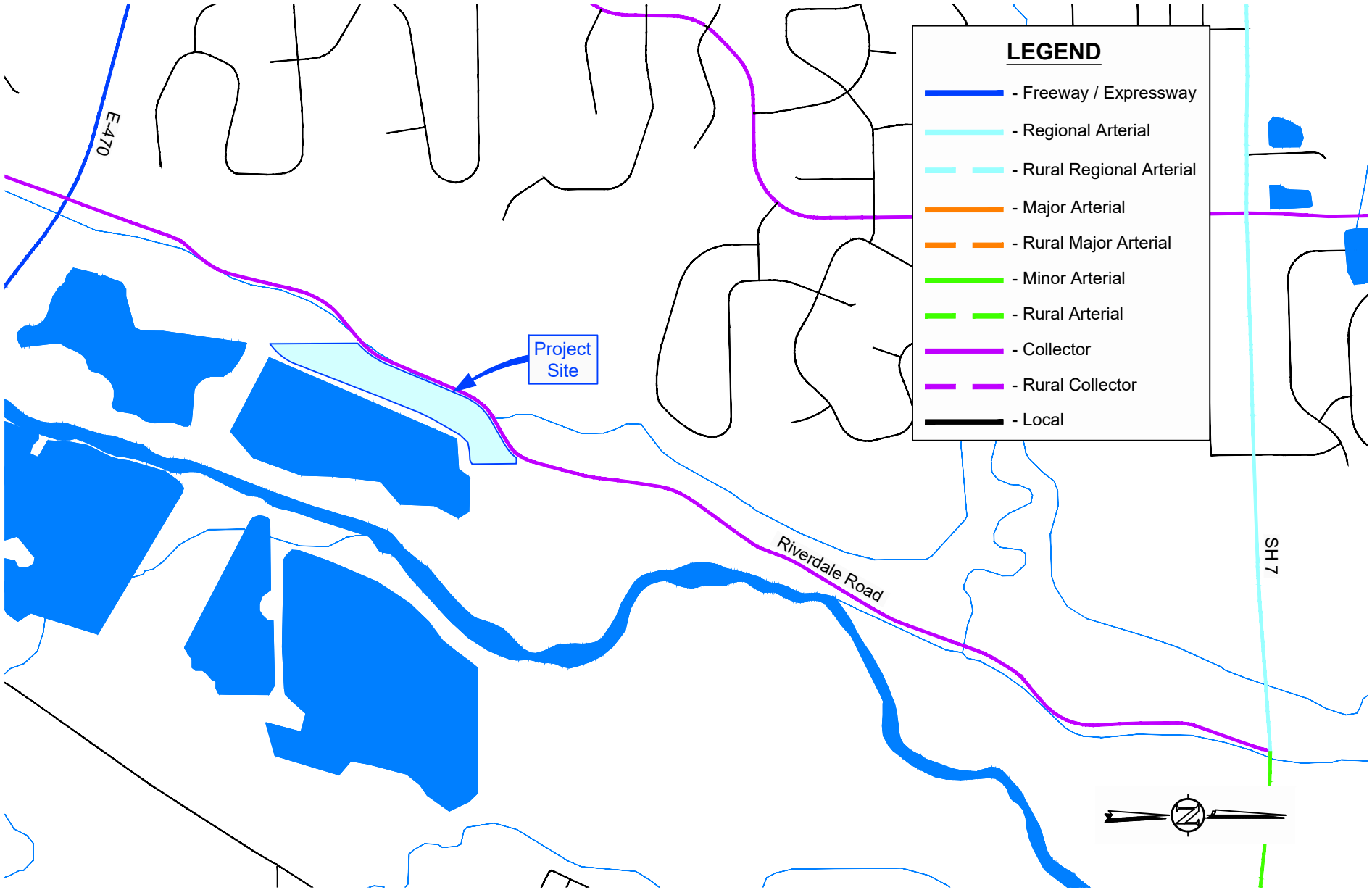
In order to estimate the traffic impacts associated with this development, the amount of traffic generated by the project was calculated using trip generation rates contained in the Institute of Transportation Engineers Trip Generation manual[3] (see Table 3).

4.2 Trip Distribution and Assignment

The trip distribution for the development is contained in Figure 6. It is based on the location of the site within the metro area and access to major transportation facilities. The morning and evening peak hour trip assignments are contained in Figures 7 and 8.

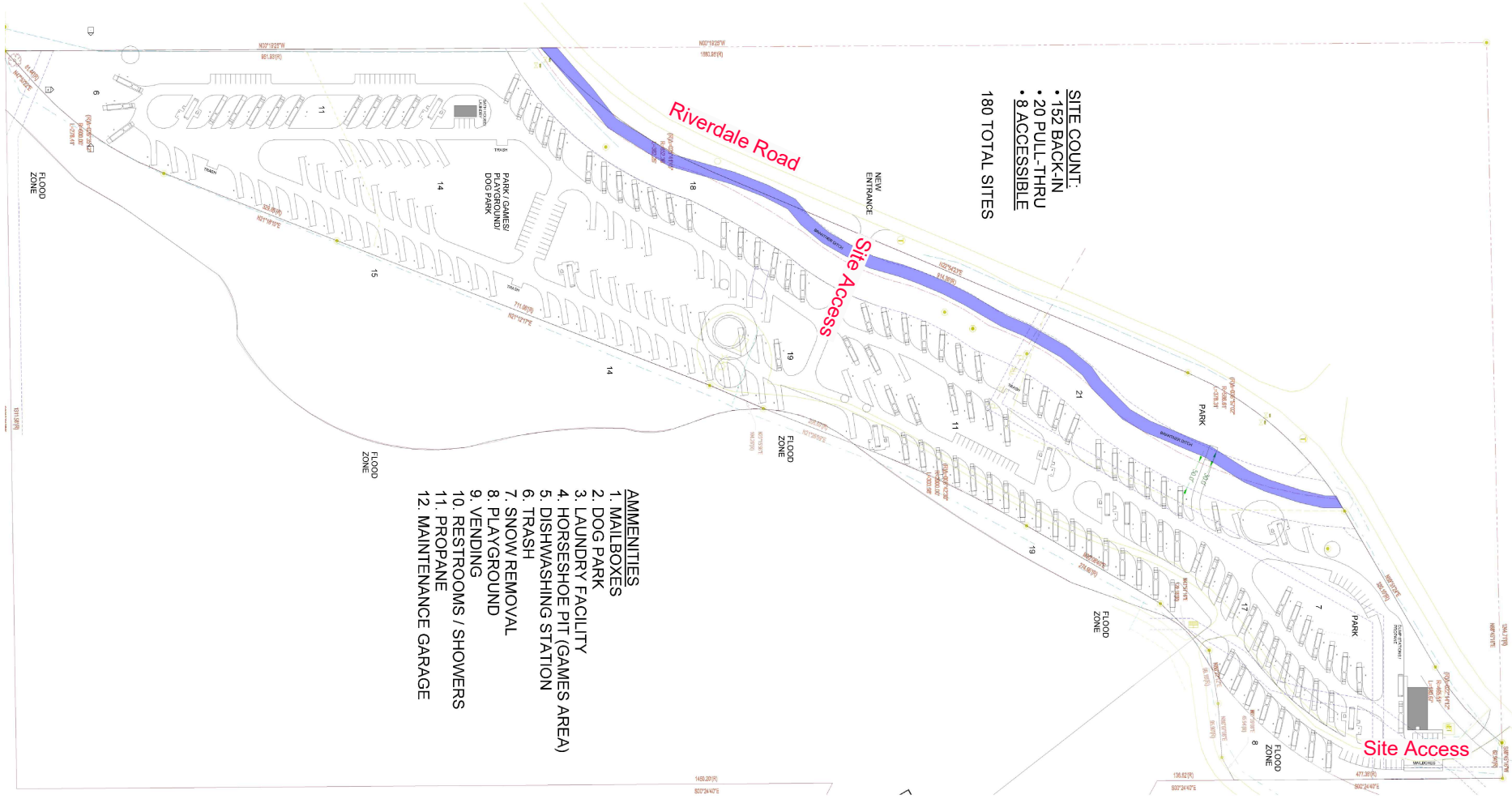
[2] Adams County Transportation Plan. Adopted December 2012.

[3] Trip Generation, 11th Edition. Institute of Transportation Engineers. September 2021.



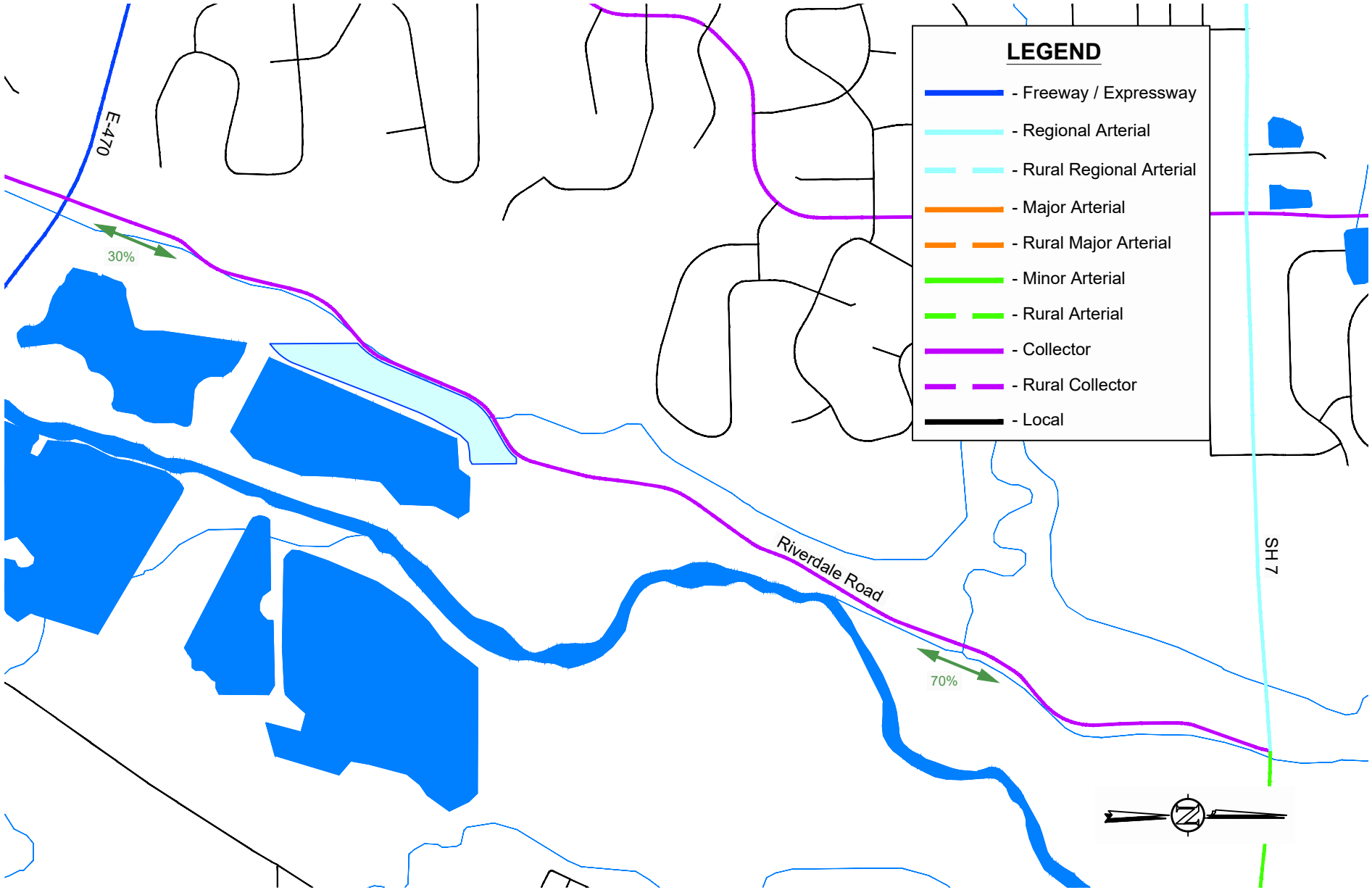
Riverdale RV Park Traffic Impact Study
VICINITY MAP

Scale	1" = 1,500'	Date	May 6, 2024	Drawn by	JLH	Job #	MPC Properties	Figure	1



Riverdale RV Park Traffic Impact Study
SITE PLAN

Scale	NTS	Date	May 6, 2024	Drawn by	JLH	Job #	MPC Properties	Figure	2



Riverdale RV Park Traffic Impact Study
TRIP DISTRIBUTION

Scale	1" = 1,500'	Date	May 6, 2024	Drawn by	JLH	Job #	MPC Properties	Figure	6

Table 3. Trip Generation Estimate

Land Use Description	ITE Code [1]	Size	Unit	Average Weekday Trips [2]				Morning Peak Hour Trips				Evening Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Campground / RV Park - Phase 1	416	63	Occupied Campsites	2.70	170	85	85	0.21	13	5	8	0.27	17	11	6
Campground / RV Park - Phase 2	416	117	Occupied Campsites	2.70	316	158	158	0.21	25	9	16	0.27	32	21	11
Total	**---**	**180**	**---**	**---**	**486**	**243**	**243**	**---**	**38**	**14**	**24**	**---**	**49**	**32**	**17**

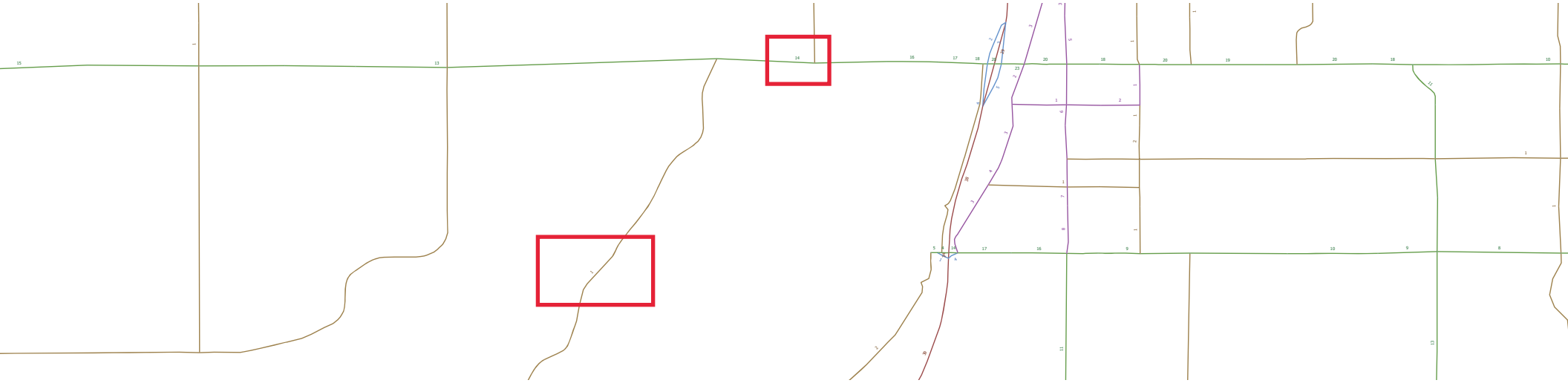
Notes

1. The trip generation rates were obtained from Trip Generation, 11th Edition (Institute of Transportation Engineers, 2021).

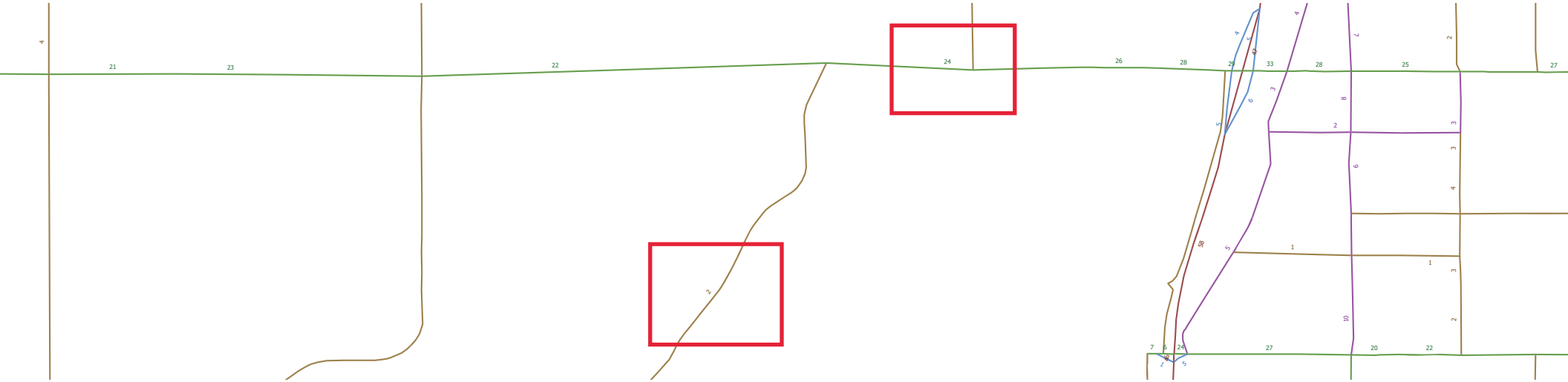
Appendix B

DRCOG Data

Year 2020 Traffic Volumes



Year 2050 Traffic Projections



Appendix C

Traffic Count Data

Sustainable Traffic Solutions

www.sustainabletrafficsolutions.com

HWY 7 / RIVERDALE ROAD
June 4th, 2024
Peak Hour: 07:15 - 08:15
Peak 15 Minutes: 07:30 - 07:45

	Riverdale Road Northbound				Riverdale Road Southbound				State Highway 7 Eastbound				State Highway 7 Westbound					Pedestrian Crossing			
Interval Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	North	South	East	West
6:30	0	1	0	13	0	0	0	0	0	0	74	3	0	18	153	0	262	0	0	0	0
6:45	0	3	0	21	0	0	0	0	0	0	109	3	0	23	163	0	322	0	0	0	0
7:00	0	4	0	11	0	0	0	0	0	0	96	3	0	27	176	0	317	0	0	0	0
7:15	0	1	0	15	0	0	0	0	0	0	95	7	0	26	189	0	333	0	0	0	0
7:30	0	2	0	21	0	0	0	0	0	0	134	3	0	28	157	1	346	0	0	0	0
7:45	0	0	0	23	0	0	0	0	0	0	156	3	0	18	138	0	338	0	0	0	0
8:00	0	0	0	18	0	1	0	0	0	0	143	5	1	13	142	0	323	0	0	0	0
8:15	0	3	0	24	0	0	0	0	0	0	118	1	0	17	132	0	295	0	0	0	0
Count Total	0	14	0	146	0	1	0	0	0	0	925	28	1	170	1250	1	2536	0	0	0	0
Peak Hour	**0**	**3**	**0**	**77**	**0**	**1**	**0**	**0**	**0**	**0**	**528**	**18**	**1**	**85**	**626**	**1**	**1340**	**0**	**0**	**0**	**0**
Peak Hour Factor		0.87				0.00				0.86				0.83			---	---	---	---	---
Peak Hour % Trucks	0%	0%	0%	3%	0%	100%	0%	0%	0%	0%	3%	6%	0%	4%	4%	100%	4%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
1	1	80	103	713	607	546	629

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HWY 7 / RIVERDALE ROAD
June 4th, 2024
Peak Hour: 07:15 - 08:15
Peak 15 Minutes: 07:30 - 07:45

Passenger Vehicles

	Riverdale Road Northbound				Riverdale Road Southbound				State Highway 7 Eastbound				State Highway 7 Westbound				
Interval Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
6:30	0	1	0	13	0	0	0	0	0	0	71	2	0	18	148	0	253
6:45	0	3	0	21	0	0	0	0	0	0	108	3	0	23	158	0	316
7:00	0	4	0	11	0	0	0	0	0	0	95	3	0	27	170	0	310
7:15	0	1	0	15	0	0	0	0	0	0	91	7	0	25	179	0	318
7:30	0	2	0	21	0	0	0	0	0	0	131	3	0	26	151	0	334
7:45	0	0	0	22	0	0	0	0	0	0	153	2	0	18	132	0	327
8:00	0	0	0	17	0	0	0	0	0	0	136	5	1	13	136	0	308
8:15	0	3	0	22	0	0	0	0	0	0	114	1	0	17	125	0	282
Count Total	0	14	0	142	0	0	0	0	0	0	899	26	1	167	1199	0	2448
Peak Hour	**0**	**3**	**0**	**75**	**0**	**0**	**0**	**0**	**0**	**0**	**511**	**17**	**1**	**82**	**598**	**0**	**1287**

Trucks Less Than 40' Long

	Riverdale Road Northbound				Riverdale Road Southbound				State Highway 7 Eastbound				State Highway 7 Westbound				
Interval Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
6:30	0	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0	7
6:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	4
7:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	4
7:15	0	0	0	0	0	0	0	0	0	0	1	0	0	1	7	0	9
7:30	0	0	0	0	0	0	0	0	0	0	1	0	0	2	4	1	8
7:45	0	0	0	1	0	0	0	0	0	0	2	1	0	0	2	0	6
8:00	0	0	0	1	0	1	0	0	0	0	6	0	0	0	6	0	14
8:15	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	4
Count Total	0	0	0	4	0	1	0	0	0	0	15	2	0	3	30	1	56
Peak Hour	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**10**	**1**	**0**	**3**	**19**	**1**	**37**

Trucks Greater Than 40' Long

	Riverdale Road Northbound				Riverdale Road Southbound				State Highway 7 Eastbound				State Highway 7 Westbound				
Interval Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
6:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
6:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
7:15	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	6
7:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	4
7:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	5
8:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
8:15	0	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0	9
Count Total	0	0	0	0	0	0	0	0	0	0	11	0	0	0	21	0	32
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**9**	**0**	**16**

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HWY 7 / RIVERDALE ROAD
June 4th, 2024
Peak Hour: 16:30 - 17:30
Peak 15 Minutes: 16:30 - 16:45

	Riverdale Road Northbound				Riverdale Road Southbound				State Highway 7 Eastbound				State Highway 7 Westbound					Pedestrian Crossing			
Interval Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	North	South	East	West
16:00	0	3	0	32	0	0	0	0	0	0	189	2	0	32	171	0	429	0	0	0	0
16:15	0	3	0	40	0	0	0	0	0	0	182	8	0	25	163	0	421	0	0	0	0
16:30	0	2	0	40	0	0	0	0	0	0	203	7	0	29	192	0	473	0	0	0	0
16:45	0	2	0	36	0	0	0	0	0	0	204	3	0	29	179	0	453	0	0	0	0
17:00	0	0	0	29	0	0	0	0	0	0	212	3	0	33	192	0	469	0	0	0	0
17:15	0	2	0	31	0	0	0	0	0	0	187	2	0	30	197	0	449	0	0	0	0
17:30	0	4	0	40	0	0	0	0	0	0	213	4	0	23	172	0	456	0	0	0	0
17:45	0	4	0	26	0	0	0	0	0	0	214	3	0	27	173	0	447	0	0	0	0
Count Total	0	20	0	274	0	0	0	0	0	0	1604	32	0	228	1439	0	3597	0	0	0	0
Peak Hour	**0**	**6**	**0**	**136**	**0**	**0**	**0**	**0**	**0**	**0**	**806**	**15**	**0**	**121**	**760**	**0**	**1844**	**0**	**0**	**0**	**0**
Peak Hour Factor		0.85				0.00				0.95				0.97			---	---	---	---	---
Peak Hour % Trucks	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	2%	0%	2%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
0	0	142	136	881	942	821	766

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HWY 7 / RIVERDALE ROAD
June 4th, 2024
Peak Hour: 16:30 - 17:30
Peak 15 Minutes: 16:30 - 16:45

Passenger Vehicles

	Riverdale Road Northbound				Riverdale Road Southbound				State Highway 7 Eastbound				State Highway 7 Westbound				
Interval Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
16:00	0	3	0	32	0	0	0	0	0	0	183	2	0	32	168	0	420
16:15	0	3	0	40	0	0	0	0	0	0	181	8	0	25	160	0	417
16:30	0	2	0	39	0	0	0	0	0	0	199	7	0	29	186	0	462
16:45	0	2	0	35	0	0	0	0	0	0	203	3	0	29	178	0	450
17:00	0	0	0	29	0	0	0	0	0	0	209	3	0	33	186	0	460
17:15	0	2	0	30	0	0	0	0	0	0	185	2	0	30	195	0	444
17:30	0	1	0	39	0	0	0	0	0	0	212	4	0	23	170	0	449
17:45	0	4	0	26	0	0	0	0	0	0	214	3	0	27	172	0	446
Count Total	0	17	0	270	0	0	0	0	0	0	1586	32	0	228	1415	0	3548
Peak Hour	**0**	**6**	**0**	**133**	**0**	**0**	**0**	**0**	**0**	**0**	**796**	**15**	**0**	**121**	**745**	**0**	**1816**

Trucks Less Than 40' Long

	Riverdale Road Northbound				Riverdale Road Southbound				State Highway 7 Eastbound				State Highway 7 Westbound				
Interval Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
16:00	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
16:30	0	0	0	1	0	0	0	0	0	0	3	0	0	0	5	0	9
16:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	4
17:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	3
17:30	0	3	0	1	0	0	0	0	0	0	1	0	0	0	1	0	6
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	3	0	3	0	0	0	0	0	0	12	0	0	0	13	0	31
Peak Hour	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**10**	**0**	**17**

Trucks Greater Than 40' Long

	Riverdale Road Northbound				Riverdale Road Southbound				State Highway 7 Eastbound				State Highway 7 Westbound				
Interval Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
16:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
16:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
16:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2
17:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	5
17:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Count Total	0	0	0	1	0	0	0	0	0	0	6	0	0	0	11	0	18
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**5**	**0**	**11**

Sustainable Traffic Solutions

HWY 7 / RIVERDALE ROAD
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South Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	NB	SB	NB	SB	NB	SB	NB	SB
00:00	5	3	0	0	0	0	5	3
00:15	2	2	0	0	1	0	3	2
00:30	3	1	0	0	0	0	3	1
00:45	2	3	0	0	0	0	2	3
	12	9	0	0	1	0	13	9
01:00	1	0	0	0	0	0	1	0
01:15	0	1	0	0	0	1	0	2
01:30	0	1	0	0	0	0	0	1
01:45	1	0	1	0	0	0	2	0
	2	2	1	0	0	1	3	3
02:00	1	0	0	0	0	0	1	0
02:15	2	2	0	0	0	0	2	2
02:30	0	0	0	0	0	0	0	0
02:45	2	1	0	0	0	1	2	2
	5	3	0	0	0	1	5	4
03:00	1	2	0	0	0	0	1	2
03:15	0	1	0	0	0	0	0	1
03:30	2	4	1	0	0	0	3	4
03:45	0	1	0	0	0	0	0	1
	3	8	1	0	0	0	4	8
04:00	0	1	0	0	0	0	0	1
04:15	7	4	0	0	0	0	7	4
04:30	4	3	0	0	0	0	4	3
04:45	6	0	0	0	0	0	6	0
	17	8	0	0	0	0	17	8
05:00	6	2	0	0	0	0	6	2
05:15	10	4	0	0	0	0	10	4
05:30	7	13	0	0	0	0	7	13
05:45	22	23	0	0	0	0	22	23
	45	42	0	0	0	0	45	42
06:00	9	8	0	0	0	0	9	8
06:15	18	21	0	0	0	0	18	21
06:30	14	20	0	1	0	0	14	21
06:45	24	26	0	0	0	0	24	26
	65	75	0	1	0	0	65	76
07:00	15	30	0	0	0	0	15	30
07:15	16	32	0	1	0	0	16	33
07:30	23	29	0	2	0	0	23	31
07:45	22	20	1	1	0	0	23	21
	76	111	1	4	0	0	77	115
08:00	17	18	1	0	0	0	18	18
08:15	25	18	2	0	0	0	27	18
08:30	22	20	0	0	0	0	22	20
08:45	23	24	0	0	1	0	24	24
	87	80	3	0	1	0	91	80
09:00	14	18	0	1	0	0	14	19
09:15	23	20	2	1	0	0	25	21
09:30	18	17	0	0	0	0	18	17
09:45	17	17	0	0	0	1	17	18
	72	72	2	2	0	1	74	75
10:00	13	13	0	2	0	0	13	15
10:15	14	20	0	2	0	0	14	22
10:30	14	19	0	0	0	0	14	19
10:45	17	21	0	0	0	0	17	21
	58	73	0	4	0	0	58	77
11:00	17	22	0	0	0	0	17	22
11:15	22	14	0	0	0	0	22	14
11:30	17	17	1	0	0	0	18	17
11:45	35	20	0	2	0	0	35	22
	91	73	1	2	0	0	92	75
Count Total	533	556	9	13	2	3	544	572
Percent	98%	97%	2%	2%	0%	1%	---	

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South Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	NB	SB	NB	SB	NB	SB	NB	SB
12:00	19	16	3	0	0	0	22	16
12:15	28	13	1	0	0	0	29	13
12:30	20	18	0	1	0	0	20	19
12:45	21	23	0	2	0	0	21	25
	88	70	4	3	0	0	92	73
13:00	11	16	2	2	0	0	13	18
13:15	11	16	2	2	0	0	13	18
13:30	16	15	0	0	0	0	16	15
13:45	16	15	0	0	0	0	16	15
	54	62	4	4	0	0	58	66
14:00	23	15	0	0	1	0	24	15
14:15	26	13	1	0	0	0	27	13
14:30	26	13	1	0	0	0	27	13
14:45	21	15	1	0	0	0	22	15
	96	56	3	0	1	0	100	56
15:00	20	20	0	0	0	0	20	20
15:15	20	20	0	0	0	0	20	20
15:30	33	15	0	0	0	0	33	15
15:45	23	26	3	1	0	0	26	27
	96	81	3	1	0	0	99	82
16:00	26	25	2	0	0	1	28	26
16:15	35	34	0	0	0	0	35	34
16:30	43	33	0	0	0	0	43	33
16:45	41	36	1	0	0	0	42	36
	145	128	3	0	0	1	148	129
17:00	37	32	0	0	1	0	38	32
17:15	29	36	0	0	0	0	29	36
17:30	32	32	1	0	0	0	33	32
17:45	40	27	4	0	0	0	44	27
	138	127	5	0	1	0	144	127
18:00	30	30	0	0	0	0	30	30
18:15	38	36	3	0	0	0	41	36
18:30	23	23	0	0	0	0	23	23
18:45	28	28	1	0	0	0	29	28
	119	117	4	0	0	0	123	117
19:00	32	18	0	0	0	0	32	18
19:15	23	31	0	0	0	0	23	31
19:30	15	14	0	0	0	0	15	14
19:45	30	21	0	0	0	0	30	21
	100	84	0	0	0	0	100	84
20:00	15	20	0	0	0	1	15	21
20:15	12	22	0	0	0	0	12	22
20:30	18	16	0	0	0	0	18	16
20:45	19	12	0	0	1	0	20	12
	64	70	0	0	1	1	65	71
21:00	20	18	0	0	0	0	20	18
21:15	20	12	0	0	0	0	20	12
21:30	10	12	0	0	0	0	10	12
21:45	9	7	0	0	0	0	9	7
	59	49	0	0	0	0	59	49
22:00	6	7	0	0	0	0	6	7
22:15	4	4	0	0	0	0	4	4
22:30	7	2	0	0	0	0	7	2
22:45	1	1	0	0	0	0	1	1
	18	14	0	0	0	0	18	14
23:00	2	3	0	0	0	0	2	3
23:15	9	1	0	0	0	0	9	1
23:30	2	3	0	0	0	0	2	3
23:45	4	3	0	0	0	0	4	3
	17	10	0	0	0	0	17	10
Count Total	994	868	26	8	3	2	1023	878
Percent	97%	99%	3%	1%	0%	0%	---	

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West Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	EB	WB	EB	WB	EB	WB	EB	WB
00:00	8	8	0	0	0	0	8	8
00:15	7	9	0	0	0	0	7	9
00:30	6	10	1	0	0	0	7	10
00:45	6	7	0	0	0	1	6	8
	27	34	1	0	0	1	28	35
01:00	5	3	0	0	0	0	5	3
01:15	6	4	0	0	0	1	6	5
01:30	8	3	0	0	0	1	8	4
01:45	3	10	0	0	0	0	3	10
	22	20	0	0	0	2	22	22
02:00	2	5	0	0	0	0	2	5
02:15	3	5	0	0	0	0	3	5
02:30	3	4	0	0	1	0	4	4
02:45	10	11	0	0	0	0	10	11
	18	25	0	0	1	0	19	25
03:00	6	10	0	1	0	0	6	11
03:15	5	12	1	0	0	0	6	12
03:30	7	17	0	0	0	0	7	17
03:45	10	11	0	0	0	2	10	13
	28	50	1	1	0	2	29	53
04:00	13	15	1	1	0	0	14	16
04:15	12	22	0	0	0	0	12	22
04:30	29	33	1	0	0	1	30	34
04:45	39	35	0	1	0	0	39	36
	93	105	2	2	0	1	95	108
05:00	38	53	0	1	1	2	39	56
05:15	41	81	1	0	0	1	42	82
05:30	62	101	2	0	1	2	65	103
05:45	68	111	1	2	0	1	69	114
	209	346	4	3	2	6	215	355
06:00	71	124	0	0	1	0	72	124
06:15	91	150	0	3	1	0	92	153
06:30	73	149	4	3	0	2	77	154
06:45	111	161	1	3	0	2	112	166
	346	584	5	9	2	4	353	597
07:00	98	174	1	3	0	3	99	180
07:15	98	180	1	7	3	3	102	190
07:30	134	153	1	4	2	2	137	159
07:45	155	132	3	2	1	4	159	138
	485	639	6	16	6	12	497	667
08:00	141	136	6	6	1	0	148	142
08:15	115	128	0	2	4	5	119	135
08:30	128	167	6	3	1	3	135	173
08:45	113	129	3	10	2	4	118	143
	497	560	15	21	8	12	520	593
09:00	101	115	3	3	5	1	109	119
09:15	103	143	12	5	3	7	118	155
09:30	105	143	4	2	1	2	110	147
09:45	111	113	4	1	7	2	122	116
	420	514	23	11	16	12	459	537
10:00	78	140	3	4	3	2	84	146
10:15	101	138	5	6	4	2	110	146
10:30	93	134	4	2	1	2	98	138
10:45	118	111	3	6	2	4	123	121
	390	523	15	18	10	10	415	551
11:00	114	132	4	6	1	3	119	141
11:15	130	126	4	5	3	2	137	133
11:30	143	127	2	5	0	3	145	135
11:45	128	161	13	8	3	2	144	171
	515	546	23	24	7	10	545	580
Count Total	3050	3946	95	105	52	72	3197	4123
Percent	95%	96%	3%	3%	2%	2%	---	

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June 4, 2024
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West Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	EB	WB	EB	WB	EB	WB	EB	WB
12:00	117	147	4	4	1	2	122	153
12:15	146	141	6	3	1	4	153	148
12:30	133	145	6	2	1	4	140	151
12:45	159	143	6	2	1	3	166	148
	555	576	22	11	4	13	581	600
13:00	131	155	10	4	1	0	142	159
13:15	131	155	10	4	1	0	142	159
13:30	129	112	3	2	2	3	134	117
13:45	129	112	3	2	2	3	134	117
	520	534	26	12	6	6	552	552
14:00	152	124	5	6	1	1	158	131
14:15	147	144	3	10	4	3	154	157
14:30	147	144	3	10	4	3	154	157
14:45	161	133	2	4	0	1	163	138
	607	545	13	30	9	8	629	583
15:00	176	155	5	0	4	3	185	158
15:15	176	155	5	0	4	3	185	158
15:30	179	124	4	1	0	0	183	125
15:45	160	163	1	1	3	0	164	164
	691	597	15	2	11	6	717	605
16:00	195	150	8	2	1	2	204	154
16:15	185	171	6	0	0	3	191	174
16:30	189	163	0	2	1	1	190	166
16:45	206	188	3	5	1	1	210	194
	775	672	17	9	3	7	795	688
17:00	206	180	1	0	0	1	207	181
17:15	212	186	1	3	2	3	215	192
17:30	187	197	0	2	2	0	189	199
17:45	216	171	1	4	0	1	217	176
	821	734	3	9	4	5	828	748
18:00	217	176	0	0	0	1	217	177
18:15	186	165	1	2	0	0	187	167
18:30	141	153	2	0	0	0	143	153
18:45	161	142	0	0	2	1	163	143
	705	636	3	2	2	2	710	640
19:00	132	101	0	0	0	0	132	101
19:15	125	117	0	0	1	0	126	117
19:30	113	88	0	0	0	0	113	88
19:45	120	85	0	0	0	0	120	85
	490	391	0	0	1	0	491	391
20:00	117	79	0	0	0	1	117	80
20:15	111	76	1	0	0	1	112	77
20:30	85	74	0	0	0	0	85	74
20:45	83	66	0	0	1	1	84	67
	396	295	1	0	1	3	398	298
21:00	79	58	0	0	0	0	79	58
21:15	76	60	0	0	0	0	76	60
21:30	51	61	0	0	0	0	51	61
21:45	53	72	0	0	0	0	53	72
	259	251	0	0	0	0	259	251
22:00	43	34	0	0	0	0	43	34
22:15	49	26	1	0	0	0	50	26
22:30	34	36	1	0	0	0	35	36
22:45	31	22	0	0	0	0	31	22
	157	118	2	0	0	0	159	118
23:00	23	31	0	0	0	0	23	31
23:15	27	26	0	0	0	0	27	26
23:30	21	17	0	0	0	0	21	17
23:45	23	11	0	0	0	0	23	11
	94	85	0	0	0	0	94	85
Count Total	6070	5434	102	75	41	50	6213	5559
Percent	98%	98%	2%	1%	1%	1%	---	

RIVERDALE ROAD NEAR PROJECT SITE
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North Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	SB	NB	SB	NB	SB	NB	SB	NB
00:00	3	2	0	0	0	0	3	2
00:15	1	0	0	0	0	0	1	0
00:30	1	2	0	0	0	0	1	2
00:45	3	1	0	0	0	0	3	1
	8	5	0	0	0	0	8	5
01:00	0	1	0	0	0	0	0	1
01:15	0	0	0	0	0	0	0	0
01:30	2	0	0	0	0	0	2	0
01:45	0	2	0	0	0	0	0	2
	2	3	0	0	0	0	2	3
02:00	0	0	0	0	0	0	0	0
02:15	2	2	0	0	0	0	2	2
02:30	0	0	0	0	0	0	0	0
02:45	0	3	0	0	0	0	0	3
	2	5	0	0	0	0	2	5
03:00	3	0	0	0	0	0	3	0
03:15	1	1	0	0	0	0	1	1
03:30	2	1	0	0	0	0	2	1
03:45	1	0	0	0	0	0	1	0
	7	2	0	0	0	0	7	2
04:00	1	0	0	0	0	0	1	0
04:15	2	5	0	0	0	0	2	5
04:30	3	4	0	0	0	0	3	4
04:45	0	7	0	0	0	0	0	7
	6	16	0	0	0	0	6	16
05:00	1	4	0	0	0	0	1	4
05:15	3	10	0	0	0	0	3	10
05:30	13	10	0	0	0	0	13	10
05:45	21	18	0	0	0	0	21	18
	38	42	0	0	0	0	38	42
06:00	9	9	0	0	0	0	9	9
06:15	15	22	0	0	0	0	15	22
06:30	24	10	1	0	0	0	25	10
06:45	28	23	0	0	0	0	28	23
	76	64	1	0	0	0	77	64
07:00	26	13	0	0	0	0	26	13
07:15	33	14	1	0	0	0	34	14
07:30	28	20	0	0	0	0	28	20
07:45	21	23	0	1	0	0	21	24
	108	70	1	1	0	0	109	71
08:00	13	16	0	1	0	0	13	17
08:15	19	26	0	2	0	0	19	28
08:30	19	15	0	0	0	1	19	16
08:45	18	21	0	0	1	1	19	22
	69	78	0	3	1	2	70	83
09:00	21	19	0	0	0	0	21	19
09:15	17	15	1	0	0	0	18	15
09:30	16	18	0	0	0	0	16	18
09:45	17	12	0	0	1	0	18	12
	71	64	1	0	1	0	73	64
10:00	16	11	2	0	0	0	18	11
10:15	17	15	0	0	0	1	17	16
10:30	16	10	0	0	1	1	17	11
10:45	17	17	0	0	0	0	17	17
	66	53	2	0	1	2	69	55
11:00	18	21	0	0	0	0	18	21
11:15	12	15	0	0	0	0	12	15
11:30	15	17	0	1	0	0	15	18
11:45	17	27	0	0	0	1	17	28
	62	80	0	1	0	1	62	82
Count Total	515	482	5	5	3	5	523	492
Percent	98%	98%	1%	1%	1%	1%	---	

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North Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	SB	NB	SB	NB	SB	NB	SB	NB
12:00	17	19	1	0	1	0	19	19
12:15	10	21	0	1	0	0	10	22
12:30	16	20	1	0	0	0	17	20
12:45	21	16	0	0	0	0	21	16
	64	76	2	1	1	0	67	77
13:00	12	17	0	1	0	0	12	18
13:15	12	17	0	1	0	0	12	18
13:30	12	18	0	0	1	1	13	19
13:45	12	18	0	0	1	1	13	19
	48	70	0	2	2	2	50	74
14:00	16	24	0	0	0	0	16	24
14:15	14	22	0	1	0	0	14	23
14:30	14	22	0	1	0	0	14	23
14:45	15	21	0	1	0	0	15	22
	59	89	0	3	0	0	59	92
15:00	17	22	0	0	1	1	18	23
15:15	17	22	0	0	1	1	18	23
15:30	17	33	0	0	0	0	17	33
15:45	23	22	1	0	0	0	24	22
	74	99	1	0	2	2	77	101
16:00	26	27	0	2	1	0	27	29
16:15	31	38	0	0	0	0	31	38
16:30	34	41	0	1	0	0	34	42
16:45	27	38	0	0	0	1	27	39
	118	144	0	3	1	1	119	148
17:00	36	33	0	0	0	0	36	33
17:15	32	28	0	0	0	0	32	28
17:30	35	32	0	2	0	0	35	34
17:45	29	34	0	2	0	0	29	36
	132	127	0	4	0	0	132	131
18:00	32	33	0	0	0	0	32	33
18:15	33	30	0	3	0	0	33	33
18:30	25	29	0	0	0	0	25	29
18:45	26	22	0	1	0	0	26	23
	116	114	0	4	0	0	116	118
19:00	23	39	0	0	0	0	23	39
19:15	27	14	0	0	0	0	27	14
19:30	15	15	0	0	0	0	15	15
19:45	22	31	0	0	0	0	22	31
	87	99	0	0	0	0	87	99
20:00	18	14	0	0	0	0	18	14
20:15	21	16	0	0	0	0	21	16
20:30	13	18	0	0	0	0	13	18
20:45	12	16	0	0	0	0	12	16
	64	64	0	0	0	0	64	64
21:00	17	20	0	0	0	0	17	20
21:15	9	16	0	0	0	0	9	16
21:30	14	12	0	0	0	0	14	12
21:45	8	9	0	0	0	0	8	9
	48	57	0	0	0	0	48	57
22:00	7	6	0	0	0	0	7	6
22:15	7	5	0	0	0	0	7	5
22:30	4	7	0	0	0	0	4	7
22:45	1	1	0	0	0	0	1	1
	19	19	0	0	0	0	19	19
23:00	3	4	0	0	0	0	3	4
23:15	2	10	0	0	0	0	2	10
23:30	3	0	0	0	0	0	3	0
23:45	3	4	0	0	0	0	3	4
	11	18	0	0	0	0	11	18
Count Total	840	976	3	17	6	5	849	998
Percent	99%	98%	0%	2%	1%	1%	---	

Appendix D

VISTRO Analysis Results

Year 2024 Traffic Volumes

Riverdale RV Park TIS

Vistro File: C:\...\AM.vistro
Report File: C:\...\2024 AM.pdf

Scenario 1 2024 AM
7/12/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Two-way stop	HCM 7th Edition	SB Left	0.017	66.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Two-way stop	Delay (sec / veh):	66.3
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	3	0	77	1	0	0	0	528	18	85	626	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	0	77	1	0	0	0	528	18	85	626	1
Peak Hour Factor	0.8700	0.8700	0.8700	0.8500	0.8500	0.8500	0.8600	0.8600	0.8600	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	22	0	0	0	0	153	5	26	189	0
Total Analysis Volume [veh/h]	3	0	89	1	0	0	0	614	21	102	754	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.18	0.02	0.00	0.00	0.00	0.01	0.00	0.11	0.01	0.00
d_M, Delay for Movement [s/veh]	51.94	43.42	13.93	66.30	43.76	14.83	9.23	0.00	0.00	9.28	0.00	0.00
Movement LOS	F	E	B	F	E	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.65	0.05	0.05	0.05	0.00	0.00	0.00	0.36	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.90	2.90	16.36	1.27	1.27	1.27	0.00	0.00	0.00	9.06	0.00	0.00
d_A, Approach Delay [s/veh]	15.17			66.30			0.00			1.10		
Approach LOS	C			F			A			A		
d_I, Intersection Delay [s/veh]	1.52											
Intersection LOS	F											

Riverdale RV Park TIS

Vistro File: C:\...\PM.vistro
Report File: C:\...\2024 PM.pdf

Scenario 1 1 2024 PM
7/12/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Two-way stop	HCM 7th Edition	NB Left	0.154	98.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Two-way stop	Delay (sec / veh):	98.3
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.154

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	6	0	136	0	0	0	0	806	15	121	760	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	0	136	0	0	0	0	806	15	121	760	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.9500	0.9500	0.9500	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	40	0	0	0	0	212	4	31	196	0
Total Analysis Volume [veh/h]	7	0	160	0	0	0	0	848	16	125	784	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.00	0.44	0.00	0.00	0.00	0.00	0.01	0.00	0.16	0.01	0.00
d_M, Delay for Movement [s/veh]	98.33	79.49	22.65	169.48	66.92	14.16	9.34	0.00	0.00	10.54	0.00	0.00
Movement LOS	F	F	C	F	F	B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.50	0.50	2.19	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00
95th-Percentile Queue Length [ft/ln]	12.40	12.40	54.84	0.00	0.00	0.00	0.00	0.00	0.00	14.33	0.00	0.00
d_A, Approach Delay [s/veh]	25.82			83.52			0.00			1.45		
Approach LOS	D			F			A			A		
d_I, Intersection Delay [s/veh]	2.90											
Intersection LOS	F											

Year 2030 Traffic Volume Scenarios

Riverdale RV Park TIS

Vistro File: C:\...\AM 7-19-24.vistro
Report File: C:\...\2030 Back AM.pdf

Scenario 3 2030 Back AM
7/19/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	SB Left	0.455	3.7	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	3.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.455

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	3	0	77	1	0	0	0	528	18	85	626	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1500	1.1500	1.1500	1.0000	1.0000	1.0000	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	89	0	0	0	0	0	10	0	0	1
Total Hourly Volume [veh/h]	3	0	0	1	0	0	0	586	10	94	695	0
Peak Hour Factor	0.8700	0.8700	0.8700	0.8500	0.8500	0.8500	0.8600	0.8600	0.8600	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	0	0	0	0	170	3	28	209	0
Total Analysis Volume [veh/h]	3	0	0	1	0	0	0	681	12	113	837	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	15	0	0	15	0	0	60	0	20	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	10	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	82	82	82	82	82	82	82
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	1	1	1	60	60	73	73
g / C, Green / Cycle	0.01	0.01	0.01	0.73	0.73	0.89	0.89
(v / s)_i Volume / Saturation Flow Rate	0.00	0.00	0.00	0.37	0.01	0.13	0.45
s, saturation flow rate [veh/h]	1711	1589	265	1855	1577	903	1855
c, Capacity [veh/h]	104	15	90	1399	1152	811	1657
d1, Uniform Delay [s]	40.36	0.00	40.95	4.71	3.01	1.89	0.86
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.11	0.00	0.05	1.21	0.02	0.08	1.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.00	0.01	0.49	0.01	0.14	0.51
d, Delay for Lane Group [s/veh]	40.47	0.00	41.00	5.93	3.02	1.97	1.96
Lane Group LOS	D	A	D	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.06	0.00	0.02	3.95	0.04	0.02	0.51
50th-Percentile Queue Length [ft/ln]	1.56	0.00	0.53	98.74	1.11	0.44	12.70
95th-Percentile Queue Length [veh/ln]	0.11	0.00	0.04	7.11	0.08	0.03	0.91
95th-Percentile Queue Length [ft/ln]	2.81	0.00	0.95	177.74	2.00	0.79	22.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.47	40.47	0.00	41.00	41.00	41.00	5.93	5.93	3.02	1.97	1.96	1.96
Movement LOS	D	D	A	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	40.47			41.00			5.88			1.96		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	3.70											
Intersection LOS	A											
Intersection V/C	0.455											

Emissions

Vehicle Miles Traveled [mph]	5.09	0.00	0.03	21.55	0.38	3.41	25.27
Stops [stops/h]	2.74	0.00	0.93	173.36	1.95	0.77	22.30
Fuel consumption [US gal/h]	0.25	0.00	0.01	2.67	0.03	0.19	1.50
CO [g/h]	17.43	0.00	1.03	186.38	2.36	13.28	104.65
NOx [g/h]	3.39	0.00	0.20	36.26	0.46	2.58	20.36
VOC [g/h]	4.04	0.00	0.24	43.19	0.55	3.08	24.25

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	366	366	1463	1463
d_b, Bicycle Delay [s]	27.38	27.38	2.96	2.96
l_b,int, Bicycle LOS Score for Intersection	1.711	1.561	2.720	3.129
Bicycle LOS	A	A	B	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Riverdale RV Park TIS

Vistro File: C:\...\PM 7-19-24.vistro
Report File: C:\...\2030 Back PM.pdf

Scenario 3 3 2030 Back PM
7/19/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	NB Left	0.474	4.8	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	4.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.474

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	6	0	136	0	0	0	0	806	15	121	760	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1500	1.1500	1.1500	1.0000	1.0000	1.0000	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	156	0	0	0	0	0	9	0	0	0
Total Hourly Volume [veh/h]	7	0	0	0	0	0	0	895	8	134	844	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.9500	0.9500	0.9500	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	0	0	0	0	0	236	2	35	218	0
Total Analysis Volume [veh/h]	8	0	0	0	0	0	0	942	8	138	870	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	20	0	0	20	0	0	60	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	5	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	78	78	78	78	78	78	78
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2	2	2	60	60	69	69
g / C, Green / Cycle	0.02	0.02	0.02	0.76	0.76	0.88	0.88
(v / s)_i Volume / Saturation Flow Rate	0.00	0.00	0.00	0.51	0.01	0.20	0.47
s, saturation flow rate [veh/h]	1710	1589	297	1855	1577	703	1855
c, Capacity [veh/h]	130	36	52	1461	1203	595	1624
d1, Uniform Delay [s]	37.73	0.00	0.00	4.48	2.22	4.36	1.14
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.43	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	0.00	0.00	2.20	0.01	0.78	1.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.06	0.00	0.00	0.64	0.01	0.23	0.54
d, Delay for Lane Group [s/veh]	37.93	0.00	0.00	6.69	2.23	5.13	2.41
Lane Group LOS	D	A	A	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.16	0.00	0.00	5.21	0.02	0.13	0.57
50th-Percentile Queue Length [ft/ln]	3.88	0.00	0.00	130.17	0.54	3.22	14.33
95th-Percentile Queue Length [veh/ln]	0.28	0.00	0.00	8.95	0.04	0.23	1.03
95th-Percentile Queue Length [ft/ln]	6.99	0.00	0.00	223.73	0.97	5.79	25.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.93	37.93	0.00	0.00	0.00	0.00	6.69	6.69	2.23	5.13	2.41	2.41
Movement LOS	D	D	A	A	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.93			0.00			6.65			2.79		
Approach LOS	D			A			A			A		
d_I, Intersection Delay [s/veh]	4.80											
Intersection LOS	A											
Intersection V/C	0.474											

Emissions

Vehicle Miles Traveled [mph]	13.57	0.00	0.00	29.81	0.25	4.17	26.26
Stops [stops/h]	7.12	0.00	0.00	238.81	0.98	5.90	26.29
Fuel consumption [US gal/h]	0.66	0.00	0.00	3.83	0.02	0.35	1.65
CO [g/h]	46.11	0.00	0.00	267.63	1.36	24.35	115.60
NOx [g/h]	8.97	0.00	0.00	52.07	0.27	4.74	22.49
VOC [g/h]	10.69	0.00	0.00	62.03	0.32	5.64	26.79

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	510	510	1529	1529
d_b, Bicycle Delay [s]	21.79	21.79	2.18	2.18
l_b,int, Bicycle LOS Score for Intersection	1.830	1.560	3.142	3.223
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Riverdale RV Park TIS

Vistro File: C:\...\AM 7-19-24.vistro
Report File: C:\...\2030 Back AM.pdf

Scenario 2 2030 Total AM
7/19/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	SB Left	0.457	4.0	A
2	North Site Access	Two-way stop	HCM 7th Edition	WB Left	0.003	10.0	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	4.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.457

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	3	0	77	1	0	0	0	528	18	85	626	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1500	1.1500	1.1500	1.0000	1.0000	1.0000	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	4	0	0	0	0	0	1	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	93	0	0	0	0	0	11	0	0	1
Total Hourly Volume [veh/h]	5	0	0	1	0	0	0	586	10	97	695	0
Peak Hour Factor	0.8700	0.8700	0.8700	0.8500	0.8500	0.8500	0.8600	0.8600	0.8600	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	0	0	0	0	170	3	29	209	0
Total Analysis Volume [veh/h]	6	0	0	1	0	0	0	681	12	117	837	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	15	0	0	15	0	0	60	0	20	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	10	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	83	83	83	83	83	83	83
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	1	1	1	60	60	73	73
g / C, Green / Cycle	0.02	0.02	0.02	0.73	0.73	0.89	0.89
(v / s)_i Volume / Saturation Flow Rate	0.00	0.00	0.01	0.37	0.01	0.13	0.45
s, saturation flow rate [veh/h]	1733	1589	177	1855	1577	904	1855
c, Capacity [veh/h]	116	27	90	1387	1142	802	1644
d1, Uniform Delay [s]	40.16	0.00	41.27	4.98	3.17	2.04	0.97
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	0.00	0.05	1.25	0.02	0.08	1.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.00	0.01	0.49	0.01	0.15	0.51
d, Delay for Lane Group [s/veh]	40.34	0.00	41.32	6.22	3.19	2.12	2.10
Lane Group LOS	D	A	D	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.12	0.00	0.02	4.17	0.05	0.02	0.52
50th-Percentile Queue Length [ft/ln]	3.11	0.00	0.53	104.25	1.17	0.46	12.90
95th-Percentile Queue Length [veh/ln]	0.22	0.00	0.04	7.51	0.08	0.03	0.93
95th-Percentile Queue Length [ft/ln]	5.61	0.00	0.96	187.65	2.11	0.83	23.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.34	40.34	0.00	41.32	41.32	41.32	6.22	6.22	3.19	2.12	2.10	2.10
Movement LOS	D	D	A	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	40.34			41.32			6.17			2.11		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	3.97											
Intersection LOS	A											
Intersection V/C	0.457											

Emissions

Vehicle Miles Traveled [mph]	10.18	0.00	0.03	21.55	0.38	3.53	25.27
Stops [stops/h]	5.42	0.00	0.93	181.46	2.04	0.80	22.45
Fuel consumption [US gal/h]	0.50	0.00	0.01	2.75	0.03	0.20	1.52
CO [g/h]	34.82	0.00	1.03	192.36	2.42	14.01	106.43
NOx [g/h]	6.77	0.00	0.20	37.43	0.47	2.73	20.71
VOC [g/h]	8.07	0.00	0.24	44.58	0.56	3.25	24.67

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	363	363	1451	1451
d_b, Bicycle Delay [s]	27.72	27.72	3.12	3.12
l_b,int, Bicycle LOS Score for Intersection	1.723	1.561	2.721	3.135
Bicycle LOS	A	A	B	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: North Site Access

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Riverdale Road		Riverdale Road		North Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		North Site Access	
Base Volume Input [veh/h]	80	0	0	103	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1500	1.0000	1.0000	1.1500	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	4	0	2	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	2	4	118	2	6
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	1	1	35	1	2
Total Analysis Volume [veh/h]	108	2	5	139	2	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.44	0.00	9.99	8.85
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.21	0.21	0.77	0.77
d_A, Approach Delay [s/veh]	0.00		0.26		9.10	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.45					
Intersection LOS	A					

Riverdale RV Park TIS

Vistro File: C:\...\PM 7-19-24.vistro
Report File: C:\...\2030 Total PM.pdf

Scenario 2 2 2030 Total PM
7/19/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	NB Left	0.474	4.9	A
2	North Site Access	Two-way stop	HCM 7th Edition	WB Left	0.003	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	4.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.474

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	6	0	136	0	0	0	0	806	15	121	760	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1500	1.1500	1.1500	1.0000	1.0000	1.0000	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	3	0	0	0	0	0	2	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	159	0	0	0	0	0	10	0	0	0
Total Hourly Volume [veh/h]	8	0	0	0	0	0	0	895	9	140	844	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.9500	0.9500	0.9500	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	0	0	0	0	0	236	2	36	218	0
Total Analysis Volume [veh/h]	9	0	0	0	0	0	0	942	9	144	870	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	20	0	0	20	0	0	60	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	5	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	79	79	79	79	79	79	79
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2	2	2	60	60	69	69
g / C, Green / Cycle	0.02	0.02	0.02	0.76	0.76	0.87	0.87
(v / s)_i Volume / Saturation Flow Rate	0.01	0.00	0.00	0.51	0.01	0.20	0.47
s, saturation flow rate [veh/h]	1702	1589	292	1855	1577	703	1855
c, Capacity [veh/h]	134	40	53	1457	1200	592	1621
d1, Uniform Delay [s]	37.68	0.00	0.00	4.58	2.27	4.50	1.19
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.46	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	0.00	0.00	2.23	0.01	0.90	1.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.00	0.00	0.65	0.01	0.24	0.54
d, Delay for Lane Group [s/veh]	37.89	0.00	0.00	6.81	2.28	5.40	2.46
Lane Group LOS	D	A	A	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.17	0.00	0.00	5.33	0.02	0.15	0.58
50th-Percentile Queue Length [ft/ln]	4.37	0.00	0.00	133.25	0.62	3.69	14.40
95th-Percentile Queue Length [veh/ln]	0.31	0.00	0.00	9.12	0.04	0.27	1.04
95th-Percentile Queue Length [ft/ln]	7.86	0.00	0.00	227.91	1.11	6.64	25.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.89	37.89	0.00	0.00	0.00	0.00	6.81	6.81	2.28	5.40	2.46	2.46
Movement LOS	D	D	A	A	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.89			0.00			6.76			2.88		
Approach LOS	D			A			A			A		
d_I, Intersection Delay [s/veh]	4.91											
Intersection LOS	A											
Intersection V/C	0.474											

Emissions

Vehicle Miles Traveled [mph]	15.26	0.00	0.00	29.81	0.28	4.35	26.26
Stops [stops/h]	7.99	0.00	0.00	243.78	1.13	6.75	26.34
Fuel consumption [US gal/h]	0.74	0.00	0.00	3.88	0.02	0.37	1.66
CO [g/h]	51.86	0.00	0.00	271.11	1.55	26.17	116.24
NOx [g/h]	10.09	0.00	0.00	52.75	0.30	5.09	22.62
VOC [g/h]	12.02	0.00	0.00	62.83	0.36	6.07	26.94

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	508	508	1525	1525
d_b, Bicycle Delay [s]	21.90	21.90	2.22	2.22
l_b,int, Bicycle LOS Score for Intersection	1.837	1.560	3.145	3.233
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: North Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Riverdale Road		Riverdale Road		North Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		North Site Access	
Base Volume Input [veh/h]	142	0	0	136	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1500	1.0000	1.0000	1.1500	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	8	0	2	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	163	3	8	156	2	4
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	1	2	46	1	1
Total Analysis Volume [veh/h]	192	4	9	184	2	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.62	0.00	11.00	9.29
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.38	0.38	0.70	0.70
d_A, Approach Delay [s/veh]	0.00		0.36		9.78	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.35					
Intersection LOS	B					

Year 2032 Traffic Volume Scenarios

Riverdale RV Park TIS

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Scenario 5 5 2032 Back AM
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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	SB Left	0.473	4.2	A
2	North Site Access	Two-way stop	HCM 7th Edition	WB Left	0.003	10.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	4.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.473

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	3	0	77	1	0	0	0	528	18	85	626	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.2000	1.2000	1.2000	1.0000	1.0000	1.0000	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	4	0	0	0	0	0	1	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	96	0	0	0	0	0	11	0	0	1
Total Hourly Volume [veh/h]	6	0	0	1	0	0	0	607	11	101	720	0
Peak Hour Factor	0.8700	0.8700	0.8700	0.8500	0.8500	0.8500	0.8600	0.8600	0.8600	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	0	0	0	0	0	176	3	30	217	0
Total Analysis Volume [veh/h]	7	0	0	1	0	0	0	706	13	122	867	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	15	0	0	15	0	0	60	0	20	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	10	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	83	83	83	83	83	83	83
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2	2	2	60	60	73	73
g / C, Green / Cycle	0.02	0.02	0.02	0.72	0.72	0.88	0.88
(v / s)_i Volume / Saturation Flow Rate	0.00	0.00	0.01	0.38	0.01	0.14	0.47
s, saturation flow rate [veh/h]	1736	1589	167	1855	1577	890	1855
c, Capacity [veh/h]	120	31	90	1382	1138	782	1640
d1, Uniform Delay [s]	40.12	0.00	41.40	5.19	3.24	2.29	1.04
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.12	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	0.00	0.05	1.35	0.02	0.10	1.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.06	0.00	0.01	0.51	0.01	0.16	0.53
d, Delay for Lane Group [s/veh]	40.32	0.00	41.45	6.54	3.26	2.39	2.27
Lane Group LOS	D	A	D	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.15	0.00	0.02	4.52	0.05	0.02	0.56
50th-Percentile Queue Length [ft/ln]	3.64	0.00	0.53	112.92	1.29	0.56	13.93
95th-Percentile Queue Length [veh/ln]	0.26	0.00	0.04	8.00	0.09	0.04	1.00
95th-Percentile Queue Length [ft/ln]	6.54	0.00	0.96	200.05	2.33	1.02	25.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.32	40.32	0.00	41.45	41.45	41.45	6.54	6.54	3.26	2.39	2.27	2.27
Movement LOS	D	D	A	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	40.32			41.45			6.49			2.28		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	4.22											
Intersection LOS	A											
Intersection V/C	0.473											

Emissions

Vehicle Miles Traveled [mph]	11.87	0.00	0.03	22.34	0.41	3.68	26.17
Stops [stops/h]	6.31	0.00	0.93	195.88	2.24	0.98	24.17
Fuel consumption [US gal/h]	0.58	0.00	0.01	2.94	0.04	0.22	1.61
CO [g/h]	40.61	0.00	1.03	205.66	2.65	15.13	112.61
NOx [g/h]	7.90	0.00	0.20	40.01	0.52	2.94	21.91
VOC [g/h]	9.41	0.00	0.24	47.66	0.62	3.51	26.10

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	361	361	1446	1446
d_b, Bicycle Delay [s]	27.86	27.86	3.19	3.19
l_b,int, Bicycle LOS Score for Intersection	1.730	1.561	2.764	3.193
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: North Site Access

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Riverdale Road		Riverdale Road		North Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		North Site Access	
Base Volume Input [veh/h]	80	0	0	103	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2000	1.0000	1.0000	1.2000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	4	0	2	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	2	4	124	2	6
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	1	1	36	1	2
Total Analysis Volume [veh/h]	113	2	5	146	2	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.45	0.00	10.07	8.88
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.21	0.21	0.78	0.78
d_A, Approach Delay [s/veh]	0.00		0.25		9.14	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	B					

Riverdale RV Park TIS

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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	NB Left	0.491	5.2	A
2	North Site Access	Two-way stop	HCM 7th Edition	WB Left	0.003	11.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	5.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	6	0	136	0	0	0	0	806	15	121	760	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.2000	1.2000	1.2000	1.0000	1.0000	1.0000	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	3	0	0	0	0	0	2	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	166	0	0	0	0	0	10	0	0	0
Total Hourly Volume [veh/h]	8	0	0	0	0	0	0	927	9	145	874	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.9500	0.9500	0.9500	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	0	0	0	0	0	244	2	37	225	0
Total Analysis Volume [veh/h]	9	0	0	0	0	0	0	976	9	149	901	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	20	0	0	20	0	0	60	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	5	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	79	79	79	79	79	79	79
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2	2	2	60	60	69	69
g / C, Green / Cycle	0.02	0.02	0.02	0.76	0.76	0.87	0.87
(v / s)_i Volume / Saturation Flow Rate	0.01	0.00	0.00	0.53	0.01	0.22	0.49
s, saturation flow rate [veh/h]	1702	1589	292	1855	1577	687	1855
c, Capacity [veh/h]	134	40	53	1457	1199	572	1621
d1, Uniform Delay [s]	37.69	0.00	0.00	4.77	2.27	5.21	1.22
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	0.00	0.00	2.47	0.01	1.11	1.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.00	0.00	0.67	0.01	0.26	0.56
d, Delay for Lane Group [s/veh]	37.90	0.00	0.00	7.23	2.28	6.31	2.60
Lane Group LOS	D	A	A	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.17	0.00	0.00	5.78	0.02	0.18	0.62
50th-Percentile Queue Length [ft/ln]	4.37	0.00	0.00	144.44	0.62	4.39	15.54
95th-Percentile Queue Length [veh/ln]	0.31	0.00	0.00	9.72	0.04	0.32	1.12
95th-Percentile Queue Length [ft/ln]	7.87	0.00	0.00	242.99	1.12	7.91	27.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.90	37.90	0.00	0.00	0.00	0.00	7.23	7.23	2.28	6.31	2.60	2.60
Movement LOS	D	D	A	A	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.90			0.00			7.19			3.13		
Approach LOS	D			A			A			A		
d_I, Intersection Delay [s/veh]	5.24											
Intersection LOS	A											
Intersection V/C	0.491											

Emissions

Vehicle Miles Traveled [mph]	15.26	0.00	0.00	30.88	0.28	4.50	27.20
Stops [stops/h]	7.99	0.00	0.00	264.16	1.13	8.03	28.42
Fuel consumption [US gal/h]	0.74	0.00	0.00	4.17	0.02	0.42	1.75
CO [g/h]	51.86	0.00	0.00	291.30	1.55	29.42	122.62
NOx [g/h]	10.09	0.00	0.00	56.68	0.30	5.72	23.86
VOC [g/h]	12.02	0.00	0.00	67.51	0.36	6.82	28.42

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	508	508	1524	1524
d_b, Bicycle Delay [s]	21.91	21.91	2.23	2.23
l_b,int, Bicycle LOS Score for Intersection	1.848	1.560	3.201	3.292
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: North Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Riverdale Road		Riverdale Road		North Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		North Site Access	
Base Volume Input [veh/h]	142	0	0	136	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2000	1.0000	1.0000	1.2000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	8	0	2	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	3	8	163	2	4
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	1	2	48	1	1
Total Analysis Volume [veh/h]	200	4	9	192	2	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.64	0.00	11.13	9.34
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.38	0.38	0.71	0.71
d_A, Approach Delay [s/veh]	0.00		0.34		9.85	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	B					

Riverdale RV Park TIS

Vistro File: C:\...\AM 7-19-24.vistro
Report File: C:\...\2032 Total AM.pdf

Scenario 4 2032 Total AM
7/19/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	SB Left	0.473	4.5	A
2	North Site Access	Two-way stop	HCM 7th Edition	WB Left	0.009	10.3	B
3	South Site Access	Two-way stop	HCM 7th Edition	WB Left	0.006	10.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	4.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.473

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	3	0	77	1	0	0	0	528	18	85	626	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.2000	1.2000	1.2000	1.0000	1.0000	1.0000	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	12	0	0	0	0	0	3	7	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	104	0	0	0	0	0	12	0	0	1
Total Hourly Volume [veh/h]	9	0	0	1	0	0	0	607	12	105	720	0
Peak Hour Factor	0.8700	0.8700	0.8700	0.8500	0.8500	0.8500	0.8600	0.8600	0.8600	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	0	0	0	0	0	176	3	32	217	0
Total Analysis Volume [veh/h]	10	0	0	1	0	0	0	706	14	127	867	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	15	0	0	15	0	0	60	0	20	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	10	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	84	84	84	84	84	84	84
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2	2	2	60	60	74	74
g / C, Green / Cycle	0.03	0.03	0.03	0.72	0.72	0.88	0.88
(v / s)_i Volume / Saturation Flow Rate	0.01	0.00	0.01	0.38	0.01	0.14	0.47
s, saturation flow rate [veh/h]	1738	1589	164	1855	1577	890	1855
c, Capacity [veh/h]	132	42	90	1371	1129	774	1629
d1, Uniform Delay [s]	39.94	0.00	41.67	5.45	3.41	2.45	1.17
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.14	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.00	0.05	1.38	0.02	0.13	1.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.00	0.01	0.51	0.01	0.16	0.53
d, Delay for Lane Group [s/veh]	40.19	0.00	41.71	6.83	3.43	2.58	2.42
Lane Group LOS	D	A	D	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.21	0.00	0.02	4.73	0.06	0.03	0.57
50th-Percentile Queue Length [ft/ln]	5.19	0.00	0.54	118.35	1.46	0.70	14.14
95th-Percentile Queue Length [veh/ln]	0.37	0.00	0.04	8.30	0.11	0.05	1.02
95th-Percentile Queue Length [ft/ln]	9.34	0.00	0.97	207.56	2.63	1.25	25.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.19	40.19	0.00	41.71	41.71	41.71	6.83	6.83	3.43	2.58	2.42	2.42
Movement LOS	D	D	A	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	40.19			41.71			6.77			2.44		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	4.49											
Intersection LOS	A											
Intersection V/C	0.473											

Emissions

Vehicle Miles Traveled [mph]	16.96	0.00	0.03	22.34	0.44	3.83	26.17
Stops [stops/h]	8.93	0.00	0.93	203.69	2.51	1.20	24.33
Fuel consumption [US gal/h]	0.83	0.00	0.01	3.03	0.04	0.23	1.64
CO [g/h]	57.97	0.00	1.04	211.59	2.93	16.15	114.50
NOx [g/h]	11.28	0.00	0.20	41.17	0.57	3.14	22.28
VOC [g/h]	13.43	0.00	0.24	49.04	0.68	3.74	26.54

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	359	359	1434	1434
d_b, Bicycle Delay [s]	28.18	28.18	3.35	3.35
l_b,int, Bicycle LOS Score for Intersection	1.748	1.561	2.767	3.201
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: North Site Access

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Riverdale Road		Riverdale Road		North Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		North Site Access	
Base Volume Input [veh/h]	80	0	0	103	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2000	1.0000	1.0000	1.2000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	4	7	3	5	12
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	4	7	127	5	12
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	1	2	37	1	4
Total Analysis Volume [veh/h]	120	5	8	149	6	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.01	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.47	0.00	10.26	8.98
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.33	0.33	1.82	1.82
d_A, Approach Delay [s/veh]	0.00		0.38		9.36	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.82					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: South Site Access

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Riverdale Road		Riverdale Road		South Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		South Site Access	
Base Volume Input [veh/h]	80	0	0	103	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2000	1.0000	1.0000	1.2000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	2	3	5	3	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	2	3	129	3	6
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	1	1	38	1	2
Total Analysis Volume [veh/h]	118	2	4	152	4	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.46	0.00	10.14	8.92
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.17	0.17	1.00	1.00
d_A, Approach Delay [s/veh]	0.00		0.19		9.36	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	B					

Riverdale RV Park TIS

Vistro File: C:\...\PM 7-19-24.vistro
Report File: C:\...\2032 Total PM.pdf

Scenario 4 4 2032 Total PM
7/19/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	NB Left	0.493	5.6	A
2	North Site Access	Two-way stop	HCM 7th Edition	WB Left	0.009	11.5	B
3	South Site Access	Two-way stop	HCM 7th Edition	WB Left	0.003	11.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	5.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.493

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	6	0	136	0	0	0	0	806	15	121	760	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.2000	1.2000	1.2000	1.0000	1.0000	1.0000	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	9	0	0	0	0	0	6	16	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	172	0	0	0	0	0	12	0	0	0
Total Hourly Volume [veh/h]	10	0	0	0	0	0	0	927	11	155	874	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.9500	0.9500	0.9500	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	0	0	0	0	0	244	3	40	225	0
Total Analysis Volume [veh/h]	12	0	0	0	0	0	0	976	12	160	901	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	20	0	0	20	0	0	60	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	5	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	79	79	79	79	79	79	79
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2	2	2	60	60	69	69
g / C, Green / Cycle	0.03	0.03	0.03	0.76	0.76	0.87	0.87
(v / s)_i Volume / Saturation Flow Rate	0.01	0.00	0.00	0.53	0.01	0.23	0.49
s, saturation flow rate [veh/h]	1644	1589	703	1855	1577	686	1855
c, Capacity [veh/h]	142	50	67	1446	1191	563	1610
d1, Uniform Delay [s]	37.52	0.00	0.00	5.03	2.40	5.64	1.35
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.25	0.00	0.00	2.54	0.02	1.26	1.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.00	0.00	0.67	0.01	0.28	0.56
d, Delay for Lane Group [s/veh]	37.77	0.00	0.00	7.57	2.42	6.90	2.76
Lane Group LOS	D	A	A	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.23	0.00	0.00	6.13	0.04	0.20	0.65
50th-Percentile Queue Length [ft/ln]	5.83	0.00	0.00	153.34	0.88	4.98	16.16
95th-Percentile Queue Length [veh/ln]	0.42	0.00	0.00	10.20	0.06	0.36	1.16
95th-Percentile Queue Length [ft/ln]	10.49	0.00	0.00	254.88	1.58	8.97	29.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.77	37.77	0.00	0.00	0.00	0.00	7.57	7.57	2.42	6.90	2.76	2.76
Movement LOS	D	D	A	A	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.77			0.00			7.51			3.39		
Approach LOS	D			A			A			A		
d_I, Intersection Delay [s/veh]	5.56											
Intersection LOS	A											
Intersection V/C	0.493											

Emissions

Vehicle Miles Traveled [mph]	20.35	0.00	0.00	30.88	0.38	4.83	27.20
Stops [stops/h]	10.58	0.00	0.00	278.38	1.59	9.04	29.34
Fuel consumption [US gal/h]	0.99	0.00	0.00	4.31	0.03	0.47	1.79
CO [g/h]	69.10	0.00	0.00	301.46	2.12	33.09	124.98
NOx [g/h]	13.44	0.00	0.00	58.65	0.41	6.44	24.32
VOC [g/h]	16.01	0.00	0.00	69.87	0.49	7.67	28.96

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	504	504	1513	1513
d_b, Bicycle Delay [s]	22.18	22.18	2.35	2.35
l_b,int, Bicycle LOS Score for Intersection	1.863	1.560	3.210	3.310
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: North Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Riverdale Road		Riverdale Road		North Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		North Site Access	
Base Volume Input [veh/h]	142	0	0	136	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2000	1.0000	1.0000	1.2000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	6	15	7	4	8
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	174	6	15	170	4	8
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	2	4	50	1	2
Total Analysis Volume [veh/h]	205	7	18	200	5	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.67	0.00	11.50	9.43
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.03	0.06	0.06
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.76	0.76	1.51	1.51
d_A, Approach Delay [s/veh]	0.00		0.63		10.17	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.63					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: South Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Riverdale Road		Riverdale Road		South Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		South Site Access	
Base Volume Input [veh/h]	142	0	0	136	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2000	1.0000	1.0000	1.2000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	3	7	4	2	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	176	3	7	167	2	4
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	1	2	49	1	1
Total Analysis Volume [veh/h]	207	4	8	196	2	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.66	0.00	11.20	9.38
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.33	0.33	0.71	0.71
d_A, Approach Delay [s/veh]	0.00		0.30		9.90	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.31					
Intersection LOS	B					

Year 2045 Traffic Volume Scenarios

Riverdale RV Park TIS

Vistro File: C:\...\AM 7-19-24.vistro
Report File: C:\...\2045 Back AM.pdf

Scenario 7 2045 Back AM
7/19/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	SB Left	0.540	6.4	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.540

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	3	0	77	1	0	0	0	528	18	85	626	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.6300	1.6300	1.6300	1.0000	1.0000	1.0000	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	126	0	0	0	0	0	13	0	0	1
Total Hourly Volume [veh/h]	5	0	0	1	0	0	0	771	13	124	914	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	0	0	0	0	210	4	34	248	0
Total Analysis Volume [veh/h]	5	0	0	1	0	0	0	838	14	135	993	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	15	0	0	15	0	0	60	0	20	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	10	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	83	83	83	83	83	83	83
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	1	1	1	60	60	74	74
g / C, Green / Cycle	0.01	0.01	0.01	0.73	0.73	0.89	0.89
(v / s)_i Volume / Saturation Flow Rate	0.00	0.00	0.01	0.45	0.01	0.16	0.54
s, saturation flow rate [veh/h]	1728	1589	196	1855	1577	820	1855
c, Capacity [veh/h]	112	23	90	1387	1142	410	1649
d1, Uniform Delay [s]	40.34	0.00	41.29	5.75	3.18	23.27	1.10
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.20	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	0.00	0.05	1.96	0.02	0.87	1.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.00	0.01	0.60	0.01	0.33	0.60
d, Delay for Lane Group [s/veh]	40.50	0.00	41.34	7.71	3.20	24.14	2.74
Lane Group LOS	D	A	D	A	A	C	A
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.10	0.00	0.02	6.01	0.05	0.10	0.75
50th-Percentile Queue Length [ft/ln]	2.61	0.00	0.53	150.18	1.37	2.48	18.76
95th-Percentile Queue Length [veh/ln]	0.19	0.00	0.04	10.03	0.10	0.18	1.35
95th-Percentile Queue Length [ft/ln]	4.69	0.00	0.96	250.66	2.46	4.46	33.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.50	40.50	0.00	41.34	41.34	41.34	7.71	7.71	3.20	24.14	2.74	2.74
Movement LOS	D	D	A	D	D	D	A	A	A	C	A	A
d_A, Approach Delay [s/veh]	40.50			41.34			7.64			5.30		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	6.41											
Intersection LOS	A											
Intersection V/C	0.540											

Emissions

Vehicle Miles Traveled [mph]	8.48	0.00	0.03	26.51	0.44	4.08	29.98
Stops [stops/h]	4.53	0.00	0.93	261.33	2.38	4.31	32.64
Fuel consumption [US gal/h]	0.42	0.00	0.01	3.85	0.04	0.85	1.97
CO [g/h]	29.03	0.00	1.03	269.19	2.83	59.73	137.56
NOx [g/h]	5.65	0.00	0.20	52.38	0.55	11.62	26.76
VOC [g/h]	6.73	0.00	0.24	62.39	0.66	13.84	31.88

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	363	363	1450	1450
d_b, Bicycle Delay [s]	27.74	27.74	3.13	3.13
l_b,int, Bicycle LOS Score for Intersection	1.776	1.561	2.987	3.422
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Riverdale RV Park TIS

Vistro File: C:\...\PM 7-19-24.vistro
Report File: C:\...\2045 Back PM.pdf

Scenario 7 2045 Back PM
7/19/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	NB Left	0.623	11.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	11.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.623

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	6	0	136	0	0	0	0	806	15	121	760	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.6300	1.6300	1.6300	1.0000	1.0000	1.0000	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	222	0	0	0	0	0	11	0	0	0
Total Hourly Volume [veh/h]	10	0	0	0	0	0	0	1177	11	177	1110	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9500	0.9500	0.9500	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	0	0	0	0	0	310	3	46	286	0
Total Analysis Volume [veh/h]	11	0	0	0	0	0	0	1239	12	182	1144	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	20	0	0	20	0	0	60	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	5	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	79	79	79	79	79	79	79
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2	2	2	60	60	69	69
g / C, Green / Cycle	0.03	0.03	0.03	0.76	0.76	0.87	0.87
(v / s)_i Volume / Saturation Flow Rate	0.01	0.00	0.00	0.67	0.01	0.32	0.62
s, saturation flow rate [veh/h]	1721	1589	254	1855	1577	578	1855
c, Capacity [veh/h]	139	44	52	1448	1192	316	1616
d1, Uniform Delay [s]	37.73	0.00	0.00	7.11	2.38	26.74	1.71
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.00	0.00	6.69	0.02	7.47	2.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.00	0.00	0.86	0.01	0.58	0.71
d, Delay for Lane Group [s/veh]	37.98	0.00	0.00	13.80	2.39	34.21	4.36
Lane Group LOS	D	A	A	B	A	C	A
Critical Lane Group	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.21	0.00	0.00	11.89	0.03	0.66	1.19
50th-Percentile Queue Length [ft/ln]	5.36	0.00	0.00	297.15	0.87	16.38	29.67
95th-Percentile Queue Length [veh/ln]	0.39	0.00	0.00	17.54	0.06	1.18	2.14
95th-Percentile Queue Length [ft/ln]	9.65	0.00	0.00	438.50	1.57	29.48	53.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.98	37.98	0.00	0.00	0.00	0.00	13.80	13.80	2.39	34.21	4.36	4.36
Movement LOS	D	D	A	A	A	A	B	B	A	C	A	A
d_A, Approach Delay [s/veh]	37.98			0.00			13.69			8.45		
Approach LOS	D			A			B			A		
d_I, Intersection Delay [s/veh]	11.11											
Intersection LOS	B											
Intersection V/C	0.623											

Emissions

Vehicle Miles Traveled [mph]	18.66	0.00	0.00	39.20	0.38	5.49	34.54
Stops [stops/h]	9.74	0.00	0.00	539.90	1.58	29.75	53.91
Fuel consumption [US gal/h]	0.91	0.00	0.00	8.08	0.03	1.66	2.73
CO [g/h]	63.38	0.00	0.00	564.52	2.11	115.84	191.06
NOx [g/h]	12.33	0.00	0.00	109.84	0.41	22.54	37.17
VOC [g/h]	14.69	0.00	0.00	130.83	0.49	26.85	44.28

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	505	505	1514	1514
d_b, Bicycle Delay [s]	22.15	22.15	2.34	2.34
l_b,int, Bicycle LOS Score for Intersection	1.944	1.560	3.642	3.748
Bicycle LOS	A	A	D	D

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Riverdale RV Park TIS

Vistro File: C:\...\AM 7-19-24.vistro
Report File: C:\...\2045 Total AM.pdf

Scenario 6 6 2045 Total AM
7/19/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	SB Left	0.542	7.0	A
2	North Site Access	Two-way stop	HCM 7th Edition	WB Left	0.009	10.7	B
3	South Site Access	Two-way stop	HCM 7th Edition	WB Left	0.006	10.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	7.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.542

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	3	0	77	1	0	0	0	528	18	85	626	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.6300	1.6300	1.6300	1.0000	1.0000	1.0000	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	12	0	0	0	0	0	3	7	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	138	0	0	0	0	0	15	0	0	1
Total Hourly Volume [veh/h]	10	0	0	1	0	0	0	771	14	131	914	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	0	0	0	0	0	210	4	36	248	0
Total Analysis Volume [veh/h]	11	0	0	1	0	0	0	838	15	142	993	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	15	0	0	15	0	0	60	0	20	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	10	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	84	84	84	84	84	84	84
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2	2	2	60	60	74	74
g / C, Green / Cycle	0.03	0.03	0.03	0.71	0.71	0.88	0.88
(v / s)_i Volume / Saturation Flow Rate	0.01	0.00	0.01	0.45	0.01	0.17	0.54
s, saturation flow rate [veh/h]	1738	1589	172	1855	1577	821	1855
c, Capacity [veh/h]	135	45	90	1366	1125	405	1626
d1, Uniform Delay [s]	39.95	0.00	41.80	6.31	3.49	23.09	1.38
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.23	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.00	0.05	2.07	0.02	1.12	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.00	0.01	0.61	0.01	0.35	0.61
d, Delay for Lane Group [s/veh]	40.21	0.00	41.85	8.38	3.51	24.21	3.10
Lane Group LOS	D	A	D	A	A	C	A
Critical Lane Group	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.23	0.00	0.02	6.57	0.06	0.13	0.78
50th-Percentile Queue Length [ft/ln]	5.72	0.00	0.54	164.33	1.60	3.15	19.42
95th-Percentile Queue Length [veh/ln]	0.41	0.00	0.04	10.78	0.12	0.23	1.40
95th-Percentile Queue Length [ft/ln]	10.30	0.00	0.97	269.44	2.88	5.68	34.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.21	40.21	0.00	41.85	41.85	41.85	8.38	8.38	3.51	24.21	3.10	3.10
Movement LOS	D	D	A	D	D	D	A	A	A	C	A	A
d_A, Approach Delay [s/veh]	40.21			41.85			8.29			5.74		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	7.04											
Intersection LOS	A											
Intersection V/C	0.542											

Emissions

Vehicle Miles Traveled [mph]	18.66	0.00	0.03	26.51	0.47	4.29	29.98
Stops [stops/h]	9.80	0.00	0.93	281.65	2.75	5.41	33.29
Fuel consumption [US gal/h]	0.91	0.00	0.01	4.08	0.05	0.91	2.04
CO [g/h]	63.76	0.00	1.04	284.96	3.18	63.32	142.93
NOx [g/h]	12.41	0.00	0.20	55.44	0.62	12.32	27.81
VOC [g/h]	14.78	0.00	0.24	66.04	0.74	14.67	33.13

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	357	357	1428	1428
d_b, Bicycle Delay [s]	28.35	28.35	3.43	3.43
l_b,int, Bicycle LOS Score for Intersection	1.805	1.561	2.992	3.434
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: North Site Access

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Riverdale Road		Riverdale Road		North Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		North Site Access	
Base Volume Input [veh/h]	80	0	0	103	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.6300	1.0000	1.0000	1.6300	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	4	7	3	5	12
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	4	7	171	5	12
Peak Hour Factor	0.9200	0.8500	0.8500	0.9200	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	1	2	46	1	4
Total Analysis Volume [veh/h]	148	5	8	186	6	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.01	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.53	0.00	10.73	9.13
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.33	0.33	1.92	1.92
d_A, Approach Delay [s/veh]	0.00		0.31		9.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.69					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: South Site Access

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Riverdale Road		Riverdale Road		South Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		South Site Access	
Base Volume Input [veh/h]	80	0	0	103	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.6300	1.0000	1.0000	1.6300	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	2	3	5	3	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	134	2	3	173	3	6
Peak Hour Factor	0.9200	0.8500	0.8500	0.9200	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	1	1	47	1	2
Total Analysis Volume [veh/h]	146	2	4	188	4	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.52	0.00	10.59	9.06
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.17	0.17	1.06	1.06
d_A, Approach Delay [s/veh]	0.00		0.16		9.62	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.39					
Intersection LOS	B					

Riverdale RV Park TIS

Vistro File: C:\...\PM 7-19-24.vistro
Report File: C:\...\2045 Total PM.pdf

Scenario 6 6 6 2045 Total PM
7/19/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SH7/Riverdale	Signalized	HCM 7th Edition	NB Left	0.625	12.3	B
2	North Site Access	Two-way stop	HCM 7th Edition	WB Left	0.010	12.4	B
3	South Site Access	Two-way stop	HCM 7th Edition	WB Left	0.004	12.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SH7/Riverdale

Control Type:	Signalized	Delay (sec / veh):	12.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.625

Intersection Setup

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Riverdale Road			Riverdale Road			SH 7			SH 7		
Base Volume Input [veh/h]	6	0	136	0	0	0	0	806	15	121	760	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.6300	1.6300	1.6300	1.0000	1.0000	1.0000	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	9	0	0	0	0	0	6	16	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	231	0	0	0	0	0	14	0	0	0
Total Hourly Volume [veh/h]	13	0	0	0	0	0	0	1177	14	193	1110	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9500	0.9500	0.9500	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	0	0	0	0	0	310	4	50	286	0
Total Analysis Volume [veh/h]	14	0	0	0	0	0	0	1239	15	199	1144	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	20	0	0	20	0	0	60	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	40.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0	14	0	0	14	0	0	14	0	9	14	0
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	5	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No			No		No	No	
Maximum Recall		No			No			Yes		No	Yes	
Pedestrian Recall		No			No			No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	R	L	C
C, Calculated Cycle Length [s]	81	81	81	81	81	81	81
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	3	3	3	60	60	70	70
g / C, Green / Cycle	0.03	0.03	0.03	0.74	0.74	0.87	0.87
(v / s)_i Volume / Saturation Flow Rate	0.01	0.00	0.00	0.67	0.01	0.34	0.62
s, saturation flow rate [veh/h]	1661	1589	705	1855	1577	592	1855
c, Capacity [veh/h]	146	54	69	1421	1170	330	1608
d1, Uniform Delay [s]	38.01	0.00	0.00	8.09	2.71	27.22	1.87
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.00	0.00	7.61	0.02	7.91	2.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.00	0.00	0.87	0.01	0.60	0.71
d, Delay for Lane Group [s/veh]	38.30	0.00	0.00	15.70	2.73	35.13	4.57
Lane Group LOS	D	A	A	B	A	D	A
Critical Lane Group	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.28	0.00	0.00	13.74	0.05	0.75	1.49
50th-Percentile Queue Length [ft/ln]	6.91	0.00	0.00	343.40	1.25	18.67	37.24
95th-Percentile Queue Length [veh/ln]	0.50	0.00	0.00	19.81	0.09	1.34	2.68
95th-Percentile Queue Length [ft/ln]	12.45	0.00	0.00	495.36	2.25	33.61	67.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.30	38.30	0.00	0.00	0.00	0.00	15.70	15.70	2.73	35.13	4.57	4.57
Movement LOS	D	D	A	A	A	A	B	B	A	D	A	A
d_A, Approach Delay [s/veh]	38.30			0.00			15.55			9.09		
Approach LOS	D			A			B			A		
d_I, Intersection Delay [s/veh]	12.35											
Intersection LOS	B											
Intersection V/C	0.625											

Emissions

Vehicle Miles Traveled [mph]	23.74	0.00	0.00	39.20	0.47	6.01	34.54
Stops [stops/h]	12.33	0.00	0.00	612.49	2.23	33.30	66.41
Fuel consumption [US gal/h]	1.15	0.00	0.00	8.96	0.04	1.85	2.85
CO [g/h]	80.71	0.00	0.00	626.07	2.81	129.55	199.33
NOx [g/h]	15.70	0.00	0.00	121.81	0.55	25.21	38.78
VOC [g/h]	18.71	0.00	0.00	145.10	0.65	30.03	46.20

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	495	495	1486	1486
d_b, Bicycle Delay [s]	22.85	22.85	2.66	2.66
l_b,int, Bicycle LOS Score for Intersection	1.964	1.560	3.652	3.776
Bicycle LOS	A	A	D	D

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: North Site Access

Control Type:	Two-way stop	Delay (sec / veh):	12.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Riverdale Road		Riverdale Road		North Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		North Site Access	
Base Volume Input [veh/h]	142	0	0	136	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.6300	1.0000	1.0000	1.6300	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	6	15	7	4	8
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	235	6	15	229	4	8
Peak Hour Factor	0.9200	0.8500	0.8500	0.9200	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	2	4	62	1	2
Total Analysis Volume [veh/h]	255	7	18	249	5	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.78	0.00	12.44	9.74
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.03	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.76	0.76	1.66	1.66
d_A, Approach Delay [s/veh]	0.00		0.52		10.70	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.53					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: South Site Access

Control Type:	Two-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Riverdale Road		Riverdale Road		South Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Riverdale Road		Riverdale Road		South Site Access	
Base Volume Input [veh/h]	142	0	0	136	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.6300	1.0000	1.0000	1.6300	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	3	7	4	2	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	237	3	7	226	2	4
Peak Hour Factor	0.9200	0.8500	0.8500	0.9200	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	1	2	61	1	1
Total Analysis Volume [veh/h]	258	4	8	246	2	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.77	0.00	12.10	9.68
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.33	0.33	0.78	0.78
d_A, Approach Delay [s/veh]	0.00		0.24		10.37	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.26					
Intersection LOS	B					

Appendix E

Traffic Signal Warrant Study

Traffic Signal Warrant Analysis

Project Name	**Riverdale RV Park TIS**
Project/File #	**MPC Properties**
Scenario	**Year 2024 PM**

Intersection Information	
Major Street Name	SH 7
North/South or East/West	E/W
Speed Limit	45 mph or greater
# of Approach Lanes	1
% of Right Turn Traffic to Include	100%
Minor Street Name	Riverdale Road
# of Approach Lanes	1
% of Right Turn Traffic to Include	0%
Isolated Community < 10,000 pop	No

What Additional Warrants to Consider?	
Warrant 3, Peak Hour (A - Vol. and Delay)	Yes
Warrant 4, Pedestrian Volume	No
Warrant 5, School Crossing	No
Warrant 6, Coordinated Signal System	No
Warrant 7, Crash Experience	No
Warrant 8, Roadway Network	No
Warrant 9, Intersection Near a Grade Crossing	No
All-Way Stop Warrant	No

Traffic Signal Warrant Analysis

SH 7 (Major Street) Volume

Eastbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	0	806	15	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**821**	**0**

Westbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	121	760	0	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**881**	**0**

Riverdale Road (Minor Street) Volume

Northbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	6	0	136	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**142**	**0**

Southbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	0	0	0	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**0**	**0**

Traffic Signal Warrant Analysis

Additional Inputs for Warrants 3 to 9 and the Multi-Way Stop Warrants

Warrant 3: Peak Hour Delay Additional Information	
T-intersection or 4-legged?	4
Peak Hour Reviewed?	PM Peak
SH 7 (Major Street) Data	
Combined Approach Volume	1,702
Riverdale Road (Minor Street) Data	
High Volume Side Volume	142
High Volume Side Average Delay (Sec.)	98.33
High Volume Side # of Approach Lanes	1
Low Volume Side Volume (leave blank if T)	0

Warrant 4: Pedestrian Volume Additional Information	
Include Right Turn Reduction for Vehicular Volume?	No
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	No
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
15th-percentile crossing speed of pedestrians less than 3.5 feet per second?**	No
If yes, then percent reduction to apply to crossing volume? (up to 50%)	N/A

* Include supporting documentation of no progressive movement impact.

** Not common. Include supporting documentation of low crossing speed.

Warrant 5: School Crossing	
Schoolchildren (elementary through high school) crossing the major street (SH 7)?	No
Consideration given to other remedial measures (warning signs/flashers, school speed zones, school crossing guards, or a grade-separated crossing)?	No
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	No
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
Minimum of 20 schoolchildren crossing during the highest crossing hour?	No
Engineering Study completed showing the number of adequate gaps in the traffic stream during the period when schoolchildren are using the crossing is less than the number of minutes in the same period?**	No

* Include supporting documentation of no progressive movement impact.

** May need to include supporting documentation of inadequate gaps in traffic.

Warrant 6: Coordinated Signal System	
One-way or Two-way Street?	Two-Way
Adjacent traffic control signals do not provide the necessary degree of platooning, but will collectively provide a progressive operation with the proposed traffic control signal?	No
Resultant spacing of traffic control signals 1,000 feet or more?	No

Warrant 7: Crash Experience	
Number of reportable crashes (*types susceptible to correction by a traffic control signal*) within a 12-month period?*	4 or less
Adequate trial of alternatives with satisfactory observance and enforcement failed to reduce crash frequency?**	No
Include Right Turn Reduction for Vehicular Volume?	No

* May need to include supporting documentation of crash details.

** May need to include supporting documentation of alternative trail(s) and results.

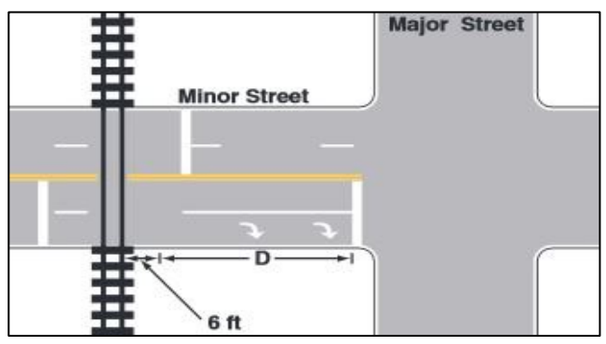
Warrant 8: Roadway Network	
Common intersection of two major routes?*	No
Projected entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday?	No
5-Year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?	No
Total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday)?	No

* Major Route defined as:
- Part of the street or highway system that serves as the principal roadway network for through traffic flow.
- Rural or suburban highways outside, entering, or traversing a city.
- Appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant 9: Intersection Near a Grade Crossing	
Tracks cross which Riverdale Road	Southbound
Consideration given to other alternatives/trial of alternative failed to alleviate the safety concerns?*	No
Distance between STOP or YIELD controlled approach and center of track nearest to the intersection within 140 feet?	No
Clear storage distance (Distance D) between the tracks and the intersection? (See Below)	70 feet
Number of approach lanes at the crossing?	2 or more
Rail traffic per day?	3-5
Percentage of high-occupancy buses?**	0%
Percentage of Tractor-Trailer Trucks?	7.6%-12.5%

* Alternatives to consider or try should include:
- Providing additional pavement that would enable vehicles to clear the track or provide space for an evasive maneuver.
- Reassigning the stop controls at the intersection to make the approach across the track non-stopping.

** High-occupancy is defined as a bus occupied by at least 20 people.



Multi-Way Stop Warrant Additional Information	
Traffic control signal warranted & justified with existing traffic?	No
Number of *correctable* crashes* in 12-month period?	4
Peak Hour high volume approach average delay (Sec.)	98.33

* Crashes include right-turn and left-turn collisions as well as right-angle collisions.

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Riverdale RV Park TIS
Project/File #	MPC Properties
Scenario	Year 2024 PM

Intersection Information			
Major Street (E/W Road)	SH 7	Minor Street (N/S Road)	Riverdale Road
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1702 vehicles	Total Approach Volume	142 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	100 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

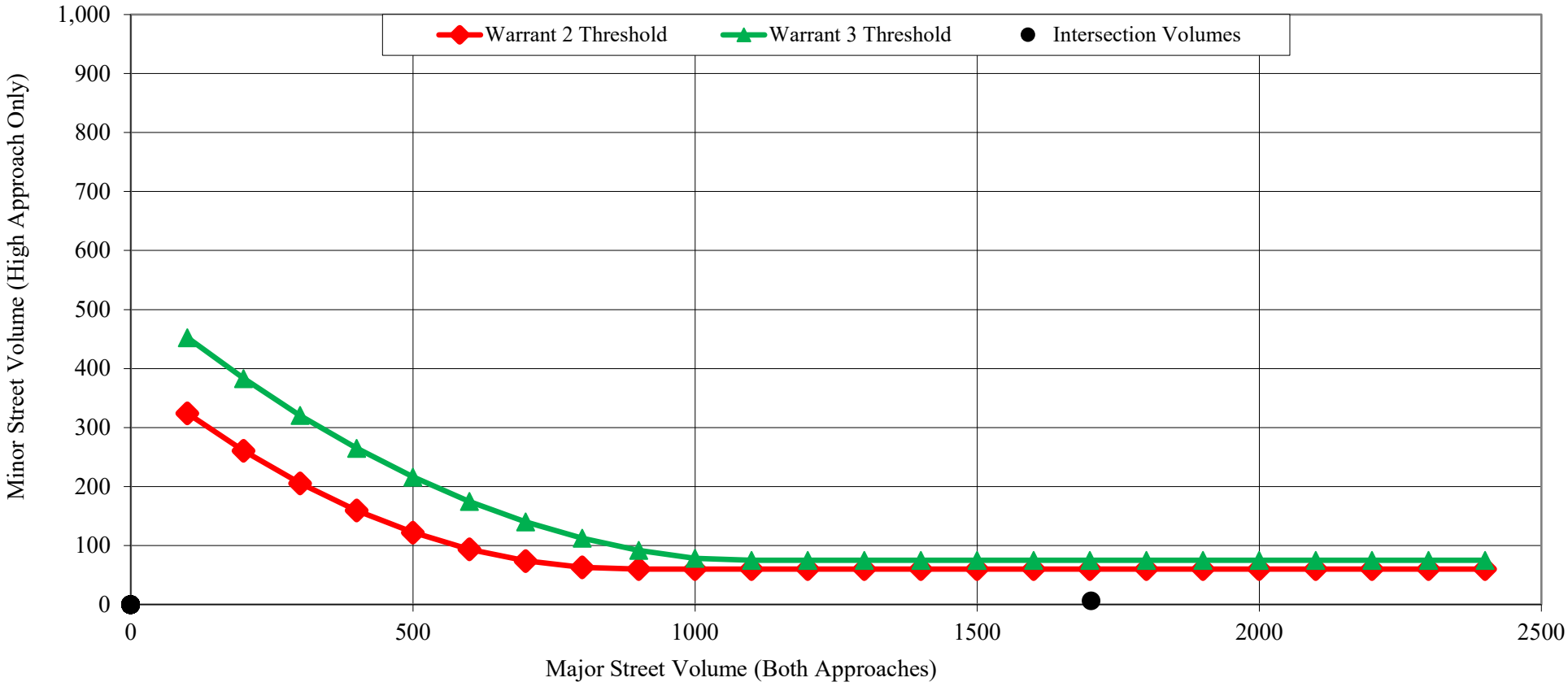
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	0 hours	0 (Cond. A) & 0 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	105	53	84 (Cond. A) & 42 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1844 total, 142 minor, 3.9 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Traffic Signal Warrant Analysis

Project Name	**Riverdale RV Park TIS**
Project/File #	**MPC Properties**
Scenario	**Year 2030 Background AM**

Intersection Information	
Major Street Name	SH 7
North/South or East/West	E/W
Speed Limit	45 mph or greater
# of Approach Lanes	1
% of Right Turn Traffic to Include	100%
Minor Street Name	Riverdale Road
# of Approach Lanes	1
% of Right Turn Traffic to Include	0%
Isolated Community < 10,000 pop	No

What Additional Warrants to Consider?	
Warrant 3, Peak Hour (A - Vol. and Delay)	Yes
Warrant 4, Pedestrian Volume	No
Warrant 5, School Crossing	No
Warrant 6, Coordinated Signal System	No
Warrant 7, Crash Experience	No
Warrant 8, Roadway Network	No
Warrant 9, Intersection Near a Grade Crossing	No
All-Way Stop Warrant	No

Traffic Signal Warrant Analysis

SH 7 (Major Street) Volume

Eastbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	0	895	17	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**912**	**0**

Westbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	134	844	0	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**978**	**0**

Riverdale Road (Minor Street) Volume

Northbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	7	0	156	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**163**	**0**

Southbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	0	0	0	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**0**	**0**

Traffic Signal Warrant Analysis

Additional Inputs for Warrants 3 to 9 and the Multi-Way Stop Warrants

Warrant 3: Peak Hour Delay Additional Information	
T-intersection or 4-legged?	4
Peak Hour Reviewed?	PM Peak
SH 7 (Major Street) Data	
Combined Approach Volume	1,890
Riverdale Road (Minor Street) Data	
High Volume Side Volume	163
High Volume Side Average Delay (Sec.)	156.88
High Volume Side # of Approach Lanes	1
Low Volume Side Volume (leave blank if T)	0

Warrant 4: Pedestrian Volume Additional Information	
Include Right Turn Reduction for Vehicular Volume?	No
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	No
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
15th-percentile crossing speed of pedestrians less than 3.5 feet per second?**	No
If yes, then percent reduction to apply to crossing volume? (up to 50%)	N/A

* Include supporting documentation of no progressive movement impact.

** Not common. Include supporting documentation of low crossing speed.

Warrant 5: School Crossing	
Schoolchildren (elementary through high school) crossing the major street (SH 7)?	No
Consideration given to other remedial measures (warning signs/flashers, school speed zones, school crossing guards, or a grade-separated crossing)?	No
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	No
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
Minimum of 20 schoolchildren crossing during the highest crossing hour?	No
Engineering Study completed showing the number of adequate gaps in the traffic stream during the period when schoolchildren are using the crossing is less than the number of minutes in the same period?**	No

* Include supporting documentation of no progressive movement impact.

** May need to include supporting documentation of inadequate gaps in traffic.

Warrant 6: Coordinated Signal System	
One-way or Two-way Street?	Two-Way
Adjacent traffic control signals do not provide the necessary degree of platooning, but will collectively provide a progressive operation with the proposed traffic control signal?	No
Resultant spacing of traffic control signals 1,000 feet or more?	No

Warrant 7: Crash Experience	
Number of reportable crashes (*types susceptible to correction by a traffic control signal*) within a 12-month period?*	4 or less
Adequate trial of alternatives with satisfactory observance and enforcement failed to reduce crash frequency?**	No
Include Right Turn Reduction for Vehicular Volume?	No

* May need to include supporting documentation of crash details.

** May need to include supporting documentation of alternative trail(s) and results.

Warrant 8: Roadway Network	
Common intersection of two major routes?*	No
Projected entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday?	No
5-Year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?	No
Total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday)?	No

* Major Route defined as:

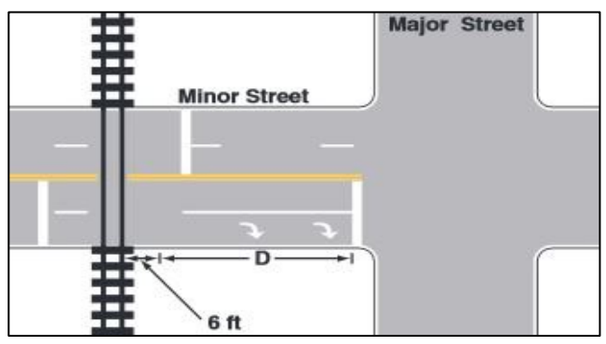
- Part of the street or highway system that serves as the principal roadway network for through traffic flow.
- Rural or suburban highways outside, entering, or traversing a city.
- Appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant 9: Intersection Near a Grade Crossing	
Tracks cross which Riverdale Road	Southbound
Consideration given to other alternatives/trial of alternative failed to alleviate the safety concerns?*	No
Distance between STOP or YIELD controlled approach and center of track nearest to the intersection within 140 feet?	No
Clear storage distance (Distance D) between the tracks and the intersection? (See Below)	70 feet
Number of approach lanes at the crossing?	2 or more
Rail traffic per day?	3-5
Percentage of high-occupancy buses?**	0%
Percentage of Tractor-Trailer Trucks?	7.6%-12.5%

* Alternatives to consider or try should include:

- Providing additional pavement that would enable vehicles to clear the track or provide space for an evasive maneuver.
- Reassigning the stop controls at the intersection to make the approach across the track non-stopping.

** High-occupancy is defined as a bus occupied by at least 20 people.



Multi-Way Stop Warrant Additional Information	
Traffic control signal warranted & justified with existing traffic?	No
Number of *correctable* crashes* in 12-month period?	4
Peak Hour high volume approach average delay (Sec.)	156.88

* Crashes include right-turn and left-turn collisions as well as right-angle collisions.

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Riverdale RV Park TIS
Project/File #	MPC Properties
Scenario	Year 2030 Background AM

Intersection Information			
Major Street (E/W Road)	SH 7	Minor Street (N/S Road)	Riverdale Road
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1890 vehicles	Total Approach Volume	163 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	100 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

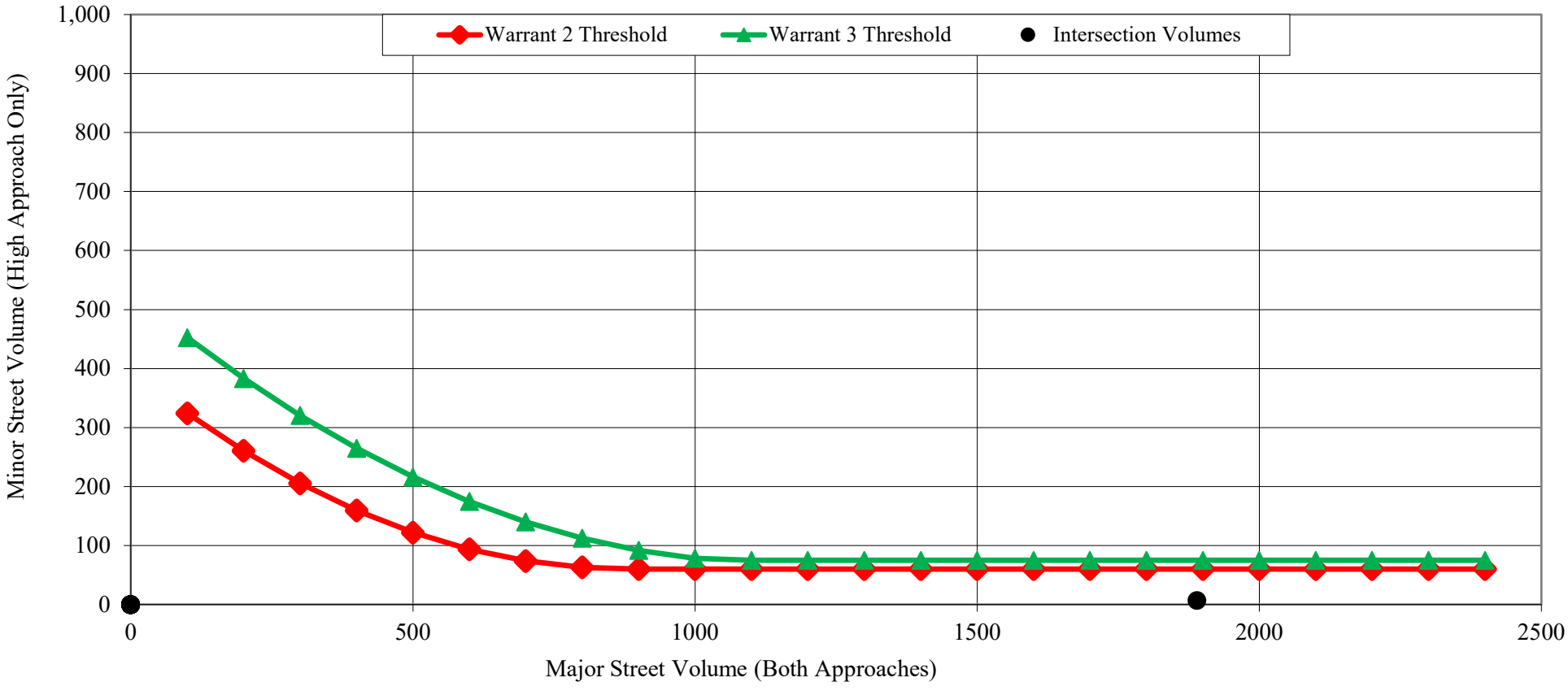
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	0 hours	0 (Cond. A) & 0 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	105	53	84 (Cond. A) & 42 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Not Satisfied**
Required values reached for	2053 total, 163 minor, 7.1 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Traffic Signal Warrant Analysis

Project Name	**Riverdale RV Park TIS**
Project/File #	**MPC Properties**
Scenario	**Year 2045 Total AM**

Intersection Information	
Major Street Name	SH 7
North/South or East/West	E/W
Speed Limit	45 mph or greater
# of Approach Lanes	2 or more
% of Right Turn Traffic to Include	100%
Minor Street Name	Riverdale Road
# of Approach Lanes	1
% of Right Turn Traffic to Include	0%
Isolated Community < 10,000 pop	No

What Additional Warrants to Consider?	
Warrant 3, Peak Hour (A - Vol. and Delay)	Yes
Warrant 4, Pedestrian Volume	No
Warrant 5, School Crossing	No
Warrant 6, Coordinated Signal System	No
Warrant 7, Crash Experience	No
Warrant 8, Roadway Network	No
Warrant 9, Intersection Near a Grade Crossing	No
All-Way Stop Warrant	No

Traffic Signal Warrant Analysis

SH 7 (Major Street) Volume

Eastbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	0	771	29	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM				
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			800	0

Westbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	131	914	1	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM				
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			1,046	0

Riverdale Road (Minor Street) Volume

Northbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	10	0	138	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM				
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			148	0

Southbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	1	0	0	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM				
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			1	0

Traffic Signal Warrant Analysis

Additional Inputs for Warrants 3 to 9 and the Multi-Way Stop Warrants

Warrant 3: Peak Hour Delay Additional Information	
T-intersection or 4-legged?	4
Peak Hour Reviewed?	AM Peak
SH 7 (Major Street) Data	
Combined Approach Volume	1,846
Riverdale Road (Minor Street) Data	
High Volume Side Volume	148
High Volume Side Average Delay (Sec.)	182.47
High Volume Side # of Approach Lanes	1
Low Volume Side Volume (leave blank if T)	1

Warrant 4: Pedestrian Volume Additional Information	
Include Right Turn Reduction for Vehicular Volume?	No
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	No
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
15th-percentile crossing speed of pedestrians less than 3.5 feet per second?**	No
If yes, then percent reduction to apply to crossing volume? (up to 50%)	N/A

* Include supporting documentation of no progressive movement impact.

** Not common. Include supporting documentation of low crossing speed.

Warrant 5: School Crossing	
Schoolchildren (elementary through high school) crossing the major street (SH 7)?	No
Consideration given to other remedial measures (warning signs/flashers, school speed zones, school crossing guards, or a grade-separated crossing)?	No
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	No
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
Minimum of 20 schoolchildren crossing during the highest crossing hour?	No
Engineering Study completed showing the number of adequate gaps in the traffic stream during the period when schoolchildren are using the crossing is less than the number of minutes in the same period?**	No

* Include supporting documentation of no progressive movement impact.

** May need to include supporting documentation of inadequate gaps in traffic.

Warrant 6: Coordinated Signal System	
One-way or Two-way Street?	Two-Way
Adjacent traffic control signals do not provide the necessary degree of platooning, but will collectively provide a progressive operation with the proposed traffic control signal?	No
Resultant spacing of traffic control signals 1,000 feet or more?	No

Warrant 7: Crash Experience	
Number of reportable crashes (*types susceptible to correction by a traffic control signal*) within a 12-month period?*	4 or less
Adequate trial of alternatives with satisfactory observance and enforcement failed to reduce crash frequency?**	No
Include Right Turn Reduction for Vehicular Volume?	No

* May need to include supporting documentation of crash details.

** May need to include supporting documentation of alternative trail(s) and results.

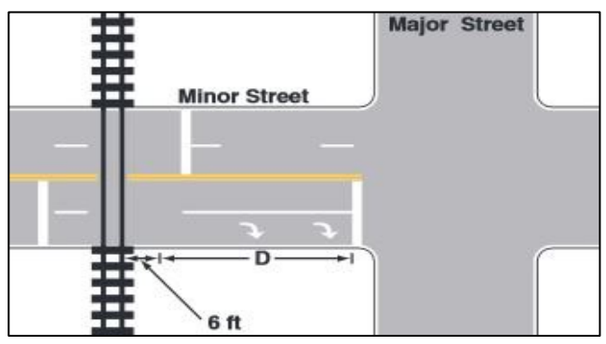
Warrant 8: Roadway Network	
Common intersection of two major routes?*	No
Projected entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday?	No
5-Year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?	No
Total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday)?	No

* Major Route defined as:
- Part of the street or highway system that serves as the principal roadway network for through traffic flow.
- Rural or suburban highways outside, entering, or traversing a city.
- Appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant 9: Intersection Near a Grade Crossing	
Tracks cross which Riverdale Road	Southbound
Consideration given to other alternatives/trial of alternative failed to alleviate the safety concerns?*	No
Distance between STOP or YIELD controlled approach and center of track nearest to the intersection within 140 feet?	No
Clear storage distance (Distance D) between the tracks and the intersection? (See Below)	70 feet
Number of approach lanes at the crossing?	2 or more
Rail traffic per day?	3-5
Percentage of high-occupancy buses?**	0%
Percentage of Tractor-Trailer Trucks?	7.6%-12.5%

* Alternatives to consider or try should include:
- Providing additional pavement that would enable vehicles to clear the track or provide space for an evasive maneuver.
- Reassigning the stop controls at the intersection to make the approach across the track non-stopping.

** High-occupancy is defined as a bus occupied by at least 20 people.



Multi-Way Stop Warrant Additional Information	
Traffic control signal warranted & justified with existing traffic?	No
Number of *correctable* crashes* in 12-month period?	4
Peak Hour high volume approach average delay (Sec.)	182.47

* Crashes include right-turn and left-turn collisions as well as right-angle collisions.

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Riverdale RV Park TIS
Project/File #	MPC Properties
Scenario	Year 2045 Total AM

Intersection Information			
Major Street (E/W Road)	SH 7	Minor Street (N/S Road)	Riverdale Road
Analyzed with	2 or more approach lanes	Analyzed with	1 Approach Lane
Total Approach Volume	1846 vehicles	Total Approach Volume	149 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	100 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

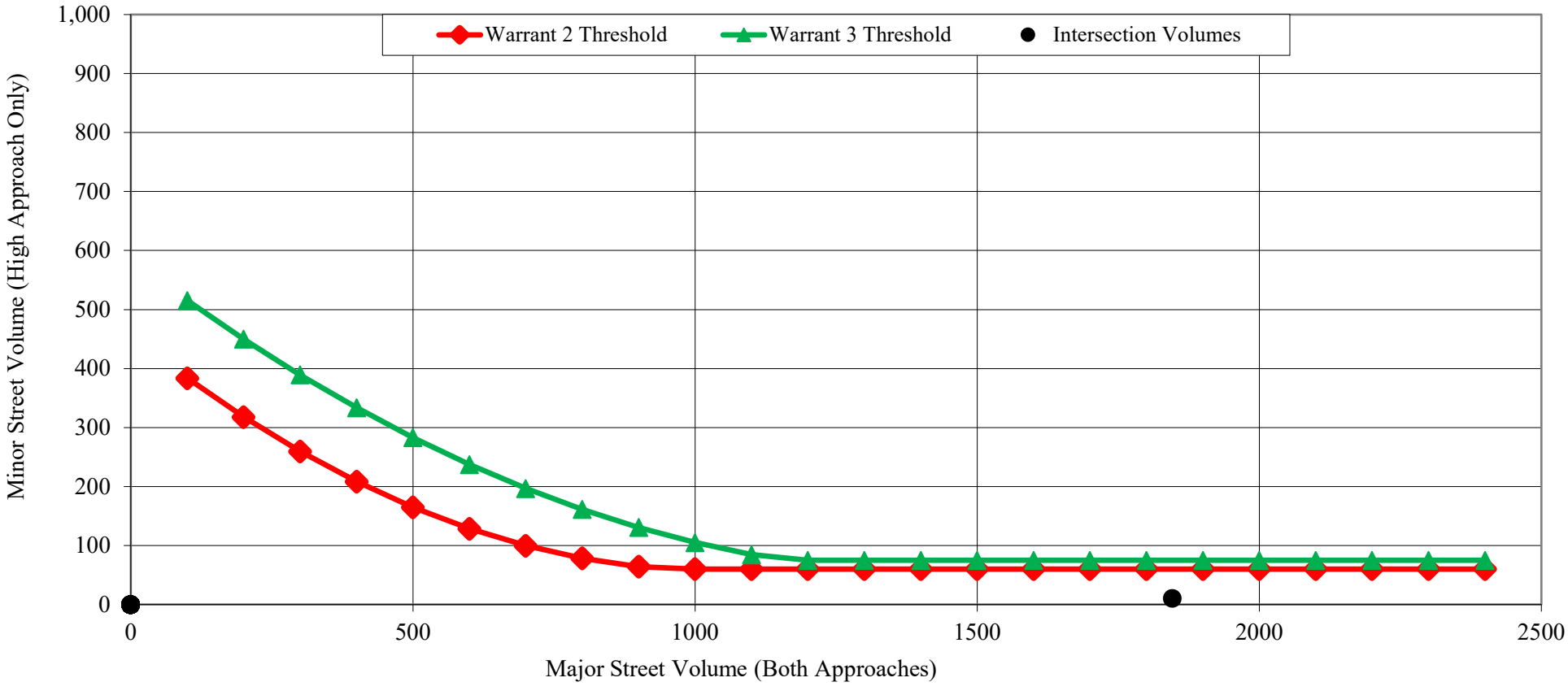
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	0 hours	0 (Cond. A) & 0 (Cond. B)
Criteria - Major Street (veh/hr)	420	630	336 (Cond. A) & 504 (Cond. B)
Criteria - Minor Street (veh/hr)	105	53	84 (Cond. A) & 42 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Not Satisfied**
Required values reached for	1995 total, 148 minor, 7.5 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Traffic Signal Warrant Analysis

Project Name	**Riverdale RV Park TIS**
Project/File #	**MPC Properties**
Scenario	**Year 2045 Total PM**

Intersection Information	
Major Street Name	SH 7
North/South or East/West	E/W
Speed Limit	45 mph or greater
# of Approach Lanes	2 or more
% of Right Turn Traffic to Include	100%
Minor Street Name	Riverdale Road
# of Approach Lanes	1
% of Right Turn Traffic to Include	0%
Isolated Community < 10,000 pop	No

What Additional Warrants to Consider?	
Warrant 3, Peak Hour (A - Vol. and Delay)	Yes
Warrant 4, Pedestrian Volume	No
Warrant 5, School Crossing	No
Warrant 6, Coordinated Signal System	No
Warrant 7, Crash Experience	No
Warrant 8, Roadway Network	No
Warrant 9, Intersection Near a Grade Crossing	No
All-Way Stop Warrant	No

Traffic Signal Warrant Analysis

SH 7 (Major Street) Volume

Eastbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	0	1177	28	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**1,205**	**0**

Westbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	193	1110	0	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**1,303**	**0**

Riverdale Road (Minor Street) Volume

Northbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	13	0	231	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**244**	**0**

Southbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	0	0	0	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			**0**	**0**

Traffic Signal Warrant Analysis

Additional Inputs for Warrants 3 to 9 and the Multi-Way Stop Warrants

Warrant 3: Peak Hour Delay Additional Information	
T-intersection or 4-legged?	4
Peak Hour Reviewed?	PM Peak
SH 7 (Major Street) Data	
Combined Approach Volume	2,508
Riverdale Road (Minor Street) Data	
High Volume Side Volume	244
High Volume Side Average Delay (Sec.)	1322.47
High Volume Side # of Approach Lanes	1
Low Volume Side Volume (leave blank if T)	0

Warrant 4: Pedestrian Volume Additional Information	
Include Right Turn Reduction for Vehicular Volume?	No
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	No
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
15th-percentile crossing speed of pedestrians less than 3.5 feet per second?**	No
If yes, then percent reduction to apply to crossing volume? (up to 50%)	N/A

* Include supporting documentation of no progressive movement impact.

** Not common. Include supporting documentation of low crossing speed.

Warrant 5: School Crossing	
Schoolchildren (elementary through high school) crossing the major street (SH 7)?	No
Consideration given to other remedial measures (warning signs/flashers, school speed zones, school crossing guards, or a grade-separated crossing)?	No
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	No
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
Minimum of 20 schoolchildren crossing during the highest crossing hour?	No
Engineering Study completed showing the number of adequate gaps in the traffic stream during the period when schoolchildren are using the crossing is less than the number of minutes in the same period?**	No

* Include supporting documentation of no progressive movement impact.

** May need to include supporting documentation of inadequate gaps in traffic.

Warrant 6: Coordinated Signal System	
One-way or Two-way Street?	Two-Way
Adjacent traffic control signals do not provide the necessary degree of platooning, but will collectively provide a progressive operation with the proposed traffic control signal?	No
Resultant spacing of traffic control signals 1,000 feet or more?	No

Warrant 7: Crash Experience	
Number of reportable crashes (*types susceptible to correction by a traffic control signal*) within a 12-month period?*	4 or less
Adequate trial of alternatives with satisfactory observance and enforcement failed to reduce crash frequency?**	No
Include Right Turn Reduction for Vehicular Volume?	No

* May need to include supporting documentation of crash details.

** May need to include supporting documentation of alternative trail(s) and results.

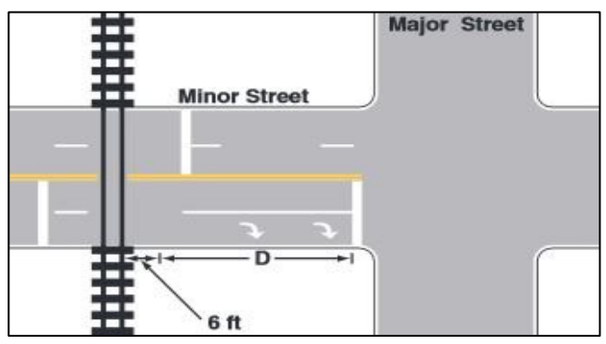
Warrant 8: Roadway Network	
Common intersection of two major routes?*	No
Projected entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday?	No
5-Year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?	No
Total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday)?	No

* Major Route defined as:
- Part of the street or highway system that serves as the principal roadway network for through traffic flow.
- Rural or suburban highways outside, entering, or traversing a city.
- Appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant 9: Intersection Near a Grade Crossing	
Tracks cross which Riverdale Road	Southbound
Consideration given to other alternatives/trial of alternative failed to alleviate the safety concerns?*	No
Distance between STOP or YIELD controlled approach and center of track nearest to the intersection within 140 feet?	No
Clear storage distance (Distance D) between the tracks and the intersection? (See Below)	70 feet
Number of approach lanes at the crossing?	2 or more
Rail traffic per day?	3-5
Percentage of high-occupancy buses?**	0%
Percentage of Tractor-Trailer Trucks?	7.6%-12.5%

* Alternatives to consider or try should include:
- Providing additional pavement that would enable vehicles to clear the track or provide space for an evasive maneuver.
- Reassigning the stop controls at the intersection to make the approach across the track non-stopping.

** High-occupancy is defined as a bus occupied by at least 20 people.



Multi-Way Stop Warrant Additional Information	
Traffic control signal warranted & justified with existing traffic?	No
Number of *correctable* crashes* in 12-month period?	4
Peak Hour high volume approach average delay (Sec.)	1322.47

* Crashes include right-turn and left-turn collisions as well as right-angle collisions.

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Riverdale RV Park TIS
Project/File #	MPC Properties
Scenario	Year 2045 Total PM

Intersection Information			
Major Street (E/W Road)	SH 7	Minor Street (N/S Road)	Riverdale Road
Analyzed with	2 or more approach lanes	Analyzed with	1 Approach Lane
Total Approach Volume	2508 vehicles	Total Approach Volume	244 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	100 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

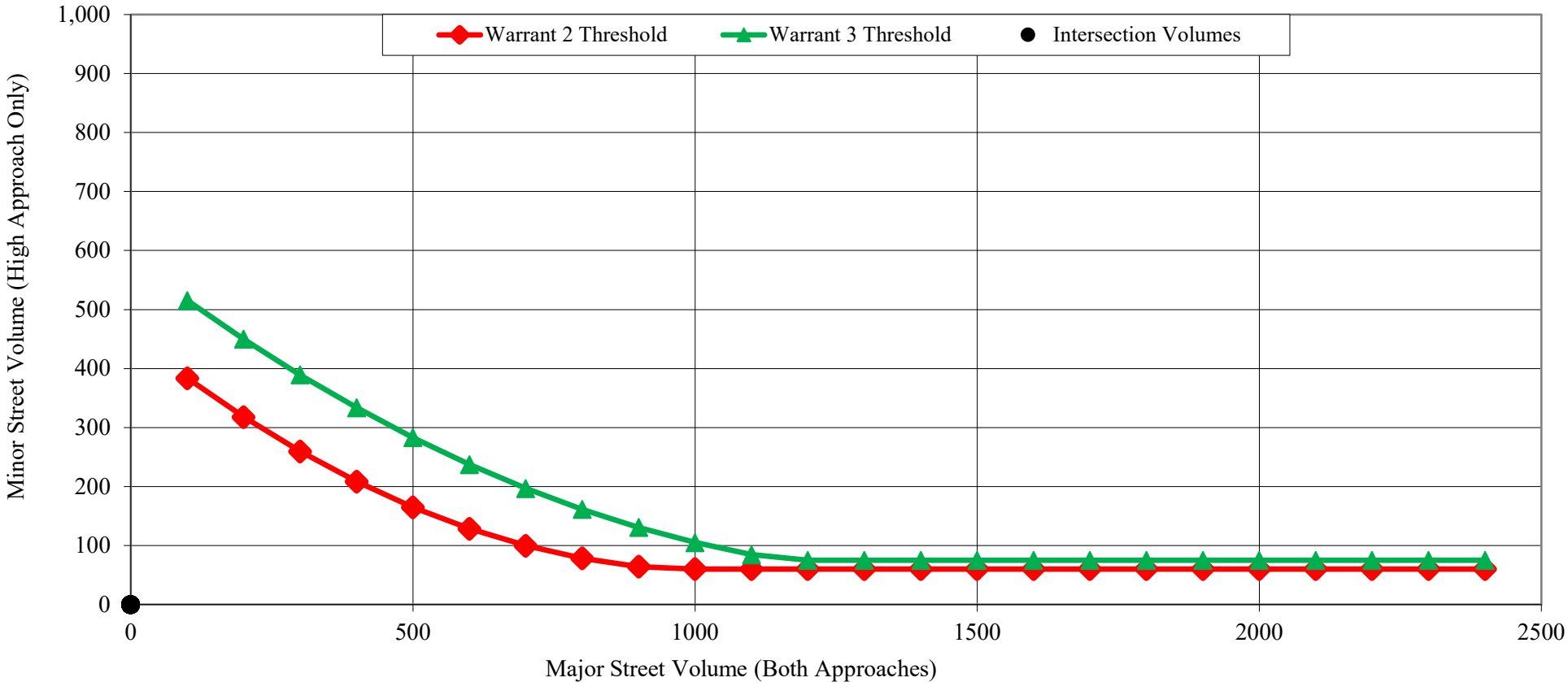
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	0 hours	0 (Cond. A) & 0 (Cond. B)
Criteria - Major Street (veh/hr)	420	630	336 (Cond. A) & 504 (Cond. B)
Criteria - Minor Street (veh/hr)	105	53	84 (Cond. A) & 42 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Not Satisfied**
Required values reached for	2752 total, 244 minor, 89.6 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



CASE NO. PLT XXXXX–XXXXX

CENTENNIAL ESTATES, REPLAT NO. 1, BLOCK 1, LOTS 1 AND 2

LOCATED IN THE SOUTH ONE–HALF OF SECTION 14, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M., COUNTY OF ADAMS, STATE OF COLORADO
SHEET 1 OF 2

OWNERSHIP AND DEDICATION CERTIFICATE:

KNOW ALL MEN BY THESE PRESENTS THAT THE UNDERSIGNED, BEING THE OWNER OF LOTS 1 AND 2, BLOCK 1, CENTENNIAL ESTATES, AMENDMENT NO.1 SUBDIVISION AS RECORDED AT RECEPTION NO. 2010000088066, ADAMS COUNTY RECORDS, BEING A PART OF THE SOUTH ONE–HALF OF SECTION 14, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO.

HAVE BY THESE PRESENTS LAID OUT, PLATTED AND SUBDIVIDED THE SAME INTO A LOTS AND EASEMENTS AS SHOWN ON THIS PLAT UNDER THE NAME AND STYLE OF CENTENNIAL ESTATES, REPLAT NO. 1, BLOCK 1, LOTS 1 AND 2, AND DO HEREBY DEDICATE TO THE COUNTY OF ADAMS, STATE OF COLORADO, FOR PUBLIC USE, ALL STREETS, AND OTHER PUBLIC WAYS AND LANDS AS SHOWN ON THIS PLAT, FOREVER, AND ALSO RESERVE THOSE PORTIONS OF REAL PROPERTY WHICH ARE LABELED AS EASEMENTS ON THIS PLAT, FOR THE INSTALLATION AND MAINTENANCE OF UTILITY AND DRAINAGE FACILITIES, INCLUDING BUT NOT LIMITED TO ELECTRIC LINES, GAS LINES, WATER LINES, AND SEWER LINES TOGETHER WITH RIGHT TO TRIM INTERFERING TREES AND BRUSH, TOGETHER WITH A PERPETUAL RIGHT IN INGRESS AND EGRESS FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF SUCH LINES; SAIS EASEMENTS AND RIGHTS TO BE USED IN A RESPONSIBLE AND PRUDENT MANNER.

EXECUTED THIS _____ DAY OF _____, 20_____.
OWNER

_____
OWNER

ACKNOWLEDGEMENT:

STATE OF COLORADO)
)SS
COUNTY OF ADAMS)

THE FOREGOING OWNERSHIP AND DEDICATION WAS ACKNOWLEDGED BY ME THIS _____ DAY OF _____, 20_____, BY GABRIEL HOIER, OWNER.

_____
NOTARY PUBLIC _____
MY COMMISSION EXPIRES: _____
MY ADDRESS IS: _____

FLOOD PLAIN NOTE

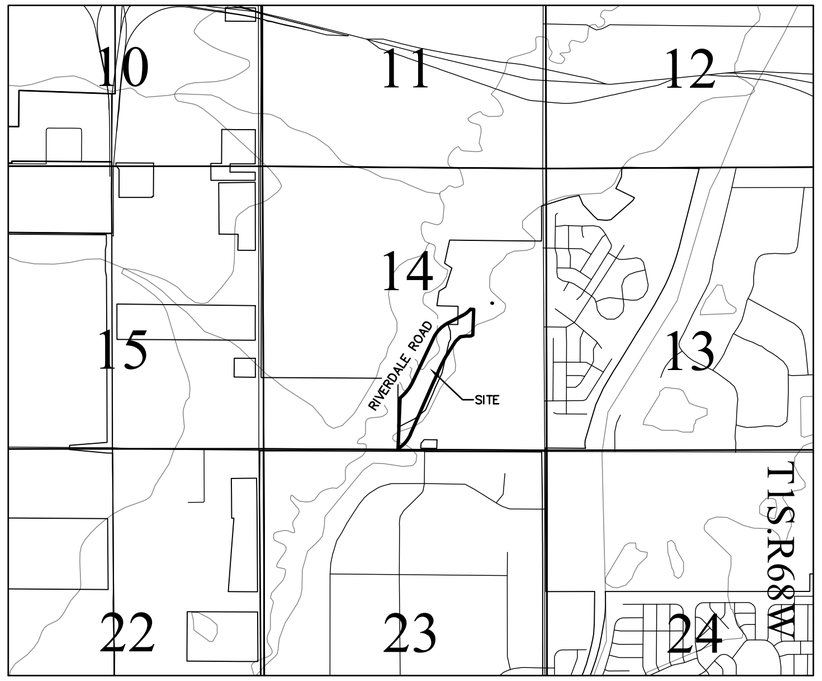
THIS LOT LIES WITHIN SPECIAL FLOOD HAZARD AREA ZONE AE AND ZONE X AS DELINEATED IN THE FEMA FLOOD INSURANCE RATE MAP, MAP NO. 08001C0328H EFFECTIVE MARCH 5, 2007.

STORM WATER FACILITIES STATEMENT

THE POLICY OF THE COUNTY REQUIRES THAT MAINTENANCE ACCESS SHALL BE PROVIDED TO ALL STORM DRAINAGE FACILITIES TO ASSURE CONTINUOUS OPERATIONAL CAPABILITY OF THE SYSTEM. THE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL DRAINAGE FACILITIES INCLUDING INLETS, PIPES, CULVERTS, CHANNELS, DITCHES, HYDRAULIC STRUCTURES, AND DETENTION BASINS LOCATED ON THEIR LAND UNLESS MODIFIED BY THE SUBDIVISION DEVELOPMENT AGREEMENT. SHOULD THE OWNER FAIL TO MAINTAIN SAID FACILITIES, THE COUNTY SHALL HAVE THE RIGHT TO ENTER SAID LAND FOR THE SOLE PURPOSE OF OPERATIONS AND MAINTENANCE. ALL SUCH MAINTENANCE COST WILL BE ASSESSED TO THE PROPERTY OWNERS.

PREPARED BY:

R.W. BAYER & ASSOCIATES, INC.
12170 TEJON STREET, UNIT 700
WESTMINSTER, COLORADO 80234
(303)452–4433 INFO@RWBSURVEYING.COM
CAD FILE: 24170/24170–PLAT.DWG
SHEET 1 OF 2
DATE PREPARED: JUNE 3, 2025



VICINITY MAP
SCALE 1'' = 2000'

SURVEYOR'S NOTES:

1. BASIS OF BEARINGS: THE BEARING OF THE WEST LINE OF LOT 2, BLOCK 1, CENTENNIAL ESTATES, AMENDMENT NO. 1, BETWEEN MONUMENTS AS SHOWN HEREON IS N00°19'25"W WITH ALL BEARINGS CONTAINED HEREON RELATIVE THERETO.

2. DISTANCES ON THIS SUBDIVISION PLAT ARE EXPRESSED IN U.S. SURVEY FEET AND DECIMALS THEREOF. A U.S. SURVEY FOOT IS DEFINED AS EXACTLY 1200/3937 METERS. THE BEARINGS AND DISTANCES SHOWN HEREON ARE AS MEASURED.

3. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY R.W. BAYER & ASSOCIATES, INC. OF THE PROPERTY SHOWN AND DESCRIBED HEREIN TO DETERMINE OWNERSHIP OF THE TRACT OF LAND, COMPATIBILITY OF THIS DESCRIPTION WITH THOSE OF ADJACENT TRACTS OF LAND OR RIGHTS–OF–WAY, EASEMENTS OR ENCUMBRANCES OF RECORD AFFECTING THIS TRACT OF LAND. R.W. BAYER & ASSOCIATES, INC. HAS RELIED UPON EQUITY TITLE OF COLORADO, COMMITMENT NO. 00028163–009–DE9–KR, EFFECTIVE DATE: AUGUST 14, 2023 FOR OWNERSHIP AND FOR THE PURPOSE OF SHOWING RECORDED EASEMENTS AND RIGHT–OF–WAY ACROSS THESE PREMISES.

4. ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FINISH DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN THEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON. IN NO EVENT SHALL THE LIABILITY EXCEED THE DOLLAR AMOUNT FOR THIS SURVEY.

5. ANY PERSON WHO KNOWINGLY REMOVES OR KNOWINGLY CAUSES TO BE REMOVED ANY PUBLIC LAND SURVEY MONUMENT, AS DEFINED BY SECTION 38–53–103 (18), C.R.S., OR CONTROL CORNER, AS DEFINED IN SECTION 38–53–103 (6), C.R.S., OR A RESTORATION OF ANY SUCH MONUMENT OR WHO KNOWINGLY REMOVES OR KNOWINGLY CAUSES TO BE REMOVED ANY BEARING TREE KNOWING SUCH IS A BEARING TREE OR OTHER ACCESSORY, AS DEFINED BY SECTION 38–53–103 (1) C.R.S., EVEN IF SAID PERSON HAS TITLE TO THE LAND ON WHICH SAID MONUMENT OR ACCESSORY IS LOCATED, COMMITS A CLASS 2 MISDEMEANOR UNLESS, PRIOR TO SUCH REMOVAL, SAID PERSON HAS CAUSED A COLORADO PROFESSIONAL LAND SURVEYOR TO ESTABLISH AT LEAST TWO WITNESS CORNER OR REFERENCE MARKS FOR EACH SUCH MONUMENT OR ACCESSORY REMOVED AND HAS FILED OR CAUSED TO BE FILED A MONUMENT RECORD PURSUANT TO ARTICLE 53 OF TITLE 28, C.R.S.

6. THE PURPOSE OF THIS AMENDMENT IS TO COMBINE LOTS 1 AND 2, BLOCK 1 BLOCK 1, CENTENNIAL ESTATES, AMENDMENT NO.1 SUBDIVISION INTO ONE LOT.

7. ALL GENERAL NOTES, DEDICATIONS AND PLAT RESTRICTIONS, AS SHOWN ON THIS PLAT OF LOTS 1 AND 2, BLOCK 1, CENTENNIAL ESTATES, AMENDMENT NO.1 SUBDIVISION AS RECORDED AT RECEPTION NO. 2010000088066, ADAMS COUNTY RECORDS SHALL APPLY UNLESS SPECIFICALLY AMENDED AND SUPERSEDED HEREBY.

8. THE LEGAL DESCRIPTION(S) ON THIS AMENDMENT WAS PREPARED UNDER THE SUPERVISION OF RAYMOND W. BAYER PLS #6973, OF THE FIRM R.W. BAYER & ASSOCIATES INC. 12170 TEJON STREET UNIT 700, WESTMINSTER COLORADO 80234. 303–452–4433

9. DIMENSIONS IN ( ) ARE PREVIOUSLY DEEDED OR SURVEYED.

SURVEYOR'S CERTIFICATE:

I, RAYMOND W. BAYER, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE SURVEY OF CENTENNIAL ESTATES, REPLAT NO. 1, BLOCK 1, LOTS 1 AND 2 WAS MADE BY ME OR DIRECTLY UNDER MY SUPERVISION ON OR ABOUT THE 20TH DAY OF JULY, 2023, AND THAT THE SURVEY IS BASED UPON MY KNOWLEDGE, INFORMATION AND BELIEF, IT HAS BEEN PREPARED IN ACCORDANCE WITH APPLICABLE STANDARDS OF PRACTICE, THE SURVEY IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED, AND THAT THE ACCOMPANYING PLAT ACCURATELY AND PROPERLY SHOWS SAID ADJUSTMENT AND THE SURVEY THEREOF.

_____ NUMBER: _____
RAYMOND W. BAYER
REGISTERED COLORADO LAND SURVEYOR
DATE: _____

COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT APPROVAL:

APPROVED BY THE ADAMS COUNTY COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT THIS _____ DAY OF_____, 202_____.

_____
PLANNING AND DEVELOPMENT MANAGER

COUNTY CLERK AND RECORDER:

THIS PLAT WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF ADAMS, COUNTY, COLORADO AT____ ___.M. ON THE _____ DAY OF _____ A.D. 2023

_____
COUNTY CLERK AND RECORDER

RECEPTION NO. _____

BY_____
DEPUTY

CASE NO. PLT XXXXX–XXXXX

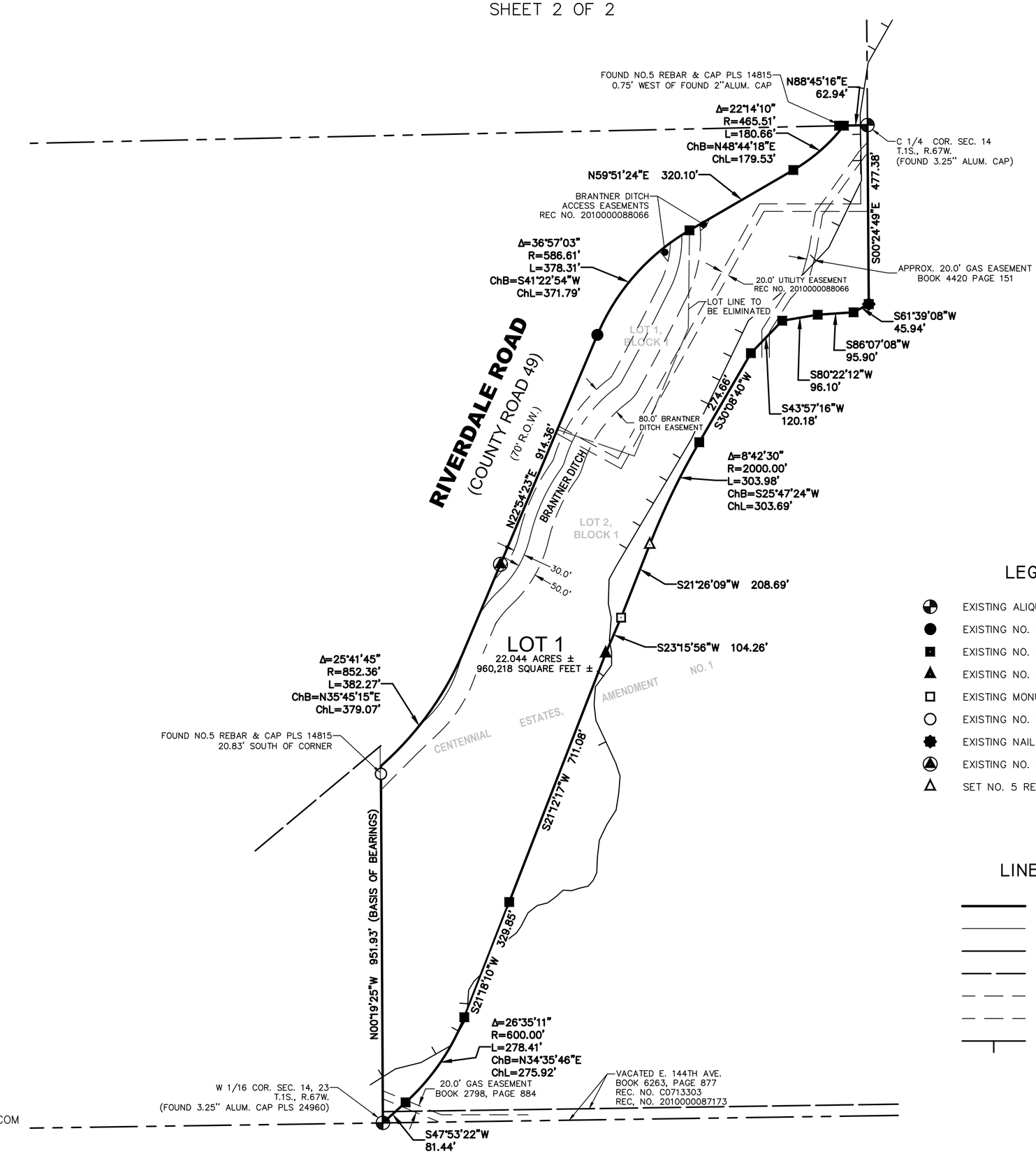
CENTENNIAL ESTATES, REPLAT NO. 1, BLOCK 1, LOTS 1 AND 2

LOCATED IN THE SOUTH ONE–HALF OF SECTION 14, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M., COUNTY OF ADAMS, STATE OF COLORADO
SHEET 2 OF 2

N
W E
S

0 200 400 Feet

SCALE 1" = 200'



LEGEND

- EXISTING ALIQUOT MONUMENT AS DESCRIBED
- EXISTING NO. 5 REBAR & YELLOW CAP – PLS 16823
- EXISTING NO. 5 REBAR & 2" ALUM. CAP – PLS 25379
- EXISTING NO. 5 REBAR & RED CAP – ILLEGIBLE
- EXISTING MONUMENT BELOW WATER – ILLEGIBLE
- EXISTING NO. 5 REBAR & YELLOW CAP – PLS 14815
- EXISTING NAIL AND BRASS TAG – PLS 35595
- EXISTING NO. 5 REBAR & 2" ALUM. CAP 250' W.C. – PLS 25379
- SET NO. 5 REBAR & YELLOW CAP – PLS 6973

LINE LEGEND

- BOUNDARY LINE
- LOT LINE
- SECTION LINE
- RIGHT–OF–WAY LINE
- EASEMENT LINE
- EASEMENT LINE DEDICATED BY THIS PLAT
- FLOOD PLANE LINE

PREPARED BY:

R.W. BAYER & ASSOCIATES, INC.
12170 TEJON STREET, UNIT 700
WESTMINSTER, COLORADO 80234
(303)452–4433 INFO@RWBSURVEYING.COM

CAD FILE: 24170/24170–PLAT.DWG
SHEET 2 OF 2
DATE PREPARED: JUNE 3, 2025

ZEREN
LAND SERVICES
OIL AND GAS TITLE

P.O. Box 336337
Greeley, CO 80633

Phone (970) 351-0733
Fax (970) 351-0867

LIST OF MINERAL OWNERS AND MINERAL LESSEES for NOTIFICATION
(MDC Holdings LLC Property)

Subject Property:

Township 1 South, Range 67 West, 6th P.M., Adams County, CO
Section 14: Lots 1 and 2, Block 1, Centennial Estates, Amendment No. 1 according to that certain map or plat thereof, recorded December 20, 2010 under Reception No. 2010000088066, being a part of the SW¼

Zeren Land Services, an oil and gas title research company, states that to the best of its knowledge the following is a true and accurate list of the names and addresses of the mineral owners and mineral leasehold owners entitled to notice under the Surface Development Notification Act, Colorado Revised Statutes §24-65.5-101, et seq. in the Subject Property based upon the records of the Adams County Assessor and Clerk Recorder as of September 30, 2024 at 7:45 a.m.:

Mineral Owners:

None (entitled to notice)

Mineral Leasehold Owners:

Extraction Oil & Gas LLC
555 17th St. Ste. 3700
Denver, CO 80202

Dated this 3rd day of October, 2024.

ZEREN LAND SERVICES

By: Cynthia A. E. Zeren, CPL
Certified Professional Landman #4044

At the request of **Western Engineering Consultants, Inc. LLC** ("Client"), Zeren Land Services, an independent land consulting firm, has prepared the foregoing list of mineral estate owners entitled to notice under the Surface Development Notification Act, Colorado Revised Statutes §24-65.5-101, et seq.

Zeren Land Services, searched (i) the records of the Adams County Assessor relating to the Subject Property for persons identified therein as mineral estate owners, and (ii) the records of the Adams County Clerk and Recorder relating to the Subject Property for recorded requests for notification in the form specified in the Surface Development Notification Act. The results of these searches are set forth above in this List of Mineral Owners Entitled to Notice. At the date of the search, the records of the Assessor and the Clerk and Recorder were posted through September 30, 2024 at 7:45 A.M.

The Adams County Clerk and Recorder has revised and modified their method of indexing the Requests for Notification of Surface Development which does not conform to the applicable statutory guidelines. Although we make every reasonable effort to locate the applicable Requests, our search is, therefore, further restricted by the current practices of the Office of the Clerk and Recorder.

Zeren Land Services, agreed to prepare this listing for the Client only if the Client agreed that the liability of Zeren Land Services, would be strictly limited to the amount paid by the Client for such services. Zeren Land Services, makes no warranty, express, implied or statutory, in connection with the accuracy, completeness or sufficiency of such listing of mineral estate owners. In the event the listing proves to be inaccurate, incomplete, insufficient or otherwise defective in any way whatsoever or for any reason whatsoever, **the liability of Zeren Land Services, shall never exceed the actual amount paid by Client to Zeren Land Services**, for the listing.

In order to induce Zeren Land Services, to provide such services**, Client further agreed to indemnify and hold Zeren Land Services, its managers, members and employees, harmless from and against all claims by all persons (including, but not limited to Client) of whatever kind or character arising out of the preparation and use of each such listing of mineral estate owners, to the extent that such claims exceed the actual amount paid to Client by Zeren Land Services, for such listing.** Client specifically intends that both the foregoing limitation on liability and foregoing indemnification shall be binding and effective without regard to the cause of the claim, inaccuracy or defect, including, but not limited to, breach of representation, warranty or duty, any theory of tort or of breach of contract, or the fault or negligence of any party (including Zeren Land Services) of any kind or character (regardless of whether the fault or negligence is sole, joint, concurrent, simple or gross). **Client's use of this listing evidences Client's acceptance of, and agreement with, this limitation on liability and the indemnification.**

ZEREN LAND SERVICES

Date: October 3, 2024

By: Cynthia A. E. Zeren

Cynthia A. E. Zeren, as President