



CITY OF KENNEWICK HEARING EXAMINER
Andrew Kottkamp, Hearing Examiner

AGENDA

**MONDAY, APRIL 10, 2023
6:00 P.M.**

**CITY OF KENNEWICK
HYBRID COUNCIL CHAMBERS & VIRTUAL MEETING
210 W. 6TH AVE, KENNEWICK, WA 99336**

Procedure for Participation

- Please register and sign in to Zoom if you wish to receive a copy of the decision when it is issued and if you plan to give testimony.
- When recognized by the Examiner, state your name, address and whether you are representing only yourself or others.
- All remarks, comments, and questions should be addressed to the Hearing Examiner and not to the audience or parties. You may offer written comments or other items (such as photographs) to the Hearing Examiner as an exhibit for the permanent record. Please provide at least three (3) copies of each item submitted: one copy for the Hearing Examiner, one for the Official Record, and one for Staff). During an Appeal Hearing, if the appellant and the applicant are different parties, then a fourth copy of all documentation is requested.

I. CALL TO ORDER

II. PROCEDURAL INFORMATION

III. PUBLIC HEARING

Preliminary Plat (SUB-2022-0022), "Apple Valley Ph. 7-9" proposing to subdivide 49.74 acres into 125 lots and 9 tracts generally located 7165 W. 32nd Avenue, 7082 W. 34th Avenue, 7117 W. 30th Avenue. The site is currently zoned Residential, Low Density (RL), the Comprehensive Plan designation is Low Density Residential. The applicant is Jason Mattox, PBS Engineering, 400 Bradley Blvd., Suite 106, Richland, WA 99352. Property owner is Matt Smith, Tri-Cities Development LLC, 15 SW Colorado Avenue, Unit 1, Bend, OR 97702.

IV. ADJOURN



COMMUNITY PLANNING DEPARTMENT
STAFF REPORT AND RECOMMENDATION TO
THE HEARING EXAMINER
FILE No: SUB-2022-0022

Staff Report Date:	April 3, 2023
Public Hearing Date and Location:	April 10, 2023, Hybrid Hearing
Report Prepared By:	Steve Donovan, AICP, Planning Manager
Report Reviewed By:	Anthony Muai, AICP, Community Planning Director
Summary Recommendation:	The City of Kennewick RECOMMENDS APPROVAL with conditions of Preliminary Plat SUB-2022-0022.
Summary of Proposal:	A Preliminary Plat proposed to subdivide 49.74 acres into 125 lots and 9 tracts.
Proposal Location:	7165 W 32 nd Avenue, 7082 W 34 th Avenue, 7117 W 30 th Avenue, Parcel Numbers 1-1789-204-0005-001, 1-1789-200-0001-017 and 1-1789-200-0001-014
Legal Description:	See Exhibit 3
Property Owner(s):	Tri-Cities Development, LLC Attn: Matt Smith 15 SW Colorado Avenue, Unit 1 Bend, OR 97702
Applicant:	PBS Engineering and Environmental Attn: Jason Mattox, PE 400 Bradley Boulevard, Suite 106 Richland, WA 99352
Engineer:	Same As Above
Surveyor:	PBS Engineering and Environmental Attn: Alex Matarazzo, PLS 200 Bradley Boulevard, Suite 106 Richland, WA 99352

Approval Criteria:

1. Comprehensive Plan – Land Use
2. Kennewick Municipal Code (KMC) Title 18 – Zoning
3. KMC Title 17 – Subdivisions
4. KMC Section 5.56 – Public Works Construction Standards
5. Washington State Environmental Policy Act

Preliminary Plat Key Application Processing Dates:

Pre-Application/Feasibility Meeting	N/A
Application Submittal	September 16, 2022
Determination of Completeness Issued	September 24, 2022
Notice of Application	October 25, 2022
Property Posting Sign	October 25, 2022
City Department Review Meeting	N/A
SEPA Threshold Determination Issued	February 22, 2023
SEPA Appeal Period Ends	March 8, 2023
Date of Published Notice of Public Hearing	March 26, 2023
Date of Mailed Notice of Public Hearing	March 24, 2023
Date of Public Hearing Notice Posting	March 24, 2023

Exhibits:

1. Staff Report
2. Preliminary Plat
3. Legal Description
4. Notice of Public Hearing, 300-ft. mailing list and mailing affidavit
5. Determination of Non-Significance ED-2022-0038
6. Traffic Impact Analysis and Traffic Engineering Division Traffic Impact Analysis Comments
7. Public Works Department Comments
8. GIS and Traffic Plat and Grading Plan Comments
9. Benton Public Utility District Comments, dated 10/26/2022
10. Kennewick Irrigation District comments, dated 11/1/2022
11. Washington State Department of Ecology Comments, dated 11/7/2022
12. Department of Archaeology & Historic Preservation Comments, dated 11/8/2022
13. Cultural Resources Survey Report for the Apple Valley Development – Kennewick, Washington (DAHP Project #2022-11-07394)
14. Department of Archaeology & Historic Preservation Approval Email, dated 2/21/2023
15. Applicant Response to First Review Comments for Preliminary Plat SUB-2022-0022, dated 1/24/2023
16. Kennewick School District comments, dated 3/21/2023
17. Kennewick Parks, Recreation & Facilities Memorandum, dated 3/15/2023

Staff Analysis of Proposal & Discussion:

The proposed Preliminary Plat (SUB-2022-0022) is a request for the subdivision of 49.74-acres into 125 lots and 9 tracts. The proposal is generally located at 7165 W 32nd Avenue, 7082 W 34th Avenue, 7117 W 30th Avenue.

The site has a Comprehensive Plan Land-Use Designation of Low Density Residential and is zoned Residential, Low Density (RL).

A Preliminary Plat (KMC 17.10) is the first step in a subdivision process for subdivisions with more than nine (9) lots and is an approval for overall lot layout and compliance with land use regulations. A Final Plat is required to create lots for preliminary plats and is the last phase in the subdivision process, and must be recorded prior to the creation of individual lots. Final plat approval is based on the Preliminary Plat conditions of approval. A civil permit with a detailed review of street, utility and stormwater construction standards, and street and utility construction or bonding for incomplete work is required prior the final plat approval. Additionally, the City of Kennewick's Residential Design Standards apply to this project.

Property History:

The City of Kennewick annexed Parcel 1-1789-200-0001-017 on May 7, 1974 by Ordinance 1754. The City annexed Parcels 1-1789-204-0005-001 and 1-1789-200-0001-0014 on April 18, 2006 by Ordinance 5142. On December 6, 2011, the City adopted Ordinance 5385 and established the current land use designation and zoning district.

Density/Lot Size:

Per the Table of Residential Development Standards (KMC 18.12.010 A.2), the RL zoning district has a minimum lot size of 7,500 square feet with no maximum density.

The proposed development has a minimum residential lot area of 7,636 square feet, a maximum residential lot area of 15,645, with an overall lot average of 9,849 square feet.

Tracts RR and UU are proposed for pedestrian access and as a water main tract. Tracts QQ, SS, TT and YY are proposed as public sidewalks, utilities and landscape tracts. Tracts WW and XX are for storm water retention. All of the tracts will be maintained by the subdivision's Home Owner's Association.

Staff Comment: The preliminary plat as proposed meets the Residential Development Standards contained in KMC 18.12.010(A.2), and is subject to the Residential Design Standards, Single-Family.

Traffic & Streets:

The applicant submitted a Traffic Impact Analysis that has been review by the Traffic Engineering Division.

Public Works made the following comments:

- The construction of the half-street improvements for Colorado Street is required to be completed along the entirety of the Apple Valley Development, from Bob Olson Parkway to the southern end of the development (Ridgeline Drive).
- Dedicate and construct the eastbound right turn lane at Colorado Street and Bob Olson Parkway.

Storm Water:

Storm water design must be able to retain and dispose of a 25-year 24-hour storm following the Storm Water Management Manual for Eastern Washington (SMMEW) and COK Standard Specification Section 5-8.

Water and Sewer

Services are to be constructed to City of Kennewick (COK) Detail 3-6. Additionally Public Works has the following comment:

- The southernmost segment of sewer mainline in Colorado Street shall be connected to the sewer main line running directly north to Bob Olson Parkway in Colorado Street. The City may require oversizing for this or other mainlines, but will reimburse for the over sizing.

Parks:

The proposed development is in Service Area 1. The Park Impact Fee for Service Area 1 is for 2023 is \$1064 per Single-Family Unit. The Park Impact Fee is due prior to the City issuing the certificate of occupancy.

Critical Areas:

The site is mapped as having erosion hazard areas and slopes greater than 15%. The site has been heavily graded and the slopes greater than 15% no longer exist.

The Building Safety Division is requiring a Soil Bearing Capacity Report at footing depth, stamped by a Geo-Tech Engineer, for each individual lot or that covers the entire site. The study(s) must be submitted with the Building Permit Applications.

Schools:

The boundary schools for the proposed development are Sage Crest Elementary (Walking Zone), Chinook Middle School (Bussing Zone) and Southridge High School (Bussing Zone).

The Kennewick School District has the capacity to add students at all three schools.

Surrounding Property:

The properties to the west are zoned RL and vacant. The property to the south and north, across Bob Olson Parkway, consists of property being developed into single-family residential. The property to the east is fully developed into single-family residential.

Provisions for Public Health, Safety, and Welfare:

The proposed development will be constructed to City of Kennewick Residential Design Standards and the applicable requirement of the Kennewick Municipal Code.

Staff Comment: It is staff's opinion that appropriate provisions have been made for, but are not limited to, the public health, safety, and general welfare, for open spaces, drainage ways, streets or roads, alleys, public sidewalks, utility easements and other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation areas, playgrounds, schools and school grounds, and the proposed subdivision has considered all other relevant facts and other planning features that assure safe walking conditions for students who walk to and from school.

Public Comments:

No submitted comments from the public.

Comprehensive Plan:

Staff is of the opinion that this request is consistent with and generally conforms to the City's Comprehensive Plan, and it will implement, goals and policies of the Comprehensive Plan. Particularly the following:

RESIDENTIAL GOAL 1: "Provide for attractive, walkable, and well-designed residential neighborhoods, with differing densities and compatible with neighboring areas."

Staff Comment: The proposed Preliminary Plat is consistent with the Comprehensive Plan Land Use and complies with development standards for Residential, Low Density (RL) zoning district.

RESIDENTIAL GOAL 2: "Provide appropriate public facilities supporting residential areas."

POLICY1: “Ensure provision of parks, schools, drainage, transit, water, sanitation, infrastructure and pedestrian in new residential developments.”

POLICY 2: “Encourage irrigation service throughout residential areas, when available, to support and maintain healthy landscaping.”

POLICY 3: “Deny residential developments if concurrency is not met for transportation, water, and sewer, or appropriately condition.”

Staff Comment: *The proposed development will be constructed with the required infrastructure improvements that meet applicable standards.*

RESIDENTIAL GOAL 3: “Promote a variety of residential densities with a minimum density target of 3 units per acre as averaged throughout the urban areas.”

POLICY 2: “Residential Low Density: Place lands constrained by sensitive areas, those intended for provide transition to the rural areas, or those appropriate for large lot housing within the Residential Low Density land use designation to allow for a range of lifestyles.

Staff Comment: *As proposed, the development meets Goal 3 and Policy 2 by meeting the minimum density of three units per acre.*

The City of Kennewick hereby RECOMMENDS that Preliminary Plat SUB-2022-0022 be APPROVED with the following conditions:

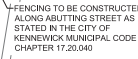
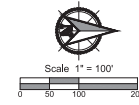
1. Comply with City of Kennewick regulatory controls, policies and codes, including the Residential Design Standards – Single-Family Residential.
2. A landscape plan must be submitted for approval of all common areas, open spaces and rights-of-way, listing the number, location, and species of trees, sizes of plant material, and ground cover prior to final plat approval. Street trees shall be placed at 40-foot intervals and within five feet of the back of sidewalk for curb tight sidewalks. The landscape plan shall be prepared by a licensed landscape architect or licensed landscape installer drawn to a legible scale.
3. Provide a bond or cash deposit for incomplete sidewalks and applicable landscaping prior to final plat approval. Trees for the individual residential lots shall be planted prior to receiving certificate of occupancy for each new home.
4. All fees required by the City shall be paid prior to approval of the final plat.
5. All development of the plat shall be in conformance and consistent with the plat drawing which was admitted as Exhibit 2.
6. Provide the Building Safety Division with a Soil Bearing Capacity Report at footing depth, stamped by a Geo-Tech Engineer, for each individual lot or that covers the entire site, no later than at the time of Building Permit Application submittal.
7. Comply with Public Works Department Comments, Exhibit 7.
8. Comply with the Traffic Engineering Division Comments, Exhibit 8.
9. Comply with GIS and Traffic Plat and Grading Plan Comments, Exhibit 9.
10. Comply with Benton Public Utility District Comments, Exhibit 10.
11. Comply with the applicable requirements of Kennewick Irrigation District Comments, Exhibit 11.
12. Comply with Washington State Department of Ecology Comments, Exhibit 12.
13. Provide dust control method(s) such as hydro seeding for all areas of the site that are disturbed.

14. The applicant and/or all of its successors must execute a written agreement to the satisfaction of the City Attorney, which will allow the City to establish enforceable arrangements for maintenance of any common areas, open spaces, private roads and common landscape areas, should the Homeowner's Association fail or refuse to maintain these areas.
15. The Preliminary Plat (SUB-2022-0022) expires 5 years from the approval date. The City may grant an extension, but any extension application must be applied for before the approved preliminary plat expires.

Located In The NW 1/4 Of Sec. 17 and The SW 1/4 of Sec. 8, T. 8N., R.29E., W.M.

BASIS OF ELEVATION:
ENNEWICK NAVD88 DATUM, POINT "K0937"
G NAIL LOCATED AT THE NORTH 1/4 CORNER
N 17, T8N, R29E, W.M. HAVING AN ELEVATION
OF 784.90

Located In The NW 1/4 Of Sec. 17 and The SW 1/4 of Sec. 8, T. 8N., R.29E., W.M.



LAND USE TABLE	
SITE AREA:	40.74 ACRES
TOTAL LOT COUNT:	125 LOTS / 9 TRACTS
SINGLE FAMILY RESIDENTIAL LOTS:	125 LOTS (LOTS 1-125)
MINIMUM RESIDENTIAL LOT AREA:	7,636 SF (LOT 43)
MAXIMUM RESIDENTIAL LOT AREA:	15,645 SF (LOT 91)
OVERALL AVG. LOT AREA:	9,849 SF (LOTS 1-125)
RIGHT OF WAY DEDICATION:	319,977 SF (7.34 ACRES)
TRACTS QQ, RR, SS, TT, UU, VV, WW, XX & YY:	220,379 (5.05 ACRES)
TRACTS RR & UU ONLY:	PEDESTRIAN ACCESS AND WATER MAIN TRACT
TRACT QQ, SS, TT & YY USE:	PUBLIC SIDEWALK, UTILITIES, AND LANDSCAPE TRACT
TRACT WW & YY USE:	STORM TRACTS

EASEMENT KEY: **XX**

- EXISTING 15' SIDEWALK & UTILITY EASEMENT PER AFN 2022-007626.
- EXISTING 10' P.U.D. EASEMENT PER SHORT PLAT NO. 3486 (AFN 2007-007166) BY SZENDRE.
- EXISTING 15' P.U.D. EASEMENT PER SHORT PLAT NO. 288 (AFN 2002-002681) BY CHRISTENSEN.
- EXISTING 15' SIDEWALK, UTILITY & EASEMENT PER SHORT PLAT NO. 3486 (AFN 2007-007166) BY SZENDRE
- EXISTING 20' SANITARY SEWER EASEMENT PER AFN 2014-022661.
- EXISTING 40' PLYMOUTH DRAIN PER AFN 381013.
- EXISTING 20' STORM & ACCESS EASEMENT PER APPLE VALLEY PH. 4B (AFN 2020-033559) BY MATARAZZO.

CITY OF KENNEWICK FILE #:

PRELIMINARY
SUBJECT TO AGENCY REVIEW
NOT FOR CONSTRUCTION

PRELIMINARY PLAT FOR:

APPLE VALLEY - PHASES 7-9



Know what's below.
Call before you dig.



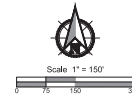
DESIGNED:
DCC/SG

CHECKED:
JLM

SEP 2022
66090.008

SHEET **1** OF **3**

NOTE:
SEE SHEET 3 FOR LEGAL DESCRIPTIONS.



FD. 3" BRASS CAP IN CASE AT CENTER
1/4 CORNER SEC. 17 PER THE VILLAGE
AT SOUTHRIDGE PHASE 1

CITY OF KENNEWICK FILE #:

PRELIMINARY
SUBJECT TO AGENCY REVIEW
NOT FOR CONSTRUCTION

PRELIMINARY PLAT FOR:

APPLE VALLEY - PHASES 7-9



DESIGNED:
DCC/SG
CHECKED:
JLM
SEP 2022
66090.008

EXHIBIT "A"

PARCEL A:

A PORTION OF LOT 3 OF SHORT PLAT NO. 3488, ACCORDING TO THE SURVEY THEREOF RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2016-007168, RECORDS OF BENTON COUNTY, WASHINGTON AND A PORTION OF THE FORMER HILDEBRAND BOULEVARD RIGHT OF WAY, VACATED BY CITY OF KENNEWICK ORDINANCE NO. 5820, FILED IN THE OFFICE OF THE CITY CLERK OF THE CITY OF KENNEWICK, WASHINGTON ON AUGUST 21, 2019 AND A PORTION OF PARCEL "C" OF SURVEY NO. 4979 FOR PLAT EXEMPTION, ACCORDING TO THE SURVEY THEREOF RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2018-002099, AND DESCRIBED IN DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2018-005308, LOCATED WITHIN THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 17 AND THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 8, TOWNSHIP 8 NORTH, RANGE 29 EAST OF THE WILLAMETTE MERIDIAN, CITY OF KENNEWICK, BENTON COUNTY, WASHINGTON, DESCRIBED MORE PARTICULARLY AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE NORTHWEST QUARTER OF SAID SECTION 17, MARKED WITH A 1/2 INCH IRON PIPE PER THAT SURVEY RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2011-001284;
 THENCE NORTH 00°41'22" WEST ALONG THE WEST LINE OF SAID NORTHWEST QUARTER OF SECTION 17 A DISTANCE OF 2,645.92 FEET TO THE NORTHWEST CORNER THEREOF, MARKED WITH A 5/8 INCH IRON PIN BY CHRISTENSEN, NOT OF RECORD;
 THENCE SOUTH 00°41'22" EAST ALONG SAID WEST LINE OF THE NORTHWEST QUARTER OF SECTION 17 A DISTANCE OF 389.56 FEET TO THE TRUE POINT OF BEGINNING;
 THENCE SOUTH 00°41'22" EAST CONTINUING ALONG SAID WEST LINE OF THE NORTHWEST QUARTER OF SECTION 17 A DISTANCE OF 825.36 FEET TO THE SOUTHERLY BOUNDARY OF SAID PARCEL "C" OF SURVEY NO.4979 AND DESCRIBED IN SAID DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2018-005308;
 THENCE ALONG SAID SOUTHERLY BOUNDARY THE FOLLOWING COURSES:
 THENCE NORTH 89°18'38" EAST A DISTANCE OF 176.02 FEET;
 THENCE NORTH 00°41'22" WEST A DISTANCE OF 10.28 FEET;
 THENCE NORTH 89°18'38" EAST A DISTANCE OF 666.74 FEET TO THE SOUTHEAST CORNER THEREOF AND THE WESTERLY BOUNDARY OF THE PLATS OF APPLE VALLEY PHASES 3 AND 4A RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBERS 2019-004311 AND 2019-030120, RESPECTIVELY, AND BEING A POINT ON THE ARC OF A NON-TANGENT CURVE TURNING TO THE RIGHT, HAVING A RADIUS OF 823.59 FEET; THE RADIUS POINT OF WHICH BEARS NORTH 80°12'09" EAST;
 THENCE ALONG SAID CURVE AND COMMON BOUNDARY BETWEEN SAID PARCEL "C" AND SAID WESTERLY BOUNDARY OF THE PLATS OF APPLE VALLEY PHASES 3 AND 4A, HAVING AN ARC LENGTH OF 125.56 FEET, WITH A DELTA ANGLE OF 08°44'07", A CHORD BEARING OF NORTH 05°25'48" WEST AND A CHORD LENGTH OF 125.44 FEET TO A NON-TANGENT LINE;
 THENCE ALONG SAID NON TANGENT LINE AND CONTINUING ALONG SAID COMMON BOUNDARY THE FOLLOWING COURSES:
 THENCE NORTH 00°41'22" WEST A DISTANCE OF 59.01 FEET;
 THENCE NORTH 89°18'38" EAST A DISTANCE OF 37.87 FEET;
 THENCE NORTH 00°41'22" WEST A DISTANCE OF 117.51 FEET;
 THENCE NORTH 00°41'23" WEST A DISTANCE OF 106.15 FEET;
 THENCE SOUTH 89°18'37" WEST A DISTANCE OF 34.18 FEET;

CONTINUED

THENCE NORTH 00°41'22" WEST A DISTANCE OF 666.85 FEET TO A POINT HEREAFTER REFERRED TO AS POINT "C";
 THENCE NORTH 41°17'42" WEST LEAVING SAID COMMON BOUNDARY A DISTANCE OF 76.79 FEET TO A POINT OF CURVATURE WITH A TANGENT CURVE TURNING TO THE LEFT, HAVING A RADIUS OF 180.02 FEET;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 126.04 FEET, WITH A DELTA ANGLE OF 40°06'52", A CHORD BEARING OF NORTH 61°21'08" WEST AND A CHORD LENGTH OF 123.48 FEET;
 THENCE NORTH 81°24'34" WEST A DISTANCE OF 271.98 FEET TO A POINT OF CURVATURE WITH A TANGENT CURVE TURNING TO THE LEFT, HAVING A RADIUS OF 380.04 FEET;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 69.84 FEET, WITH A DELTA ANGLE OF 10°31'44", A CHORD BEARING OF NORTH 86°40'26" WEST AND A CHORD LENGTH OF 69.74 FEET;
 THENCE SOUTH 88°03'42" WEST A DISTANCE OF 44.45 FEET;
 THENCE SOUTH 00°41'22" EAST A DISTANCE OF 426.03 FEET;
 THENCE SOUTH 89°18'38" WEST A DISTANCE OF 296.03 FEET TO THE TRUE POINT OF BEGINNING.

TOGETHER WITH:

A PORTION OF LOT 3 OF SHORT PLAT NO. 3488, ACCORDING TO THE SURVEY THEREOF RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2016-007168, RECORDS OF BENTON COUNTY, WASHINGTON AND A PORTION OF THE FORMER HILDEBRAND BOULEVARD RIGHT OF WAY, VACATED BY CITY OF KENNEWICK ORDINANCE NO. 5820, FILED IN THE OFFICE OF THE CITY CLERK OF THE CITY OF KENNEWICK, WASHINGTON ON AUGUST 21, 2019 AND A PORTION OF PARCEL "C" OF SURVEY NO. 4979 FOR PLAT EXEMPTION, ACCORDING TO THE SURVEY THEREOF RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2018-002099, AND DESCRIBED IN DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2018-005308, LOCATED WITHIN THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 17 AND THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 8, TOWNSHIP 8 NORTH, RANGE 29 EAST OF THE WILLAMETTE MERIDIAN, CITY OF KENNEWICK, BENTON COUNTY, WASHINGTON, DESCRIBED MORE PARTICULARLY AS FOLLOWS:

COMMENCING AT SAID POINT "C", THENCE NORTH 00°41'22" WEST CONTINUING ALONG THE SAID COMMON BOUNDARY BETWEEN SAID PARCEL "C" AND SAID WESTERLY BOUNDARY OF THE PLAT OF APPLE VALLEY PHASE 4A, A DISTANCE OF 12.29 FEET;
 THENCE CONTINUING ALONG SAID COMMON BOUNDARY THE FOLLOWING COURSES:
 THENCE NORTH 88°03'42" EAST A DISTANCE OF 20.71 FEET;
 THENCE NORTH 01°56'18" WEST A DISTANCE OF 25.22 FEET TO THE TRUE POINT OF BEGINNING;
 THENCE NORTH 01°56'18" WEST CONTINUING ALONG SAID COMMON BOUNDARY A DISTANCE OF 80.79 FEET TO THE SAID FORMER SOUTH MARGIN OF HILDEBRAND BOULEVARD RIGHT OF WAY;
 THENCE NORTH 88°03'42" EAST ALONG SAID FORMER SOUTH RIGHT OF WAY MARGIN A DISTANCE OF 506.15 FEET TO THE INTERSECTION WITH THE SOUTHWESTERLY MARGIN OF BOB OLSON PARKWAY RIGHT OF WAY, ESTABLISHED PER THAT DEED RECORDED UNDER BENTON COUNTY AUDITORS' FILE NUMBER 2017-005228 AND SAID SHORT PLAT RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2016-007168 AND BEING A POINT ON THE ARC OF A NON-TANGENT CURVE TURNING TO THE LEFT, HAVING A RADIUS OF 738.00 FEET; THE RADIUS POINT OF WHICH BEARS SOUTH 27°35'58" WEST;
 THENCE ALONG SAID CURVE AND SAID SOUTHWESTERLY RIGHT OF WAY MARGIN, HAVING AN ARC LENGTH OF 244.82 FEET, WITH A DELTA ANGLE OF 19°00'25", A CHORD BEARING OF NORTH 71°54'14" WEST AND A CHORD LENGTH OF 243.70 FEET;

CONTINUED

THENCE NORTH 81°24'26" WEST CONTINUING ALONG SAID SOUTHWESTERLY RIGHT OF WAY MARGIN A DISTANCE OF 1,084.44 FEET TO A POINT OF CURVATURE WITH A TANGENT CURVE TURNING TO THE LEFT, HAVING A RADIUS OF 25.00 FEET;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 43.16 FEET, WITH A DELTA ANGLE OF 98°54'11", A CHORD BEARING OF SOUTH 49°08'28" WEST AND A CHORD LENGTH OF 38.00 FEET TO A LINE BEING A 29.00 FOOT EASTERLY OFFSET OF THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 8;
 THENCE SOUTH 00°18'37" EAST ALONG SAID OFFSET LINE A DISTANCE OF 132.15 FEET TO A POINT OF CURVATURE WITH A TANGENT CURVE TURNING TO THE LEFT, HAVING A RADIUS OF 25.00 FEET;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 39.98 FEET, WITH A DELTA ANGLE OF 91°37'41", A CHORD BEARING OF SOUTH 46°07'28" EAST AND A CHORD LENGTH OF 35.86 FEET;
 THENCE NORTH 88°03'42" EAST A DISTANCE OF 284.48 FEET TO A POINT OF CURVATURE WITH A TANGENT CURVE TURNING TO THE RIGHT, HAVING A RADIUS OF 420.04 FEET;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 77.19 FEET, WITH A DELTA ANGLE OF 10°31'44", A CHORD BEARING OF SOUTH 86°40'26" EAST AND A CHORD LENGTH OF 77.08 FEET;
 THENCE SOUTH 81°24'34" EAST A DISTANCE OF 271.98 FEET TO A POINT OF CURVATURE WITH A TANGENT CURVE TURNING TO THE RIGHT, HAVING A RADIUS OF 220.02 FEET;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 154.04 FEET, WITH A DELTA ANGLE OF 40°06'52", A CHORD BEARING OF SOUTH 61°21'08" EAST AND A CHORD LENGTH OF 150.92 FEET;
 THENCE SOUTH 41°17'42" EAST A DISTANCE OF 61.09 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL B:

TRACT R OF THE AMENDED PLAT OF APPLE VALLEY PHASE 3 ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 15 OF PLATS, PAGE 647, RECORDS OF BENTON COUNTY, WASHINGTON TOGETHER WITH A PORTION OF THOSE LANDS DESCRIBED IN DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2019-008432 AND BEING A PORTION OF "NEW PARCEL E" AS SHOWN ON THE SURVEY FOR PLAT EXEMPTION RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2019-007030, ALL LOCATED WITHIN THE NORTHWEST QUARTER OF SECTION 17, TOWNSHIP 8 NORTH, RANGE 29 EAST OF THE WILLAMETTE MERIDIAN, CITY OF KENNEWICK, BENTON COUNTY, WASHINGTON, DESCRIBED MORE PARTICULARLY AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID NORTHWEST QUARTER OF SECTION 17, MARKED WITH A 3 INCH BRASS CAP PER THE PLAT OF THE VILLAGE AT SOUTHRIDGE PHASE 1 RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2017-029283;
 THENCE SOUTH 88°47'16" WEST ALONG THE SOUTH LINE OF SAID NORTHWEST QUARTER OF SECTION 17 A DISTANCE OF 2,653.96 FEET TO THE SOUTHWEST CORNER THEREOF, MARKED WITH A 1/2 INCH IRON PIPE PER THAT SURVEY RECORDED UNDER AUDITOR'S FILE NUMBER 2011-001284;
 THENCE NORTH 00°41'22" WEST ALONG THE WEST LINE OF SAID NORTHWEST QUARTER OF SECTION 17 A DISTANCE OF 562.91 FEET TO THE TRUE POINT OF BEGINNING;
 THENCE NORTH 00°41'22" WEST CONTINUING ALONG SAID WEST LINE OF THE NORTHWEST QUARTER OF SECTION 17 A DISTANCE OF 868.09 FEET TO THE INTERSECTION WITH THE NORTHERLY BOUNDARY OF SAID "NEW PARCEL E" OF THAT SURVEY FOR PLAT EXEMPTION RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2019-007030;
 THENCE ALONG SAID NORTHERLY BOUNDARY THE FOLLOWING COURSES:
 THENCE NORTH 89°18'38" EAST A DISTANCE OF 176.02 FEET;

CONTINUED

THENCE NORTH 00°41'22" WEST A DISTANCE OF 10.28 FEET;
 THENCE NORTH 89°18'38" EAST A DISTANCE OF 666.74 FEET TO A POINT ON THE ARC OF A NON TANGENT CURVE TURNING TO THE LEFT, HAVING A RADIUS OF 823.59 FEET; THE RADIUS POINT OF WHICH BEARS NORTH 80°12'09" EAST;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 32.30 FEET, WITH A DELTA ANGLE OF 02°14'49", A CHORD BEARING OF SOUTH 10°55'16" EAST, AND A CHORD LENGTH OF 32.30 FEET TO A NON TANGENT LINE BEING ALONG THE EASTERLY BOUNDARY OF SAID TRACT R OF THE AMENDED PLAT OF APPLE VALLEY PHASE 3;
 THENCE ALONG SAID EASTERLY BOUNDARY THE FOLLOWING COURSES:
 THENCE SOUTH 17°11'23" EAST ALONG SAID NON TANGENT LINE A DISTANCE OF 25.11 FEET TO A POINT OF CURVATURE WITH A TANGENT CURVE TURNING TO THE LEFT, HAVING A RADIUS OF 545.05 FEET;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 95.89 FEET, WITH A DELTA ANGLE OF 10°04'49", A CHORD BEARING OF SOUTH 22°13'47" EAST, AND A CHORD LENGTH OF 95.77 FEET;
 THENCE SOUTH 27°16'12" EAST A DISTANCE OF 49.79 FEET TO A POINT OF CURVATURE WITH A TANGENT CURVE TURNING TO THE RIGHT, HAVING A RADIUS OF 255.03 FEET;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 78.29 FEET, WITH A DELTA ANGLE OF 17°35'25", A CHORD BEARING OF SOUTH 18°28'30" EAST, AND A CHORD LENGTH OF 77.99 FEET TO THE NORTHERLY MARGIN OF WEST 32ND AVENUE RIGHT OF WAY DEDICATED PER SAID AMENDED PLAT OF APPLE VALLEY PHASE 3;
 THENCE NORTH 69°15'47" WEST ALONG SAID NORTHERLY RIGHT OF WAY A DISTANCE OF 5.60 FEET TO THE EASTERLY BOUNDARY OF SAID "NEW PARCEL E" OF THAT SURVEY FOR PLAT EXEMPTION RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 2019-007030;
 THENCE ALONG SAID EASTERLY BOUNDARY THE FOLLOWING COURSES:
 THENCE SOUTH 25°16'54" WEST A DISTANCE OF 40.13 FEET;
 THENCE SOUTH 20°44'13" WEST A DISTANCE OF 145.01 FEET;
 THENCE SOUTH 69°15'47" EAST A DISTANCE OF 35.95 FEET TO A POINT ON THE ARC OF A NON TANGENT CURVE TURNING TO THE LEFT, HAVING A RADIUS OF 663.78 FEET; THE RADIUS POINT OF WHICH BEARS NORTH 20°51'06" EAST;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 67.80 FEET, WITH A DELTA ANGLE OF 05°51'07", A CHORD BEARING OF SOUTH 72°04'28" EAST, AND A CHORD LENGTH OF 67.77 FEET;
 THENCE SOUTH 14°59'00" WEST A DISTANCE OF 144.94 FEET;
 TO A POINT ON THE ARC OF A NON TANGENT CURVE TURNING TO THE LEFT, HAVING A RADIUS OF 820.08 FEET; THE RADIUS POINT OF WHICH BEARS NORTH 14°59'00" EAST;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 16.53 FEET, WITH A DELTA ANGLE OF 01°09'18", A CHORD BEARING OF SOUTH 75°35'40" EAST, AND A CHORD LENGTH OF 16.53 FEET;
 THENCE SOUTH 13°40'06" WEST A DISTANCE OF 128.35 FEET TO A POINT ON THE ARC OF A NON TANGENT CURVE TURNING TO THE LEFT, HAVING A RADIUS OF 895.09 FEET; THE RADIUS POINT OF WHICH BEARS NORTH 87°04'43" EAST;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 106.45 FEET, WITH A DELTA ANGLE OF 06°48'52", A CHORD BEARING OF SOUTH 06°19'43" EAST, AND A CHORD LENGTH OF 106.39 FEET;
 THENCE SOUTH 09°44'09" EAST A DISTANCE OF 137.24 FEET;
 THENCE SOUTH 20°53'48" WEST A DISTANCE OF 40.00 FEET TO A POINT ON THE ARC OF A NON TANGENT CURVE TURNING TO THE LEFT, HAVING A RADIUS OF 820.08 FEET; THE RADIUS POINT OF WHICH BEARS NORTH 20°53'48" EAST;
 THENCE ALONG SAID CURVE, HAVING AN ARC LENGTH OF 36.76 FEET, WITH A DELTA ANGLE OF 02°34'05", A CHORD BEARING OF SOUTH 70°23'14" EAST, AND A CHORD LENGTH OF 36.75 FEET;

CONTINUED

THENCE SOUTH 00°37'45" EAST A DISTANCE OF 98.95 FEET;
THENCE SOUTH 88°47'16" WEST LEAVING SAID EASTERLY BOUNDARY A DISTANCE OF 582.32 FEET;
THENCE SOUTH 01°12'44" EAST A DISTANCE OF 5.00 FEET;
THENCE SOUTH 88°47'16" WEST A DISTANCE OF 72.20 FEET;
THENCE NORTH 00°41'22" WEST A DISTANCE OF 266.91 FEET;
THENCE SOUTH 89°18'38" WEST A DISTANCE OF 150.02 FEET;
THENCE SOUTH 00°41'22" EAST A DISTANCE OF 8.28 FEET;
THENCE SOUTH 89°18'38" WEST A DISTANCE OF 151.02 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL C:

TRACT CC, APPLE VALLEY PHASE 4B, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 15 OF PLATS, PAGE 686, RECORDS OF BENTON COUNTY, WASHINGTON.

PARCEL D:

TRACT P, AMENDED PLAT OF APPLE VALLEY PHASE 3, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 15 OF PLATS, PAGE 647, RECORDS OF BENTON COUNTY, WASHINGTON.

PARCEL E:

TRACT Q, AMENDED PLAT OF APPLE VALLEY PHASE 3, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 15 OF PLATS, PAGE 647, RECORDS OF BENTON COUNTY, WASHINGTON.

PARCEL F:

TRACT Y, APPLE VALLEY PHASE 4A, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 15 OF PLATS, PAGE 655, RECORDS OF BENTON COUNTY, WASHINGTON.

PARCEL G:

TRACT Z, APPLE VALLEY PHASE 4A, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 15 OF PLATS, PAGE 655, RECORDS OF BENTON COUNTY, WASHINGTON.

PARCEL H:

TRACT DD, APPLE VALLEY PHASE 4B, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 15 OF PLATS, PAGE 686, RECORDS OF BENTON COUNTY, WASHINGTON.

PARCEL I:

TRACT KK, APPLE VALLEY PHASE 6A, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 15 OF PLATS, PAGE 738, RECORDS OF BENTON COUNTY, WASHINGTON.



NOTICE OF MAILING

I, Steve Donovan, on 3/24, 2023
mailed 62 copies of NPH
for SUB-2022-0022
to surrounding properties within 300 feet
as shown on the attached list.



Signature

Exhibit 4

37
TRI CITIES DEVELOPMENT COMPANY LLC
329 N KELLOGG ST
KENNEWICK, WA 99338

37
HABLADO ROBERT
3116 S ZIMMERMAN ST
KENNEWICK, WA 99338

37
BOUCHEY MICHELLE A & JOEL I
7081 W 31ST PLACE
KENNEWICK, WA 99338

37
CASTILLEJA SEBASTIAN A III & KYLA
SUZANNE
7091 W 30TH AVE
KENNEWICK, WA 99338

37
ALLEY CHRISTOPHER & LAURA
7080 W 31ST PL
KENNEWICK, WA 99338

37
BOLTON JR HARVEY & BOLTON LINNEA
MICHELLE
7079 W 30TH AVE
KENNEWICK, WA 99338

37
LEWELLEN RICHARD JAY
2912 S ZIMMERMAN ST
KENNEWICK, WA 99338

37
HUTCHCRAFT TRUSTEES GARY D &
JEANETTE L
7084 W 30TH AVE
KENNEWICK, WA 99338

37
MUNDT ROBERT D
7075 W 32ND AVE
KENNEWICK, WA 99338

37
CHIAVARAS DANIEL B & ELIZABETH
2900 S ZIMMERMAN ST
KENNEWICK, WA 99338

37
MERRILL JAMES M & TINA M
3104 S ZIMMERMAN ST
KENNEWICK, WA 99338

37
GAROUTTE MAKINSI L
7103 W 30TH AVE
KENNEWICK, WA 99338

37
POZNANSKI CODY & KEARNEY HALEY
7092 W 31ST PL
KENNEWICK, WA 99338

37
JIANG HONGFENG & MA XUEJIAO
7069 W 31ST PL
KENNEWICK, WA 99338

37
YOUNG CORBY C & MEGAN
2924 S ZIMMERMAN ST
KENNEWICK, WA 99338

37
ZHANG DI & JIN MENGZHU
7057 W 31ST PL
KENNEWICK, WA 99338

37
ALLMANN KYLE M & KAREN E
7087 W 32ND AVE
KENNEWICK, WA 99338

37
CONTRERAS JESUS INES & LONG PAIGE
JORDAN
7067 W 30TH AVE
KENNEWICK, WA 99338

37
KUHN JOHN
7072 W 30TH AVE
KENNEWICK, WA 99338

37
LACAP MARIA ANGELA FAYE & MADRID
VON LESTER
7077 W 29TH AVE
KENNEWICK, WA 99338

37
MESAN NEDIM & EMINA
7104 W 31ST PL
KENNEWICK, WA 99338

37
WALTHER THOMAS W & BEVERLY A
3128 S ZIMMERMAN STREET
KENNEWICK, WA 99338

37
COSTIN WILLIAM DALE & KATHRYN ANN
3119 S ZIMMERMAN STREET
KENNEWICK, WA 99338

37
NGUYEN HIEP XUAN
7080 W 32ND AVE
KENNEWICK, WA 99338

37
HILZMAN ESTES & MISTY
3131 S ZIMMERMAN ST KENNEWICK, WA
99338

37
CARISTO NICHOLAS R & ELLEN L
7068 W 31ST PLACE
37KENNEWICK, WA 99338

37
LOIACONO GARY & JULIE
3143 S ZIMMERMAN STREET
KENNEWICK, WA 99338

37
SIMS MARC J & HILLARY R
3118 S YOUNG PL
KENNEWICK, WA 99338

37
HEMSTREET MEKENZIE & TARVER JACOB
3155 S ZIMMERMAN ST
KENNEWICK, WA 99338

37
CASALE BRYSON & MEGAN A
3128 S YOUNG PL
KENNEWICK, WA 99338

Exhibit 4

37

GREEN STEVEN BURL & NANCY LYNN
7060 W 30TH AVE
KENNEWICK, WA 99338

37

HURST GREGORY A & SANDRA L
7040 W 32ND AVENUE
KENNEWICK, WA 99338

37

CALLAWAY TRUSTEES TIMOTHY MICHAEL
& ROSEMARY GLORIA
7065 W 29TH AVE
KENNEWICK, WA 99338

37

BROWN LEORA L
2838 S ZIMMERMAN ST
KENNEWICK, WA 99338

37

WILLIAMS DAWN
7063 W 32ND AVE
KENNEWICK, WA 99338

37

LANDMARK HOMES OF
WASHINGTON INC
PO BOX 3848
PASCO, WA 99302

37

PANGILAN DINDO S & VOVILYN V
7051 W 32ND AVENUE
KENNEWICK, WA 99338

37

SMITH ROBERT ALBERT JR
7078 W 29TH AVE
KENNEWICK, WA 99338

37

CHILDRESS CARA L
2814 S ZIMMERMAN ST
KENNEWICK, WA 99338

37

ARMENTA FIDENCIO T
7066 W 29TH AVE
KENNEWICK, WA 99338

37

MENDOZA MARCO A CRUZ
7067 W 28TH AVE
KENNEWICK, WA 99338

37

OTHEIM ERIC A & KATHY L
7044 W 33RD PL
KENNEWICK, WA 99338

37

MASON STEPHEN R & WANDA S
7055 W 28TH AVE
KENNEWICK, WA 99338

37

KHALEEL TAHANI & NAIMA HAIDER
2802 S ZIMMERMAN ST
KENNEWICK, WA 99338

37

LOTT'S BETTER BUILT HOMES INC
7513 W KENNEWICK AVE
KENNEWICK, WA 99336

37

SAENZ ALEX & ANGELITA
7043 W 28TH AVE
KENNEWICK, WA 99338

37

LOPEZ RIGOBERTO & LAURA VIVIANA
3306 S YOUNG ST
KENNEWICK, WA 99338

37

MCDONALD CAMDEN J & KATELYNN
7031 W 28TH AVE
KENNEWICK, WA 99338

37

RIVERWOOD HOMES WASHINGTON LLC
PO BOX 344
MERIDIAN, ID 83680

37

WINK VICTORIA L & ROY L
7019 W 28TH AVE
KENNEWICK, WA 99338

37

FISHER ANDREW & FISHER ELIZABETH
3318 S YOUNG ST
KENNEWICK, WA 99338

37

RENAISSANCE HOMES LLC
2919 TROON CT
RICHLAND, WA 99354

37

BENNETT JAMES K & JUDITH L
7007 W 28TH AVE
KENNEWICK, WA 99338

37

TITAN HOMES LLC
6601 W DESCHUTES AVE STE 611
KENNEWICK, WA 99336

37

FIRTH CHANDLER & TAYLOR
614 S KELLOGG STREET
KENNEWICK, WA 99336

37

QUESTAD KEVIN W
PO BOX 2696
PASCO, WA 99302

37

SANCHEZ VIVIANA
7002 W 28TH AVE
KENNEWICK, WA 99338

Exhibit 4

37

OSTIC WOODROW R & VICKEY ANN
10251 RIDGELINE DR, H136
KENNEWICK, WA 99338

37

SIGNATURE HOMES LLC
2445 WOODS DR
RICHLAND, WA 99352

37

JAYCEE STRUCTURE LLC
1505 NE VILLAGE ST
FAIRVIEW, OR 97024

37

ROTH JACOB L & LAURA
216 N JOHNSON ST KENNEWICK, WA
99336-2928

37

BAUDER YOUNG PROPERTIES LLC
859 MEADOW HILLS
RICHLAND, WA 99352



NOTICE OF PUBLIC HEARING – APRIL 10, 2023, 6:00 P.M.

Proposal: PBS Engineering and Environmental, c/o Jason Mattox submitted a preliminary plat application to subdivide 49.74-acres into 125 lots and 9 tract, generally located SE of the S Colorado Street and Bob Olson Parkway Intersection. The Comprehensive Plan Designation for the site is Low Density Residential. The site is zoned Residential, Low Density (RL) and is subject to Residential Design Standards. The file number is SUB-2022-0022. **PLAT MAP ON BACK**

Open Record Hearing: The City of Kennewick Hearing Examiner will conduct an open record hearing at **6:00 p.m. on April 10, 2023 at 210 W 6th Avenue, City Hall Council Chambers**. The meeting will be conducted in a hybrid format, which allows in person or virtual participation. To participate in the meeting virtually, use the link found at www.go2kennewick.com/244/Hearing-Examiner.

Environmental Documents and/or Studies Applicable to this Proposal: A Determination of Non-significance, ED-2022-0038, was issued on February 22, 2023.

Determination of Completeness: The application was determined complete on September 24, 2022 for processing.

Project Permits Associated with this Proposal: Civil

Preliminary Determination of Regulations Used for Project Mitigation: Title 18 (Zoning), Title 17 (Subdivision), Title 4 (Administrative Procedures) of the Kennewick Municipal Code and the land use policies contained in the Kennewick Comprehensive Plan.

Estimated Date of Decision: Within 10 business days of the Hearing Date of April 10, 2023.

To Receive Notification of the Decision: Contact the Development Services Division at 210 W. 6th Avenue, Kennewick, WA 99336 or via telephone at (509) 585-4280.

Appeal: Any person aggrieved by the decision of the Kennewick Hearing Examiner on this proposal may appeal to the Superior Court of Benton County within twenty-one (21) days of the date of decision.

Steve Donovan, Planning Manager

The City of Kennewick welcomes full participation in public meetings by all citizens and does not discriminate on the basis of disability, pursuant to the requirements of the American with Disabilities Act of 1990, pub. L 101-336. No qualified individual with a disability shall be excluded or denied the benefit of participating in such meetings. If you wish to use auxiliary aids or require assistance to comment at this public meeting, please contact the City of Kennewick, Steve Donovan, Development Services Department at (509) 585-4361 or TDD (509) 585-4425 or through the Washington Relay Service Center TTY at #711 at least ten days prior to the date of the meeting to make arrangements for special needs.

210 W. 6th Avenue / PO Box 6108, Kennewick WA 99336

Located In The NW 1/4 Of Sec. 17 and The SW 1/4 of Sec. 8, T. 8N., R.29E., W.M.

BASIS OF ELEVATION:
CITY OF KENNEWICK NAVD88 DATUM, POINT "K0937"
BEING A MAG NAIL LOCATED AT THE NORTH 1/4 CORNER
OF SECTION 17, T8N, R29E, W.M. HAVING AN ELEVATION
OF 784.90

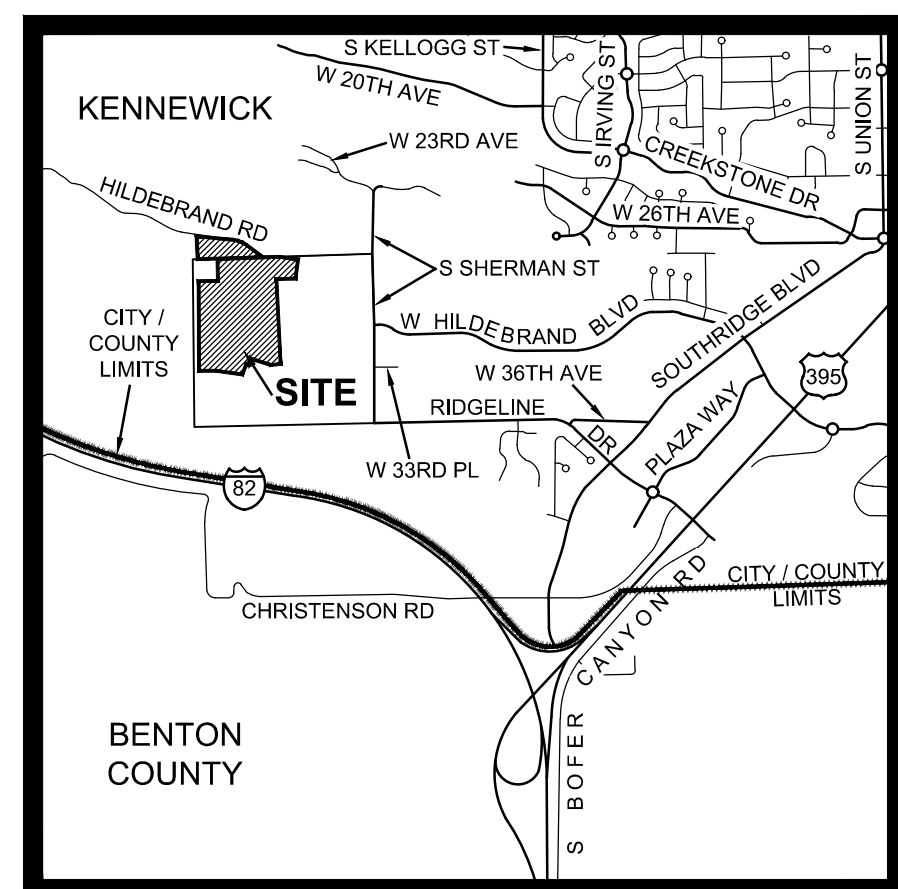
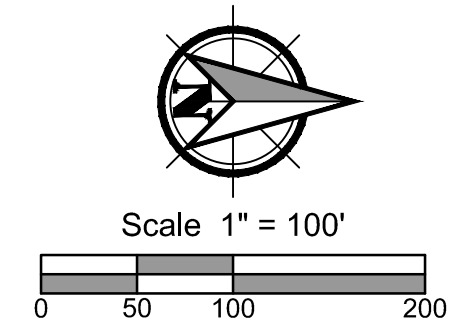
ADJUSTED TRACT R-
PARCEL#117892040005001

FENCING TO BE CONSTRUCTED
ALONG ABUTTING STREET AS
STATED IN THE CITY OF KENNEWICK
MUNICIPAL CODE CHAPTER 17.20.040

ADJUSTED PARCEL "C" (PTN)-
PARCEL#117892000001017

2' AND 10'
CONTOURS

FOUND 5/8" IRON PIN BY-
CHRISTENSEN, NOT OF RECORD,
WITHIN 0.2' OF CALCULATED
POSITION OF SECTION CORNER
PER SHORT PLAT NO. 2394



VICINITY MAP
NOT TO SCALE



LAND USE TABLE	
SITE AREA:	49.74 ACRES
TOTAL LOT COUNT:	125 LOTS + 9 TRACTS
SINGLE FAMILY RESIDENTIAL LOTS:	125 LOTS (LOTS 1-125)
MINIMUM RESIDENTIAL LOT AREA:	7,636 SF (LOT 43)
MAXIMUM RESIDENTIAL LOT AREA:	15,645 SF (LOT 91)
OVERALL AVG. LOT AREA:	9,849 SF (LOTS 1-125)
RIGHT OF WAY DEDICATION:	319,977 SF (7.34 ACRES)
TRACTS QQ, RR, SS, TT, UU, VV, WW, XX & YY:	220,379 (5.05 ACRES)
TRACTS RR & UU USE:	PEDESTRIAN ACCESS AND WATER MAIN TRACT
TRACT QQ, SS, TT & YY USE:	PUBLIC SIDEWALK, UTILITIES, AND LANDSCAPE TRACT
TRACT WW & XX USE:	STORM TRACTS

EASEMENT KEY: XX

1. EXISTING 15' SIDEWALK & UTILITY EASEMENT PER AFN 2022-007826.
2. EXISTING 10' P.U.D EASEMENT PER SHORT PLAT NO. 3488 (AFN 2016-007168) BY SZENDRE.
3. EXISTING 15' P.U.E PER SHORT PLAT NO. 2693 (AFN 2003-002681) BY CHRISTENSON.
4. EXISTING 15' SIDEWALK, UTILITY & KID EASEMENT PER SHORT PLAT NO. 3488 (AFN 2016-007168) BY SZENDRE
5. EXISTING 20' SANITARY SEWER EASEMENT PER AFN 2019-026661.
6. EXISTING 40' PLYWOOD DRAIN PER AFN 381003.
7. EXISTING 20' STORM & ACCESS EASEMENT PER APPLE VALLEY PH. 4B (AFN 2020-035559) BY MATARAZZO.

CITY OF KENNEWICK FILE #:

PRELIMINARY
SUBJECT TO AGENCY REVIEW
NOT FOR CONSTRUCTION

PRELIMINARY PLAT FOR:

APPLE VALLEY - PHASES 7-9

A SUBDIVISION LOCATED IN THE CITY OF KENNEWICK, WASHINGTON



Know what's below.
Call before you dig



DESIGNED:
DCC/SG

CHECKED:
JLM

SEP 2022
66090.008

SHEET 1 OF 3



**CITY OF KENNEWICK
DETERMINATION OF NON-SIGNIFICANCE**

FILE/PROJECT NUMBER: ED-2022-0038

DESCRIPTION OF PROPOSAL: Preliminary Plat to develop 125 lots and 9 tracts.

PROPOSER: PBS Engineering and Environmental, c/o Jason Mattox, 400 Bradley Boulevard, Suite 106, Richland, WA 99352

LOCATION OF PROPOSAL, INCLUDING STREET ADDRESS, IF ANY: Generally located at 7165 W 32nd Avenue

LEAD AGENCY: City of Kennewick

DETERMINATION: The City of Kennewick has determined that this proposal does not have a probable significant adverse impact on the environment. An Environmental Impact Statement (EIS) will not be required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the City. This information is available to the public on request. Application for other required permits may require further review under SEPA procedures.

☒ There is no comment period for this DNS.

☐ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

☐ This DNS is issued under 197-11-340(2); the City will not act on this proposal for fifteen days from the date below. Comments must be submitted by _____. After the review period has elapsed, all comments received will be evaluated and the DNS will be retained, modified, or withdrawn as required by SEPA regulations.

RESPONSIBLE OFFICIAL: Anthony Muai, AICP

POSITION/TITLE: Planning Director

ADDRESS: 210 W 6th Ave., P.O. Box 6108, Kennewick, WA 99336

PHONE: (509) 585-4386

☐ Changes, modifications and/or additions to the checklist have been made on the attached Environmental Checklist Review.

This DNS is subject to the attached conditions:

☒ No conditions.

☐ See attached condition(s).

Date: February 22, 2023

Signature: _____

Appeal: An appeal of this determination must be submitted to the Community Planning Department within fourteen (14) calendar days after the date issued and no later than 5 p.m. This appeal must be written and make specific factual objections to the City's threshold determination. Appeals shall be conducted in conformance with Section 4.12.090(9) of the Kennewick Municipal Code and the required fees pursuant to the City's adopted Fee Schedule shall be paid at time of appeal submittal.

Copies of this DNS were mailed to:

Dept. of Ecology
WA Dept. of Fish & Wildlife
WSDOT
Yakama Nation
CTUIR
ED-2022-0038 File



January 25, 2021

William Smith Properties
Attn: Matt Smith
15 SW Colorado Avenue, Suite 1
Bend, Oregon 97702

Via email: matt@wspi.net

Regarding: Traffic Impact Analysis Supplemental Letter
Apple Valley Phases 6 & 7
South of Bob Olson Parkway, East of S Colorado Street
Kennewick, Washington
Parcel numbers: 1-1789-200-0001-009 & 1-1789-200-0001-012
PBS Project 66090.005

Dear Mr. Smith:

This letter addresses comments on the traffic impact analysis submitted to support the proposed Apple Valley Subdivision. These responses fulfill the information requests and the additional discussion required. The project documents comprise the following:

- TIA Scope Memorandum, dated August 6, 2020, by PBS Engineering and Environmental Inc. (PBS).
- Traffic Impact Analysis, dated September 11, 2020, by PBS, referred to in this letter as the TIA.
- Addendum 1, dated October 21, 2020, by City of Kennewick Public Works (attached for reference).

PROJECT DESCRIPTION

The Apple Valley Subdivision is bounded by Bob Olson Parkway to the north, Sherman Street to the east, the future Ridgeline Drive to the south, and the future Colorado Street to the west. Figure 1 provides a vicinity map for the project. The subdivision is developing in phases, beginning at the Sherman Street / Bob Olson Parkway / Hildebrand Boulevard intersection and continuing west and south. Phases 1 through 5 previously received site plan approval from the City of Kennewick (City).

The 96 residential lots within Phase 6 were previously addressed in the TIA, assuming a buildout year of 2022. This letter summarizes analysis of Phase 6 and the remaining future phases of the Apple Valley Subdivision—estimated to contain 130 additional residential lots—as the proposed project. For simplicity, all remaining future phases will be collectively referred to as Phase 7 in this letter. This letter includes the following scope, as agreed upon with City staff.

- Analyze one additional intersection (Colorado Street and Bob Olson Parkway) in addition to those already evaluated.
- Provide trip distribution and assignments for the Colorado Street / 31st Place and Colorado Street / Zimmerman Street intersections. No level of service (LOS) analysis is required.
- Include only 2025 analysis to address year-of-buildout conditions.
- Include the trips from Hayden Homes' Sherman Heights proposed development.
- Submit traffic analysis in letter format and provide exhibits, tables, and figures summarizing the data.

BASELINE VOLUMES

The same procedures as described in TIA section 1.4.1 were applied to estimate the 2020 volumes at the future Colorado Street / Bob Olson Parkway intersection. The east-west volumes on Bob Olson Parkway were set equal to those on the west leg of the 31st Place / Bob Olson Parkway intersection. Figure 4 presents the 2020 Baseline volumes at the study intersections.

As requested by City staff, the proposed trips generated by the Sherman Heights subdivision, located north of Bob Olson Parkway and west of Sherman Street, are included in the 2025 analyses. Figure 6 presents the Sherman Heights trips.

The 2025 Without Project analysis scenario represents the future traffic conditions with no additional Apple Valley phases approved for development. It is the sum of:

- 2020 Baseline volumes
- Background growth volumes (at a linear rate of 2% per year)
- Trips generated by unoccupied or under construction homes from Apple Valley Phases 1 through 5, distributed as shown on Figure 5
- Sherman Heights trips

Figure 7 presents the 2025 Without Project volumes.

ACCESS AND CIRCULATION

There are two existing access points that were developed with Phases 1 through 5:

- 31st Place on Bob Olson Parkway
- 33rd Place on Sherman Street

The proposed Phase 7 will develop another access point, Colorado Street, on Bob Olson Parkway, along the west edge of the development. Colorado Street will connect to Bob Olson Parkway at the intersection stub currently signed as Delaware Street. See Figure 2 for the site plan and the future connections within Phases 1 through 5. See Figure 3 for the existing traffic controls at these intersections.

Within the developed Phases 6 and 7, an internal local roadway network will be constructed to serve the future detached single-family dwellings. Pedestrian connections will be provided in the form of sidewalks to be constructed as part of the local street section. The local roadway network includes (among others) the extensions of existing W 31st Place, W 33rd Place, and S Zimmerman Street, as well as the construction of new local streets. The east half-width of S Colorado Street will be dedicated and improved to City collector standards, anticipating a future three-lane cross section when it is fully improved.

Findings: The Apple Valley Subdivision will have three total access points, two existing and one proposed. An internal local roadway network will be constructed to serve all the residential lots. Pedestrian connections will be provided via sidewalks constructed as part of the local street section.

TRIP GENERATION

The number of new trips from the proposed Apple Valley Subdivision, Phases 6 and 7, was estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual*.¹ The ITE trip generation regression equations for Single-Family Detached Housing (ITE Land Use Code 210), with the number of dwellings as the independent variable, were applied following the ITE *Trip Generation Handbook* guidelines.² See Figure 2 for the site plan and lot layout. The new weekday trips generated by the project are shown in Table 1. Trip generation calculations are included in the attachments.

Table 1. ITE Trip Generation for Apply Valley Subdivision Phases 6 and 7

Land Use (ITE Code)	Single-Family Detached Housing (210)				Total	
Independent Variable	Dwelling Units				Dwelling Units	
Phase	Phase 6		Phase 7		Phases 6 and 7	
Size	96		130		226	
Average Weekday Trips (ADT)	1,001		1,324		2,325	
Peak Hour Trips	AM	PM	AM	PM	AM	PM
In	18	62	24	83	42	145
Out	55	36	73	48	128	84
Total Trips	73	98	97	131	170	229

Findings: Together, Phases 6 and 7 of the Apple Valley Subdivision are anticipated to generate 2,325 vehicle trips during a typical weekday, including 170 during the AM peak hour and 229 during the PM peak hour.

TRIP DISTRIBUTION AND ASSIGNMENT

In the 2025 Without Project conditions, the Colorado Street / Bob Olson Parkway intersection is assumed not to exist. Trips from the unoccupied or under construction homes from Phases 1 through 5 will only have two accesses (31st Place / Bob Olson Parkway and Sherman Street / 33rd Place) into and out of the site. See Figure 5 for the trip distribution and assignment in the 2025 Without Project conditions.

In the 2025 With Project conditions, the Colorado Street / Bob Olson Parkway intersection is assumed to be built out. Trips from Phases 6 and 7 were distributed to three site accesses. Trips from the unoccupied or under construction homes from Phases 1 through 5 were redistributed to account for the additional access point. Existing trips from the occupied lots of Apple Valley were not redistributed because those homes are all closer to the two existing accesses than to Colorado Street. The combined trip distribution and assignment of the unoccupied or under construction homes from Phases 1 through 5, plus the proposed Phases 6 and 7, are shown on Figure 8.

The 2025 With Project analysis scenario represents the future traffic conditions with all Apple Valley phases approved for development. It is the sum of:

¹ Institute of Transportation Engineers (ITE). (2017). *Trip Generation Manual*, 10th Edition.

² Institute of Transportation Engineers (ITE). (2017). *Trip Generation Handbook*, 3rd Edition.

- 2020 Baseline volumes
- Background growth volumes (at a linear rate of 2% per year)
- Trips generated by unoccupied or under construction homes from Apple Valley Phases 1 through 5, redistributed as described above
- Sherman Heights trips
- Trips generated by Apple Valley Phases 6 and 7

Figure 9 presents the 2025 With Project volumes.

LEVEL OF SERVICE ANALYSIS

Operation Standards

Per Kennewick Administrative Code Title 13-08-030(5),³ at existing signalized intersections the analysis must demonstrate that the major intersection approaches can operate at LOS D. At unsignalized intersections or driveways, a LOS E must be provided on the minor street approach.

Analysis Methodology

Traffic impacts were estimated to determine the changes in traffic conditions caused by the project's development. To make these determinations, the following assumptions were employed:

- The individual peak hour volumes were analyzed for 2025. For the Colorado Street / Bob Olson Parkway access, the peak hour volumes were estimated using the nearby 31st Place / Bob Olson Parkway access.
- The peak hour factor (PHF) for the overall intersection, as calculated from the count data, was applied for the 2020 baseline analysis scenario and the future 2025 conditions. For the Colorado Street / Bob Olson Parkway intersection, the PHF was assumed to be 0.96, similar to the nearby 31st Place / Bob Olson Parkway intersection.
- A minimum heavy vehicle percentage (HV%) of 2% was assumed for each movement for the 2025 analysis scenarios. The HV% calculated from the count data was applied if it was greater than 2%.
- Baseline traffic volumes on the surrounding street system were determined prior to adding the traffic impacts of the proposed project. This was done to establish a baseline for measuring the project impacts at the time of its development. Baseline traffic volume estimates were prepared for the year of buildout and are termed the 2025 Without Project scenario.
- As noted previously, trip generation estimates for the project were prepared for the weekday AM and PM peak hours on the surrounding street system.
- Cumulative traffic impacts of the proposed project were determined by adding the project-generated traffic to the baseline weekday PM peak traffic at all studied intersections. This is termed the 2025 With Project scenario.
- The LOS for all signalized and stop-controlled intersections was calculated with Trafficware's Synchro software, Version 10, based on *Highway Capacity Manual* (HCM) 6th Edition⁴ methodologies.

³ City of Kennewick. Title 13 Public Works-Traffic. Kennewick Administrative Code Title 13-08-030(5).

⁴ Transportation Research Board (TRB), National Research Council. (2016). *Highway Capacity Manual* (HCM), 6th Edition.

- The LOS for the roundabout intersection was calculated with Akcelik & Associates' SIDRA Intersection software, Version 9, based on Washington State Department of Transportation (WSDOT)⁵ recommended settings.
- Intersection results are reported differently depending on the control type.
 - o Two-way stop-controlled (TWSC) intersection results report the critical movement LOS, delay, and volume to capacity (v/c) ratio.
 - o All-way stop-controlled, roundabout, and signalized intersection results report the overall intersection LOS and delay as well as the critical lane v/c ratio.

Level of Service Analyses

LOS calculation reports for the study area intersections are provided in the attachments. The key analysis findings are listed in the following tables.

2025 Future Conditions Without Project

Table 2 describes the LOS for each intersection within the study area for the 2025 Without Project scenario during the PM peak hour.

Table 2. Estimated 2025 Levels of Service Without Project for Study Area Intersections

INTERSECTION	PM Peak Hour		
	LOS	Delay (sec/veh)	v/c (critical lane)
1. Southridge Boulevard / Hildebrand Boulevard	B	18.1	0.67 (NB TH)
2. Sherman Street / Bob Olson Parkway / Hildebrand Boulevard	C	16.8	0.153 (NB LT)
3. Bob Olson Parkway / Steptoe Street / 10th Avenue	A	6.3	0.247 (SB)
4. 31st Place / Bob Olson Parkway	B	14.4	0.1 (NB LT)
5. Sherman Street / 33rd Place	B	10.7	0.033 (EB)
6. Colorado Street / Bob Olson Parkway	B	11.9	0.031 (SB)

As shown in Table 2, all studied intersections will operate at an acceptable LOS in the 2025 year of opening Without Project conditions during the weekday PM peak hour.

2025 Future Conditions With Project

Table 3 describes the LOS for each intersection within the study area for the 2025 With Project scenario during the PM peak hour.

⁵ Washington State Department of Transportation (WSDOT). (undated). "WSDOT Sidra Policy Settings." (<https://wsdot.wa.gov/sites/default/files/2006/03/21/sidrapolicysettingsdesign.pdf>)

Table 3. Estimated 2025 Level of Service With Project for Study Area Intersections

INTERSECTION	PM Peak Hour		
	LOS	Delay (sec/veh)	v/c (critical lane)
1. Southridge Boulevard / Hildebrand Boulevard	B	18.3	0.67 (NB TH)
2. Sherman Street / Bob Olson Parkway / Hildebrand Boulevard	C	19.8	0.184 (NB LT)
3. Bob Olson Parkway / Steptoe Street / 10th Avenue	A	6.4	0.263 (SB)
4. 31st Place / Bob Olson Parkway	C	15.5	0.101 (NB LT)
5. Sherman Street / 33rd Place	B	11.3	0.081 (EB)
6. Colorado Street / Bob Olson Parkway	C	16.3	0.131 (NB)

As shown in Table 3, all studied intersections will operate at an acceptable LOS in the 2025 year of opening With Project conditions during the weekday PM peak hour.

Findings: All studied intersections will operate at an acceptable LOS in the 2025 year of opening Without and With Project conditions during the weekday PM peak hour.

SAFETY ANALYSIS

Left- and Right-Turn Lane Warrants

The criteria for right- and left-turn lane warrants, according to the City's TIA guidelines, are as follows:

Any development access with existing plus projected traffic volume of more than 1,000 vehicles per day, or if the existing plus projected entering turning movement(s) equal or exceed fifty (50) per hour during a typical peak traffic period; then the development shall normally be required to provide a separate right-turn and/or left-turn deceleration lane(s) to allow an entering passenger design vehicle turning speed of 15 mph (20 km/h) to help reduce interference with and improve safety for through street traffic. In the case of industrial development, it may be necessary to consider a larger design vehicle. Meeting the volume criteria does not require installation of a turn lane if engineering judgment determines it would be unsafe or impractical (e.g. geometric conditions, buildings), or if another mitigation measure would achieve the desired results.

The proposed Colorado Street / Bob Olson Parkway development access meets the volume criteria for a right-turn lane with 78 eastbound right-turn movements during the 2025 PM peak hour. The location is as follows:

- Eastbound right-turn lane at Colorado Street / Bob Olson Parkway intersection.

After further analysis, at Colorado Street / Bob Olson Parkway the right-turn lane is not recommended for the following reasons:

- The precedent has been set that there are no right-turn lanes along Bob Olson Parkway at other stubbed-out intersections. This appears to be based on a design standard of frequent access points to the surrounding land use to distribute future turning movements along Bob Olson Parkway.

Eastbound right turn lane from Bob Olson Parkway to southbound S Colorado St. is required. Right turn lane's construction to be completed and accepted by the City as a condition to Final Plat Approval.

- The posted speed on Bob Olson Parkway is 40 miles per hour (mph); therefore, it does not meet the WSDOT right-turn lane guidelines with a 45-mph threshold noted in the *WSDOT Design Manual Right-Turn Lane Guidelines*.⁶
- No LOS improvements are needed at this driveway.

The proposed Colorado Street / Bob Olson Parkway development access does not meet the City's volume criteria for a left-turn lane.

Findings: No right-turn lanes are recommended for the Colorado Street / Bob Olson Parkway intersection.

The Colorado Street / Bob Olson Parkway intersection does not meet the volume criteria for a left-turn lane.

Intersection Sight Distance

The Colorado Street / Bob Olson Parkway proposed site access currently includes only stubs for future connections to Bob Olson Parkway. The generally flat terrain and moderately curved alignment of Bob Olson Parkway suggest that adequate sight distances should be achievable through design and construction of the proposed Colorado Street access on Bob Olson Parkway.

No other physical limitations exist such as vertical curves or steep embankments to obstruct existing or future sight distance. It is recommended to design the proposed access points in accordance with Kennewick Municipal Code (KMC) 13.12.020 guidelines for intersection sight distance. Install no objects within the sight distance triangles that would block exiting drivers' view of approaching traffic.

Finding: Digital review of the current conditions along Bob Olson Parkway suggests that adequate sight distances should be achievable through design and construction of the Colorado Street / Bob Olson Parkway proposed access intersection.

Recommendation: Design the proposed access point consistent with KMC 13.12.020 guidelines for intersection sight distance. Install no objects within the sight distance triangles that would block exiting drivers' view at the access points.

FINDINGS SUMMARY

The findings of this letter are summarized from the above narrative.

- The Apple Valley Subdivision will have three total access points, two existing and one proposed. An internal local roadway network will be constructed to serve all 226 residential lots proposed within Phases 6 and 7. Pedestrian connections will be provided via sidewalks constructed as part of the local street section.
- Phases 6 and 7 of the Apple Valley Subdivision are anticipated to generate 2,325 vehicle trips during a typical weekday, including 170 during the AM peak hour and 229 during the PM peak hour.
- All studied intersections will operate at an acceptable LOS in the 2025 year of opening Without and With Project conditions during the weekday PM peak hour.
- No right-turn lanes are recommended for the Colorado Street / Bob Olson Parkway intersection.

⁶ WSDOT. (September 2020). *WSDOT Design Manual*, Chapter 1310.03(3).

William Smith Properties
Apple Valley Subdivision Phases 6 and 7 – TIA Supplemental Letter
January 25, 2021
Page 8 of 8

- The Colorado Street / Bob Olson Parkway intersection does not meet the volume criteria for a left-turn lane.
- Digital review of the current conditions along Bob Olson Parkway suggests that adequate sight distances should be achievable through design and construction of the Colorado Street / Bob Olson Parkway proposed access intersection.

RECOMMENDATIONS SUMMARY

The letter supports the following recommendation, which is summarized from the above narrative.

- Design the proposed access point consistent with KMC 13.12.020 guidelines for intersection sight distance. Install no objects within the sight distance triangles that would block exiting drivers' view at the access points.

CLOSING

Please feel free to contact me at 360.567.2117 or john.manix@pbsusa.com with any questions or comments.

Sincerely,

John Manix, PE
Senior Traffic Engineer

Attachments: Addendum 1, dated October 21, 2020, by City of Kennewick Public Works
Figures
ITE Trip Generation Calculation Summary
Level of Service Reports

BJ:DAH:JAM:mo



Leading the Way

October 21, 2020

ADDENDUM #1 TO TRAFFIC STUDY SCOPE MEMORANDUM OF AUGUST 6, 2020

This addendum purpose is:

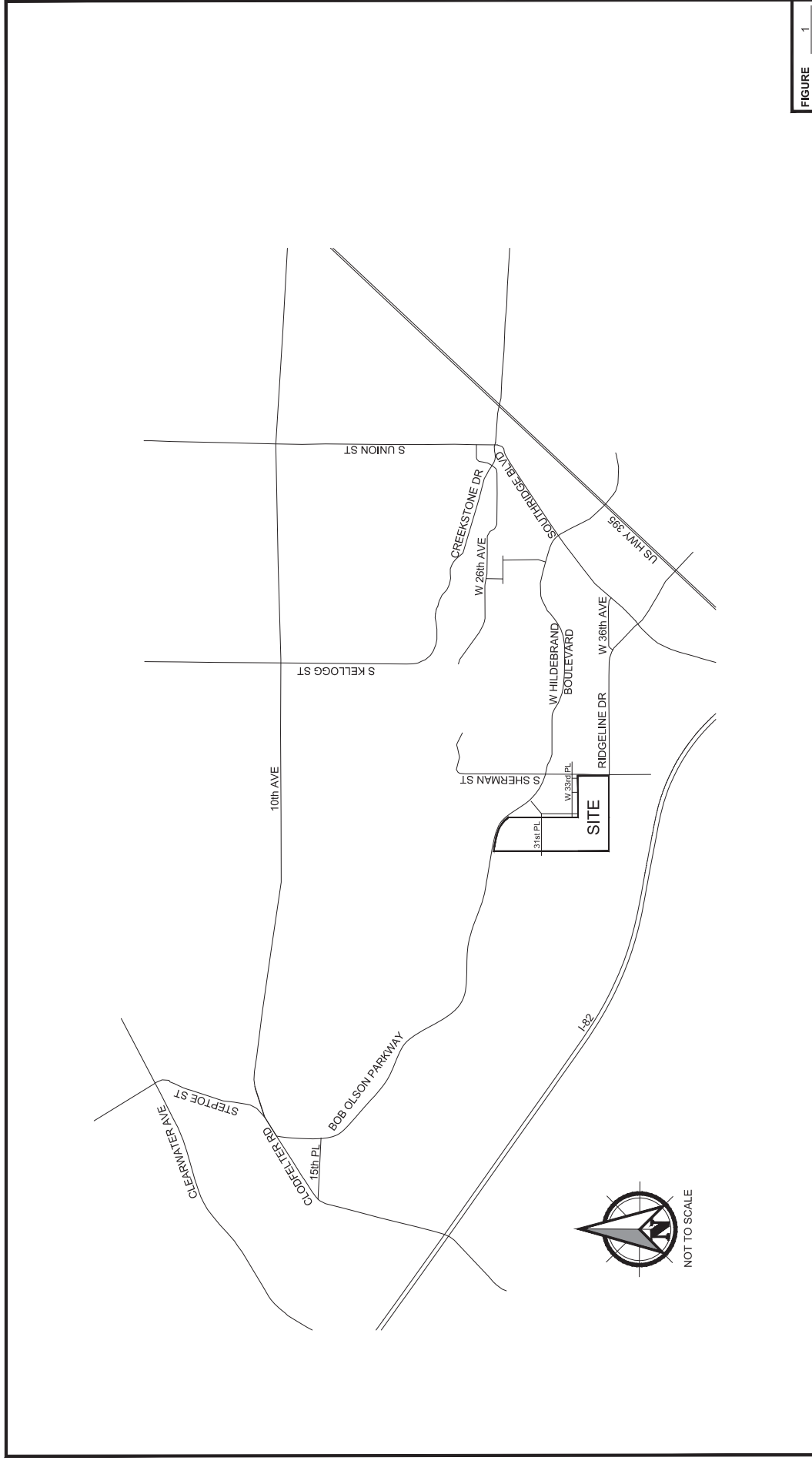
1. Clarify the required study area and,
 2. Add the future connections of Apple Valley development to Colorado Street to the intersections studied.
1. **Clarify the required study area.** The trip generation for the future parcels 117892000001009 and 117892000001012 identified on attached Exhibit A shall be included in this study. This is to emphasize that the study area south of Bob Olson Parkway shall include all the present and future development area bounded by S Colorado Street to the west, Sherman Street to the east, Ridgeline Drive to the south and Bob Olson Parkway to the north.
 2. **Future intersections of the proposed and existing Apple Valley development with S Colorado Street shall be included in this study.** These intersections are shown on the attached Exhibit A and shall include:
 - a. S Colorado Street and Bob Olson Parkway,
 - b. S Colorado Street and S Zimmerman Street and,
 - c. S Colorado Street and W 31st Pl.

PUBLIC WORKS

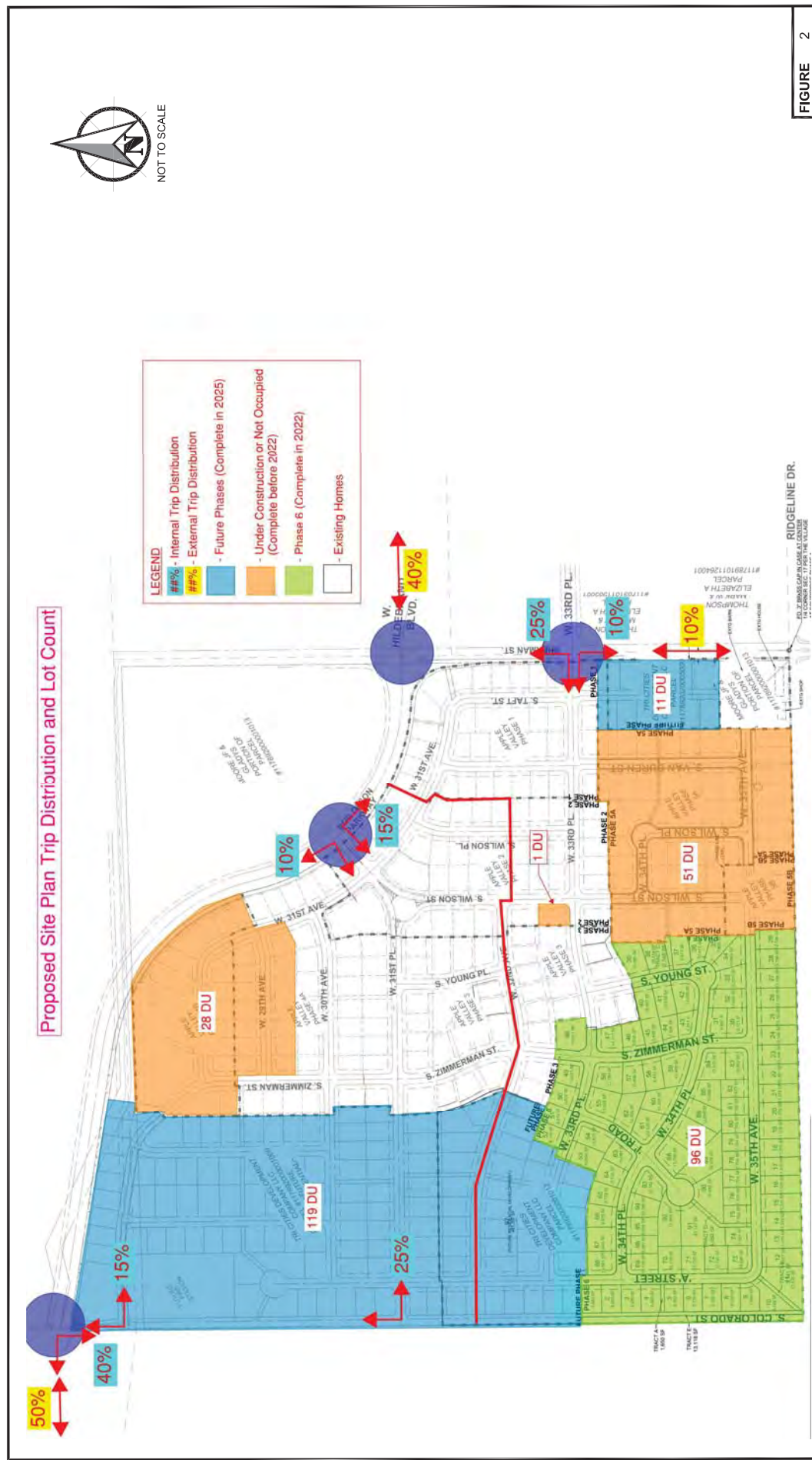
Exhibit 6

Traffic Impact Analysis Letter
Apple Valley Subdivision, Phase 6 & 7

South of Bob Olson Parkway, East of S Colorado Street
Kennewick, Washington

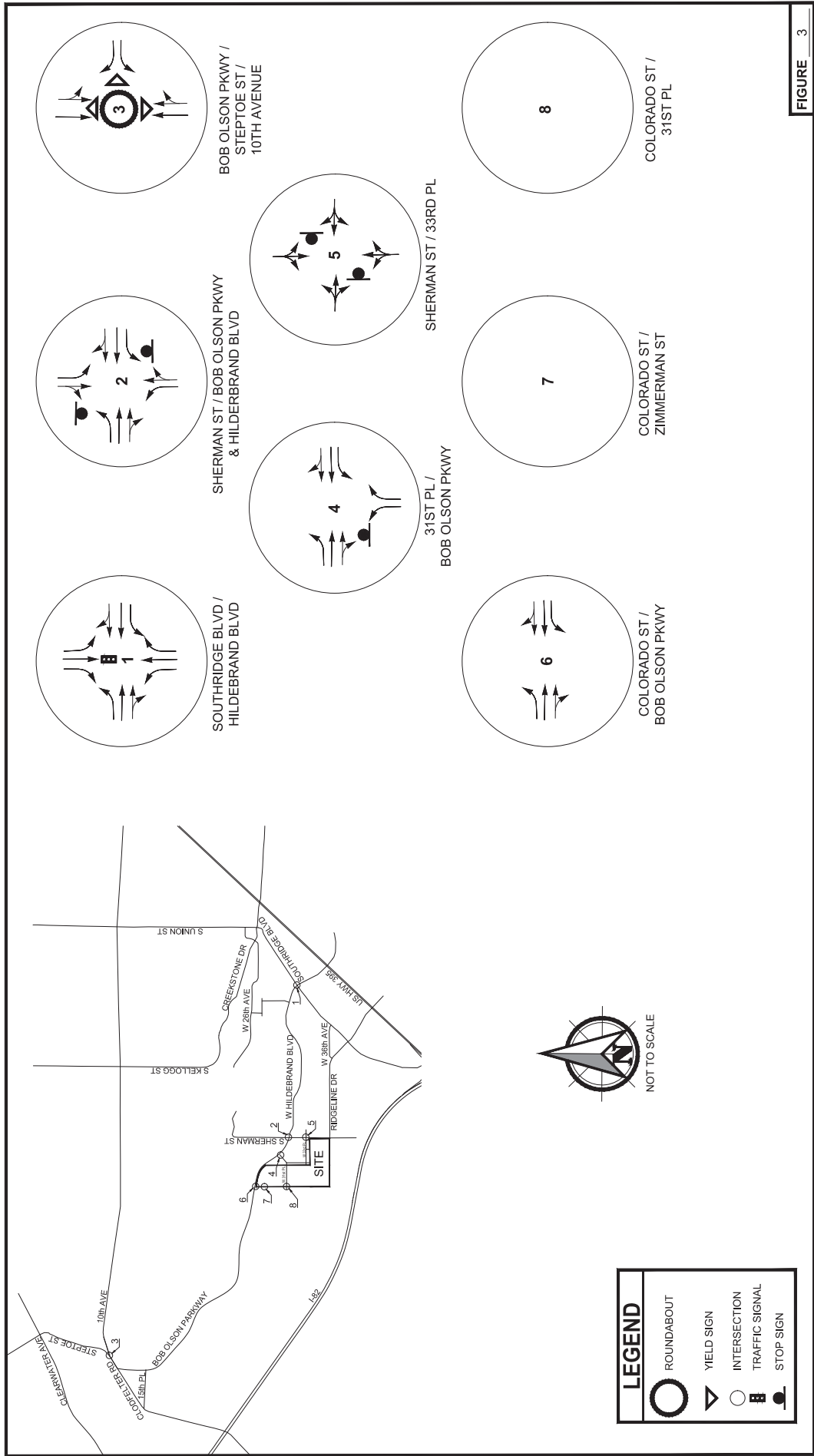


Vicinity Map
Apple Valley Phase 6 & 7



Site Plan

Apple Valley Phase 6 & 7



Existing Lane Configurations and Traffic Controls
Apple Valley Phase 6 & 7

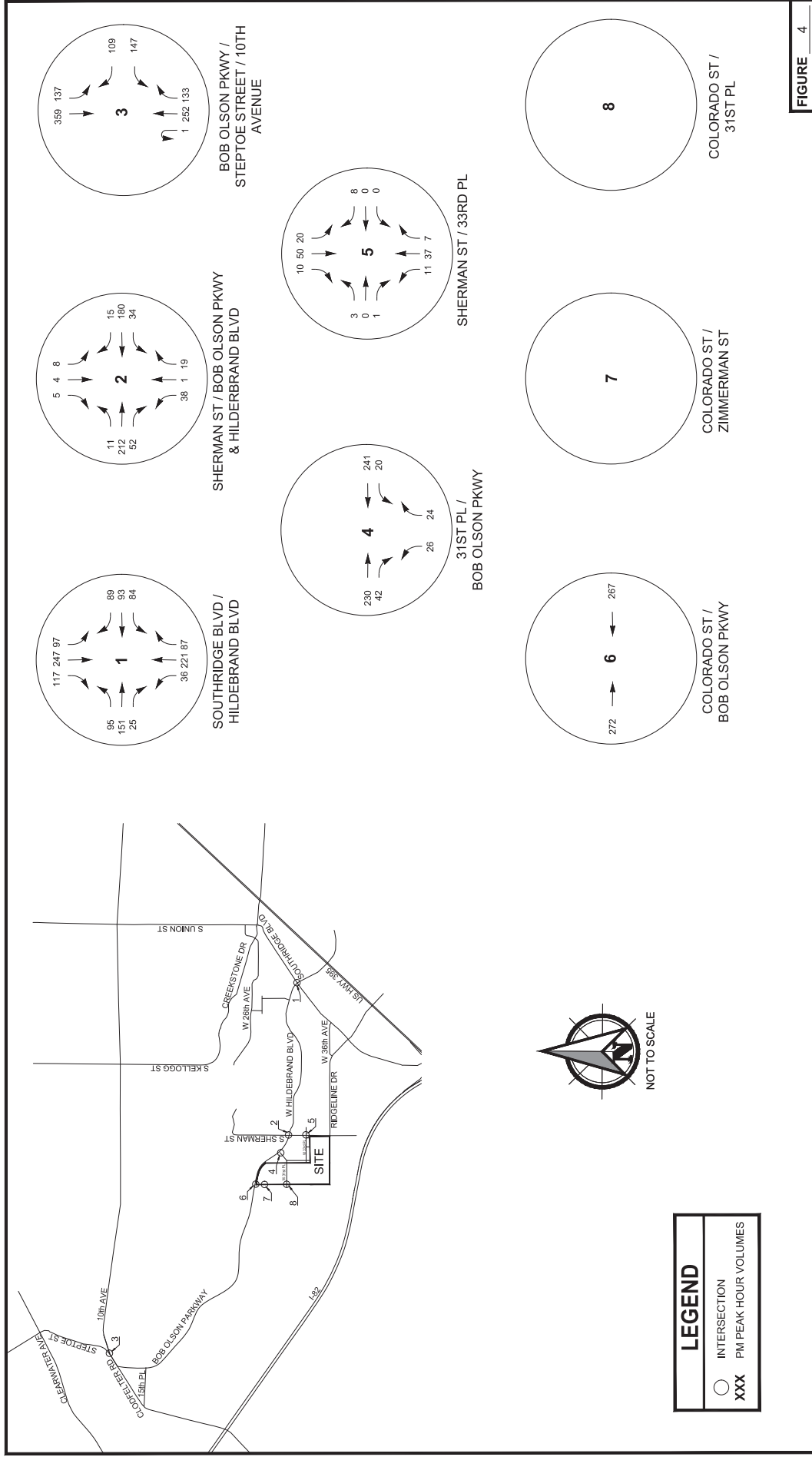
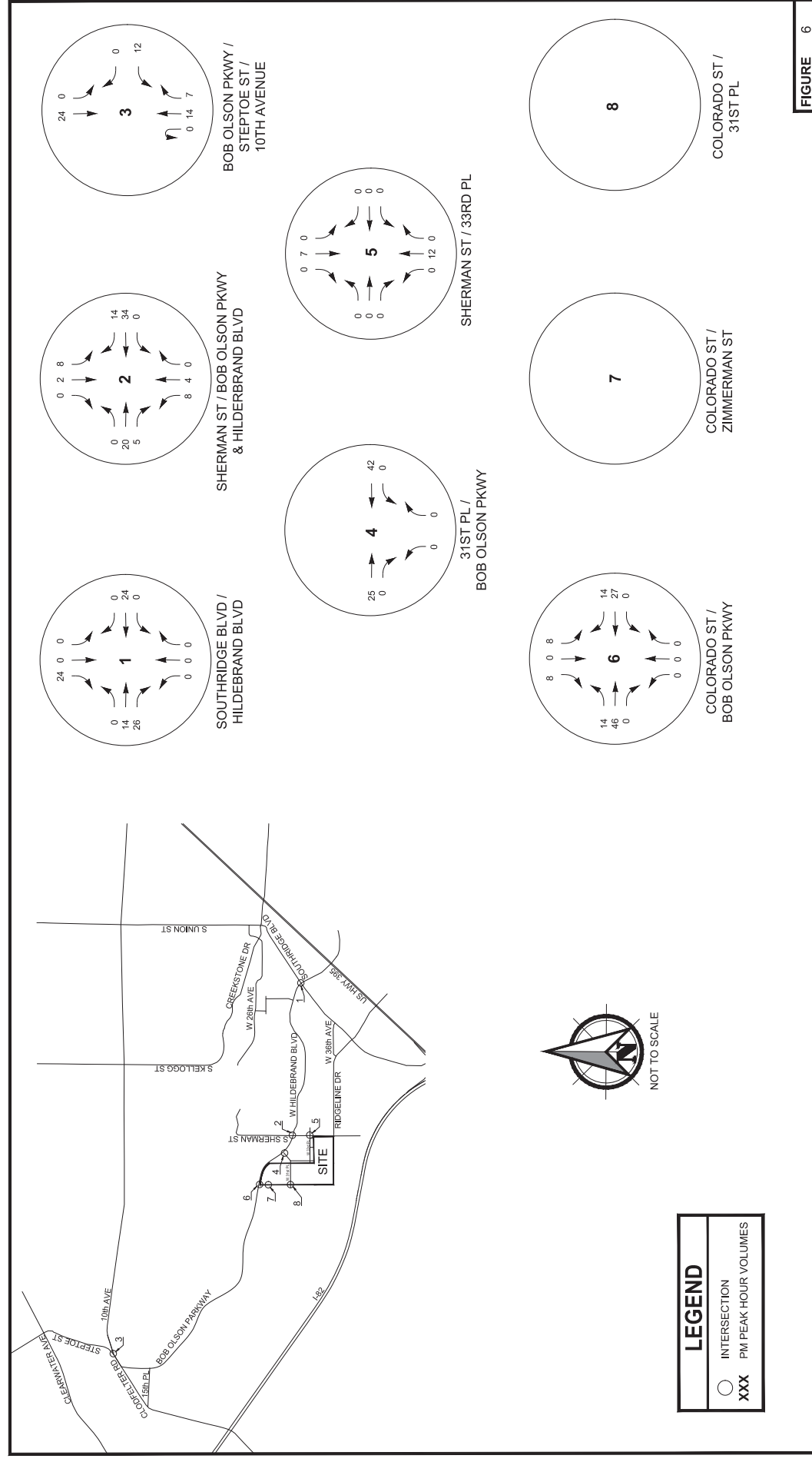


FIGURE 4

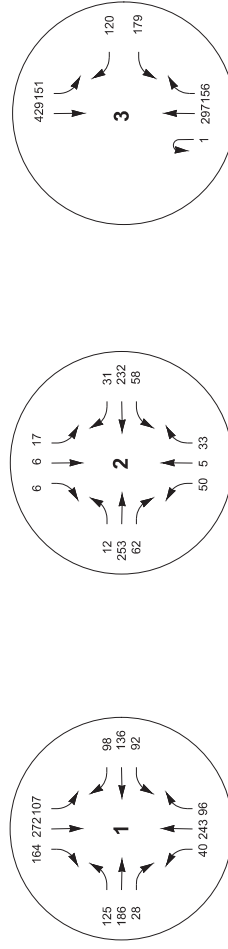
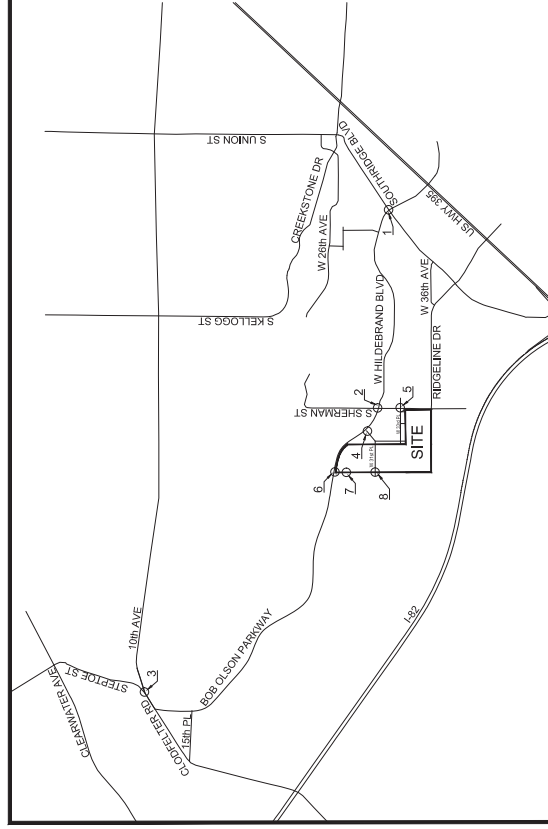
2020 Baseline Volumes Apple Valley Phase 6 & 7



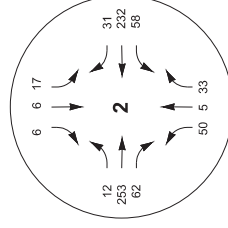
Apple Valley Phase 6 & 7



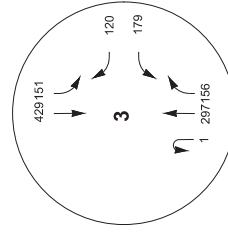
Adjacent Development Trips (Sherman Heights)



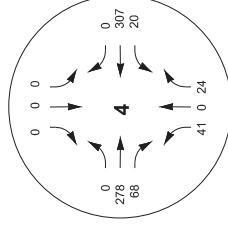
SOUTHRIDGE BLVD /
HILDEBRAND BLVD



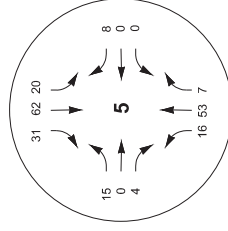
SHERMAN ST / BOB OLSON PKWY
& HILDEBRAND BLVD



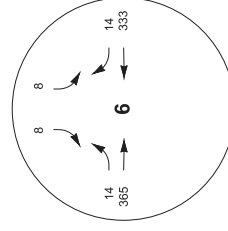
BOB OLSON PKWY /
STEPTOE ST /
10TH AVENUE



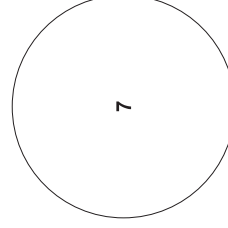
31ST PL /
BOB OLSON PKWY



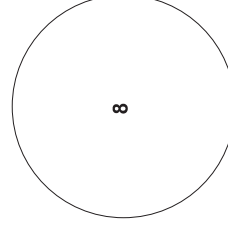
SHERMAN ST / 33RD PL



COLORADO ST /
BOB OLSON PKWY



COLORADO ST /
ZIMMERMAN ST

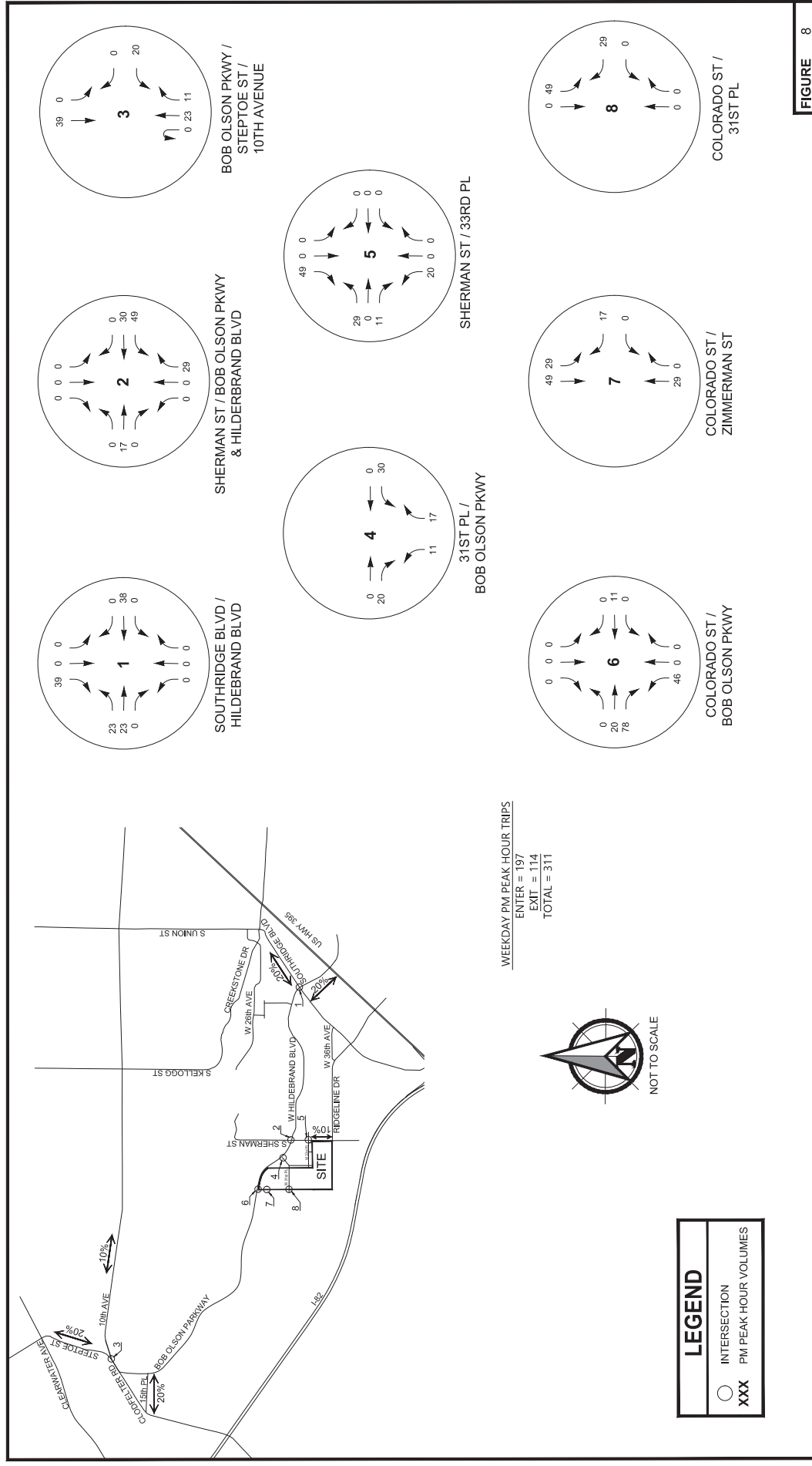


COLORADO ST /
31ST PL

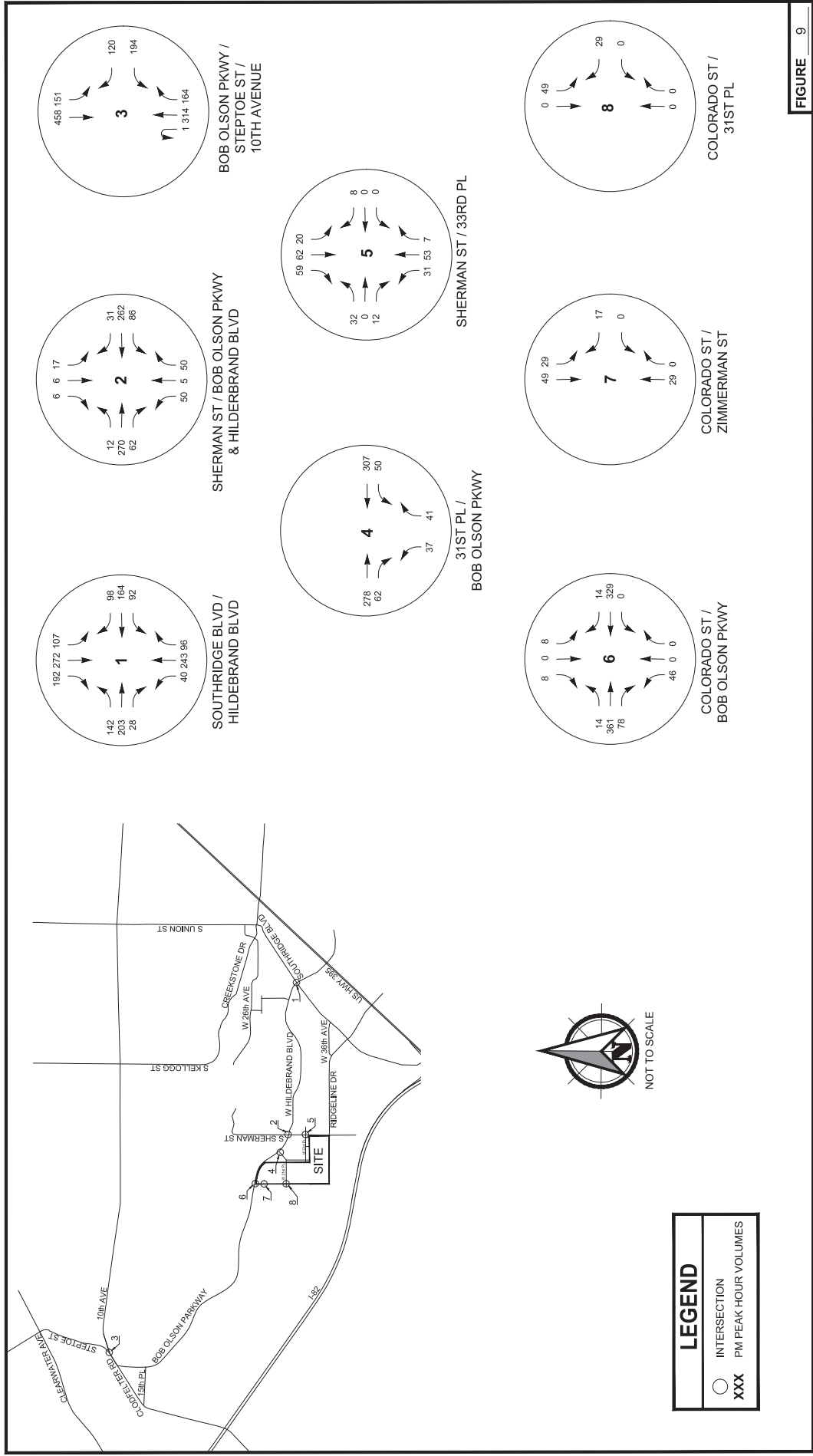


LEGEND	
	INTERSECTION
XXX	PM PEAK HOUR VOLUMES

2025 Without Project Volumes Apple Valley Phase 6 & 7



Trip Distribution and Assignment of All Unoccupied Homes (Phases 1 to 7)



2025 With Project Volumes
Apple Valley Phase 6 & 7

Exhibit 6

Detailed Land Use Data

For 80 Dwelling Units of Unoccupied lots at Apple Valley Phase 1 to 5B
(210) Single-Family Detached Housing

Project: Apple Valley Open Date: 1/21/2021
Analysis Date: 1/21/2021

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R ²
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	847	0	9.44	4.81	19.39	2.1	264	50	50	True	$\ln(T) = 0.92 \ln(X) + 2.71$	0.95
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	62	0	0.74	0.33	2.27	0.27	219	25	75	True	$T = 0.71(X) + 4.8$	0.89
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	82	0	0.99	0.44	2.98	0.31	242	63	37	True	$\ln(T) = 0.96 \ln(X) + 0.2$	0.92

Trip Generation Summary

Exhibit 6

Alternative: Alternative 1

Phase:

Open Date: 8/25/2020

Project: Apple Valley

Analysis Date: 8/25/2020

ITE	Land Use	Weekday Average Daily Trips				Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
210	Unoccupied lots at Apple Valley Phase 1 to 5B		424	423	847		16	46	62		52	30	82
	80 Dwelling Units												
	Unadjusted Volume		424	423	847		16	46	62		52	30	82
	Internal Capture Trips		0	0	0		0	0	0		0	0	0
	Pass-By Trips		0	0	0		0	0	0		0	0	0
	Volume Added to Adjacent Streets		424	423	847		16	46	62		52	30	82

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Exhibit 6

Detailed Land Use Data

For 96 Dwelling Units of Apple Valley Phase 6
(210) Single-Family Detached Housing

Open Date: 1/21/2021
Analysis Date: 1/21/2021

Project: Apple Valley Phase 6

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R ²
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	1001	0	9.44	4.81	19.39	2.1	264	50	50	True	$\ln(T) = 0.92 \ln(X) + 2.71$	0.95
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	73	0	0.74	0.33	2.27	0.27	219	25	75	True	$T = 0.71(X) + 4.8$	0.89
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	98	0	0.99	0.44	2.98	0.31	242	63	37	True	$\ln(T) = 0.96 \ln(X) + 0.2$	0.92

Trip Generation Summary

Exhibit 6

Alternative: Alternative 1

Phase:

Project: Apple Valley Phase 6

Open Date: 5/15/2020

Analysis Date: 5/15/2020

ITE	Land Use	Weekday Average Daily Trips				Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
210	SFHOUSE 1		501	500	1001		18	55	73		62	36	98
96 Dwelling Units													
Unadjusted Volume													
	Internal Capture Trips		501	500	1001		18	55	73		62	36	98
	Pass-By Trips		0	0	0		0	0	0		0	0	0
	Volume Added to Adjacent Streets		0	0	0		0	0	0		0	0	0
			501	500	1001		18	55	73		62	36	98

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Exhibit 6

Detailed Land Use Data

For 130 Dwelling Units of Apple Valley Phase 7 (All Remaining Future Phases)
(210) Single-Family Detached Housing

Project: Apple Valley Open Date: 1/21/2021 Analysis Date: 1/21/2021

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R ²
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	1324	0	9.44	4.81	19.39	2.1	264	50	50	True	$\ln(T) = 0.92 \ln(X) + 2.71$	0.95
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	97	0	0.74	0.33	2.27	0.27	219	25	75	True	$T = 0.71(X) + 4.8$	0.89
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	131	0	0.99	0.44	2.98	0.31	242	63	37	True	$\ln(T) = 0.96 \ln(X) + 0.2$	0.92

Trip Generation Summary

Exhibit 6

Alternative: Alternative 1

Phase:

Open Date: 1/15/2021

Project: Apple Valley

Analysis Date: 1/15/2021

ITE	Land Use	Weekday Average Daily Trips				Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
210	Apple Valley Phase 7 (All Future Phases)		662	662	1324		24	73	97		83	48	131
	130 Dwelling Units												
	Unadjusted Volume		662	662	1324		24	73	97		83	48	131
	Internal Capture Trips		0	0	0		0	0	0		0	0	0
	Pass-By Trips		0	0	0		0	0	0		0	0	0
	Volume Added to Adjacent Streets		662	662	1324		24	73	97		83	48	131

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

HCM 6th Signalized Intersection Summary

1: Southridge Blvd & Hilderbrand Blvd

01/20/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	186	28	92	136	98	40	243	96	107	272	164
Future Volume (veh/h)	125	186	28	92	136	98	40	243	96	107	272	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	144	214	32	106	156	113	46	279	110	123	313	189
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	461	571	84	470	346	234	371	419	535	431	510	626
Arrive On Green	0.13	0.18	0.18	0.12	0.17	0.17	0.07	0.22	0.22	0.12	0.27	0.27
Sat Flow, veh/h	1781	3099	456	1781	2012	1357	1781	1870	1574	1781	1870	1556
Grp Volume(v), veh/h	144	121	125	106	136	133	46	279	110	123	313	189
Grp Sat Flow(s),veh/h/ln	1781	1777	1778	1781	1777	1593	1781	1870	1574	1781	1870	1556
Q Serve(g_s), s	3.5	3.4	3.5	2.5	3.9	4.2	1.0	7.7	2.8	2.7	8.2	4.7
Cycle Q Clear(g_c), s	3.5	3.4	3.5	2.5	3.9	4.2	1.0	7.7	2.8	2.7	8.2	4.7
Prop In Lane	1.00		0.26	1.00		0.85	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	327	328	470	306	274	371	419	535	431	510	626
V/C Ratio(X)	0.31	0.37	0.38	0.23	0.45	0.48	0.12	0.67	0.21	0.29	0.61	0.30
Avail Cap(c_a), veh/h	488	789	790	519	789	707	494	964	994	468	964	1003
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.2	20.1	20.1	14.8	20.9	21.0	13.0	19.9	13.2	13.6	17.9	11.5
Incr Delay (d2), s/veh	0.4	0.7	0.7	0.2	1.0	1.3	0.1	1.8	0.2	0.4	1.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.3	1.4	0.9	1.6	1.6	0.3	3.1	0.9	0.9	3.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.6	20.8	20.9	15.0	21.9	22.4	13.2	21.7	13.4	13.9	19.1	11.8
LnGrp LOS	B	C	C	B	C	C	B	C	B	B	B	B
Approach Vol, veh/h		390			375			435			625	
Approach Delay, s/veh		18.9			20.1			18.7			15.9	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	14.7	11.8	17.6	11.5	15.4	9.1	20.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	25.0	8.0	29.0	8.0	25.0	8.0	29.0				
Max Q Clear Time (g_c+I1), s	5.5	6.2	4.7	9.7	4.5	5.5	3.0	10.2				
Green Ext Time (p_c), s	0.1	1.5	0.1	1.8	0.1	1.3	0.0	2.2				
Intersection Summary												
HCM 6th Ctrl Delay			18.1									
HCM 6th LOS			B									

HCM 6th TWSC

2: Sherman St & Bob Olson Pkwy/Hildebrand Blvd

01/20/2021

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱		↰	↰		↰	↰	
Traffic Vol, veh/h	12	253	62	58	232	31	50	5	33	17	6	6
Future Vol, veh/h	12	253	62	58	232	31	50	5	33	17	6	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	130	-	-	130	-	-	110	-	-	110	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	25
Mvmt Flow	13	278	68	64	255	34	55	5	36	19	7	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	289	0	0	346	0	0	597	755	173	568	772	145
Stage 1	-	-	-	-	-	-	338	338	-	400	400	-
Stage 2	-	-	-	-	-	-	259	417	-	168	372	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	7.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.55
Pot Cap-1 Maneuver	1270	-	-	1210	-	-	387	336	840	406	329	808
Stage 1	-	-	-	-	-	-	650	639	-	597	600	-
Stage 2	-	-	-	-	-	-	723	590	-	817	617	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1270	-	-	1210	-	-	360	315	840	365	309	808
Mov Cap-2 Maneuver	-	-	-	-	-	-	360	315	-	365	309	-
Stage 1	-	-	-	-	-	-	644	633	-	591	568	-
Stage 2	-	-	-	-	-	-	671	559	-	767	611	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			1.5			14.1			14.5		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	360	689	1270	-	-	1210	-	-	365	447		
HCM Lane V/C Ratio	0.153	0.061	0.01	-	-	0.053	-	-	0.051	0.03		
HCM Control Delay (s)	16.8	10.6	7.9	-	-	8.1	-	-	15.4	13.3		
HCM Lane LOS	C	B	A	-	-	A	-	-	C	B		
HCM 95th %tile Q(veh)	0.5	0.2	0	-	-	0.2	-	-	0.2	0.1		

MOVEMENT SUMMARY

 **Site: 3 [2025 PM Without Project (Site Folder: BobOlson-Steptoe-10th)]**

Bob Olson Parkway-Steptoe Street-10th Avenue Intersection
 Site Category: Roundabout Intersection
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] ft				
East: 10th Avenue														
1a	L1	179	2.0	208	2.0	0.159	9.6	LOS A	0.7	17.0	0.38	0.66	0.38	34.5
16	R2	120	2.0	140	2.0	0.128	3.0	LOS A	0.5	12.9	0.39	0.44	0.39	30.8
Approach		299	2.0	348	2.0	0.159	6.9	LOS A	0.7	17.0	0.38	0.57	0.38	33.0
North: Steptoe Street														
7	L2	151	2.0	176	2.0	0.247	9.8	LOS A	1.5	38.6	0.43	0.59	0.43	31.9
14a	R1	429	2.0	499	2.0	0.247	3.6	LOS A	1.6	39.8	0.42	0.47	0.42	36.6
Approach		580	2.0	674	2.0	0.247	5.2	LOS A	1.6	39.8	0.42	0.50	0.42	35.2
SouthWest: Bob Olson Parkway														
5ux	U	1	2.0	1	2.0	0.188	13.4	LOS B	1.1	27.1	0.37	0.61	0.37	36.0
5ax	L1	297	3.0	345	3.0	0.188	9.5	LOS A	1.1	28.0	0.36	0.57	0.36	35.2
12ax	R1	156	3.0	181	3.0	0.188	3.3	LOS A	1.1	28.0	0.35	0.49	0.35	36.5
Approach		454	3.0	528	3.0	0.188	7.3	LOS A	1.1	28.0	0.35	0.55	0.35	35.6
All Vehicles		1333	2.3	1550	2.3	0.247	6.3	LOS A	1.6	39.8	0.39	0.53	0.39	34.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PBS ENGINEERING AND ENVIRONMENTAL INC. | Licence: PLUS / 1PC | Processed: Thursday, January 21, 2021 10:09:37 AM

Project: L:\Projects\66000\66090\66090-005\Traffic\Documents\LOS\BobOlson-Steptoe-10th.sip9

HCM 6th TWSC
4: 31st Pl & Bob Olson Pkwy

Exhibit 6

01/20/2021

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	278	68	20	307	0	41	0	24	0	0	0
Future Vol, veh/h	0	278	68	20	307	0	41	0	24	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	130	-	-	135	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	290	71	21	320	0	43	0	25	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	320	0	0	361	0	0	528	688	181	507	723	160
Stage 1	-	-	-	-	-	-	326	326	-	362	362	-
Stage 2	-	-	-	-	-	-	202	362	-	145	361	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1237	-	-	1194	-	-	433	368	831	449	351	857
Stage 1	-	-	-	-	-	-	661	647	-	629	624	-
Stage 2	-	-	-	-	-	-	781	624	-	843	624	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1237	-	-	1194	-	-	427	361	831	430	345	857
Mov Cap-2 Maneuver	-	-	-	-	-	-	427	361	-	430	345	-
Stage 1	-	-	-	-	-	-	661	647	-	629	613	-
Stage 2	-	-	-	-	-	-	767	613	-	818	624	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.5			12.6			0		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	427	831	1237	-	-	1194	-	-	-
HCM Lane V/C Ratio	0.1	0.03	-	-	-	0.017	-	-	-
HCM Control Delay (s)	14.4	9.5	0	-	-	8.1	-	-	0
HCM Lane LOS	B	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	0.1	-	-	-

HCM 6th TWSC

5: Sherman St & 33rd PI

01/20/2021

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	0	4	0	0	8	16	53	7	20	62	31
Future Vol, veh/h	15	0	4	0	0	8	16	53	7	20	62	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	50	2	2	2	2	2	2	3	2	2	4	2
Mvmt Flow	17	0	5	0	0	9	18	61	8	23	71	36
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	241	240	89	239	254	65	107	0	0	69	0	0
Stage 1	135	135	-	101	101	-	-	-	-	-	-	-
Stage 2	106	105	-	138	153	-	-	-	-	-	-	-
Critical Hdwy	7.6	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.6	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	624	661	969	715	650	999	1484	-	-	1532	-	-
Stage 1	766	785	-	905	811	-	-	-	-	-	-	-
Stage 2	795	808	-	865	771	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	605	642	969	696	631	999	1484	-	-	1532	-	-
Mov Cap-2 Maneuver	605	642	-	696	631	-	-	-	-	-	-	-
Stage 1	756	772	-	893	800	-	-	-	-	-	-	-
Stage 2	777	797	-	847	759	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.7		8.6		1.6		1.3					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1484	-	-	657	999	1532	-	-				
HCM Lane V/C Ratio	0.012	-	-	0.033	0.009	0.015	-	-				
HCM Control Delay (s)	7.5	0	-	10.7	8.6	7.4	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-				

HCM 6th TWSC

6: Colorado Street & Bob Olson Pkwy

01/20/2021

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	367	0	0	333	14	0	0	0	8	0	8
Future Vol, veh/h	14	367	0	0	333	14	0	0	0	8	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	382	0	0	347	15	0	0	0	8	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	362	0	0	382	0	0	586	774	191	576	767	181
Stage 1	-	-	-	-	-	-	412	412	-	355	355	-
Stage 2	-	-	-	-	-	-	174	362	-	221	412	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1193	-	-	1173	-	-	394	328	818	400	331	831
Stage 1	-	-	-	-	-	-	588	593	-	635	628	-
Stage 2	-	-	-	-	-	-	811	624	-	761	593	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1193	-	-	1173	-	-	386	324	818	396	327	831
Mov Cap-2 Maneuver	-	-	-	-	-	-	386	324	-	396	327	-
Stage 1	-	-	-	-	-	-	580	585	-	627	628	-
Stage 2	-	-	-	-	-	-	803	624	-	751	585	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0			0			11.9		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1193	-	-	1173	-	-	536
HCM Lane V/C Ratio	-	0.012	-	-	-	-	-	0.031
HCM Control Delay (s)	0	8.1	-	-	0	-	-	11.9
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

HCM 6th Signalized Intersection Summary

1: Southridge Blvd & Hilderbrand Blvd

01/20/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	203	28	92	164	98	40	243	96	107	272	192
Future Volume (veh/h)	142	203	28	92	164	98	40	243	96	107	272	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	233	32	106	189	113	46	279	110	123	313	221
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	456	603	82	469	383	217	363	417	532	426	506	627
Arrive On Green	0.13	0.19	0.19	0.11	0.18	0.18	0.07	0.22	0.22	0.12	0.27	0.27
Sat Flow, veh/h	1781	3137	425	1781	2168	1229	1781	1870	1574	1781	1870	1556
Grp Volume(v), veh/h	163	131	134	106	153	149	46	279	110	123	313	221
Grp Sat Flow(s),veh/h/ln	1781	1777	1785	1781	1777	1620	1781	1870	1574	1781	1870	1556
Q Serve(g_s), s	4.0	3.7	3.8	2.5	4.4	4.8	1.0	7.8	2.8	2.8	8.4	5.7
Cycle Q Clear(g_c), s	4.0	3.7	3.8	2.5	4.4	4.8	1.0	7.8	2.8	2.8	8.4	5.7
Prop In Lane	1.00		0.24	1.00		0.76	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	456	341	343	469	314	286	363	417	532	426	506	627
V/C Ratio(X)	0.36	0.38	0.39	0.23	0.49	0.52	0.13	0.67	0.21	0.29	0.62	0.35
Avail Cap(c_a), veh/h	475	778	782	515	778	710	484	951	981	462	951	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	20.1	20.1	14.7	21.2	21.3	13.3	20.2	13.5	13.8	18.2	12.0
Incr Delay (d2), s/veh	0.5	0.7	0.7	0.2	1.2	1.5	0.2	1.9	0.2	0.4	1.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.5	1.5	0.9	1.8	1.8	0.3	3.2	0.9	1.0	3.3	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	20.8	20.9	15.0	22.3	22.8	13.4	22.1	13.7	14.2	19.5	12.3
LnGrp LOS	B	C	C	B	C	C	B	C	B	B	B	B
Approach Vol, veh/h		428			408			435			657	
Approach Delay, s/veh		18.9			20.6			19.1			16.1	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.4	15.1	11.9	17.7	11.5	16.0	9.1	20.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	25.0	8.0	29.0	8.0	25.0	8.0	29.0				
Max Q Clear Time (g_c+I1), s	6.0	6.8	4.8	9.8	4.5	5.8	3.0	10.4				
Green Ext Time (p_c), s	0.1	1.7	0.1	1.8	0.1	1.4	0.0	2.3				
Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

HCM 6th TWSC

2: Sherman St & Bob Olson Pkwy/Hildebrand Blvd

01/20/2021

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱		↰	↰		↰	↰	
Traffic Vol, veh/h	12	270	62	86	262	31	50	5	50	17	6	6
Future Vol, veh/h	12	270	62	86	262	31	50	5	50	17	6	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	130	-	-	130	-	-	110	-	-	110	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	25
Mvmt Flow	13	297	68	95	288	34	55	5	55	19	7	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	322	0	0	365	0	0	695	869	183	672	886	161
Stage 1	-	-	-	-	-	-	357	357	-	495	495	-
Stage 2	-	-	-	-	-	-	338	512	-	177	391	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	7.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.55
Pot Cap-1 Maneuver	1235	-	-	1190	-	-	329	289	828	342	282	788
Stage 1	-	-	-	-	-	-	633	627	-	525	544	-
Stage 2	-	-	-	-	-	-	650	535	-	808	606	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1235	-	-	1190	-	-	298	263	828	293	257	788
Mov Cap-2 Maneuver	-	-	-	-	-	-	298	263	-	293	257	-
Stage 1	-	-	-	-	-	-	626	620	-	519	500	-
Stage 2	-	-	-	-	-	-	585	492	-	740	599	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			1.9			15			16.7		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1		NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	298		693	1235	-	-	1190	-	-	293	388	
HCM Lane V/C Ratio	0.184		0.087	0.011	-	-	0.079	-	-	0.064	0.034	
HCM Control Delay (s)	19.8		10.7	7.9	-	-	8.3	-	-	18.1	14.6	
HCM Lane LOS	C		B	A	-	-	A	-	-	C	B	
HCM 95th %tile Q(veh)	0.7		0.3	0	-	-	0.3	-	-	0.2	0.1	

MOVEMENT SUMMARY

 **Site: 3 [2025 PM With Project (Site Folder: BobOlson-Step toe-10th)]**

Bob Olson Parkway-Step toe Street-10th Avenue Intersection

Site Category: Roundabout Intersection

Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] ft				
East: 10th Avenue														
1a	L1	194	2.0	226	2.0	0.174	9.6	LOS A	0.7	18.8	0.39	0.67	0.39	34.5
16	R2	120	2.0	140	2.0	0.131	3.0	LOS A	0.5	13.2	0.40	0.45	0.40	30.7
Approach		314	2.0	365	2.0	0.174	7.1	LOS A	0.7	18.8	0.39	0.58	0.39	33.0
North: Steptoe Street														
7	L2	151	2.0	176	2.0	0.263	9.9	LOS A	1.6	41.7	0.46	0.59	0.46	32.0
14a	R1	458	2.0	533	2.0	0.263	3.7	LOS A	1.7	43.2	0.44	0.48	0.44	36.5
Approach		609	2.0	708	2.0	0.263	5.2	LOS A	1.7	43.2	0.44	0.51	0.44	35.3
SouthWest: Bob Olson Parkway														
5ux	U	1	2.0	1	2.0	0.199	13.4	LOS B	1.1	29.1	0.37	0.61	0.37	36.0
5ax	L1	314	3.0	365	3.0	0.199	9.5	LOS A	1.2	30.0	0.36	0.58	0.36	35.1
12ax	R1	164	3.0	191	3.0	0.199	3.3	LOS A	1.2	30.0	0.35	0.49	0.35	36.5
Approach		479	3.0	557	3.0	0.199	7.4	LOS A	1.2	30.0	0.36	0.55	0.36	35.6
All Vehicles		1402	2.3	1630	2.3	0.263	6.4	LOS A	1.7	43.2	0.40	0.54	0.40	34.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PBS ENGINEERING AND ENVIRONMENTAL INC. | Licence: PLUS / 1PC | Processed: Thursday, January 21, 2021 10:09:38 AM

Project: L:\Projects\66000\66090\66090-005\Traffic\Documents\LOS\BobOlson-Step toe-10th.sip9

HCM 6th TWSC

4: 31st Pl & Bob Olson Pkwy

01/20/2021

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	278	62	50	307	0	37	0	41	0	0	0
Future Vol, veh/h	0	278	62	50	307	0	37	0	41	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	130	-	-	135	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	290	65	52	320	0	39	0	43	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	320	0	0	355	0	0	587	747	178	569	779	160
Stage 1	-	-	-	-	-	-	323	323	-	424	424	-
Stage 2	-	-	-	-	-	-	264	424	-	145	355	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1237	-	-	1200	-	-	393	340	834	405	326	857
Stage 1	-	-	-	-	-	-	663	649	-	578	585	-
Stage 2	-	-	-	-	-	-	718	585	-	843	628	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1237	-	-	1200	-	-	380	325	834	371	312	857
Mov Cap-2 Maneuver	-	-	-	-	-	-	380	325	-	371	312	-
Stage 1	-	-	-	-	-	-	663	649	-	578	560	-
Stage 2	-	-	-	-	-	-	687	560	-	800	628	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.1			12.3			0		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	380	834	1237	-	-	1200	-	-	-
HCM Lane V/C Ratio	0.101	0.051	-	-	-	0.043	-	-	-
HCM Control Delay (s)	15.5	9.5	0	-	-	8.1	-	-	0
HCM Lane LOS	C	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0.2	0	-	-	0.1	-	-	-

HCM 6th TWSC
5: Sherman St & 33rd PI

01/20/2021

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	32	0	12	0	0	8	31	53	7	20	62	59
Future Vol, veh/h	32	0	12	0	0	8	31	53	7	20	62	59
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	50	2	2	2	2	2	2	3	2	2	4	2
Mvmt Flow	37	0	14	0	0	9	36	61	8	23	71	68
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	293	292	105	295	322	65	139	0	0	69	0	0
Stage 1	151	151	-	137	137	-	-	-	-	-	-	-
Stage 2	142	141	-	158	185	-	-	-	-	-	-	-
Critical Hdwy	7.6	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.6	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	574	619	949	657	595	999	1445	-	-	1532	-	-
Stage 1	750	772	-	866	783	-	-	-	-	-	-	-
Stage 2	759	780	-	844	747	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	550	593	949	627	570	999	1445	-	-	1532	-	-
Mov Cap-2 Maneuver	550	593	-	627	570	-	-	-	-	-	-	-
Stage 1	731	760	-	843	763	-	-	-	-	-	-	-
Stage 2	732	760	-	818	735	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	11.3		8.6			2.6			1			
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1445	-	-	621	999	1532	-	-				
HCM Lane V/C Ratio	0.025	-	-	0.081	0.009	0.015	-	-				
HCM Control Delay (s)	7.6	0	-	11.3	8.6	7.4	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile O(veh)	0.1	-	-	0.3	0	0	-	-				

HCM 6th TWSC

6: Colorado Street & Bob Olson Pkwy

01/20/2021

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↕			↕	
Traffic Vol, veh/h	14	361	78	0	329	14	46	0	0	8	0	8
Future Vol, veh/h	14	361	78	0	329	14	46	0	0	8	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	376	81	0	343	15	48	0	0	8	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	358	0	0	457	0	0	619	805	229	569	838	179
Stage 1	-	-	-	-	-	-	447	447	-	351	351	-
Stage 2	-	-	-	-	-	-	172	358	-	218	487	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1197	-	-	1100	-	-	373	315	774	405	301	833
Stage 1	-	-	-	-	-	-	560	572	-	639	631	-
Stage 2	-	-	-	-	-	-	813	626	-	764	549	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1197	-	-	1100	-	-	366	311	774	401	297	833
Mov Cap-2 Maneuver	-	-	-	-	-	-	366	311	-	401	297	-
Stage 1	-	-	-	-	-	-	553	565	-	631	631	-
Stage 2	-	-	-	-	-	-	805	626	-	754	542	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0			16.3			11.9		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	366	1197	-	-	1100	-	-	541
HCM Lane V/C Ratio	0.131	0.012	-	-	-	-	-	0.031
HCM Control Delay (s)	16.3	8	-	-	0	-	-	11.9
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1



June 14, 2022

Sorin Juster, PE, PTOE – Transportation Manager
City of Kennewick, Public Works Department
PO Box 6108
Kennewick, Washington 99336-0108

Via email: sorin.juster@ci.kennewick.wa.us

Regarding: Addendum to Traffic Impact Analysis Supplemental Letter Dated January 25, 2021
Apple Valley Phases Subdivision
South of Bob Olson Parkway, East of S Colorado Street
Kennewick, Washington
Parcel numbers: 1-1789-200-0001-009 and 1-1789-200-0001-012
PBS Project 66090.008

Dear Mr. Juster:

This letter provides the updated trip generation and a finding on the traffic impacts due to the slight variation in number of dwelling units at the proposed Apple Valley Subdivision located south of Bob Olson Parkway and east of S Colorado Street at Kennewick, Washington. Figure 1 provides a vicinity map for the project.

PROJECT DESCRIPTION

The Traffic Impact Analysis Supplemental Letter dated January 25, 2021, addressed Phase 6 and all the remaining future phases of the Apple Valley Subdivision. For simplicity, in the January 2021 letter, all future phases were collectively referred to as Phase 7 and had a total 130 dwelling units. The 130 dwelling units are comprised of 119 dwelling units located on the northwest portion of the project and 11 dwelling units located on the southeast portion of the project. Figure 2 provides location references of the previously proposed Phase 7 dwelling units.

The current proposed site plan for Phase 6 did not change and Phase 7 changed slightly. The 119 dwelling units located on the northwest portion of the project have now increased to 126 dwelling units and the 11 dwelling units located on the southeast portion is assumed to remain for a total of 137 dwelling units. Therefore, the new proposed single-family detached housing increased from 130 to 137 dwelling units. Figure 3 provides the current site plan for Phase 7 of the Apple Valley Subdivision.

TRIP GENERATION

The Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 11th Edition*, was used to estimate the number of total trips from the current proposed project. Trip generation estimates for the project are based on the ITE fitted curves for the 137 dwelling units of single-family detached housing for land use code 210.

Net new peak hour trips were estimated by deducting the number of total trips of the previously proposed project from the current proposed project. Trip generation estimates for the previously proposed land use were based on the Apple Valley Phases 6 and 7 traffic impact analysis supplemental letter dated January 25, 2021. The ITE fitted curves for 130 dwelling units of single-family detached housing were used in the January 2021 letter. Table 1 presents the currently and previously proposed land use and the net new trip generation estimates. Detailed trip generation calculations are attached.

Table 1. Net New Trip Generation for Apple Valley Subdivision

Proposed Land Use (ITE Code)	Size	Independent Variable	ADT			AM			PM		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Currently Proposed (Institute of Transportation Engineers' Trip Generation Manual, 11th Edition)											
Single-Family Detached Housing (ITE 210) ^a	137	DU	674	674	1,348	26	73	99	84	50	134
Total Trips			674	674	1,348	26	73	99	84	50	134
Previously Proposed (Institute of Transportation Engineers' Trip Generation Manual, 10th Edition)											
Single-Family Detached Housing (ITE 210) ^a	130	DU	(662)	(662)	(1,324)	(24)	(73)	(97)	(83)	(48)	(131)
Total Trips			(662)	(662)	(1,324)	(24)	(73)	(97)	(83)	(48)	(131)
Net New Trips			12	12	24	2	0	2	1	2	3

Note: negative values are shown in parentheses.

^a Trip generation estimates are based on ITE fitted curves.

The updated size of proposed land uses within the Phase 7 of the Apple Valley Subdivision is anticipated to generate 24 net new trips on a typical weekday, including 2 trips during the AM peak hour and 3 trips during the PM peak hour.

CONCLUSION

The change in dwelling units within Phase 7 of the Apple Valley Subdivision will not change the findings and recommendations presented in the Apple Valley Phases 6 and 7 Traffic Impact Analysis Supplemental Letter dated January 25, 2021.

Please feel free to contact me at 360.567.2117 or john.manix@pbsusa.com with any questions or comments.

Sincerely,



John Manix, PE
 Senior Traffic Engineer
 PBS Engineering and Environmental Inc.

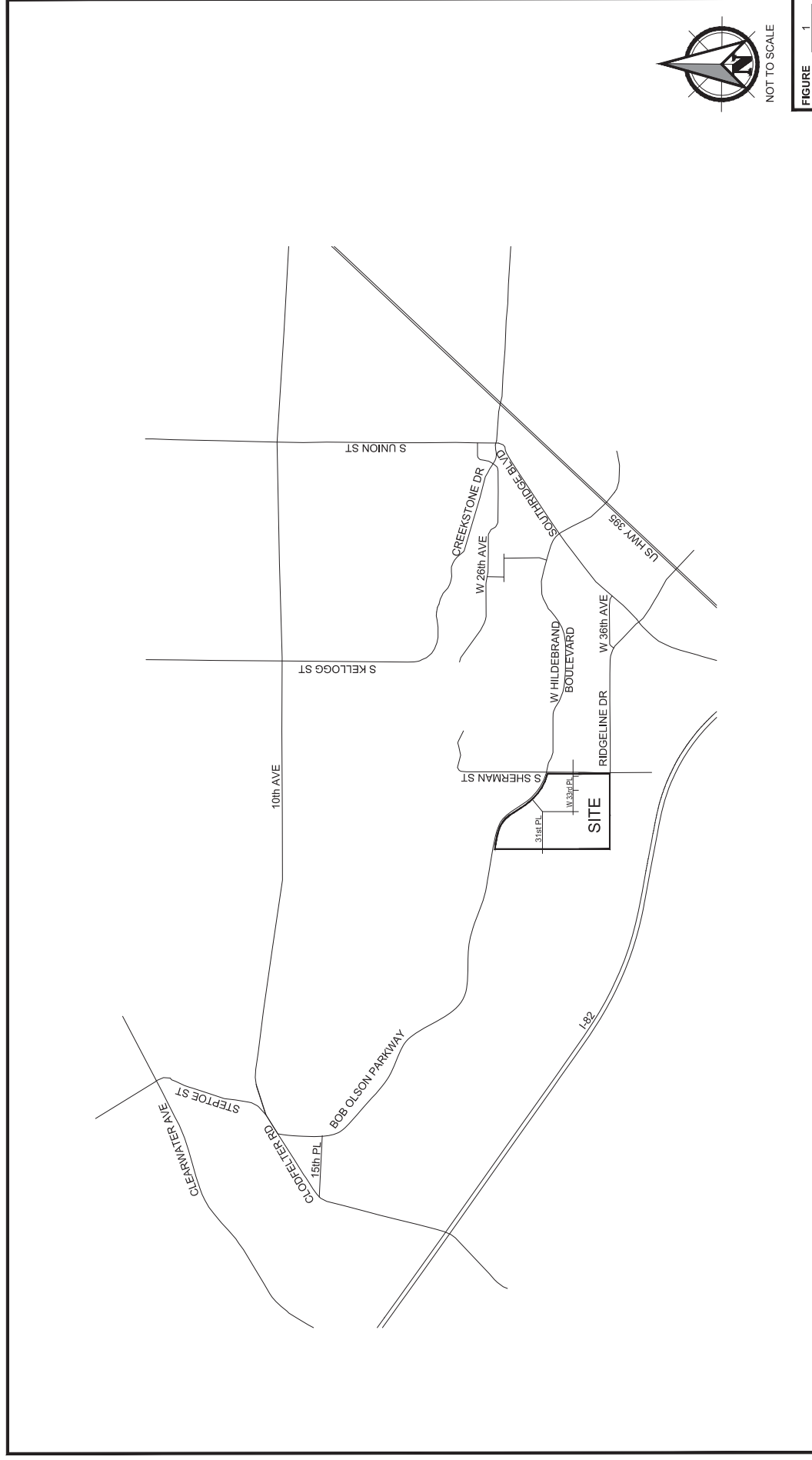


John A Manix
 2022.06.14
 20:08:46-07'00'

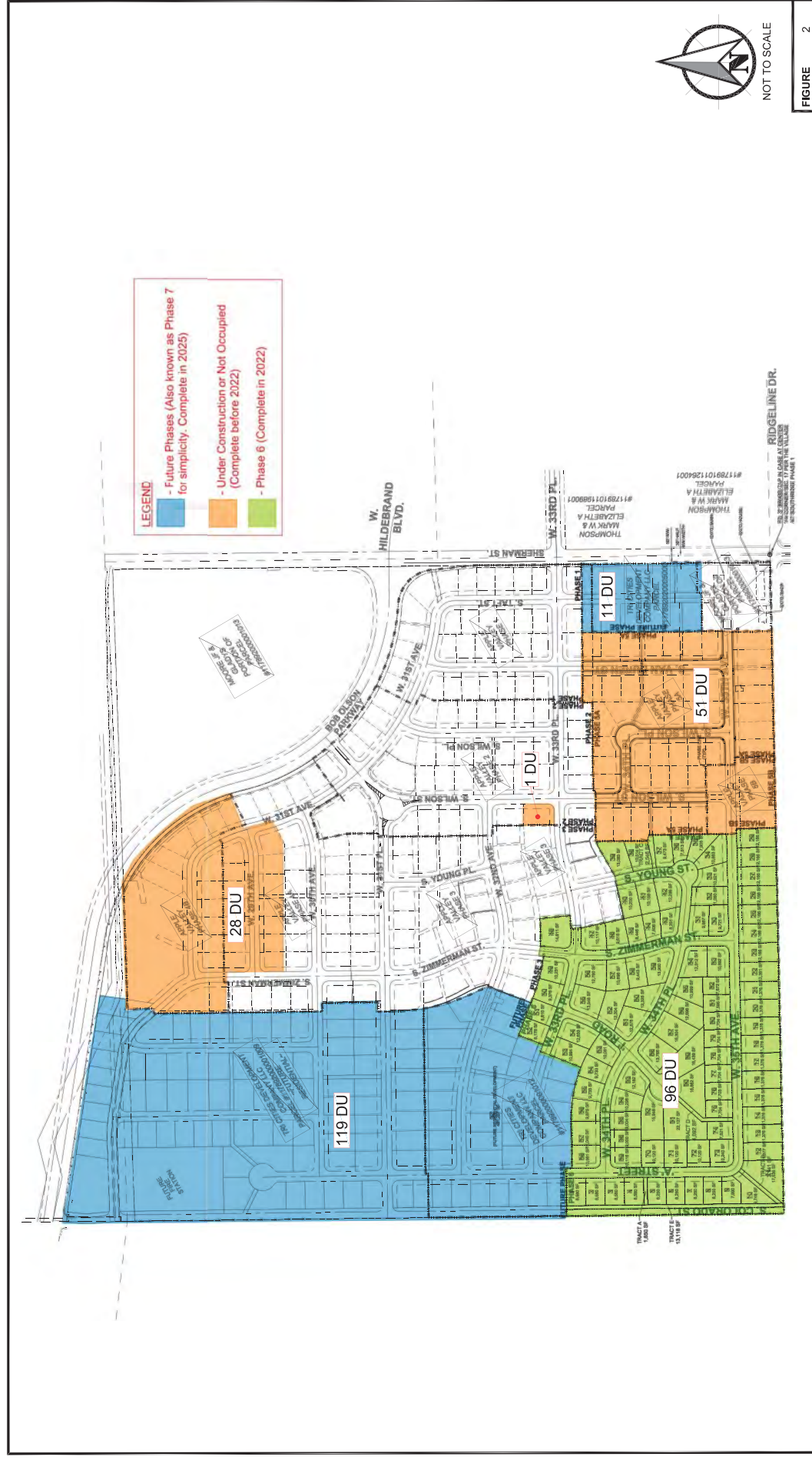
Attachments: Figure 1. Vicinity Map
 Figure 2. Prior Site Plan
 Figure 3. Current Site Plan
 Currently Proposed Trip Generation Calculations
 Previously Proposed Trip Generation Calculations

BJ:JAM:tl

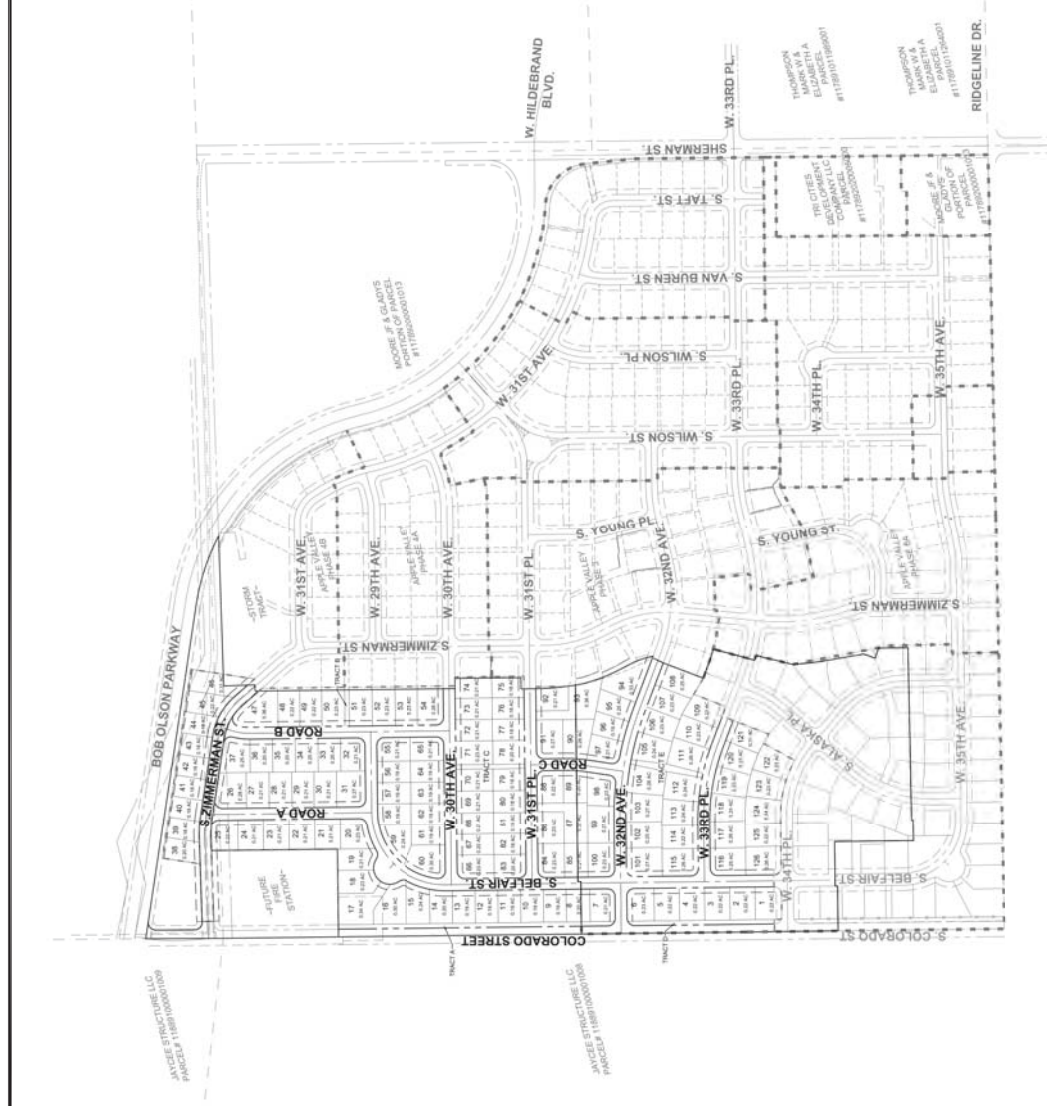
Eastbound right turn lane from Bob Olson Parkway to southbound S Colorado St. is required. Right turn lane's construction to be completed and accepted by the City as a condition to Final Plat Approval.



Vicinity Map
Apple Valley Subdivision



Prior Site Plan



NOT TO SCALE

FIGURE 3

Current Site Plan

Apple Valley Subdivision

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE :
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE (IV):
Dwelling Units

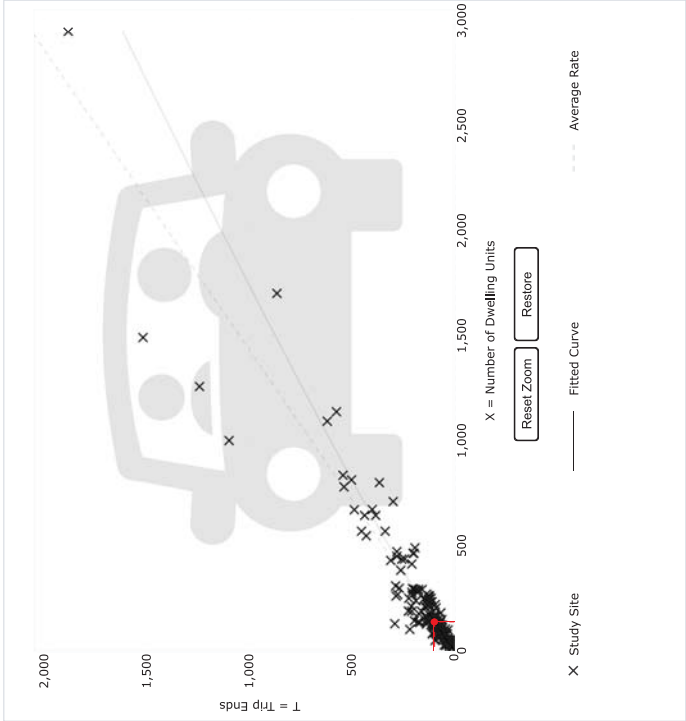
TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
137

Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) [Click for Description and Data Plots](#)

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
192

Avg. Num. of Dwelling Units:
226

Average Rate:
0.70

Range of Rates:
0.27 - 2.27

Standard Deviation:
0.24

Fitted Curve Equation:
 $\ln(T) = 0.91 \ln(X) + 0.12$

R²:
0.90

Directional Distribution:
26% entering, 74% exiting

Calculated Trip Ends:
Average Rate: 96 (Total), 25 (Entry), 71 (Exit)
Fitted Curve: 99 (Total), 26 (Entry), 73 (Exit)





Query Filter

DATA SOURCE:

Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:

210

LAND USE GROUP:

(200-299) Residential

LAND USE :

210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:

All Sites

SETTING/LOCATION:

General Urban/Suburban

INDEPENDENT VARIABLE (IV):

Dwelling Units

TIME PERIOD:

Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:

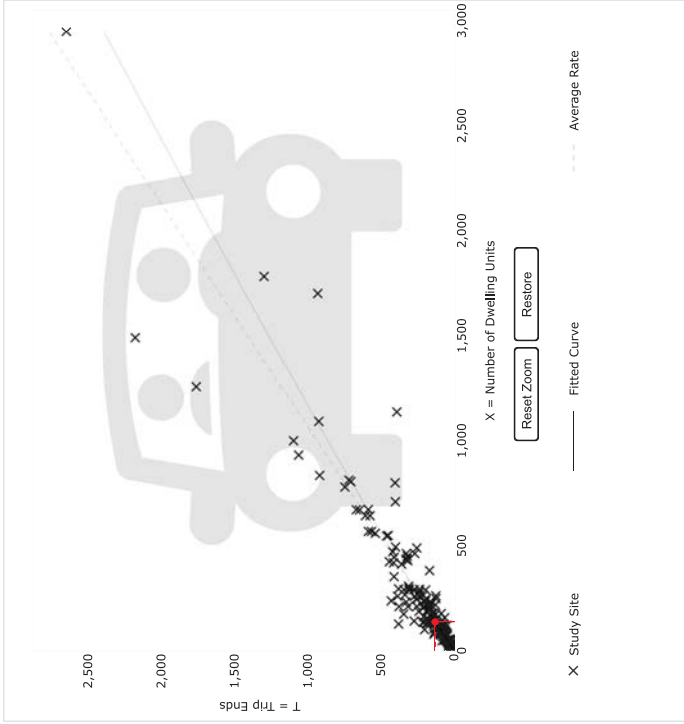
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

137

Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) [Click for Description and Data Plots](#)

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
208

Avg. Num. of Dwelling Units:
248

Average Rate:
0.94

Range of Rates:
0.35 - 2.98

Standard Deviation:
0.31

Fitted Curve Equation:
 $\ln(T) = 0.94 \ln(X) + 0.27$

R²:
0.92

Directional Distribution:
63% entering, 37% exiting

Calculated Trip Ends:
Average Rate: 129 (Total), 81 (Entry), 48 (Exit)
Fitted Curve: 134 (Total), 84 (Entry), 50 (Exit)

Detailed Land Use Data

For 130 Dwelling Units of Apple Valley Phase 7 (All Remaining Future Phases)
(210) Single-Family Detached Housing

Project: Apple Valley Open Date: 1/21/2021
Analysis Date: 1/21/2021

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R ²
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	1324	0	9.44	4.81	19.39	2.1	264	50	50	True	$\ln(T) = 0.92 \ln(X) + 2.71$	0.95
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	97	0	0.74	0.33	2.27	0.27	219	25	75	True	$T = 0.71(X) + 4.8$	0.89
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	131	0	0.99	0.44	2.98	0.31	242	63	37	True	$\ln(T) = 0.96 \ln(X) + 0.2$	0.92

Trip Generation Summary

Exhibit 6

Alternative: Alternative 1

Phase:

Open Date: 1/15/2021

Project: Apple Valley

Analysis Date: 1/15/2021

ITE	Land Use	Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic					
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
210	Apple Valley Phase 7 (All Future Phases)		662	662	1324		24	73	97		83	48	131
130 Dwelling Units													
Unadjusted Volume													
	Internal Capture Trips		662	662	1324		24	73	97		83	48	131
	Pass-By Trips		0	0	0		0	0	0		0	0	0
	Volume Added to Adjacent Streets		662	662	1324		24	73	97		83	48	131

Total Weekday Average Daily Trips Internal Capture = 0 Percent
Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.



Memorandum Public Works

Leading the Way

To: Planning Department
From: Martin Nelson, Public Works Development Review Supervisor
Date: November 10, 2022
Re: Public Works Comments
Project: SUB-2022-0022

1. Prior to approval of the preliminary plat, the developer shall address the comments addressed on the plat.
2. All agreements between the City and the developer, and/or associated with the subject or parent parcels are still in place.
3. Developer will be required to provide construction of private roads, sidewalks, streetlights, storm drainage, and designate sidewalk and utility easements, all in conformance with the latest City of Kennewick (COK) Standard Specifications and Details.
4. The maximum street grade per KMC 5.56.275 is 12%. Show grades on the street centerline profile.
5. Buildings or structures may not be located over City utilities.
6. Provide water and sanitary sewer services for each proposed dwelling or building per Kennewick Municipal Code KMC 14.13.020, 14.22.020(1), KMC 17.13.095(1), KMC 17.12.055 and fire flow as required by the Fire Department.
7. Water and sewer services to be constructed per City of Kennewick (COK) Detail 3-6.
8. Streets adjacent to this project have a Pavement Condition Index (PCI) rating equal to or above 75, therefore trenching will not be allowed per KMC 5.56.215 unless specified exceptions have been met. Any trenching done on pavement with a PCI rating of 75 or over will require a minimum 25-foot wide patch and full width of each travel lane or shoulder disturbed.
9. Provide 15-foot wide easements or tracts centered over all water mains outside of the right-of-way. These easements must extend to 5 feet behind fire hydrants.
10. The Developer shall provide and install one metered water service for each proposed dwelling or building at their own expense per COK Standard Detail 3-6. The meter shall be placed as close to the main line as possible (not in a driveway or parking area) per KMC 14.12.080.
11. All proposed water main extensions must conform to the adopted City master plan, as amended and must conform to an overall program for a grid system, with provisions made for extensions of looping for circulation where at all possible per KMC 14.10.030.
12. Provide water lines and hydrants as required by Fire Department to meet fire protection.

PUBLIC WORKS

13. Hydraulic modeling may be required based on fire flow requirements.
14. City potable water is not available for irrigation purposes unless special permission is given by the Public Works Director. Contact KID/CID in order to provide irrigation water to irrigate the parcels.
15. Every proposed dwelling shall be separately connected with the public sewer, unless such connection is six inch diameter sewer pipe or larger per KMC 14.22.030(10).
16. Provide 15-foot wide easements or tracts centered over all sewer mains outside of the right-of-way.
17. All proposed sanitary sewer extensions will be required at Developer expense. On the Plans, provide a Sewer Comprehensive Plan for the site/subdivision meeting KMC 14.22.040.
18. Provide a Storm Water Site Plan (drainage report) and storm design to retain and dispose of a 25-year 24-hour storm following the Storm Water Management Manual for Eastern Washington (SMMEW) and Section 5-8. Infiltration tests are required at the location and depth of the planned infiltration structures along with a soils log to 5 feet below that point. Design and construct all underground infiltration structures to meet the Washington State Underground Injection Control (UIC) Rule. Provide an assessment of the design against the UIC pretreatment requirements found in section 5-6 of the SMMEW. Provide UIC registration numbers on the plans prior seeking the City's signature.
19. All plans showing existing utilities shall call out the Record Drawing set number that installed the utilities. All plans need to clearly identify the size and type of water/sewer utility that is being proposed or connected to (i.e. "Existing 8-inch Water" or similar). Label private lines "Private".
20. Any off site tracts, easements or agreements required for the project shall be submitted with the civil plans for review. Before a permit can be issued for the project, the easements or agreements shall be recorded at Benton County and a copy shall be provided to Public Works. The Auditor File Number shall be added to the plans before seeking City signature.
21. This site requires a Public Works Construction Permit. You may apply for this by submitting the information below for Civil Plan Review through Kennewick's Self Service Portal at https://selfservice.ci.kennewick.wa.us/EnerGov_Prod/SelfService#/home:
 - a. PDF copy of the Application for Civil Review and Storm Calculations, if required to retain the Stormwater on site.
 - b. One full size (24"x36") PDF copy of the construction plans.
22. Construct all projects using current City Survey Data. After project completion, Record Drawings showing improvements made on the property will be required prior to acceptance of the construction permit(s). For detailed information on Kennewick Survey Data and Record Drawings go to COK website at <https://www.go2kennewick.com/314/Civil-Plan-Review>.

PUBLIC WORKS



APPLE VALLEY - PHASES 7-9

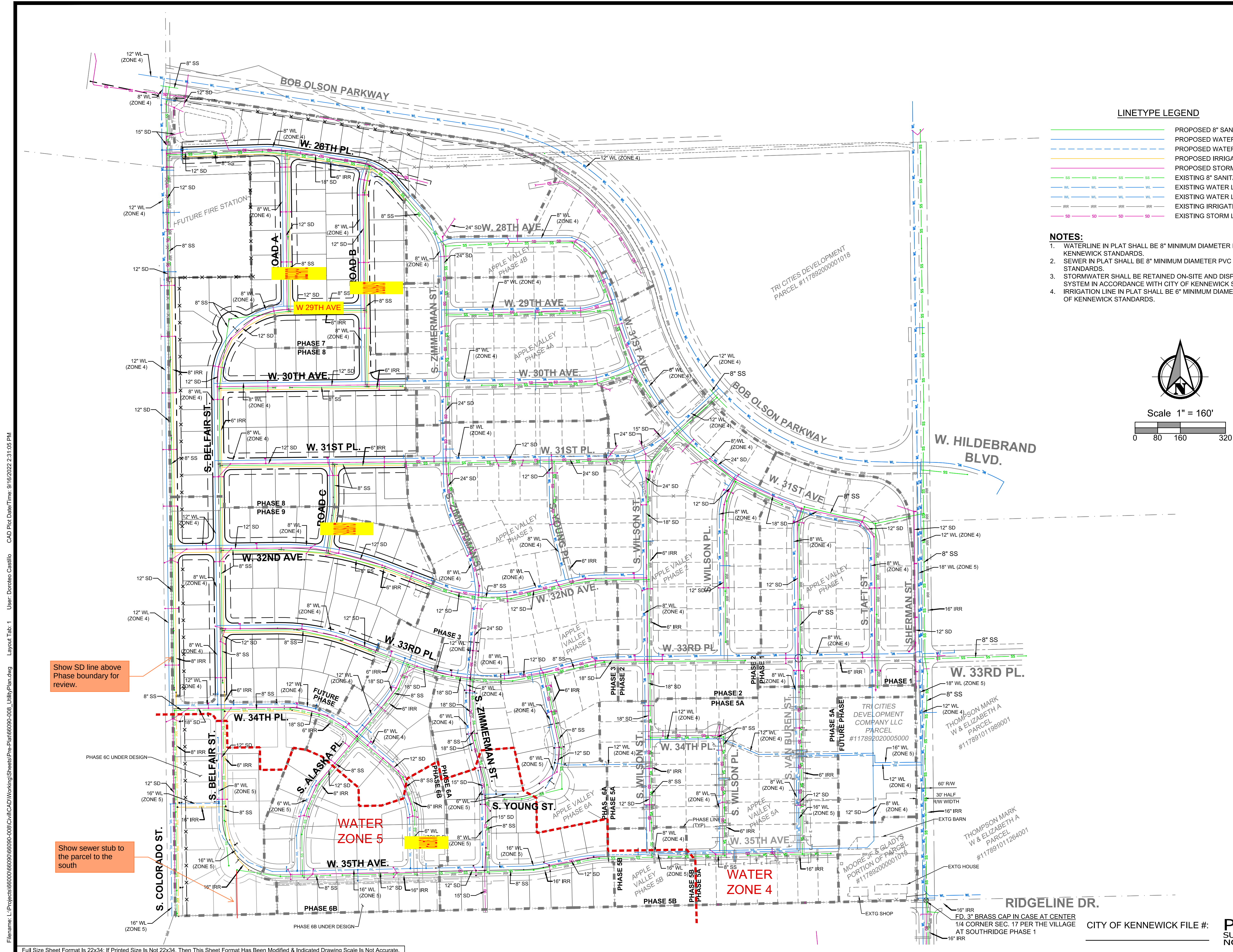
COMPREHENSIVE UTILITY PLAN FOR:



Know what's **below**.
Call before you dig.

DESIGNED:	DCC
CHECKED:	JLM
APRIL 2022	66090.008
SHEET ID	

SHEET 1 OF 1



Filename: L:\Projects\66000\66090-008\CivilCAD\Working\Sheets\Pre-Plat\66090-008_UtilityPlan.dwg Layout Tab: 1 User: Doroteo Castillo CAD Plot Date/Time: 9/16/2022 2:31:05 PM

Full Size Sheet Format Is 22x34; If Printed Size Is Not 22x34, Then This Sheet Format Has Been Modified & Indicated Drawing Scale Is Not Accurate.

CITY OF KENNEWICK FILE #:

PRELIMINARY
SUBJECT TO AGENCY REVIEW
NOT FOR CONSTRUCTION



Memorandum **Public Works**

Leading the Way

To: Planning Department
From: Martin Nelson, Public Works Stormwater and solid Waste Program Engineer
Date: February 9, 2022 
Re: Public Works Comments
Project: SUB-2022-0022

In addition to the requirements provided on previous correspondence, please address the following items as you move through the platting process.

1. Traffic Requirements:

- a. The construction of the half-street improvements for Colorado Street is required to be completed along the entirety of the Apple Valley development, from Bob Olson Pkwy to the southern end of the development (Ridgeline Drive).
- b. Dedicate and construct the eastbound right turn lane at the Colorado St. and Bob Olson Pkwy intersection.

2. Utility Requirements:

- a. The southernmost segment of sewer mainline in Colorado shall be connected to the sewer main line running directly north to Bob Olsen Parkway in Colorado. The City may require oversizing for this or other mainlines but would reimburse for the over sizing.

PUBLIC WORKS



From: [Shanna Everson](#)
To: [Steve Donovan](#)
Subject: RE: [E] SUB-2022-0022 and ED-2022-0038
Date: Wednesday, October 26, 2022 1:58:42 PM
Attachments: [image003.png](#)
[image004.png](#)
[image005.png](#)

I need a Cad file on this and a time line. Is this being phased out? What is the plan on this and schedule?

Shanna Everson
 Distribution Design Tech 2
 509-585-5367



From: Steve Donovan <Steve.Donovan@ci.kennewick.wa.us>
Sent: Tuesday, October 25, 2022 8:44 AM
To: Ashley M. Morton <AshleyMorton@ctuir.org>; Ben Franklin Transit - Bill Barlow <bbarlow@bft.org>; Ben Franklin Transit - Kevin Sliger <ksliger@bft.org>; Benton Clean Air Authority - Rob Rodger <rob.rodger@bentoncleanair.org>; Benton Clean Air Authority - Tyler Thompson <tyler.thompson@bentoncleanair.org>; Benton Clean Air John Lyle <john.lyle@bentoncleanair.org>; Benton County Assessor - Segregations <Segregations@co.benton.wa.us>; Benton Franklin Health Dept. - Erin Hockaday <erint@bfhd.wa.gov>; Benton Franklin Health Dept. - Seam Domagalski <seand@bfhd.wa.gov>; EngService <EngService@bentonpud.org>; Jeff Vosahlo <vosahloj@bentonpud.org>; Chad Brooks <brooksc@bentonpud.org>; Mike Irving <irvingm@bentonpud.org>; Shanna Everson <eversons@bentonpud.org>; Tina Glines <glinest@bentonpud.org>; BPA - Deborah Rodgers <dxrodgers@bpa.gov>; BPA - Joe Cottrell <jecottrell@bpa.gov>; BPA - Mike Deklyen <mjdeklyen@bpa.gov>; Cascade Gas James Thomas <james.thomas@cngc.com>; Cascade Natural Gas - Sara Pineda <sara.pineda@cngc.com>; Casey Barney <Casey_Barney@Yakama.com>; Charter - Junior Campos <junior.campos@charter.com>; Charter - Ryan Sams <ryan.sams@charter.com>; Columbia Irrigation District <cid@columbiairrigation.com>; Dept of Archaeology and Historic Preservation (sepa@dahp.wa.gov) <sepa@dahp.wa.gov>; Dustin Fisk - Kennewick School District (dustin.fisk@ksd.org) <dustin.fisk@ksd.org>; Greg Wendt (Greg.Wendt@co.benton.wa.us) <Greg.Wendt@co.benton.wa.us>; Jessica Lally <Jessica_Lally@Yakama.com>; KID Development <development@kid.org>; Kyle McCauley <Kyle.McCauley@cngc.com>; Michelle Cooke <Michelle.Cooke@co.benton.wa.us>; Mike Stevens - (mstevens@ci.richland.wa.us) <mstevens@ci.richland.wa.us>; Noah Oliver <Noah_Oliver@Yakama.com>; US Army Corps of Engineers <CENWW-RE@usace.army.mil>; WDFW (R3Planning@dfw.wa.gov) <R3Planning@dfw.wa.gov>; Williams Pipeline - Audie Neuson <audie.neuson@williams.com>; WSDOT <scplanning@wsdot.wa.gov>; Yakama Nation - Thalia Sachtelban <enviroreview@yakama.com>; Ziplly Fiber Christy Ross <christy.ross@ziply.com>
Subject: [E] SUB-2022-0022 and ED-2022-0038



2015 South Ely Street
Kennewick, WA 99337
Customer Service 509-586-9111
Business 509-586-6012
FAX 509-586-7663
www.kid.org

November 1, 2022

Steve Donovan, AICP, Planning Manager
City of Kennewick - Development Services Division
PO Box 6108
Kennewick, WA 99336

Subject: Review Comments Preliminary Plat for Apple Valley Ph. 7-9

Dear Mr. Donovan:

This letter provides Kennewick Irrigation District (KID) review comments on Preliminary Plat No. SUB-2022-0022 submitted by Matt Smith of Tri-Cities Development Company, LLC ("Applicant"¹). The properties are generally located south of Bob Olson Parkway and east of Colorado Street in the Northwest Quarter of Section 17, Township 8 North, Range 29 East, and the Southwest Quarter of Section 8, Township 8 North, Range 29 East, W.M., Kennewick, Benton County, Washington, and includes the following parcels:

- 117892000001017 (24.28 **irrigable** acres)
- 117892060003000 (2.20 **irrigable** acres, 0.30 **non-irrigable** acres)
- Portion of 117892040005001 (18.76 **irrigable** acres, 3.13 **non-irrigable** acres)
- Portion of 117892000001016 (3.83 **non-irrigable** acres)

The properties identified on the proposed preliminary plat are located within KID boundaries. The properties within this preliminary plat are classified as irrigable and non-irrigable land and consist of 39.49 **irrigable** acres and 1.07 **non-irrigable** acres. Accordingly, KID provides the following comments to be included as required conditions of approval by the legislative authority under RCW 58.17.310(2):

- 1) The plat shall include the following irrigation easements consistent with KID requirements:
 - a. Dedicate to KID an irrigation easement 10 feet in width via a recorded deed to match irrigation system components, centered on an irrigation pipeline.
 - b. On all lots within the plat, dedicate to KID an irrigation easement 10 feet in width, or five (5) feet in width if adjacent to a utility easement, located along the

¹ Reference to the "Applicant" throughout this comment letter shall refer to the property owner and/or developer of the proposed plat.

road frontage of each lot. An irrigation easement may be included within the 'sidewalk and utility' easement if one is proposed, denoting the easement as a "Sidewalk, Utility, and Irrigation Easement."

- 2) This plat is proposed within the Southridge Master Plan Benefit Area. Compliance with the Southridge Master Irrigation Facilities Plan and KID Resolution No. 2016-14 is also required.
- 3) The Applicant is required to install an irrigation system that conforms to the most recent edition of the KID Standard Specifications pursuant to Resolution 86-15-A. This includes providing distribution pipelines adequate to provide individual pressurized irrigation services to each lot within the preliminary plat. This system will be dedicated to KID upon completion, at the time of final plat.
- 4) Design of the required irrigation system must be approved by KID prior to installation. The Applicant is required to submit an irrigation plan designed by a professional engineer for review and approval by KID. The plan may be hand drawn or computer drafted. The plan shall be accurate and to a scale not to exceed one (1) inch = 50 feet. This is a vital step of the approval process. In addition to compliance with condition 2 above, the plan must ensure all reasonable measures are taken to protect any easements, rights-of-way, and facilities. Please contact Daniel Tissell at 586-6012 for more information regarding this irrigation plan.
- 5) Completion of all the facilities, consistent with an irrigation plan approved by KID, is required prior to KID signature on the final plat.
 - a. In the event any KID facilities are damaged during construction, the damage must be fully repaired to KID's then-existing standards.
 - b. For each phase of the plat, KID review and approval of construction and grading plans is required to allow KID to assure all reasonable measures to protect any easements and rights-of-way. Such review and approval will be coordinated as part of City review and the final plat approval process.
 - c. KID must inspect any new irrigation system installations or modifications. The Applicant shall contact KID to schedule an inspection at least two business days in advance of the desired inspection date.
 - d. As an alternative to immediate construction prior to approval of the final plat, the Applicant may choose to delay installation of the irrigation system by entering into a facilities installation agreement with KID. The Applicant must still provide KID with an irrigation system design that conforms to the most recent addition of the KID standard specifications. This irrigation system may be bonded and delayed up to five years. The facility installation agreement charge is \$350.00. The Applicant must establish an approved bonding mechanism with KID in an amount approved by KID.

Finally, KID requests the following additional conditions of final plat approval:

- 6) Prior to approval of each phase, the current year's assessment must be paid. If the final plat is submitted for review after May 31st of a given year or submitted for review prior to May 31st but not submitted for final approval prior to June 15th, the next year's estimated assessment (125% of the current year's assessment) must be paid prior to plat approval.
- 7) The review and inspection fees in place at the time of each review request must be paid. At the time of application the review fees are as follows:
 - a. A preliminary plat review fee of **\$825.00** which must be paid prior to scheduling for final plat approval at a KID Board meeting for the first phase.
 - b. For each phase an inspection fee of **\$350** for the first 20 lots/tracts plus **\$25** per lot/tract after 20 lots/tracts.
 - c. Final plat review fee for each phase of **\$225.00**.
- 8) Per KID Policy 4.17, "Irrigable Land Recalibration Principles," as land within the plat is subdivided or developed, KID will remove the irrigation water allocation from the impermeable surfaces, such as streets, from the plats.
- 9) In order to receive KID irrigation water delivery, a water master (or point of contact) for the subdivision must be appointed. This water master can be appointed by the Homeowners Association (or similar organization) officers or must be elected from among the property owners within the boundary of this proposed subdivision. If no HOA (or similar organization) is organized, then an election method similar to the attached document is required.
- 10) Prior to approval of each phase, an electronic file (AutoCAD 2004 format or later) and hard copy (6-mil mylar, sealed by a professional engineer) of construction as-builts must be provided to KID.
- 11) Please include the following irrigation title block on future final plat phases related to the proposed preliminary plat:
 - a. I HEREBY CERTIFY THAT THE PROPERTY DESCRIBED HEREIN IS LOCATED WITHIN THE BOUNDARIES OF THE KENNEWICK IRRIGATION DISTRICT, AND THAT THE IRRIGATION EASEMENTS SHOWN ON THIS FINAL PLAT ARE ADEQUATE TO SERVE ALL LOTS SHOWN HEREON. I FURTHER CERTIFY THAT THOSE LOTS WHICH ARE ENTITLED TO IRRIGATION WATER UNDER THE OPERATING RULES AND REGULATIONS OF THE DISTRICT HAVE SATISFIED THE REQUIREMENTS OF RCW 58.17.310, AND THAT ALL ASSESSMENTS HAVE BEEN PAID THROUGH THE YEAR 20____ A.D.

- 12) KID will be reviewing the existing 40-foot Plymouth Drain easement as recorded under Auditor's File Number 381003, which crosses 'Tract WW', for vacation. Any action related to easement vacation requires KID Board of Directors approval.
- 13) All subdivisions of land are required to be approved by the KID Board of Directors during a KID board meeting. KID board meetings are regularly scheduled on the first and third Tuesdays of each month. All conditions must be completed prior to submittal to KID for final approval. The submittal for final approval must be received by KID a minimum of two weeks prior to a regularly scheduled board meeting to be considered at that meeting.

KID reserves the following rights regarding future review of the plat:

- 14) KID reserves the right to provide review comments under RCW 58.17.330(1) and RCW 58.17.330(2) in response to future design submittals by the Applicant prior to final plat approval. The scope of these reviews will be limited to phases that are adjacent to the District's ROW. KID review of construction plans will be consistent with the City's plan review timelines.
- 15) KID reserves the right to review and comment on the Applicant's plat line revisions for potential additional revisions to protect KID system components for phases that are adjacent to KID's easements or ROW.
- 16) KID reserves the right to review and comment on the Applicant's covenants, conditions, and restrictions to evaluate whether they should include any terms regarding protection of KID system components after construction and fencing requirements.
- 17) KID reserves the right to submit additional comments during the City's review process under the State Environmental Policy Act (SEPA).

Please provide notice to KID of any public meeting or hearing where this project will be an agenda item. If you have any questions regarding these comments, please contact me at the address/phone number listed below.

Sincerely,



Jason McShane, P.E.
Engineering/Operations Manager

Enc: Sample Water Master Information
cc: LB\correspondence\File: [17-8-29; 8-8-29]
Applicant - ATTN: Matt Smith, Tri-Cities Development Company, LLC, 15 SW Colorado Avenue, Suite 1, Bend, OR 97702

Sample Watermaster Election Process

That the Water Users are deemed to agree as a condition of water delivery as follows::

- i. The LID participants will elect a Watermaster from among themselves, as follows:
 - a. Election of First Watermaster. The first Watermaster shall be elected prior to April 1, 2011, and shall be elected as described in paragraph d. below.
 - b. Resignation of Watermaster. If the Watermaster resigns, the parties shall meet at a place and time designated by the resigning Watermaster in a written notice and elect a new Watermaster, or if the Watermaster does not designate a time and a place for such a meeting, the parties shall meet at a time and a place first designated in writing by two of the parties hereto to elect a new Watermaster.
 - c. Death or Incapacity of Watermaster. If the Watermaster dies or becomes incapacitated, the parties shall meet at a time and a place first designated in writing by two of the parties hereto to elect a new Watermaster.
 - d. Elections and Replacement of Watermaster. The Watermaster shall be assigned by the elected members of the Royal Ann Estates Homeowner Association Board of Directors. If the Homeowner's Association defaults or stops functioning, the Watermaster shall be elected by and may be replaced by a sixty percent (60%) majority of the Water Users participating in the LID at an election called for by a majority of the properties that are subject hereto. Each property shall have one (1) vote. If more than one person owns a property, the owners of the property shall designate in writing the person who shall have the right to vote for that property. If the owners of the property cannot agree on the person who shall vote for the property, that property shall have no vote in the election. The owners' properties which are calling for an election or replacement of a new Watermaster shall give or cause the other parties to be given a written notice stating the place and time of the election. Any notice required under this paragraph, which notice shall be mailed by U.S. Mail as certified mail to the common address identified above for the property not more than thirty days and not less than ten days

prior to the election. Any election held hereunder shall be held in Benton County, Washington, between 6:00 p.m. and 9:00 p.m.

- ii. Powers and Duties of Watermaster. The Watermaster shall have the power and it shall be his or her duty to take all actions reasonably necessary to fulfill the purposes of this agreement, including but not limited to:
 - a. Provide a primary point of contact for KID to communicate system problems, outages, schedules, drought mitigation measures, etc.
 - b. Assist KID in providing the LID participants information regarding system problems, outages, water schedules, drought mitigation measures, etc.
- iii. Qualified Immunity of Watermaster from Liability. The Watermaster shall not be liable for any damages caused to the parcels or persons subject hereto so long as the Watermaster acts in good faith.
- iv. No water delivery unless a Watermaster is performing duties. If at any time a Watermaster no longer is performing his/her duties, as outlined above, for more than 30 days, KID will stop water delivery to the participants of the LID until a new Watermaster has been elected.
- v. Alternate Watermaster. An alternate Watermaster may be elected in the same manner as described above for the Watermaster. This alternate Watermaster can function as Watermaster for a limited time, not to exceed 60 days, in case of the elected Watermaster being unavailable.



**STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY**

Central Region Office
1250 West Alder St., Union Gap, WA 98903-0009 • 509-575-2490

November 7, 2022

Steve Donovan
Kennewick Development Services
PO Box 6108
Kennewick, WA 99336

Re: 202205362, ED-2022-0038

Dear Steve Donovan,

Thank you for the opportunity to comment on the Pre-Threshold Consultation for the Apple Valley Phase 7-9. We have reviewed the environmental checklist and have the following comment.

WATER RESOURCES

If you plan to use water for dust suppression at your project site, be sure that you have a legal right. In Washington State, prospective water users must obtain authorization from the Department of Ecology before diverting surface water or withdrawing ground water, with one exception. Ground water withdrawals of up to 5,000 gallons per day used for single or group domestic supply, up to 5,000 gallons per day used for industrial purposes, stock watering, and for the irrigation of up to one-half acre of non-commercial lawn and garden are exempt from the permitting process. Water use under the RCW 90.44.050 exemption establishes a water right that is subject to the same privileges, restrictions, laws and regulations as a water right permit or certificate obtained directly from Ecology. Temporary permits may be obtainable in a short time-period. The concern of Water Resources is for existing water rights. In some instances water may need to be obtained from a different area and hauled in or from an existing water right holder.

If you have any questions or would like to respond to these Water Resources comments, please contact Christopher Kossik at (509) 379-1826 or email at christopher.kossik@ecy.wa.gov.

Sincerely,

Lucila Cornejo

Lucila Cornejo
SEPA Coordinator
Central Regional Office
(509) 208-4590
crosepacoordinator@ecy.wa.gov



Allyson Brooks Ph.D., Director
State Historic Preservation Officer

November 8, 2022

Steve Donovan
Planning Manager
City of Kennewick
210 W 6th Ave
Kennewick, WA 99336

In future correspondence please refer to:
Project Tracking Code: 2022-11-07394
Property: City of Kennewick_Apple Valley Phases 7-9 (SUB-2022-0022)
Re: Survey Requested

Dear Steve Donovan:

Thank you for contacting the Washington State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) and providing documentation regarding the above referenced project. These comments are based on the information available at the time of this review and on behalf of the SHPO in conformance Washington State law. Should additional information become available, our assessment may be revised.

While our statewide predictive model indicates that there is a moderate to low probability of encountering cultural resources within the proposed project area, artifacts have been identified in the Thompson Hill vicinity in the last several years. The scale of the proposed ground disturbing actions associated with this project would destroy any archaeological resources present. Identification during construction is not a recommended detection method because inadvertent discoveries often result in costly construction delays and damage to the resource. Therefore, we recommend a professional archaeological survey of the project area be conducted and a report be produced prior to ground disturbing activities. This report should meet DAHP's [Standards for Cultural Resource Reporting](#).

We also recommend that any historic buildings or structures (45 years in age or older) located within the project area are evaluated for eligibility for listing in the National Register of Historic Places on Historic Property Inventory (HPI) forms. We highly encourage the SEPA lead agency to ensure that these evaluations are written by a cultural resource professional meeting the [SOI Professional Qualification Standards in Architectural History](#).

Please note that the recommendations provided in this letter reflect only the opinions of DAHP. Any interested Tribes may have different recommendations. We appreciate receiving any correspondence or comments from Tribes or other parties concerning cultural resource issues that you receive.

Thank you for the opportunity to comment on this project. Please ensure that the DAHP Project Tracking Number is shared with any hired cultural resource consultants and is attached to any



communications or submitted reports. Please also ensure that any reports, site forms, and/or historic property inventory (HPI) forms are uploaded to WISAARD by the consultant(s).

Should you have any questions, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Sydney Hanson". The signature is fluid and cursive, with a long horizontal line extending from the end.

Sydney Hanson
Local Government Archaeologist
(360) 280-7563
Sydney.Hanson@dahp.wa.gov



CULTURAL RESOURCES REPORT COVER SHEET

Author(s): Molly Swords and Nathan J. May GRAM Northwest, LLC

Title of Report: *Cultural Resources Survey Report for the proposed Apple Valley Residential Development– Kennewick, Washington (DAHP Project Number: 2022-11-07394)*

Date of Report: February 2023

County(ies): Benton **Section:** 17 **Township:** 08N **Range:** 29E

Quad: Kennewick, WA 7.5 **Acres:** 50

PDF of report submitted (REQUIRED): ☐ Yes

Historic Property Inventory Forms to be Approved Online? ☐ Yes ☒ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement?

☐ Yes (# _____) ☒ No

Were Human Remains Found?

☐ Yes (DAHP Case # _____) ☒ No

DAHP Archaeological Site #: None

- Submission of PDFs is required.
- Please be sure that any PDF submitted to DAHP has its cover sheet, figures, graphics, appendices, attachments, correspondence, etc., compiled into one single PDF file.
- Please check that the PDF displays correctly when opened.

Cultural Resources Survey Report for the Apple Valley Development – Kennewick, Washington (DAHP Project #2022-11-07394)

Preface

This cultural resource review report (survey report) has been prepared by GRAM Northwest, LLC, for the construction of a housing development on a tract of land located in Kennewick, Washington. The project will not involve state or federal funding; however, the project is subject to compliance with the Washington State Environmental Policy Act (RCW 43.21, “State Environmental Policy”).

This report includes a literature review, a geomorphologic review, data from geographic information systems, and archaeological fieldwork. A pedestrian survey of the project area was conducted in January 2023. Subsurface testing was planned for this project however, due to the grading that had occurred throughout the project area. Grading had happened in the project area under a prior grading permit that had been issued. No cultural resources were identified during fieldwork.

This page intentionally left blank.

Contents

1	Introduction	1
1.1	Project Activities.....	1
1.2	Regulatory Background	1
1.3	Survey Personnel	1
1.4	Availability of Survey and Inventory Forms.....	1
2	Environmental Setting.....	4
2.1	Climate and Vegetation	4
2.2	Geomorphology.....	4
3	Cultural Setting.....	4
3.1	Pre-Contact Cultural Sequence	4
3.2	Ethnographic Period	6
3.3	Euro-American Period	7
3.4	City of Kennewick	8
4	Literature Review	8
4.1	Previously Recorded Archaeological Sites/Isolates.....	9
4.2	Previously Conducted Archaeological Surveys.....	9
4.3	Historic Property Inventories	10
4.4	Cemeteries	10
4.5	Historic Maps.....	10
4.5.1	1871 General Land Office Map.....	10
4.5.2	1917 U.S. Geological Survey Topographic Map	11
4.5.3	Additional Maps	14
4.6	Google Earth Historical Imagery.....	14
5	Research Design.....	14
5.1	Objectives and Expectations	14
5.2	Proposed Field and Laboratory Methods.....	15
5.2.1	Pedestrian Survey.....	15
5.2.2	Subsurface Testing	15
6	Survey Results	16
6.1	Survey	16
6.1.1	Pedestrian Survey.....	16

6.1.2	Subsurface Testing	20
7	Analysis	20
8	Conclusions and Recommendations.....	20
9	References.....	21

Appendices

A	Additional Figures	A-1
B	Inadvertent Discovery Plan	B-1

Figures

Figure 1.	Project Area on USGS Quad Topography Map	2
Figure 2.	Project Area – Aerial Imagery	3
Figure 3.	Map of Project Location and 1871 General Land Office Map.....	12
Figure 4.	Map of Project Location and 1917 USGS Topographic Map.....	13
Figure 5.	Surveyed Project Area.....	17
Figure 6.	Overview of the project area surveyed from the center of the project – note the piles of fill in the left of frame (Aspect: Southeast).	18
Figure 7.	Overview from the southeastern portion of the project area that has been excavated and graded (Aspect: West).	18
Figure 8.	Overview from the center of the project area – note the area has been levelled and graded (Aspect: Southeast.....	19
Figure 9.	Overview of the western portion of the project area – note the area has been excavated down to pillow-basalt deposits (Aspect: East).....	19
Figure 10.	Overview of portion of the project area excavated (Aspect: North).....	A-2
Figure 11.	View of large basalt boulders in the northern portion of the project area (Aspect: Southwest). A-2	
Figure 12.	Overview of portion of the project area graded and excavated - note the construction material (Aspect: West).....	A-3
Figure 13.	View of portion of project area excavated with white PVC pipes sticking out of the soil profile wall in the left of the frame (Aspect: Southwest).	A-4
Figure 14.	View of portion of the project area graded and shaped into a platform for a residential house (Aspect Southeast).....	A-4
Figure 15.	Overview of southern portion of the project area - note the area graded for the placement of a road (Aspect: West).	A-5
Figure 16.	Overview of the project area (Aspect: Northwest).....	A-5

Figure 17. Overview of project area - note the white PVC pipe sticking out of the ground in the foreground (Aspect: Northwest).	A-6
Figure 18. Overview of the project area (Aspect: Northeast).....	A-6
Figure 19. Overview of the project area (Aspect: South).	A-7
Figure 20. Overview of eastern portion of the project area - note the marked utilities (Aspect: East)....	A-7
Figure 21. Overview of fill pile in the northern portion of the project area (Aspect: West).	A-8
Figure 22. Overview of the project area (Aspect: North).	A-8

Tables

Table 1. Pre-Contact Cultural Sequence for Southeast Washington	4
Table 2. Previously Recorded Archaeological Sites/Isolates	9
Table 3. Previously Conducted Archaeological Survey.....	9

1 Introduction

The following cultural resources survey report has been prepared by GRAM Northwest, LLC, for the development of residential homes on a tract of land located along Bob Olson Parkway in Kennewick, Washington. The project will not involve state or federal funding; however, the project is subject to compliance with the Washington State Environmental Policy Act (SEPA) (RCW 43.21, “State Environmental Policy”).

1.1 Project Activities

The project includes the construction of a residential development on approximately 20.23-hectares (50 acres) of land located along Bob Olson Parkway in Kennewick, Washington. Project activities include general construction activities that will take place throughout the project area. The anticipated maximum depth of excavation for this project is approximately 6 meters (20 feet).

The project area is located in Benton County, Section 17 of Township 8N, Range 29E, on a parcel of land uniquely identified as Benton County tax lot #117892000001017, 117892060003000, 117892060004000, 117892050006000, 117892050007000, 117892040003000, 117892040004000, a portion of 117892040005001, and a portion of 117892000001016 (Figures 1 and 2).

1.2 Regulatory Background

This survey report is intended to meet SEPA requirements (RCW 43.21).

1.3 Survey Personnel

The principal investigator for this project was Molly Swords of GRAM Northwest, LLC. Ms. Swords meets the Secretary of the Interior’s professional qualification standards and oversaw the completion of all elements of this cultural resource survey. The pedestrian survey was conducted by GRAM Project Archaeologist II Nathan J. May with Margaret Clark, Janet Cook, and Dan Charbonneaux.

1.4 Availability of Survey and Inventory Forms

Digital copies of the report and any additional documents (e.g., site and/or isolate forms) associated with this project will be available via the Washington Information System for Architectural & Archaeological Records Data (WISAARD) (<https://fortress.wa.gov/dahp/wisaardp3/>), which is maintained by the Department of Archaeology and Historic Preservation (DAHP).

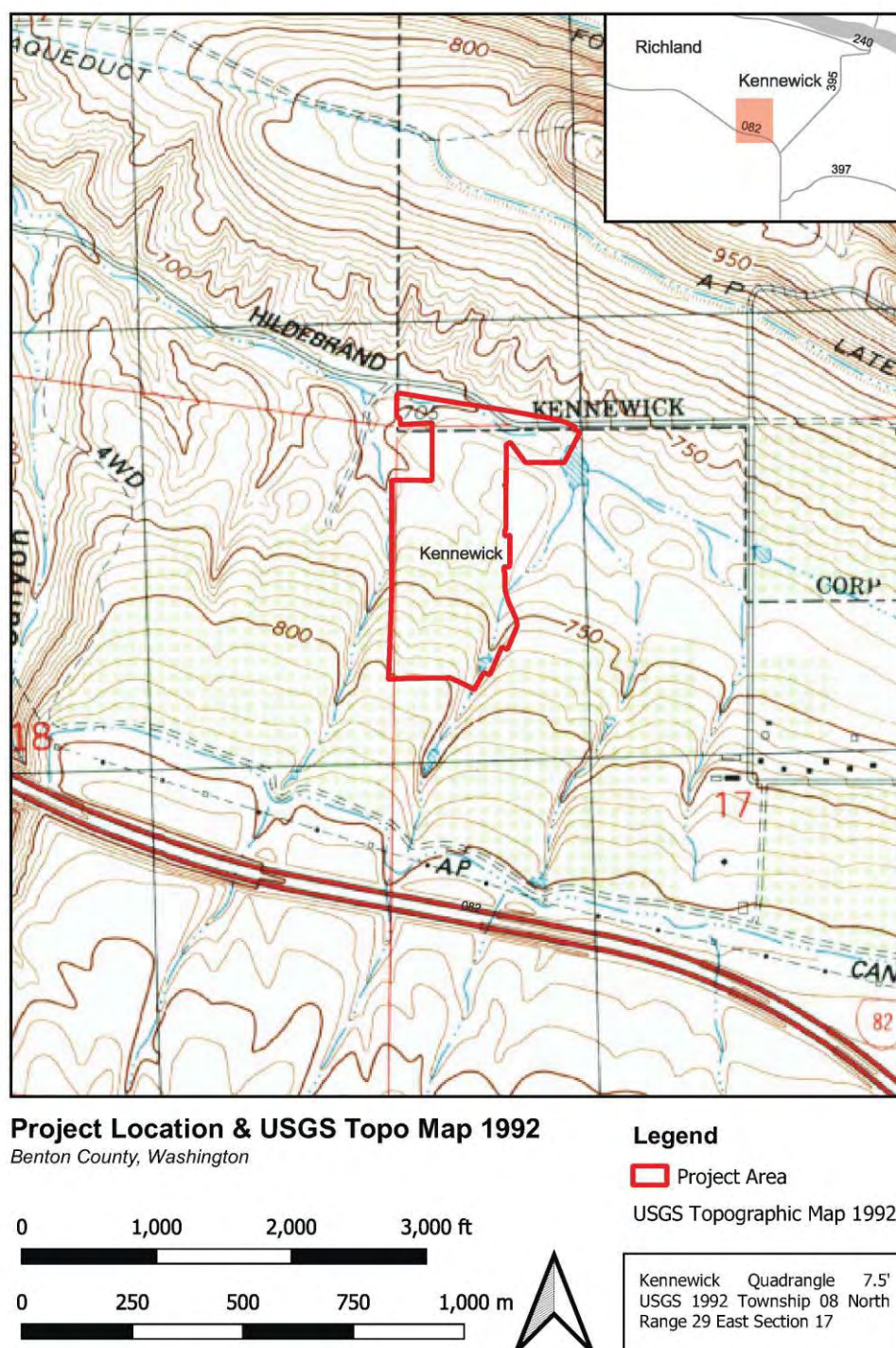


Figure 1. Project Area on USGS Quad Topography Map



Project Detail Aerial Map

Benton County, Washington

0 250 500 750 Feet



0 50 100 150 200 Meters



Legend

 Project Area

Esri Satellite Imagery 02/26/2020

Benton County, WA
Township 08 North, Range 29 East,
Section 17

Figure 2. Project Area – Aerial Imagery

2 Environmental Setting

2.1 Climate and Vegetation

The project area is located within the Columbia Plateau, a region characterized by a shrub-steppe ecosystem. This semiarid environment typically consists of perennial grasses and shrubs, including the following: Great Basin wild rye (*Leymus cinereus*), needle and thread grass (*Stipa comata*), antelope bitterbrush (*Purshia tridentate*), sagebrush (*Artemisia* sp.), and rabbitbrush (*Chrysothamnus* sp.). Native wildflowers include balsamroot (*Balsamorhiza* sp.), buckwheat (*Eriogonum* sp.), phloxes, desert parsleys, and lupines (Franklin and Dyrness, 1973). This area receives approximately 20 centimeters (8 inches) of rainfall annually, primarily during the winter months (Morgan et al., 2001).

2.2 Geomorphology

The geomorphology within and around the project area is composed largely of Pleistocene gravel and sandy gravel deposits with interbedded silt lenses, deposited as benches along the main stem of the Snake River resulting from rapid draining of glacial Lake Bonneville. The area also includes widespread silt, sand, gravel, and boulder deposits that were deposited during multiple catastrophic drainage of glacial Lake Missoula, including glaciolacustrine deposits. These geological units are described as observed in the Washington Department of Natural Resources geologic information portal (<https://geologyportal.dnr.wa.gov/>).

3 Cultural Setting

3.1 Pre-Contact Cultural Sequence

Archaeological investigations conducted on the Columbia Plateau have enabled the creation of a cultural chronology dating to the end of the Pleistocene epoch. Table 1 summarizes the cultural sequence for the area (from Sharpe and Demaris, 2012 [used with permission]).

Table 1. Pre-Contact Cultural Sequence for Southeast Washington

Cultural Period	Years Before Present	Site Types	Architecture	Subsistence
General Columbia Plateau				
Windust Phase	11,000 – 8,000	Rock shelters, caves, game processing sites, lithic reduction sites; isolated lithic tools Examples include Marmes Rockshelter, Bernard Creek, Lind Coulee, Kirkwood Bar, Deep Gully, Granite Point, Fivemile Rapids, and Bobs Point	Rock shelters and caves; open habitation sites No evidence of constructed dwellings or storage features	Large mammals supplemented with small mammals and fish Toolset: Windust, Clovis, Folsom, and Scottsbluff points; contracting stemmed points and/or lanceolate points; cobble tools

Table 1. Pre-Contact Cultural Sequence for Southeast Washington

Cultural Period	Years Before Present		Site Types	Architecture	Subsistence
Mid-Columbia Region — Vantage Area					
Cascade/ Vantage Phase	8,000 – 4,500		Lithic scatters, quarry sites, resource processing sites, and temporary camps	Rock shelters and caves; open habitation sites	Mobile, opportunistic foragers subsisting on fish, mussels, seeds, and mammals Basalt leaf-shaped Cascade and stemmed projectile points, ovate knives, edge-ground cobble tools, microblades, hammerstones, core tools, and scrapers
Frenchman Springs Period	4,500 – 2,500		Habitation sites along major rivers, confluences, tributaries, canyons, and rapids Lithic scatters, quarry sites, resource processing sites, seasonal round of upland to lowland travel for resource procurement, and seasonal camps	House dwellings, including semi-subterranean	As earlier, but with increased use of upland resources, seeds, and roots Groundstone and cobble tools, mortars, pestles, contracting stemmed, corner notched, and stemmed projectile points, hopper mortar bases and pestles, knives, scrapers, and graters Wider tool material variety
Cayuse Phase	I	2,500 – 1,200	Habitation sites at major rivers, confluences, tributaries, canyons, and rapids Lithic scatters, quarry sites, resource processing sites, and seasonal round camps Ideological and spiritual sites	Pithouses with wall benches	Reliance on riverine resources, fish, and botanicals; basal-notched and corner-notched projectile points (most corner-notched) Variety of tools including groundstone, scrapers, lanceolate and pentagonal knives, net weights, cobble tools, drills, etc.

Table 1. Pre-Contact Cultural Sequence for Southeast Washington

Cultural Period	Years Before Present		Site Types	Architecture	Subsistence
	II	1,200 – 900	Same as Cayuse Phase I	Pithouses without wall benches	Same as Cayuse Phase I
	III	900 – 250	Increased mobility and hunting ability due to horse introduction Large village habitation sites along rivers, seasonal round camps Same site types as Cayuse Phases I & II	Pit longhouse village sites	Decrease in corner notched points, increase in stemmed and side-notched projectile points, fine pressure flaked tools. Increase in trade goods
Sources: Morgan et al. (2001); Walker (1998); Sharpe and Marceau (2001); Swanson (1962); Nelson (1969); Galm et al. (1981); Benson et al. (1989); Thoms et al. (1983); Green (1975); and Rice (1980).					

3.2 Ethnographic Period

Native American groups in the region include the Wanapum, Yakama, Umatilla, Nez Perce, Walla Walla, Cayuse, Palouse, and other neighboring groups (Fagan, 2000; Schuster, 1998; Stern, 1998). The Southern Plateau groups did not have formal political unity under a permanent central influence; instead, they formed smaller, politically self-governing groups (villages). The groups were joined by bordering territory, language (Sahaptin), common culture, and frequent social interaction. Although the different groups within the Southern Plateau presided and had power over a specific territory, hunting and fishing grounds were shared amongst all, as cooperation between these groups was common.

During this period, residents moved seasonally. Seasonal rounds included semi-permanent winter villages along major waterways, including the Columbia and Snake Rivers. In the spring, small groups would travel into canyons and river valleys in temporary camps to gather roots and other spring provisions. Summer food gatherings centered on collecting berries and other mountain-based foods in the late summer and early fall (Chatters, 1980).

The *Handbook of North American Indians* (Walker, 1998) summarizes the ethnohistoric cultural pattern of the Columbia Plateau as follows:

- Riverine settlement patterns.
- Reliance on a diverse subsistence base of anadromous fish and extensive game and root resources.
- Mutual cross-utilization of subsistence resources among the various groups comprising the populations of the area.
- Extension of kinship ties through extensive intermarriage.
- Limited political integration, primarily at the village and band levels, until adoption of the horse.

- Relatively uniform mythology, art styles, and religious beliefs and practices focused on the vision quest, shamanism, lifecycle observances, and seasonal celebrations of the annual subsistence cycle.

Čáw Pawá Láakni, They Are Not Forgotten: Sahaptian Place Names Atlas of the Cayuse, Umatilla, and Walla Walla (Hunn et al., 2015)

A review of the project area described in *Čáw Pawá Láakni, They Are Not Forgotten: Sahaptian Place Names Atlas of the Cayuse, Umatilla, and Walla Walla* (Hunn et al., 2015), indicated that the project area is located within approximately 1.6 kilometers (1 mile) of the following named places:

- *Piyuušmaami Puštay*, meaning ‘hills of the snakes’, occur over a mile south of the project area (Hunn et al. 2015:96). A chain hills beginning southwest of Richland, Washington and extending southeast to the Columbia River in the vicinity of Crescent and Badger Islands. This feature on the landscape refers to a mythical snake transformed into a mountain chain whose head has now been inundated by the Columbia River (Hunn et al. 2015:96). Hills in this chain include Red Mountain, Candy Mountain, and Badger Mountain.
- An unnamed trail occurs on the north and south bank of the Columbia River running along the river (Hunn et al. 2015:94).

No named places overlap the project area.

3.3 Euro-American Period

The Lewis and Clark Expedition of 1805 prompted large-scale Euro-American exploration and settlement of the region. Early explorers sought trade with Native Americans, and trade routes were established. Other settlers including miners, livestock producers, and homesteaders soon followed. By the 1860s, the discovery of gold north and east of the mid-Columbia region resulted in an influx of miners traveling through the area. The mining industry created a demand for beef, and the Columbia Basin was ideal for livestock production (Grundy et al., 1998).

Eastern Washington saw an increase in Euro-American settlement in the late 1800s, beginning with livestock producers. Ranchers relied on the abundant bunchgrass and open rangeland to graze thousands of cattle, and later sheep and horses. The open range lasted from the 1880s until about 1910, when homesteaders settled the area and plowed the rangeland to plant crops. However, livestock remained an important economic commodity to the area’s agricultural producers (Fridlund, 1985). The *Homestead Act of 1862* enabled legal land ownership to those 21 years of age or older who were willing to live on and develop the land.

Around 1900, homesteaders moved west, and agricultural producers gradually replaced the open-range livestock operations that had dominated the area in the latter part of the 1800s and early 1900s. The Northern Pacific Railroad entered the area in the 1880s, creating transportation routes for agricultural commodities and an increase in settler traffic (Lewty, 1987).

In 1943, the Columbia Basin Project was authorized by the U.S. federal government as a project to control floods, regulate stream flow, improve navigation, and provide storage and delivery for irrigation water to approximately 202,343 hectares (500,000 acres) of land (Callum et al., 2005). The project began

with the construction of Grand Coulee Dam, which provided irrigation water to convert large areas of desert into productive farmland (Meinig, 1995). The Columbia Basin Project initially authorized water management for 443,131 hectares (1,095,000 acres); however, by the mid-1980s, only around half of this area was receiving irrigation water (Alwin, 1994).

3.4 City of Kennewick

The developmental history of Kennewick, Washington, as described by Bauman (2001) and Kershner (2008), is provided below:

- **1859:** Steamboats began transiting the Columbia River past the site that would become Kennewick. Only a small number of stockmen raising cattle would inhabit the area through the 1870s (Kershner, 2008).
- **1883:** North Pacific Railroad work crews arrived in the Kennewick area to build a railroad bridge across the Columbia River. Approximately 400 people temporarily inhabit the Kennewick area, until completion of the bridge in 1888. With the railroad bridge complete, the area becomes a ghost town (Bauman, 2001).
- **1892:** The Yakima Irrigation and Improvement Company started bringing water to the arid land in Kennewick. A new town was planned, and people began to move into the area again. A schoolhouse was built, a newspaper began publication, and a three-story hotel was built (Kershner, 2008).
- **1893:** The Yakima Irrigation and Improvement Company went under during the Panic of 1893, and the Kennewick irrigation project was abandoned. The area was deserted again by 1899 (Kershner, 2008).
- **1902:** The Northern Pacific Railway assumed control of the abandoned irrigation project, made repairs, and completed the irrigation project. Settlers moved into the area (Bauman, 2001).
- **1904:** The residents of Kennewick voted in favor of incorporation (Kershner, 2008).
- **1926:** Kennewick, after a decade of trying to become the Benton County seat, lost out to Prosser (Kershner, 2008). However, Kennewick had come to be seen as an important industrial center with canneries, warehouses, and mills (Bauman, 2001).
- **1943:** The Hanford Engineer Works began operations west of nearby Richland. The huge influx of Hanford Site workers caused Kennewick's population to grow from less than 2,000 in 1941 to over 10,000 by 1950 (Bauman, 2001).
- **1969:** The Columbia Center Mall was built, increasing retail activity in Kennewick (Bauman, 2001).
- **1980:** With cheap electricity and plentiful water (thanks to the completion of the Columbia Basin Irrigation project bringing industry and jobs), Kennewick's population grew to over 34,000 (Kershner, 2008).

4 Literature Review

A literature review was conducted for all land within a 1.6-kilometer (1-mile) radius of the project area using the WISAARD and available historical maps.

4.1 Previously Recorded Archaeological Sites/Isolates

A review of WISAARD identified no previously recorded archaeological sites within the project area. There were 14 sites/isolates that were identified within 1.6 kilometers (1 mile) of the project area (Table 2).

Table 2. Previously Recorded Archaeological Sites/Isolates

Site Number	Type	Relative Age	Eligibility*	Description	In Project Area? ^a
45BN2137	Site	Historic	Determined Not Eligible	Historic Debris Scatter	No
*As identified in WISAARD.					

4.2 Previously Conducted Archaeological Surveys

A review of WISAARD identified no previously conducted archaeological surveys within the project area. There were 28 previously conducted archaeological surveys that were identified within 1.6 kilometers (1 mile) of the project area (Table 3).

Table 3. Previously Conducted Archaeological Survey

Report Number	Title	Reference	In Project Area?
1342384	A Cultural Resources Survey of the City of Kennewick's Zone 3, Zone 4, and Zone 5 Reservoirs.	Steinmetz 2003	No
1351878	Historic Resources Survey for Amon Pump Plant Operator's Residence Disposal in Kennewick	Doncaster, K. 2008	No
1682848	Cultural Resources Assessment for the Kennewick Irrigation District 2012-2014 Capital Improvement Plan	Trost, T 2012	No
1683818	Archaeological Survey for the City of Kennewick's Proposed Aquifer Storage and Recovery Project	Senn, A. 2013	No
1684998	Cultural Resources Assessment for the Williams Northwest Pipeline LLC's Pasco Replacement Project	Dampf, S. 2014	No
1692158	An executive order 05-05 Archaeological Review and Inventory of the City of Kennewick Storm-water Masterplan Geotechnical Survey, Benton County, Washington	Landreau, C. 2019	No
1695210	Cultural Resource Survey Report for the Construction of a Housing Development on Benton County Tax Lot #108-893-013-488-002 in Kennewick, Washington (DAHP Project Number 2020-11-07245)	Sexton, S. 2021	No
1695252	Cultural Resources Survey for the Ridgeline Estates Subdivision Project, Benton County, Washington	Furlong, J. 2021	No

Table 3. Previously Conducted Archaeological Survey

Report Number	Title	Reference	In Project Area?
1696520	Cultural Resources Survey Report for the Amon Pumping Plant Parcel, Kennewick Irrigation District, Benton County, Washington.	Sharpe, J. 2021	No
1697154	A Section 106 Cultural Resources Review and Inventory of the South Cliff Development Project, Kennewick, Benton County, Washington	Landreau, C. 2022	No

4.3 Historic Property Inventories

A review of WISAARD identified no previously reported historic properties within the project area. There were 4 historic property inventories identified within 1.6 kilometers (1 mile) of the project area (Table 4).

Table 4. Historic Properties within 1.6 kilometers (1 mile) of the project area

Property ID	Property Name	Eligibility	In the Project Area?
667226	Kennewick Main Canal Division IV - Yakima Project	Determined Eligible	No
667239	Kennewick Division Highland Feeder including Highland Feeder 3.3 - Yakima Project	Determined Eligible	No
721665	McNary-Badger Canyon No. 1 Transmission Line	Determined Not Eligible	No
721952	Amon Pump Lateral - Kennewick Division - Yakima Project	Determined Eligible	No

4.4 Cemeteries

A review of WISAARD identified no previously reported cemetery within the project area. There are no known cemeteries within 1.6 kilometers (1 mile) of the project area.

4.5 Historic Maps

4.5.1 1871 General Land Office Map

Review of the 1871 General Land Office map (Figure 3) shows that the area had been surveyed, but no features fall within or near the project area.

4.5.2 1917 U.S. Geological Survey Topographic Map

Review of the 1917 U.S. Geological Survey (USGS) topographic map (Figure 4) shows no development within the project area. A north-south road is located east of the project area. This features do not overlap the project area.

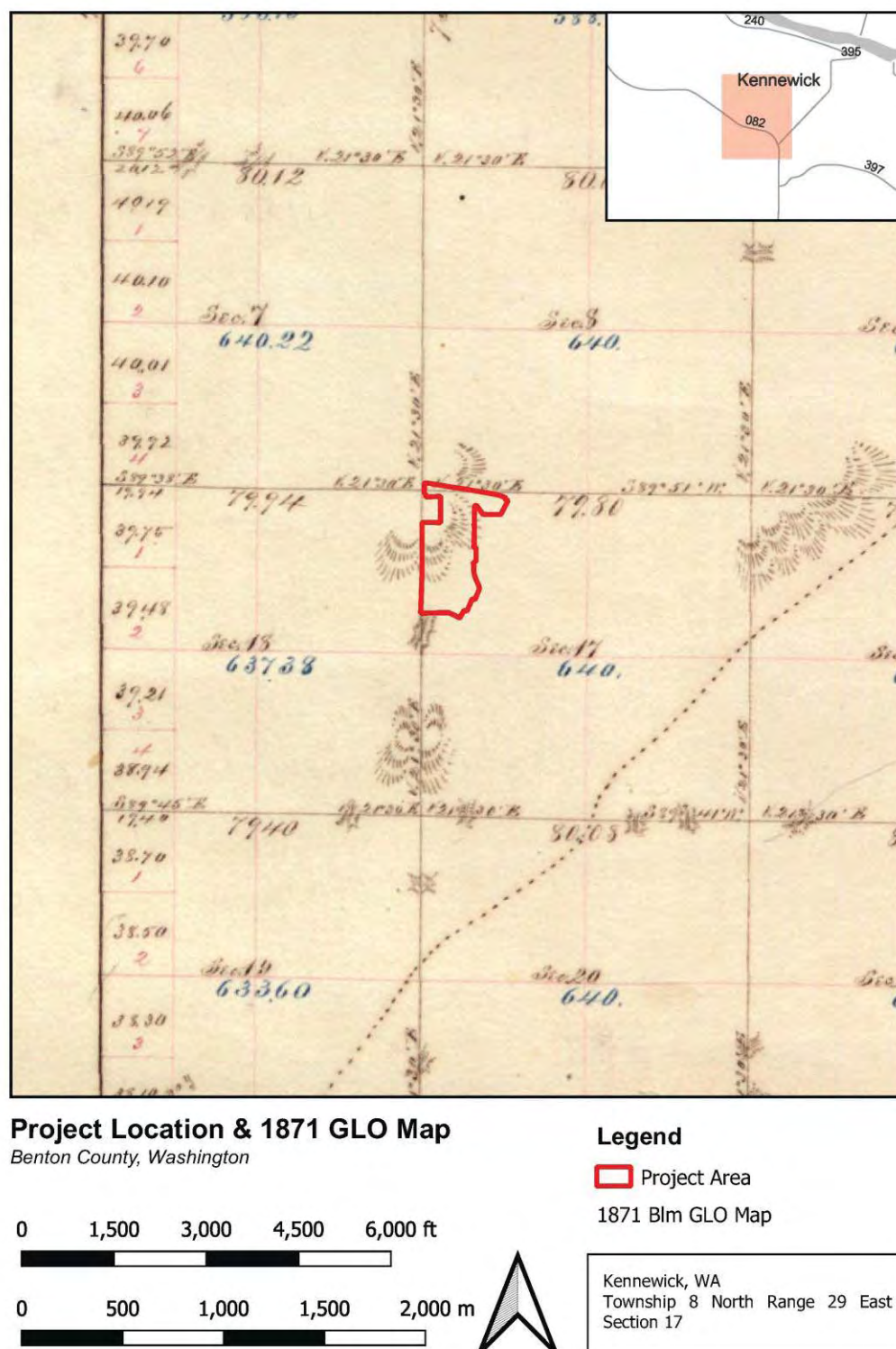


Figure 3. Map of Project Location and 1871 General Land Office Map

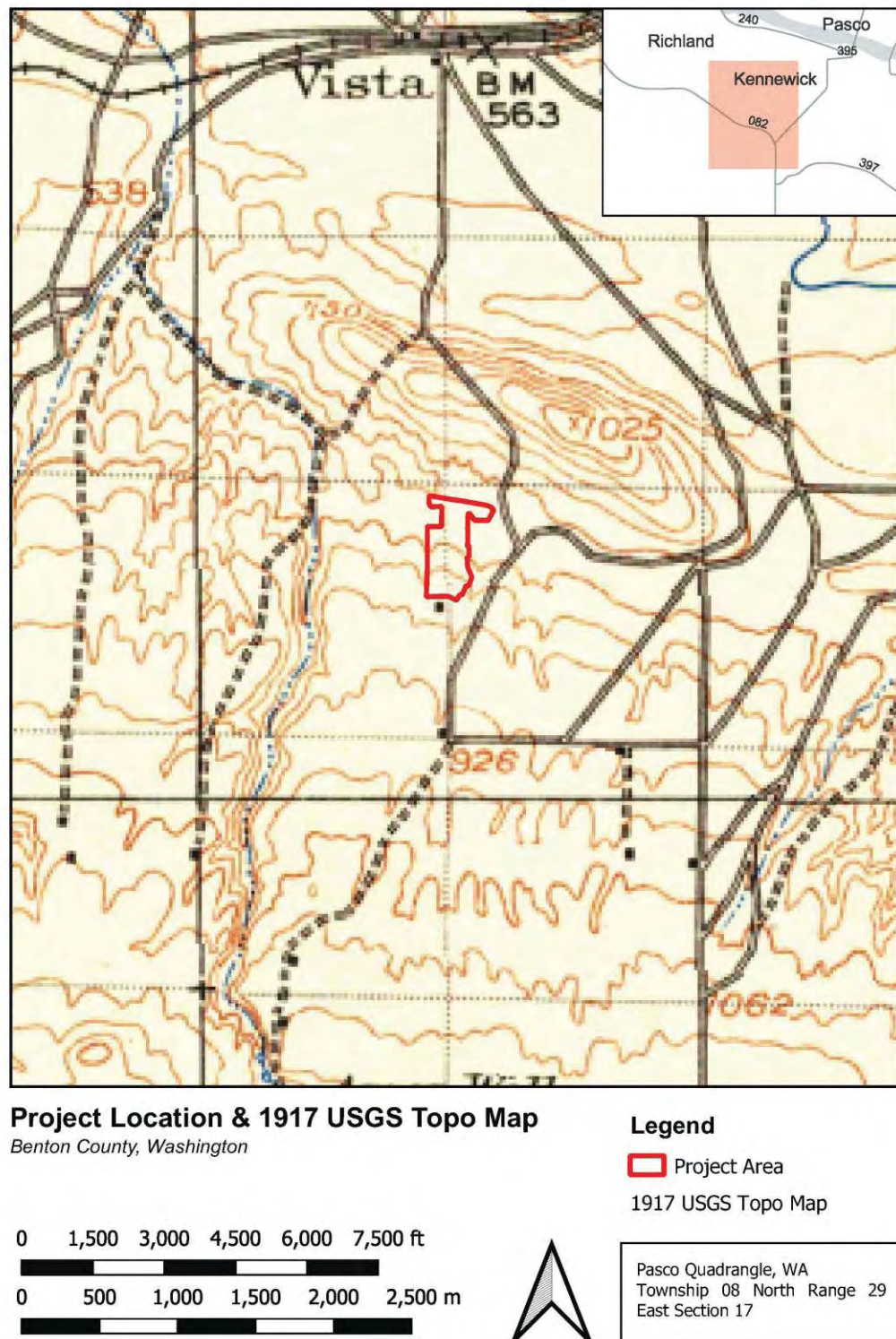


Figure 4. Map of Project Location and 1917 USGS Topographic Map

4.5.3 Additional Maps

Additional USGS topographic maps were reviewed digitally as part of this project. Reviewed maps include the following:

- Pasco, Washington (1917)
- Walla Walla, Washington (1953)
- Walla Walla, Washington (1958)
- Kennewick, Washington (1964)
- Pasco, Washington (1964)
- Richland, Washington (1978)
- Kennewick, Washington (1992)
- Kennewick, Washington (2011)
- Kennewick, Washington (2013)
- Kennewick, Washington (2017)
- Kennewick, Washington (2020)

Review of historical USGS topographic maps indicates no development directly within the project area. A review of these maps indicates that development occurred around the project with the addition of housing developments, roads, and highways. No other major development is visible adjacent to or within the project area.

4.6 Google Earth Historical Imagery

Google Earth contained historical imagery for the project area from 1985, 1996, 2003, 2004, 2005, 2006, 2009, 2011, 2012, 2013, 2015, 2016, 2017, 2018, and 2021.

The project area shows no development throughout the range of historical imagery. The 1985 image shows the project area as undeveloped land, as well as the area to the east of the project area.

The project area remains undeveloped throughout historical imagery, while the adjacent area to the east is developed by 2003.

5 Research Design

5.1 Objectives and Expectations

The scope of this survey is limited to providing the client with relevant information to meet the requirements of SEPA (RCW 43.21) (checklist question 13). The components of question 13 are as follows:

- Are there any buildings, structures, or sites located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

- Are there any landmarks, features, or other evidence of Native American or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.
- Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with the Tribes and DAHP, archaeological surveys, historic maps, geographic information system data, etc.
- Discuss proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

The goal of this research design was to determine if there are any constraints on development of the project area by identifying cultural resources, determining their extent, and evaluating their eligibility for listing in state or national historic registers.

Based on the information obtained from the literature review, there is a potential for both pre-contact and historic cultural materials. Pre-contact, the potential exists for isolated finds and small sites. Previous cultural resource investigations and a literature search in the general area have identified isolated finds and small sites (primarily near water sources). Historically, the project area has the potential to contain early settlement and agricultural related items such as can scatters, roads, or isolated finds.

5.2 Proposed Field and Laboratory Methods

Current project activities will occur throughout the project area. No previous archaeological fieldwork has been conducted at this location; therefore, pedestrian survey and subsurface testing are recommended to evaluate the potential for cultural resources to exist within the project area. A pedestrian survey and subsurface testing will occur throughout the project area.

5.2.1 Pedestrian Survey

A pedestrian survey will be conducted throughout the project area using transects spaced no more than 20 meters (65 feet) apart. Any potential cultural resources encountered will be recorded in the field and evaluated to determine eligibility as a recorded archaeological site. Recorded data will include a description of the items encountered (including dimensions), photographs, global positioning system (GPS) coordinates, environmental context, and any other relevant observations. All observations and data will be recorded in the field. Artifacts will not be collected as part of fieldwork.

5.2.2 Subsurface Testing

Given the absence of previously conducted fieldwork and the unknown extent of excavations within the project area, subsurface testing will use shovel test probes (STPs) to provide a systematic sample of the project area. A total of ten STPs are planned within the project area. Appendix A presents a summary of data recovered from each STP.

Each STP will be hand-dug to approximately 30 centimeters (12 inches) in diameter and will be excavated to approximately 1 meter (39.3 inches) deep, if possible. All excavated soil will be screened through 1/4-inch hardware cloth. An STP may be moved or abandoned if environmental conditions (e.g., geologic conditions, construction activities, or other environmental hazards) prevent excavation.

If an STP cannot be moved within an approximately 10-meter (30-foot) radius of the original location, that unit will be removed from the excavation plan.

If any artifacts are identified during the survey or shovel testing, they will be documented according to DAHP excavation reporting standards. The documentation will include careful descriptions of soil types and natural/cultural stratigraphic layers. For each STP, photographs and GPS coordinates will be collected. Artifacts will not be collected. Information obtained from this activity will be included in the survey report.

If positive shovel tests occur, additional STPs will be completed to determine if an archaeological site is present and to identify the spatial boundaries of the site, if possible. Shovel testing will only be conducted within the project area. Any artifacts identified during shovel testing will be documented for size, form, and function (if possible); will be photographed; and will then be returned to the STP. All observations and data will be recorded in the field. Artifacts will not be collected as part of fieldwork.

Subsurface testing at a depth greater than 1 meter (39.3 inches) (hand auger) was considered but was ultimately not included as part of the research design for this project because local geomorphology primarily consists of Pleistocene outburst flood deposits that will likely not extend beyond 1 meter (39.3 inches) in depth. Additionally, subsurface deposits are likely to relate to agricultural use of the property, which typically do not extend beyond 1 meter (39.3 inches) below ground surface. However, should artifacts be encountered near the termination depth of an STP, use of a hand auger will be reconsidered as a means of confirming the extent of cultural deposits at that location.

An inadvertent discovery plan was compiled for the fieldwork component of this project and is provided in Appendix B of this report.

6 Survey Results

6.1 Survey

A pedestrian survey and subsurface testing within the project area were conducted on January 17, 2023 (Figure 5). Fieldwork was led by Molly Swords (principal investigator for GRAM Northwest, LLC). Field conditions were partly cloudy, with high temperatures reaching approximately 45°F.

6.1.1 Pedestrian Survey

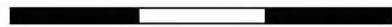
A pedestrian survey was conducted on January 17, 2023. Survey transects were spaced 30 meters (98 feet) apart throughout the surveyed project area (Figure 5). The survey was generally conducted in north to south transects with east to west transects in the northern portion of the project area (Figure 5). The entire survey area was stripped of vegetation from construction and grading activities in the project area. Portions of the northern project area were filled with large piles (20 to 25 feet tall) of construction fill. Throughout the southwestern portion of the project area substantial excavation occurred down to pillow-basalt deposits. The excavated area was approximately 20 feet deep and 20 feet wide. In the southeastern portion of the project area, substantial grading had taken place with the land being counteracted for residential housing. Utilities were observed to be marked throughout this portion of the project area. The project area has been substantially altered with the entire landscape being reshaped and altered from grading activities. No cultural or archaeological resources were identified during the field survey for this project. Representative photographs of the project area are provided in Figures 6 through 9.



**Project Location & Fieldwork
Results**

Benton County, Washington

0 250 500 750 Feet



0 50 100 150 Meters



Legend

ProjectArea

30-Meter Survey Transect

Esri Satellite Imagery 02/26/2020

Figure 5. Surveyed Project Area



Figure 6. Overview of the project area surveyed from the center of the project – note the piles of fill in the left of frame (Aspect: Southeast).



Figure 7. Overview from the southeastern portion of the project area that has been excavated and graded (Aspect: West).



Figure 8. Overview from the center of the project area – note the area has been levelled and graded (Aspect: Southeast).



Figure 9. Overview of the western portion of the project area – note the area has been excavated down to pillow-basalt deposits (Aspect: East).

6.1.2 Subsurface Testing

Ten STPs were planned to be excavated within the project area. Due to field conditions observed during the pedestrian survey, subsurface testing was not conducted. Subsurface testing was not conducted due to prior ground disturbance, such as grading and excavation that occurred several feet below surface depth, that significantly altered the landscape. The observed field conditions at the site consisted of fine-grained, medium-brown clays, silts, and sands in equal parts (loam) with less than 10% gravels.

See Appendix A for additional photographs of the project area and level of disturbance, utility lines, and excavation activities noted.

7 Analysis

Background research (including a review of archaeological site and survey data available in the WISAARD), analysis of historical maps and geographic information system data, and an assessment of local geology were conducted to identify any previously recorded cultural resources within the project area.

Sediments observed throughout the project area consisted of dusty loam with large cobbles observed at the ground surface. These sediments are consistent with that observed in the Washington Department of Natural Resources geologic information portal (<https://geologyportal.dnr.wa.gov/2d-view>).

A review of literature via WISAARD identified no archaeological sites, isolates, or previously conducted surveys within the project area. Additionally, a review of historical USGS topographic maps indicates little development within the project area.

A pedestrian survey and subsurface testing within the project area were conducted October 13, 2021. Survey transects were spaced 10 meters (32.8 feet) apart, and a total of four STPs were excavated within the project area. All units were truncated due to hardpan loam at the base of the excavation. The survey area consisted of a vacant lot within a commercial/industrial area. Some modern trash including galvanized scrap metal, food and beverage containers, and plastic was observed within the project area.

No other potential cultural resources were identified during the field survey for this project.

8 Conclusions and Recommendations

The findings of the literature review and archaeological investigation indicate that the project area has a low potential to contain archaeological materials. Based on the results of the archaeological survey and shovel testing, cultural resources monitoring is not recommended for this project.

This survey report was developed to answer all the components of question 13 of the SEPA checklist (RCW 43.21). The components of question 13 are as follows:

- Are there any buildings, structures, or sites located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.
 - No. Background research and fieldwork to support this project did not identify any historic buildings, structures, or sites within the project area.

- Are there any landmarks, features, or other evidence of Native American or historical use or occupation? This may include human burials or old cemeteries. Is there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.
 - A professional archaeological survey, including pedestrian survey and subsurface testing, was conducted to identify any cultural resources located within the project area. A review of archaeological site and survey data available in the WISAARD, analysis of historical maps and geographic information system data, and archaeological fieldwork conducted to support this project did not identify any cultural resources overlapping the project area.
- Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with the Tribes and the DAHP, archaeological surveys, historic maps, geographic information system data, etc.
 - A professional archaeological review (including archaeological site and survey data available in the WISAARD), analysis of historical maps and geographic information system data, and archaeological fieldwork were conducted as part of this survey report.
- Discuss proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.
 - The findings of the literature review and archaeological investigation did not identify any cultural resources within the project area. As such, no additional measures were recommended for this project.

9 References

- Alwin, J., 1994, *Between the Mountains, a Portrait of Eastern Washington*, Northwest Panorama Publishing, Inc., Bozeman, Montana.
- Bauman, R., 2001, Historic Property Inventory of the Downtown Commercial District of the City of Kennewick, Washington, Office of Archaeology and Historic Preservation, Kennewick, Washington.
- Benson, J.R., J.V. Jermann, and D.E. Lewarch, 1989, *Cultural Resources Inventory of the Proposed Yakima Firing Center Expansion Area East-Central Washington*, Contract CACA67 86-D 0051, Sacramento, California.
- Callum, K.E., N. Lopez, and C. Smith, 2005, *NRCS Richland Tennis EQIP 2005 Site Identification Survey in Franklin County, Washington*, Natural Resources Conservation Service, Washington, D.C.
- Chatters, J.C., 1980, *Cultural Resources of the Columbia Basin Project: An Inventory of Selected Parcels*, Reconnaissance Report No. 32, University of Washington, Seattle, Washington.
- Dampf, S., 2014, *Cultural Resources Assessment for the Williams Northwest Pipeline LLC's Pasco Replacement Project* (on file), Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

Cultural Resource Survey Report for the proposed Apple Valley Residential Development – Kennewick,
Washington
February 2023

Doncaster, K. 2008, Historic Resources Survey for Amon Pump Plant Operator's Residence Disposal in Kennewick (on file), Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

Fagan, B.M., 2000, *Ancient North America: The Archaeology of a Continent*, Thames & Hudson, New York.

Franklin, J.F. and C.T. Dyrness, 1973, *Natural Vegetation of Oregon and Washington*, Oregon State University Press, Corvallis, Oregon.

Fridlund, P., 1985, *Prosser 1910-20 Going Back*, Ye Galleon Press, Fairfield, Washington.

Furlong, J. 2021, Cultural Resources Survey for the Ridgeline Estates Subdivision Project, Benton County, Washington (on file), Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

Galm, J.R., G.D. Hartmann, R.A. Masten, and G.O. Stephenson, 1981, *A Cultural Resources Overview of the Bonneville Power Administration's Mid-Columbia Project, Central Washington*, Eastern Washington University, Cheney, Washington.

Green, G.S., 1975, *Prehistoric Utilization in the Channeled Scablands of Eastern Washington*, Washington State University, Pullman, Washington.

Grundy, F.J., S. Axton, S. Emerson, S. Gough, and C.T. Luttrell, 1998, *A Cultural Resources Overview of the United States Bureau of Reclamation's Scattered Tracts/Potholes Study Area Adams, Franklin, Grant, and Walla Walla Counties, Washington*, Eastern Washington University, Cheney, Washington.

Homestead Act of 1862, Public Law 37-64, 37th Congress.

Hunn, E.S., E.T. Morning Owl, P.E. Cash, and J.K. Engum, 2015, *Čáw Pawá Láakni, They Are Not Forgotten: Sahaptian Place Names Atlas of the Cayuse, Umatilla, and Walla Walla*, Tamástslikt Cultural Institute, Pendleton, Oregon.

Kershner, J., 2008, Kennewick – Thumbnail History, HistoryLink.org website. Available at: <https://www.historylink.org/File/8499>. Accessed 10/27/2020.

Landreau, C. 2019, An executive order 05-05 Archaeological Review and Inventory of the City of Kennewick Storm-water Masterplan Geotechnical Survey, Benton County, Washington (on file), Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

Landreau, C. 2022, A Section 106 Cultural Resources Review and Inventory of the South Cliff Development Project, Kennewick, Benton County, Washington (on file), Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

Lewty, P.J., 1987, *To the Columbia Gateway, the Oregon Railway and the Northern Pacific, 1879-1884*, Washington State University Press, Pullman, Washington.

Meinig, D.W., 1995, *The Great Columbia Plain, A Historical Geography, 1805-1910*, University of Washington Press, Seattle, Washington.

Cultural Resource Survey Report for the proposed Apple Valley Residential Development – Kennewick,
Washington
February 2023

Morgan, V., R. Bruce, J. Creighton, and S. Emerson, 2001, *A Cultural Resources Overview for the Priest Rapids Hydroelectric Generation Project (FERC Project No. 2114), Grant, Chelan, Douglas, Kittitas, and Yakima Counties, Washington*, Grant County Public Utility District, Ephrata, Washington.

Nelson, C.M., 1969, *The Sunset Creek Site (45-KT-28) and its Place in Plateau Prehistory*, Report of Investigations No. 47, Laboratory of Anthropology, Washington State University, Pullman, Washington.

RCW 43.21, "State Environmental Policy," *Revised Code of Washington*, Olympia, Washington.

Rice, D.G., 1980, *Overview of Cultural Resources on the Hanford Reservation in South Central Washington State*, submitted to U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Schuster, H., 1998, "Yakima and Neighboring Groups," *Handbook of North American Indians*, Volume 12, Plateau, Smithsonian Institution, Washington, D.C.

Senn, A.K., 2013, Archaeological Survey for the City of Kennewick's Proposed Aquifer Storage and Recovery Project (on file), Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

Sexton, S. 2021, Cultural Resource Survey Report for the Construction of a Housing Development on Benton County Tax Lot #108-893-013-488-002 in Kennewick, Washington (DAHP Project Number 2020-11-07245) (on file), Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

Sharpe, J.J. and T.E. Marceau, 2001, *Archaeological Excavation Report for Extraction Well C3662 in Support of the 100-KR-4 Pump and Treat Project*, BHI-01645, Bechtel Hanford, Inc., Richland, Washington.

Sharpe, J. 2021, Cultural Resources Survey Report for the Amon Pumping Plant Parcel, Kennewick Irrigation District, Benton County, Washington. (on file), Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

Steinmetz, S., 2003, A Cultural Resources Survey of the City of Kennewick's Zone 3, Zone 4, and Zone 5 Reservoirs (on file), Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

Stern, T., 1998, "Cayuse, Umatilla, and Walla Walla," *Handbook of North American Indians*, Volume 12, Plateau, Smithsonian Institution, Washington, D.C.

Swanson, E.H., 1962, *The Emergence of Plateau Culture*, Occasional Papers of the Idaho State College Museum No. 8, Idaho State University Museum, Pocatello, Idaho.

Thoms, A.V., S.J. Bobalick, K. Bohm, T.R. Metzger, D. Olson, and S.R. Samuels, 1983, *Archaeological Investigations in Upper McNary Reservoir: 1981-1982*, Washington State University, Pullman, Washington.

Trost, T. 2012, Cultural Resources Assessment for the Kennewick Irrigation District 2012-2014 Capital Improvement Plan (on file), Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

Cultural Resource Survey Report for the proposed Apple Valley Residential Development – Kennewick,
Washington
February 2023

Walker, D.E., Jr. (ed.), 1998, *Handbook of North American Indians*, Volume 12, Plateau, Smithsonian
Institution, Washington, D.C.

Appendix A – Additional Photographs



Figure 10. Overview of portion of the project area excavated (Aspect: North).



Figure 11. View of large basalt boulders in the northern portion of the project area (Aspect: Southwest).



Figure 12. Overview of portion of the project area graded and excavated - note the construction material (Aspect: West).



Figure 13. View of portion of project area excavated with white PVC pipes sticking out of the soil profile wall in the left of the frame (Aspect: Southwest).



Figure 14. View of portion of the project area graded and shaped into a platform for a residential house (Aspect Southeast).



Figure 15. Overview of southern portion of the project area - note the area graded for the placement of a road (Aspect: West).



Figure 16. Overview of the project area (Aspect: Northwest).



Figure 17. Overview of project area - note the white PVC pipe sticking out of the ground in the foreground (Aspect: Northwest).



Figure 18. Overview of the project area (Aspect: Northeast).



Figure 19. Overview of the project area (Aspect: South).

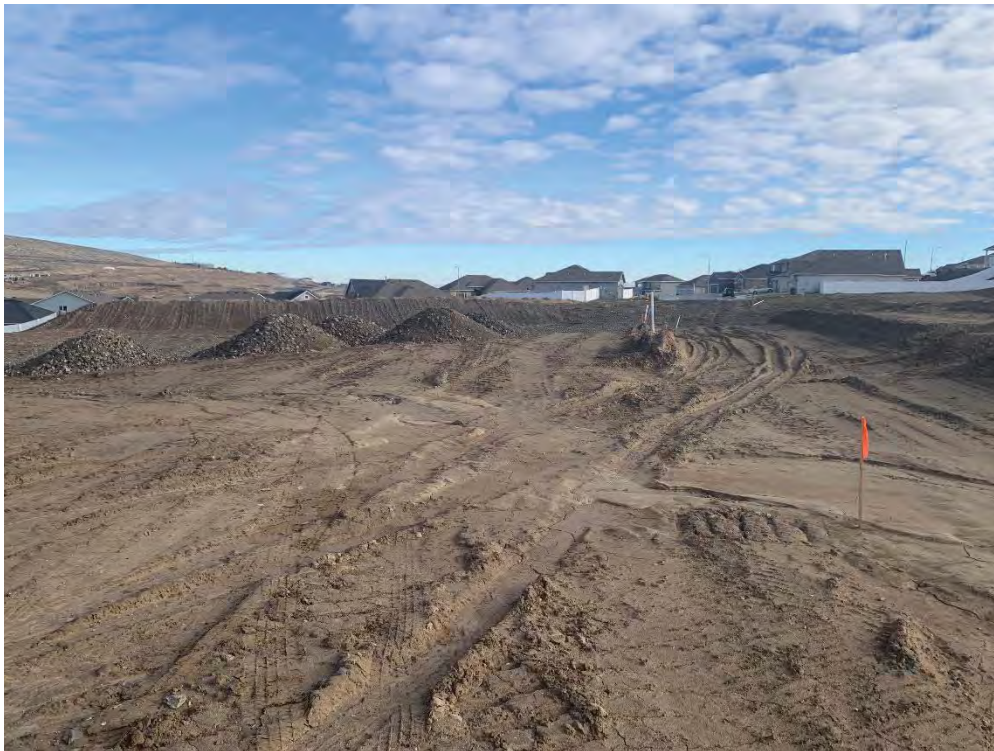


Figure 20. Overview of eastern portion of the project area - note the marked utilities (Aspect: East).



Figure 21. Overview of fill pile in the northern portion of the project area (Aspect: West).



Figure 22. Overview of the project area (Aspect: North).

Appendix B – Inadvertent Discovery Plan

Apple Valley Phase 7-9 Kennewick, WA

Inadvertent Discovery Plan

February 4, 2023

Project Location

USGS Quadrangle: Kennewick, WA 7.5'

Township: 8N, Range: 29E

Section: 17

Project Description

Project activities include construction of a new residential development and associated infrastructure on a lot located in Kennewick, Washington. Development will include construction of the road, excavation, grading, and other general construction activities throughout the project area. Excavations are not expected to exceed 6 meters (20 feet) in depth.

Project Area

The project area is an approximately 20.23-hectare (50-acres) of land located along Bob Olson Parkway in Kennewick, Washington in Benton County, in Township 8N, Range 29E, of Section 17 (Figures 1 and 2). The property is uniquely identified as Benton County Tax Lot 101884BP5063016.

Inadvertent Discovery Plan

This inadvertent discovery plan (IDP) was prepared to support project activities described above. This plan was prepared to provide field personnel a process for the inadvertent discovery of cultural resources and/or human remains identified during fieldwork for the project.

Recognizing Cultural Resources

A cultural resource discovery could be prehistoric or historic. Examples include the following:

- An accumulation of shell, burned rocks, or other food-related materials
- Bones or small pieces of bone
- An area of charcoal or very dark-stained soil with artifacts
- Stone tools or waste flakes (i.e. an arrowhead, or stone chips)
- Clusters of tin cans or bottles, logging or agricultural equipment that appears to be older than 50 years
- Buried railroad tracks, decking, or other industrial materials

When in doubt, assume the material is a cultural resource.

Onsite Responsibilities

STEP 1: Stop Work

If any employee, contractor, or subcontractor believes that he or she has uncovered a cultural resource at any point in the project, all work must stop immediately in the vicinity of the find. Notify the appropriate party(ies) as outlined in steps 2 through 4. The area surrounding the find must be secured using pin flags, stanchions and rope, or other appropriate delineation to provide for the security and protection of the discovery.

STEP 2: Notify the Archaeological Monitor

If there is an archaeological monitor for the project, notify that person. If there is a monitoring plan in place, the monitor will follow the procedure as described.

STEP 3: Notify the Project Manager

Notify the identified project manager of this project or other applicable contacts:

Project Manager

Matt Smith
Tri-Cities Development Company, LLC
Phone: (541) 382-6691
Email: matt@wspl.net

Alternate Contact

Jason Mattox
PBS
Phone: (509) 942-1600
Email: jason.mattox@pbsusa.com

Project manager responsibilities include the following:

- **Protect the Find:** The project manager is responsible for ensuring that the project takes appropriate steps to protect the discovery site while all necessary assessments and notifications are completed. As stated in steps 1 and 2, all work will stop immediately in the surrounding area, and the area will be secured to protect the integrity of the resource. Vehicles, equipment, and unauthorized personnel will not be permitted to enter the area of the discovery. See the section of this plan titled "Resuming Work" for further instruction on how and when work may resume.
- **Direct Project Activities Elsewhere Onsite:** The project manager may direct project activities to continue in areas away from cultural resources for working in other areas prior to contacting the concerned parties.
- **Contact the Project Archaeologist:** If the assigned project archaeologist has not yet been contacted, the project manager must do so.

STEP 5: Notify the Professional Archaeologist

Notify the identified professional archaeologist serving as the archaeologist for this project (if a monitor is not present)

Professional Archaeologist(s)

Molly Swords, Professional Archaeologist, GRAM Northwest, LLC

1201 Jadwin Ave., Richland, WA 99352

Phone: (703) 283-5175

Email: molly.swords@gramnorthwest.com

The professional archaeologist's responsibilities include the following:

- **Identify Find:** The professional archaeologist will examine the area to determine if there is an archaeological find.
 - If it is determined not to be a cultural resource/archaeological find or human remains, work may proceed with no further delay.
 - If it is determined to be a cultural resource/archaeological find or human remains, the professional archaeologist will continue with all notifications.

If the find may be human remains or funerary objects, the Project Archaeologist will ensure that a qualified physical anthropologist examines the find. **If the find is determined to be human remains, the procedure described in the section of this plan titled "DISCOVERY OF HUMAN REMAINS" will be followed.**

- **Notify Appropriate Parties:** If the find is determined to be a cultural resource, the professional archaeologist will notify the appropriate parties. Notifications may include the following:
 - **Agency Contact:** The professional archaeologist will contact the designated point of contact for the City of Kennewick.
 - **Washington Department of Archaeology (DAHP):** The professional archaeologist will contact DAHP.
 - **Tribes:** If the discovery may be of interest to Native American Tribes, the professional archaeologist, the Agency point of contact, and the DAHP will coordinate with the interested and/or affected Tribes.
- **Record the Find:** The project archaeologist will work with DAHP and the consulting parties as appropriate to determine how to record the find. Methods for recording will likely require completion of a Washington State Archaeological Site or Isolate Form.

Resuming Work

Work outside of the discovery location may continue while documentation and assessment of the cultural resources proceed. The professional archaeologist must determine the final boundaries of the discovery location.

Work may continue at the discovery location only after the process outlined in this plan is followed and the project manager, DAHP, and any affected Tribes (if applicable) determine that appropriate documentation has been completed.

Discovery of Human Remains

The inadvertent discovery of human skeletal remains on non-federal and non-Tribal land in the state of Washington is implemented under RCW 68.50.645, 27.44.055, and 68.60.055. The information below in *italics* for the inadvertent discovery of human remains was obtained from the Washington State Department of Archaeology and Historic Preservation web page

(<http://www.dahp.wa.gov/programs/human-remains-program/idp-language>).

In the event that human remains are encountered during field-related project activities, the following steps will be implemented.

Step 1: Stop Work Immediately

If ground disturbing activities encounter human skeletal remains during the course of data collection or construction, then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance.

(<http://www.dahp.wa.gov/programs/human-remains-program/idp-language>)

In order to secure the discovery, a temporary fencing system such as posts and rope or similar protection measures will be placed around the discovery. Work in the immediate area of the discovery will be discontinued, however; work outside the discovery area may continue.

When an inadvertent discovery is encountered, staff will take measures to avoid further disturbance of the area. Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Cultural materials shall not be moved from the location of the discovery. Photographs shall not be taken of bones unless photographs are needed to assist in the determination of the remains to be human or animal.

Step 2: Notification Process

The finding of human skeletal remains will be reported to the county medical examiner/coroner and local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or nonforensic.

(<http://www.dahp.wa.gov/programs/human-remains-program/idp-language>)

In the event of the discovery of human remains, the following individuals will be contacted:

Benton County Coroner
William Leach, Coroner
7110 West Okanogan Pl. Building A, Kennewick WA 99336
Phone: (509) 736-2720
Email: william.leach@co.benton.wa.us

Benton County Sheriff
Tom Croskrey, Sheriff
7122 West Okanogan Pl. Building B, Kennewick, WA 99336
Phone: (509) 735-6555

Step 3: Jurisdictional Authority

If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

(<http://www.dahp.wa.gov/programs/human-remains-program/idplanguage>)

DAHP Contact
Guy Tasa, State Physical Anthropologist
Phone: (360) 586-3534
Email: Guy.Tasa@dahp.wa.gov

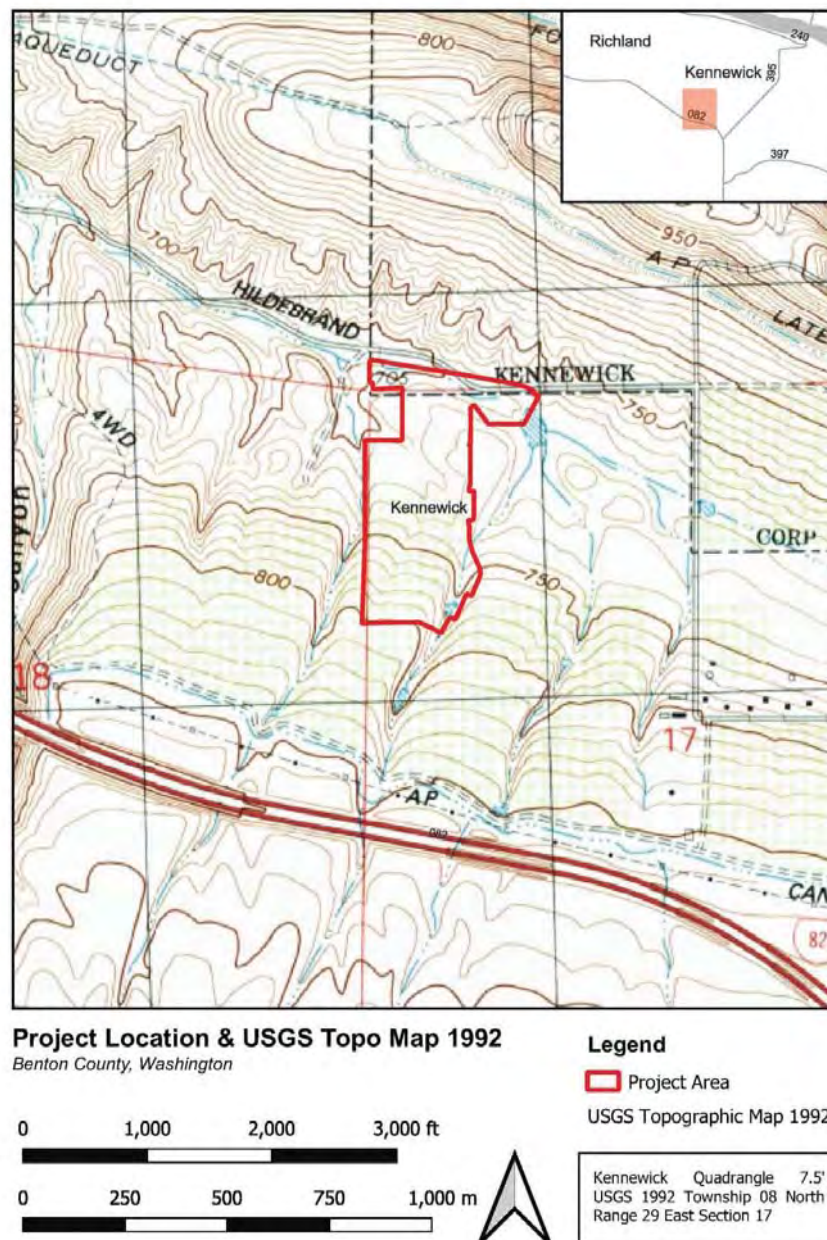


Figure 1. Project Area and USGS Topographic Map



Figure 2. Project Area and Aerial Imagery

From: [DAHP SEPA \(DAHP\)](#)
To: [Steve Donovan](#)
Cc: Molly.Swords@gramnorthwest.com; [Ashley Morton](#); [Casey Barney](#); [Corrine Camuso](#); [Gregg Kiona](#); [Jessica Lally](#); [Kate Valdez](#); [Noah Oliver](#)
Subject: FW: SUB-2022-0022
Date: Tuesday, February 21, 2023 1:14:02 PM
Attachments: [image001.png](#)
[image003.png](#)
[Apple Valley CRR Final Draft.pdf](#)

Hi Steve,

Thank you for providing this survey report. I am unable to generate formal letters at the moment due to some technical issues on my end. However, I have included the text of my concurrence letter below:

Thank you for contacting the Washington State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) and providing documentation regarding the above referenced project. These comments are based on the information available at the time of this review and on behalf of the SHPO in conformance with Washington State law. Should additional information become available, our assessment may be revised.

We concur with the results and recommendations made in the survey report. Specifically, as no cultural resources were found during the survey, we do not recommend direct archaeological supervision of the project. However, we ask that an Inadvertent Discovery Plan (IDP) be included as part of the construction permit.

Please note that the recommendations provided in this letter reflect only the opinions of DAHP. Any interested Tribes may have different recommendations. We appreciate receiving any correspondence or comments from Tribes or other parties concerning cultural resource issues that you receive.

Thank you for the opportunity to comment on this project. Please ensure that the DAHP project Tracking Number is attached to any future communications about this project.

Should you have any questions, please feel free to contact me.

All the best,

Sydney Hanson, MA (she/her) | **Local Government Archaeologist**
Eastern Washington & Columbia River Counties
360.280.7563 | sydney.hanson@dahp.wa.gov

Department of Archaeology & Historic Preservation | www.dahp.wa.gov
1110 Capitol Way S, Suite 30 | Olympia WA 98501
PO Box 48343 | Olympia WA 98504-8343

Please consider the environment before printing this email



January 24, 2023

Stephen Donovan, Planning Manager
City of Kennewick - Development Services Division
Community Planning
210 W. 6th Ave.
Kennewick, Washington 99336

Via email: steve.donovan@ci.kennewick.wa.us

Regarding: Response to First Review Comments for Preliminary Plat SUB-2022-0022
Apple Valley Phases 7-9
W. 33rd Pl.
Kennewick, Washington
PBS Project 66090.008

Dear Stephen:

PBS received the First Review Comments for the above project on November 14, 2022. This letter is a response to each item or comment received as a part of the first submittal and contains the attachments for the second submittal. Please review each item below, organized by entity with PBS response below each item.

INFORMATION AND CHANGES TO THE PLAT REQUIRED PRIOR TO ISSUING A SEPA DETERMINATION AND PROCEEDING TO HEARING

Public Works Department Memorandum

- 1. Prior to approval of the preliminary plat, the developer shall address the comments addressed on the plat.**

This is understood. All comments received are addressed in this response letter or in the attachments.

- 2. All agreements between the City and the developer, and/or associated with the subject or parent parcels are still in place.**

This is understood.

- 3. Developer will be required to provide construction of private roads, sidewalks, streetlights, storm drainage, and designate sidewalk and utility easements, all in conformance with the latest City of Kennewick (COK) Standard Specifications and Details.**

This is understood.

- 4. The maximum street grade per KMC 5.56.275 is 12%. Show grades on the street centerline profile.**

Maximum street grades proposed are 10% or less. See attached preliminary street centerline plan and profile sheets for all roadways within the preliminary plat with this submittal.

- 5. Buildings or structures may not be located over City utilities.**

This is understood.

6. Provide water and sanitary sewer services for each proposed dwelling or building per Kennewick Municipal Code KMC 14.13.020, 14.22.020(1), KMC 17.13.095(1), KMC 17.12.055 and fire flow as required by the Fire Department.

Water and sewer services for each proposed dwelling or building shall be provided. Fire flow was modeled as part of the Hydraulic Analysis prepared by RH2 for the City of Kennewick, dated June 15, 2017. The recommended water main alignment and sizing in the Hydraulic Analysis has been followed, with input from the City on pipe sizing and routing as site layout has changed.

7. Water and sewer services to be constructed per City of Kennewick (COK) Detail 3-6.

This is understood.

8. Streets adjacent to this project have a Pavement Condition Index (PCI) rating equal to or above 75, therefore trenching will not be allowed per KMC 5.56.215 unless specified exceptions have been met. Any trenching done on pavement with a PCI rating of 75 or over will require a minimum 25-foot wide patch and full width of each travel lane or shoulder disturbed.

This is understood.

9. Provide 15-foot wide easements or tracts centered over all water mains outside of the right-of-way. These easements must extend to 5 feet behind fire hydrants.

This is understood, easements will be provided as requested on all properties within the boundary of the preliminary plat.

10. The Developer shall provide and install one metered water service for each proposed dwelling or building at their own expense per COK Standard Detail 3-6. The meter shall be placed as close to the main line as possible (not in a driveway or parking area) per KMC 14.12.080.

This is understood.

11. All proposed water main extensions must conform to the adopted City master plan, as amended and must conform to an overall program for a grid system, with provisions made for extensions of looping for circulation where at all possible per KMC 14.10.030.

This is understood. The overall utility plan shows water main extensions throughout the site.

12. Provide water lines and hydrants as required by Fire Department to meet fire protection.

This is understood.

13. Hydraulic modeling may be required based on fire flow requirements.

As mentioned in item 6 above, fire flow was modeled as part of the Hydraulic Analysis prepared by RH2 for the City of Kennewick, dated June 15, 2017. The recommended water main alignment and sizing in the Hydraulic Analysis has continued to be followed, with input from the City on pipe sizing and routing as site layout has changed.

14. City potable water is not available for irrigation purposes unless special permission is given by the Public Works Director. Contact KID/CID in order to provide irrigation water to irrigate the parcels.

This is understood, KID has been contacted and will continue to provide irrigation water to the Apple Valley development.

- 15. Every proposed dwelling shall be separately connected with the public sewer, unless such connection is six inch diameter sewer pipe or larger per KMC 14.22.030(10).**

This is understood.

- 16. Provide 15-foot wide easements or tracts centered over all sewer mains outside of the right-of-way.**

This is understood.

- 17. All proposed sanitary sewer extensions will be required at Developer expense. On the Plans, provide a Sewer Comprehensive Plan for the site/subdivision meeting KMC 14.22.040.**

This is understood. Plans shall include an overall utility plan for each phase. A comprehensive utility plan is included in the preliminary plat package.

- 18. Provide a Storm Water Site Plan (drainage report) and storm design to retain and dispose of a 25-year 24-hour storm following the Storm Water Management Manual for Eastern Washington (SMMEW) and Section 5-8. Infiltration tests are required at the location and depth of the planned infiltration structures along with a soils log to 5 feet below that point. Design and construct all underground infiltration structures to meet the Washington State Underground Injection Control (UIC) Rule. Provide an assessment of the design against the UIC pretreatment requirements found in section 5-6 of the SMMEW. Provide UIC registration numbers on the plans prior seeking the City's signature.**

This is understood. Storm retention ponds have been constructed in previous phases of the Apple Valley subdivision using City of Kennewick standards and the Stormwater Management Manual for Eastern Washington in place at the time of their construction. These existing facilities shall continue to serve the remaining phases as previously documented to the City of Kennewick.

- 19. All plans showing existing utilities shall call out the Record Drawing set number that installed the utilities. All plans need to clearly identify the size and type of water/sewer utility that is being proposed or connected to (i.e. "Existing 8-inch Water" or similar). Label private lines "Private".**

This is understood.

- 20. Any off site tracts, easements or agreements required for the project shall be submitted with the civil plans for review. Before a permit can be issued for the project, the easements or agreements shall be recorded at Benton County and a copy shall be provided to Public Works. The Auditor File Number shall be added to the plans before seeking City signature.**

This is understood.

- 21. This site requires a Public Works Construction Permit. You may apply for this by submitting the information below for Civil Plan Review through Kennewick's Self Service Portal at https://selfservice.ci.kennewick.wa.us/EnerGov_Prod/SelfService#/home:**

- a. PDF copy of the Application for Civil Review and Storm Calculations, if required to retain the Stormwater on site.**
- b. One full size (24"x36") PDF copy of the construction plans.**

This is understood.

22. Construct all projects using current City Survey Data. After project completion, Record Drawings showing improvements made on the property will be required prior to acceptance of the construction permit(s). For detailed information on Kennewick Survey Data and Record Drawings go to COK website at <https://www.go2kennewick.com/314/Civil-Plan-Review>.

This is understood.

Public Works Utility Plan Comments

The following utility plan comments (listed from north to south) included on the Comprehensive Utility Plan have been addressed:

- **Rename “Road A” to “South Belfair Place”**
 - o This has been updated.
- **Rename “Road B” to “South Alaska Street”**
 - o This has been updated.
- **Add road name “West 29th Avenue”**
 - o This has been updated.
- **Rename “Road C” to “South Alaska Street”**
 - o This has been updated.
- **Show storm drain line above phase boundary for review**
 - o This has been updated.
- **Add road name “West 34th Place”**
 - o This has been updated.
- **Show sewer stub to the parcel to the south**
 - o A sewer stub and sewer tract is now shown in Phase 6 stubbing sewer to the property south of Apple Valley. This tract is not a part of the Phase 7-9 preliminary plat.

Department of Archaeology and Historic Preservation Comments

The letter from the Department of Archaeology & Historic preservation was reviewed. It was recommended that a professional archaeological survey of the project area be conducted. PBS is working with GRAM Northwest, LLC for completion and report of this archaeological survey. A full report will be provided to the City of Kennewick as requested.

COMMENTS REQUIRED TO BE MET/ADDRESSED PRIOR TO FINAL PLAT APPROVAL:

Traffic Division TIA Comments

PBS submitted a “Traffic Impact Analysis Supplemental Letter”, dated January 25, 2021, for Apple Valley Phases 6 & 7 that the Traffic Division provided comments on. The Traffic Division comments and PBS responses to these are as follows:

1. **On page 6 of 8, the comment states “Eastbound right turn lane from Bob Olson Parkway to southbound S Colorado St. is required. Right turn lane’s construction to be completed and accepted by the City as a condition to Final Plat Approval”.**

Comment has been received, and City’s position on this issue is understood, no additional analysis is required at this time.

PBS submitted an “Addendum to Traffic Impact Analysis Supplemental Letter Dated January 25, 2021”, dated June 14, 2022, for Apple Valley that the Traffic Division provided comments on. The Traffic Division comments and PBS responses to these are as follows:

1. **On page 2 of 2, the comment states “Eastbound right turn lane from Bob Olson Parkway to southbound S Colorado St. is required. Right turn lane’s construction to be completed and accepted by the City as a condition to Final Plat Approval”.**

Comment has been received, and City’s position on this issue is understood no additional analysis is required at this time.

GIS and Traffic Plat Comments

The following comments were received on a mark-up of the plat. PBS responses are shown beneath each comment:

1. Sheet 1 comments:

- **Add a label to “West 34th Place”**
 - o Road label has been added
- **Correct a street name from “South Zimmerman Street” to “South Alaska Place”**
 - o Road name has been corrected
- **Change “Road C” name to “South Alaska Street”**
 - o Road name has been changed
- **Add a label to “West 29th Avenue”**
 - o Road label has been added
- **Change “Road A” name to “South Belfair Place”**
 - o Road name has been changed
- **Change “Road B” name to “South Alaska Street”**
 - o Road name has been changed

2. Sheet 2 comments:

- **Road name changes and updates from Sheet 1**
 - o Road name changes and updates from Sheet 1 have been completed
- **Eastbound right turn lane from Bob Olson Parkway to southbound S Colorado St. is required. Right turn lane’s construction to be completed and accepted by the City as a condition to Final Plat Approval**
 - o Comment has been received, and City’s position on this issue is understood. No additional analysis is required at this time.

GIS and Traffic Grading Plan Comments

The following comments were received on a mark-up of the preliminary grading plan. PBS responses are shown beneath each comment:

1. Sheet 1 comments:

- **Add a label to “West 34th Place”**

- o Road label has been added
- **Correct a street name from “South Zimmerman Street” to “South Alaska Place”**
 - o Road name has been corrected
- **Change “Road C” name to “South Alaska Steet”**
 - o Road name has been changed
- **Add a label to “West 29th Avenue”**
 - o Road label has been added
- **Change “Road A” name to “South Belfair Place”**
 - o Road name has been changed
- **Change “Road B” name to “South Alaska Street”**
 - o Road name has been changed
- **Resubmit with plan profile of proposed streets to verify longitudinal profile and vertical curvature rates**
 - o A plan and profile of each street has been prepared and included in this package.
- **Update Vicinity Map to show Bob Olson Parkway**
 - o This has been updated.
- **Update 5-foot utility easement to 15-foot utility easement**
 - o This label is mislabeled and has been corrected. The 5-foot easement is a fence and utility easement that abuts the 15-foot utility easement.

BENTON PUBLIC UTILITY DISTRICT COMMENTS

The Benton PUD comments reviewed request a CAD file for this project, with phasing and planned schedule. PBS has submitted the requested documents to Shanna Everson at Benton PUD on January 12th, 2023, via email.

KENNEWICK IRRIGATION DISTRICT COMMENTS

PBS reviewed the comments provided by the Kennewick Irrigation District (KID), dated November 1st, 2022, stating that the properties identified on the proposed preliminary plat are located within KID boundaries. It is understood that KID comments are to be included as required conditions of approval. This project will seek to comply with the listed conditions of approval and PBS understands that assessment, review, and inspection fees must be paid. It is understood that the existing 40-foot Plymouth Drain easement crossing “Tract WW” shall be reviewed for vacation, which required KID Board of Directors approval. It is understood that KID reserves the rights listed in their letter. Notice of public meetings or hearings where this project will be an agenda item shall be provided to KID by the City of Kennewick.

PBS COMMENTS

Please review the attached documents that have been updated per comments received and supplemented with additional requested information.

Please feel free to contact me at 509.942.1600 or jason.mattox@pbsusa.com with any questions or comments.

Sincerely, Digitally signed by
 Jason Mattox
 Date: 2023.01.24
 07:46:16-08'00'



Jason Mattox, PE
 Principal Civil Engineer

Stephen Donovan – City of Kennewick – Development Services Division
Response to First Review Comments for Preliminary Plat SUB-2022-0022
January 24, 2023
Page 7 of 7

cc: Matt Smith

Attachment(s): Preliminary Plat
Preliminary Grading Plan and Road Profiles
Comprehensive Utility Plan
Benton PUD Email with Requested Files and Information

SG:JLM



NOTE:
SEE SHEET 3 FOR LEGAL DESCRIPTIONS.



ED. 3" BRASS CAP IN CASE AT CENTER
1/4 CORNER SEC. 17 PER THE VILLAGE
AT SOUTHRIDGE PHASE 1

APPLE VALLEY - PHASES 7-9

PRELIMINARY GRADING PLAN AND ROAD PROFILES

Located In The NW 1/4 Of Sec. 17 and The SW 1/4 of Sec. 8, T. 8 N., R. 29 E., W.M.

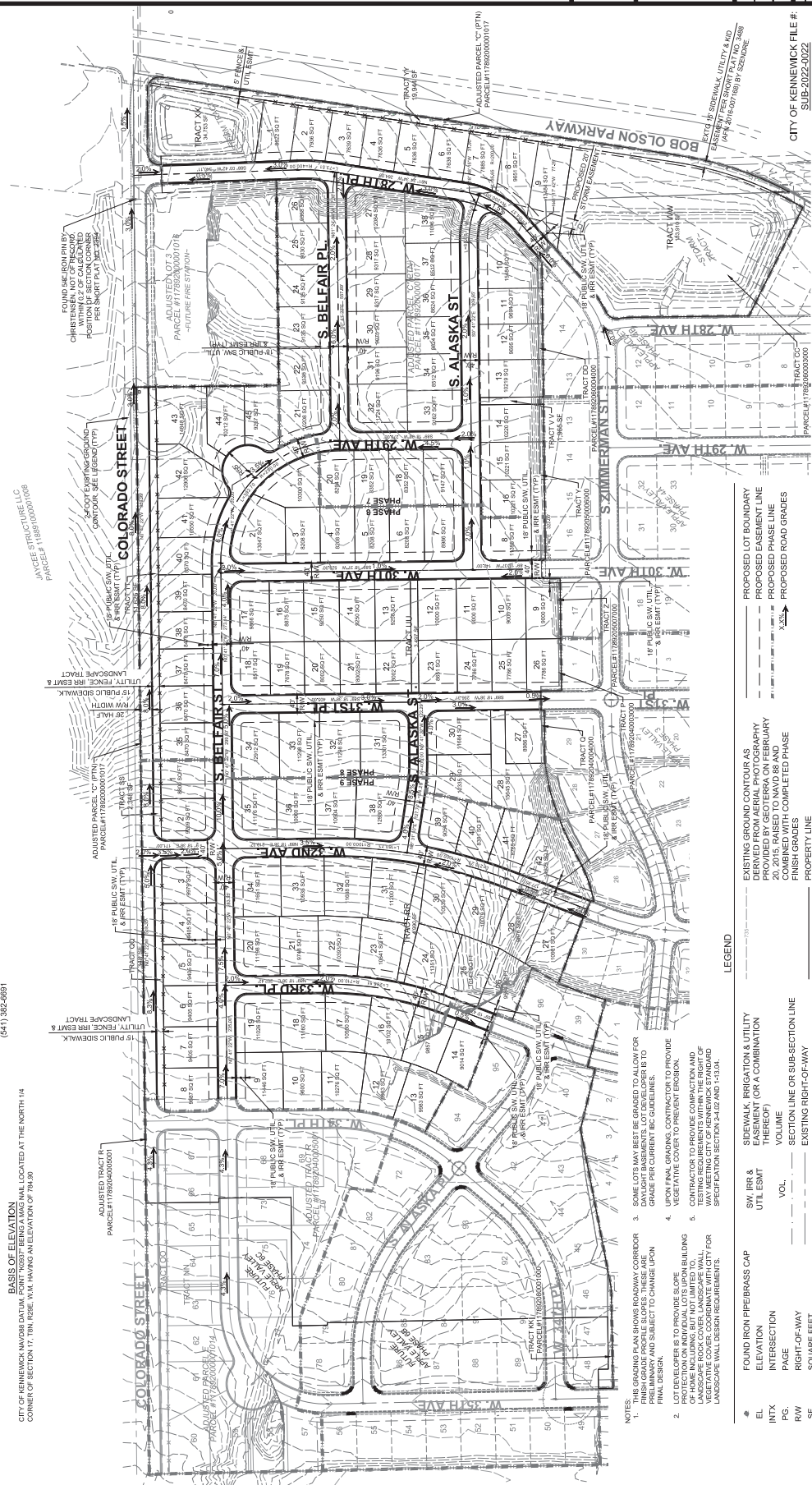
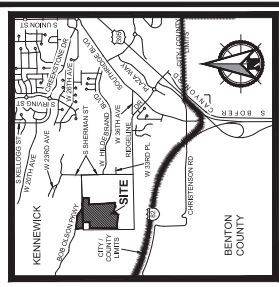
BASIS OF BEARINGS:
NAD 83, SOUTH 00°18'37" EAST ALONG THE WEST LINE OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 8, T8N, R29E, W.M., ESTABLISHED BY HOLDING THE COORDINATES OF FOUND MONUMENTS ON THE NORTH 1/4 CORNER & NORTHEAST CORNER OF SECTION 17, T8N, R29E, W.M., AS LISTED IN BOOK 1 OF SURVEYS, PAGE 1540, RECORDS OF BENTON COUNTY, WASHINGTON. SAID MONUMENTS ARE SHOWN AS CONTROL POINTS #0937 & #0927, RESPECTIVELY IN SAID SURVEY NO. 0540

BASIS OF ELEVATION
CITY OF KENNEWICK NAVD83 DATUM, POINT "K0937" BEING A MAG NAIL LOCATED AT THE NORTH 1/4 CORNER OF SECTION 17, T8N, R28E, W4M, HAVING AN ELEVATION OF 794.00

APPLICANT/DEVELOPER:
TRI-CITIES DEVELOPMENT CO. LLC
ATTN: MATT SMITH
15 SW COLORADO AVENUE
SUITE 1
BEND, OR 97702

SURVEYOR:
PBS
ATTN: ALEX MATAR
400 BRADLEY BLVD
RICHLAND, WA 99353
PHONE: (509) 942-1111

ENGINEER:
PBS
ATTN: JASON MATTOX, PE
400 BRADLEY BLVD, SUITE 106
RICHLAND, WA 99352
PHONE: (509) 942-1600



PRELIMINARY
SUBJECT TO AGENCY REVIEW
NOT FOR CONSTRUCTION

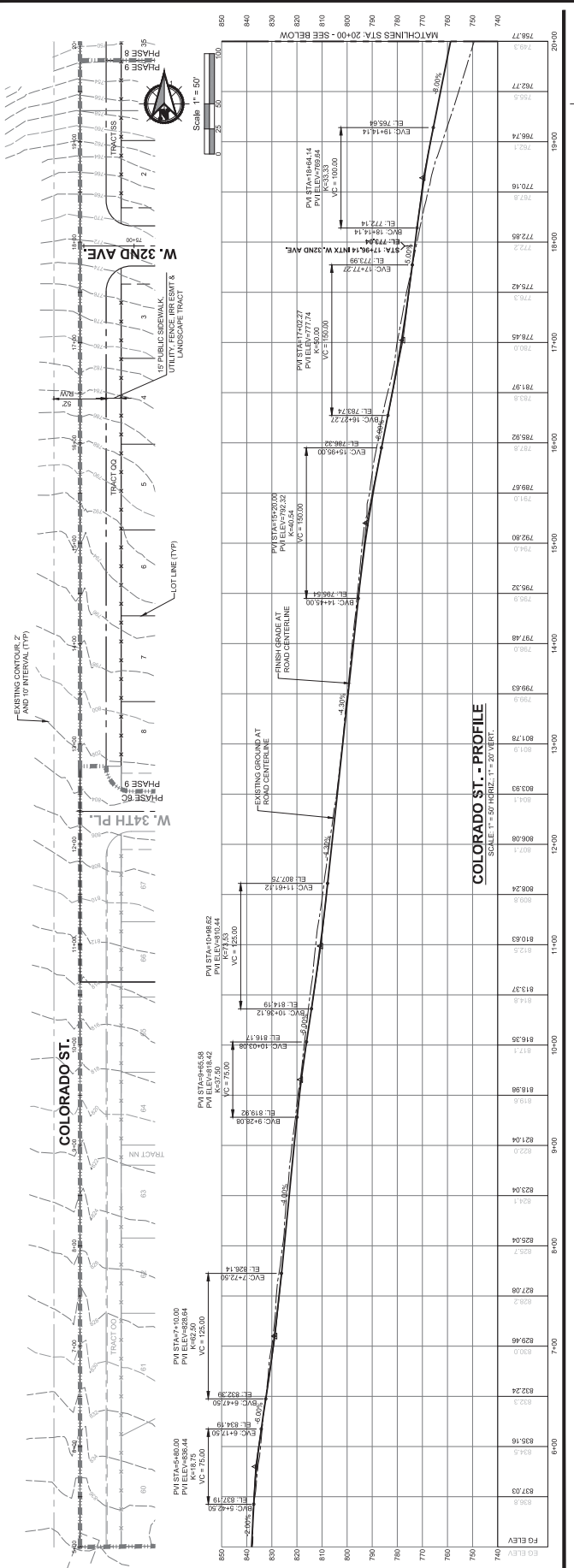
PROPOSED RIGHT-OF-WAY

PROPOSED RIGHT-OF-WAY CENTERLINE

— — — — — EXISTING EASEMENT

TYPE	TYPICAL
Format is 24x36. If Printed Size is Not 24x36, Then This Sheet Format Has Been Modified	

Full Size Sheet Format: 24x36. If Printed Size is Not 24x36, Then This Sheet Format Has Been Modified & Indicated (Drawing Scale) is Not Accurate.



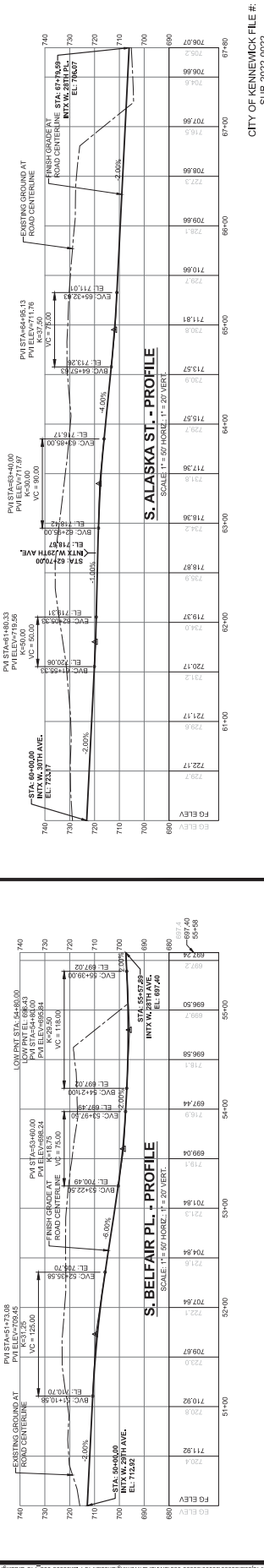
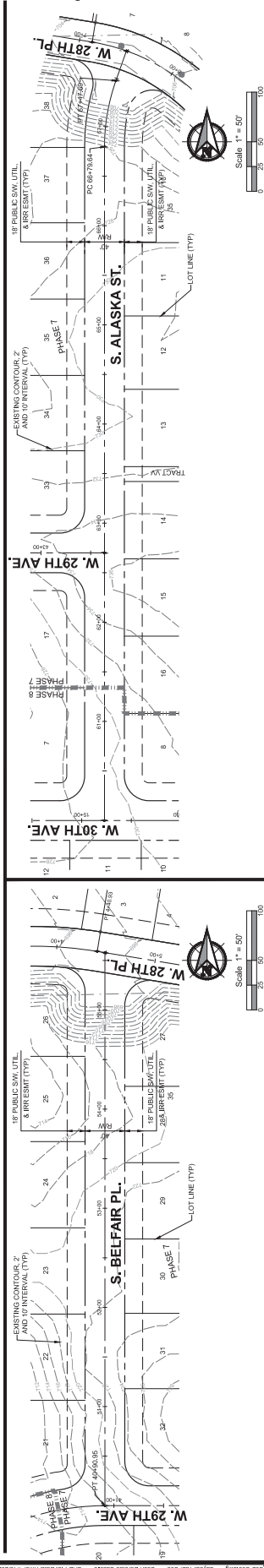
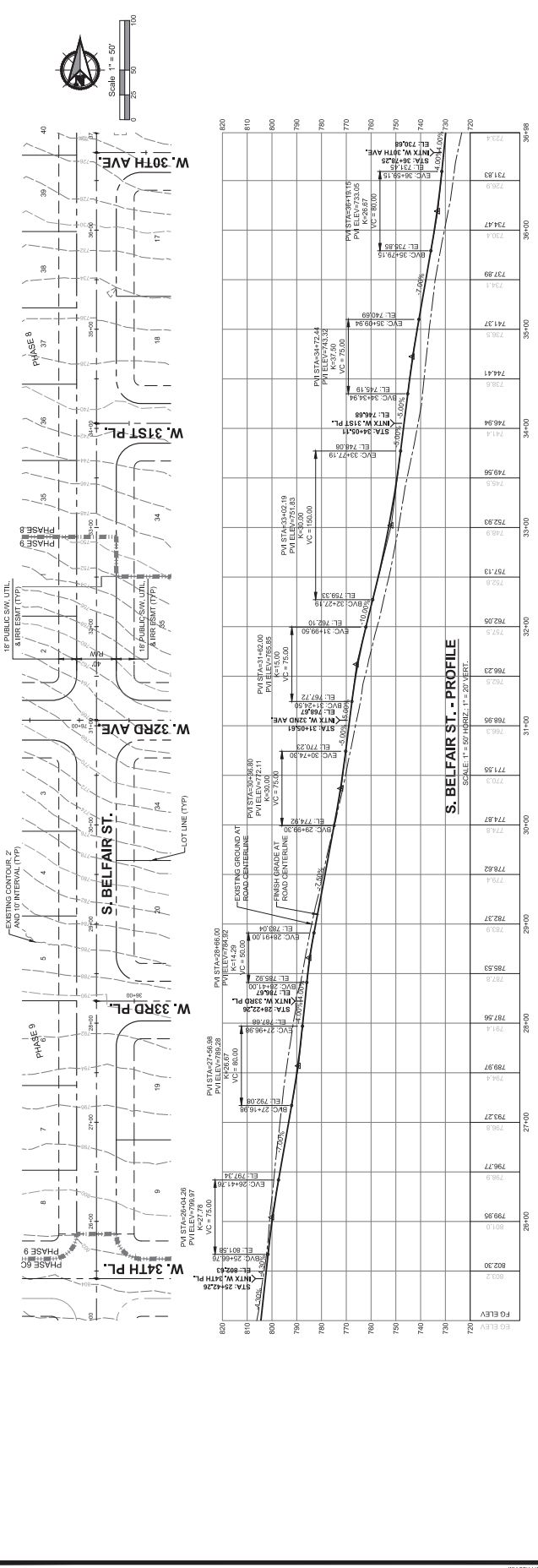
PRELIMINARY GRADING PLAN AND ROAD PROFILES FOR:
APPLE VALLEY - PHASES 7-9
A SUBDIVISION LOCATED IN THE CITY OF KENNEWICK, WASHINGTON



DESIGNED	JAN 2022
CHECKED	JUN 2022
DATE	06/06/2022

SHEET 3 OF 5

CITY OF KENNEWICK FILE #:
SUB-2022-0022
PRELIMINARY
SUBJECT TO AGENCY REVIEW
NOT FOR CONSTRUCTION



Filename: I:\projects\apple_valley\phases_7_9\Drawings\Apple Valley Phases 7-9.dwg
User: jason.cox
Date: 6/6/2022 10:44:30 AM
Sheet: 3 of 5

DESIGNED:	DCC
CHECKED:	JLL
DATE:	JAN 2023
PROJECT:	665001008
SHEET ID:	



COMPREHENSIVE UTILITY PLAN FOR:
APPLE VALLEY - PHASES 7-9

A SUBDIVISION LOCATED IN THE CITY OF KENNEWICK, WASHINGTON



PBS Engineering and
Environmental Inc.
4600 Highway 90A, Box 100
Richmond, VA 23132
509.942.1000
pbsusa.com

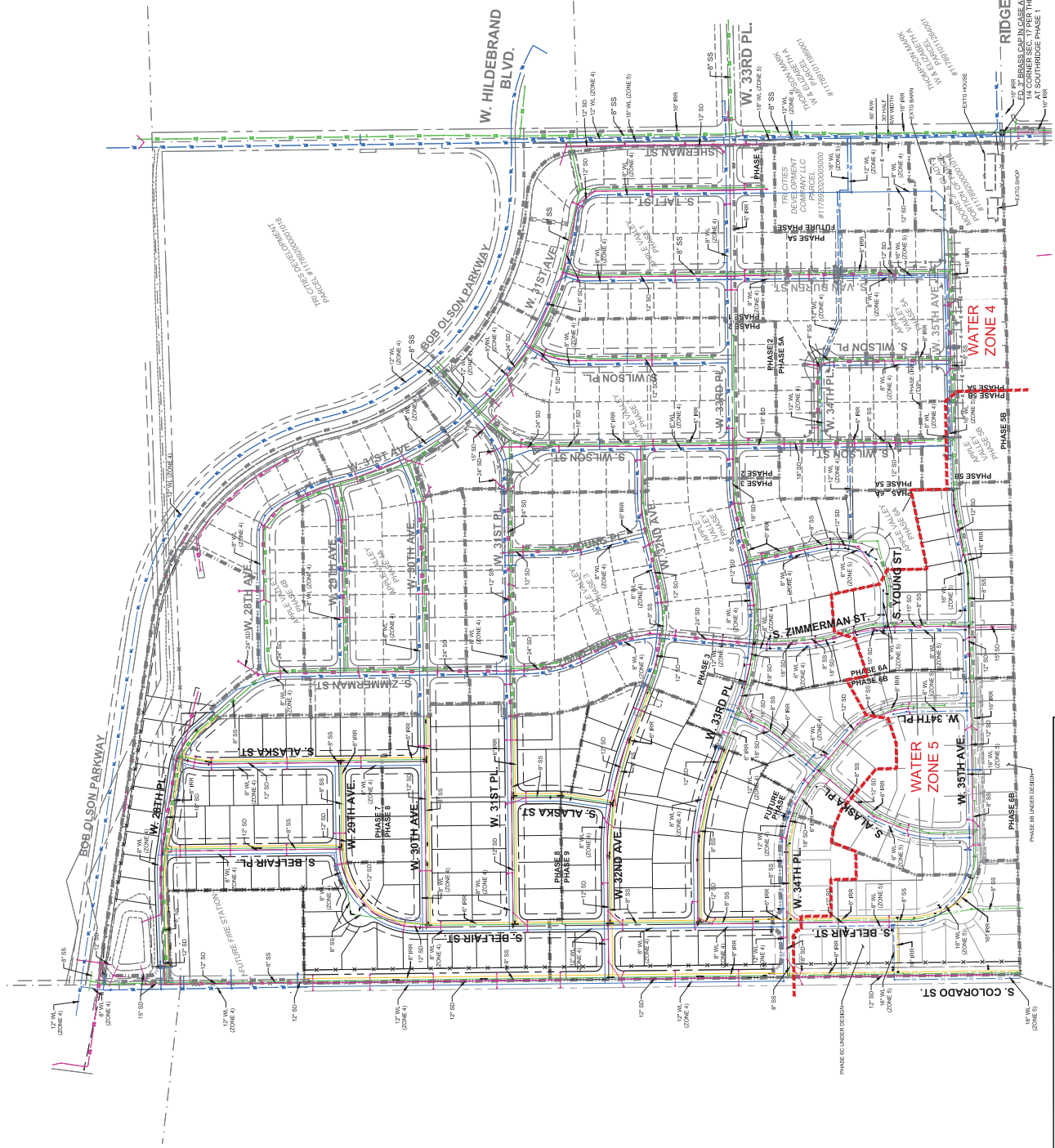
LINETYPE LEGEND

- PROPOSED 8" SANITARY SEWER MAIN LINE
- PROPOSED 12" WATER MAIN LINE (ZONE 4)
- PROPOSED WATER LINE (ZONE 5)
- PROPOSED IRRIGATION LINE
- PROPOSED STORM DRAIN MAIN LINE
- EXISTING 8" SANITARY SEWER MAIN LINE
- EXISTING WATER LINE (ZONE 4)
- EXISTING WATER LINE (ZONE 5)
- EXISTING IRRIGATION LINE
- EXISTING STORM LINE

- NOTES:**
1. ALL NEW UTILITY SHALL BE 6" MINIMUM DIAMETER PVC (3600) BUILT TO CITY OF KENNEWICK STANDARDS.
 2. SEWER IN PLAT SHALL BE 8" MINIMUM DIAMETER PVC BUILT TO CITY OF KENNEWICK STANDARDS.
 3. STORMWATER SHALL BE RETAINED ON-SITE AND DISPOSED OF IN AN ENGINEERED SYSTEM IN ACCORDANCE WITH CITY OF KENNEWICK STANDARDS.
 4. STORMWATER SHALL BE 6" MINIMUM DIAMETER PVC (3600) BUILT TO CITY OF KENNEWICK STANDARDS.



Scale 1" = 160'
0 80 160 320



PRELIMINARY
SUBJECT TO AGENCY REVIEW
NOT FOR CONSTRUCTION

CITY OF KENNEWICK FILE #:
SUB-2022-002

Full Size Sheet Format: 11.25x17.5. If Printed Size is Not 22x34, Then This Sheet Format Has Been Modified & Indicated Within Scale is Not Accurate.

Stephanie Garcia

From: Stephanie Garcia
Sent: Thursday, January 12, 2023 1:02 PM
To: Shanna Everson
Cc: Jason L. Mattox
Subject: City of Kennewick Plat SUB-2022-0022 - Apple Valley - Phases 7-9
Attachments: 66090-008_CL_2023-01-12.dwg; 66090008_AppleValley_7-9_PrelimPlat-Sht-1.pdf

Hello Shanna,

To address preliminary plat comments received by PBS from the City of Kennewick for the above referenced project, we wanted to address the questions posed by Benton PUD with the following information:

- Please see attached CAD file for your use showing the Phase 7-9 limits, as requested.
- This project is being phased out. Please see the attached PDF showing the overall site, with phase limits shown.
- The schedule proposed for this: Summer 2023 through 2025.

Let me know if you have additional questions.

Thank you,

Stephanie Garcia, PE (she/her)

Staff Engineer

PBS | *Celebrating 40 Years*

400 Bradley Blvd., Suite 106, Richland, WA 99352

office: 509.942.1600 | direct: 509.416.5492

stephanie.garcia@pbsusa.com

pbsusa.com

PBS is the assumed business name of PBS Engineering and Environmental Inc., an Oregon Domestic Corporation. This electronic communication and its attachments are intended only for the person(s) to whom it is addressed and may contain confidential information. If you are not the intended recipient, you are hereby notified that any use, retransmission, distribution, reproduction or any action relying upon this message is prohibited. If you have received this information in error, please notify the sender.



RYAN JONES • CAPITAL PROJECTS MANAGER
5501 W. METALINE AVE. ▪ KENNEWICK, WA 99336
P: (509) 222-6810 ▪ F: (509) 222-5057
RYAN.JONES@KSD.ORG ▪ WWW.KSD.ORG

Exhibit 16

March 21, 2022

Steve Donovan, AICP
Community Planning/Senior Planner
City of Kennewick

Re: Apple Valley – Phases 7-9 Preliminary Plat, SUB-2022-0022

Mr. Donovan,

This memo is in regard to your request for the Kennewick School District #17 to submit comments for the following:

Apple Valley – Phases 7-9 Preliminary Plat, SUB-2022-0010

The boundary schools for this development are Sage Crest Elementary (Walking Zone), Chinook Middle School (Bussing Zone) and Southridge High School (Bussing Zone).

The Kennewick School District has a Ten-Year Plan in place that forecasts future growth. It is impossible to know exactly where pockets of growth may occur, but the district works closely with the City of Kennewick and Benton County to make sure that we own property near projected areas of growth. Having property near potential growth areas allows us to add schools where the students are living, and to avoid additional bussing or redistricting of our boundaries. That being said, we do occasionally have to redistrict to keep our schools within our preferred enrollment numbers.

The Kennewick School District has the capacity to add students at all levels and at the three schools mentioned in this letter. Forecasted growth in additional boundary areas of the Kennewick School District makes it difficult to know if any redistricting could result because of this proposed development.

Residential development has had a significant impact on public utility capacity (i.e. City of Kennewick, Kennewick Irrigation District, etc.), roads, and traffic. The impact on utility and road infrastructure directly and indirectly affects our schools and students. The District expects the level of current utility capacity to be maintained to District facilities. We request the city to ensure that developers are contributing toward utility infrastructure development and upgrades, safe walking routes, safe crosswalks, including flashing beacons, etc. Given the number of lots in this development, the likelihood of middle school/high school age students, and that it falls in a bussing zone for two of the three schools, the Kennewick School District would like to request that considerations be made for designated school bus pick up and drop off area.

Sincerely,



Ryan Jones

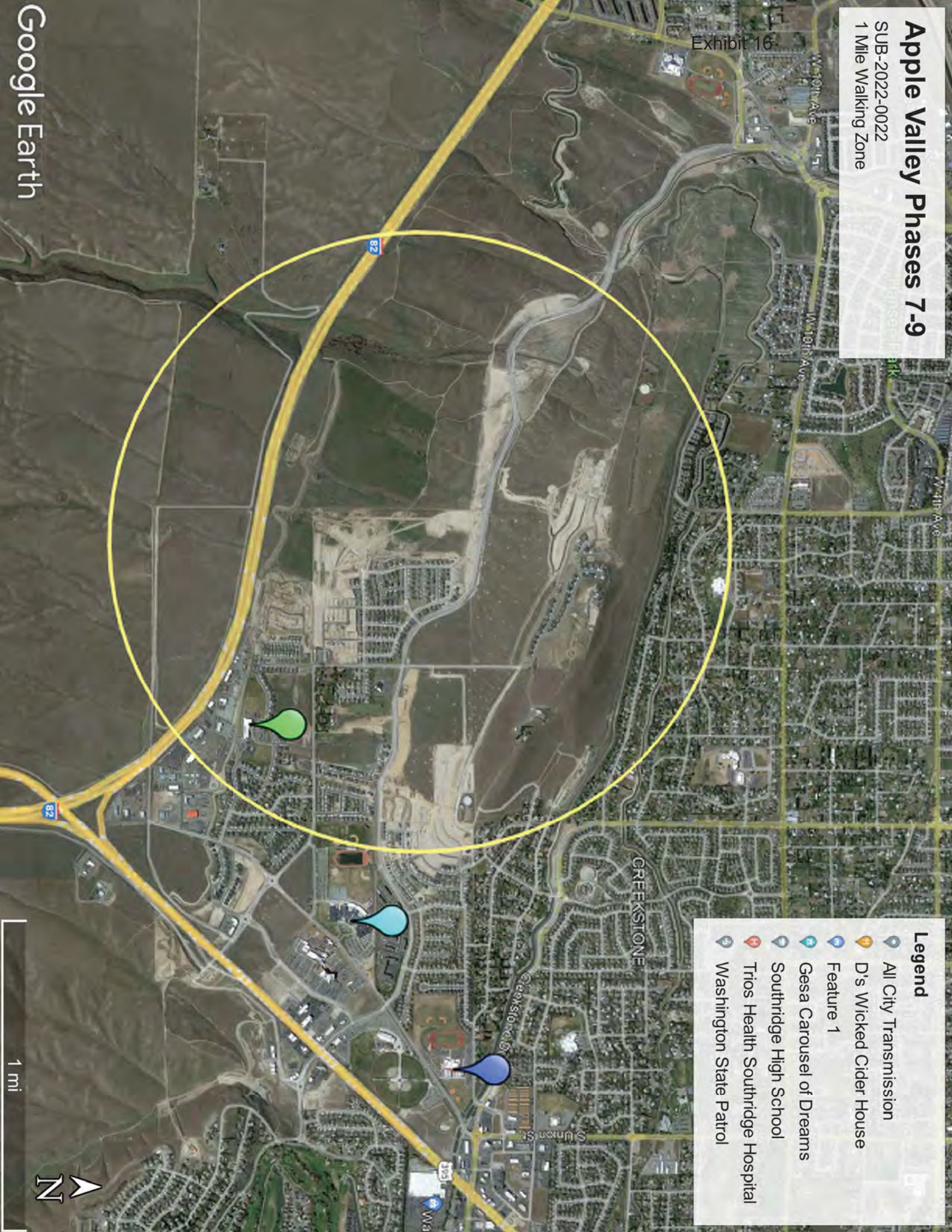
Apple Valley Phases 7-9

SUB-2022-0022

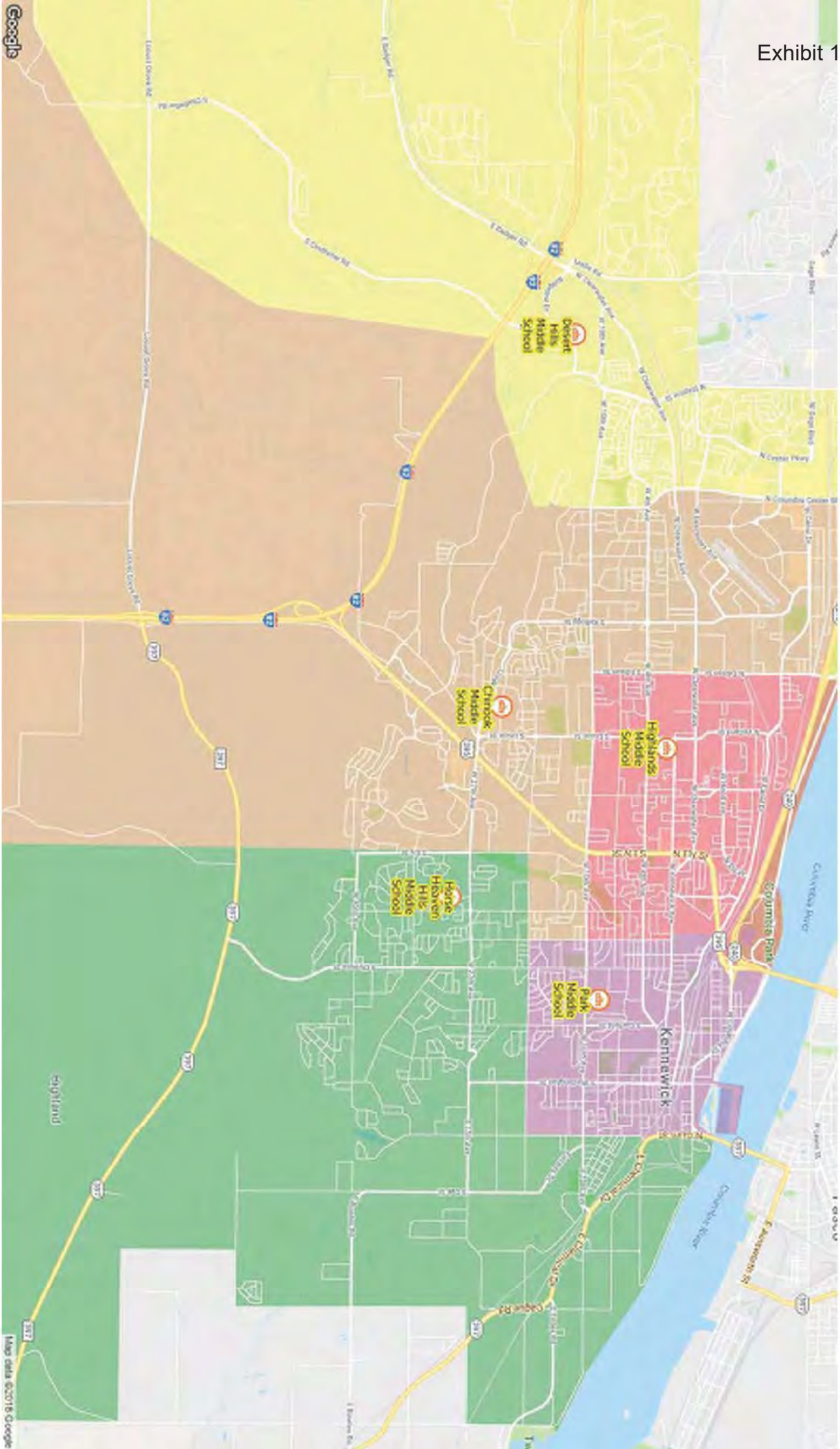
1 Mile Walking Zone

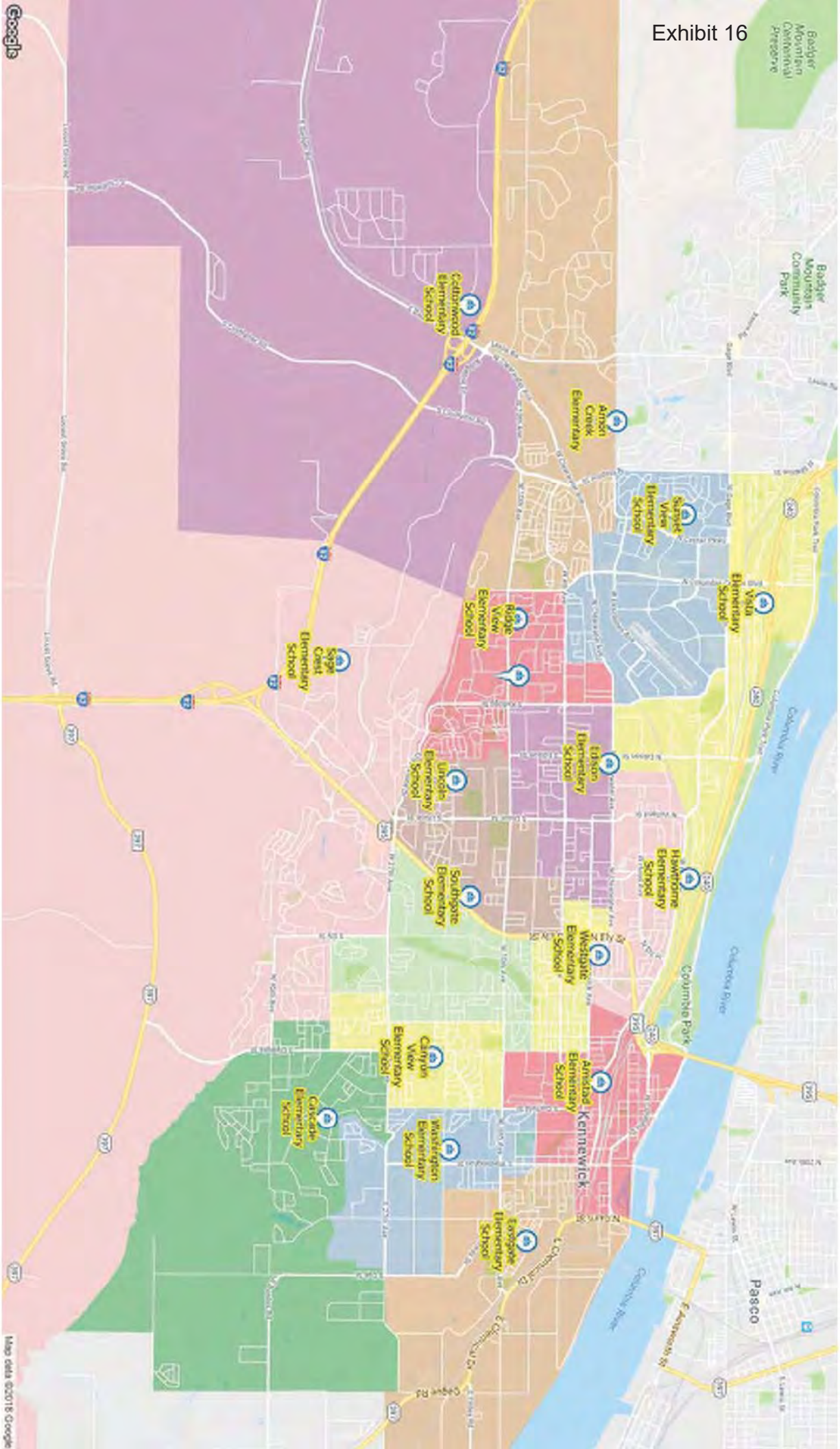
Exhibit 16

- Legend**
- All City Transmission
 - D's Wicked Cider House
 - Feature 1
 - Gesa Carousel of Dreams
 - Southridge High School
 - Trios Health Southridge Hospital
 - Washington State Patrol











PRELIMINARY
SUBJECT TO AGENCY REVIEW
NOT FOR CONSTRUCTION

A SUBDIVISION LOCATED IN THE CITY OF KENNEWICK, WASHINGTON



LEGAL DESCRIPTION FOR TRACT KK
 LOCATED IN THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 16, T4N, R12E, S4E, RANGE 12E, T4N, RANGE 12E, COUNTY OF KINGMAN, CITY OF KENNEWICK, BENNETT COUNTY, WASHINGTON. MORE PARTICULARLY DESCRIBED AS FOLLOWS:
 TRACT KK, PART E, VALLEY PHASE 4A, ACCORDING TO THE PLAT THEREOF, BEING THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 16, T4N, R12E, S4E, RANGE 12E, T4N, RANGE 12E, COUNTY OF KENNEWICK, BENNETT COUNTY, WASHINGTON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
 HAVING AN AREA OF 5,870 SQUARE FEET, 0.133 ACRES, MORE OR LESS,
 SUBJECT TO EASEMENTS, CONDITIONS, COVENANTS & RESTRICTIONS OF RECORD.

[illegible]

HAVING A COMBINED AREA OF 1,057.72 SQUARE FEET, 21.24 CORDS, MORE, OR LESS, SUFFICIENT TO EQUIPMENTS, OBSERVATIONS AND DESCRIPTIONS OF RECORD.



MEMORANDUM

Kennewick Parks, Recreation & Facilities

To: Anthony Muai, Planning Manager
From: Angela Dearing, Parks and Recreation
Date: March 15, 2023
Re: Park Impact Fees for Apple Valley Subdivision
Project: SUB-2022-0022

The Apple Valley subdivision is located in Park Service Area 1.

Pursuant to Ordinance 5736, park impact fees for Park Service Area 1 are \$1064 per single-family dwelling. Park impact fees will be assessed at building permit and are required to be paid prior to issuance of a certificate of occupancy.