T·O ENGINEERS

memo

TO:	Heather Trautman, City of Airway Heights Kevin Anderson, P.E., City of Airway Heights
FROM:	Bill White, T-O Engineers
DATE:	May 2020
RE:	City of Airway Heights Comprehensive Plan Update, Transportation Chapter/Section Supplemental Information
CC:	Alicia Ayars, SCJ Alliance

☐**Urgent** ☒**For Review** ☒**Please Comment** ☒**Please Reply** ☐**For Your Use**

The Airway Heights Transportation Circulation Plan was prepared in 2017, finalized, and adopted by City Council in April 2018. The City Comprehensive Plan has been in development since late in 2018 and is targeted for adoption early June of 2020, referencing transportation data from the Circulation Plan. Although this is a year 2037 "compliance" update, the Comprehensive Plan was developed using more recent land use and capital facility information. As such, there are marginal differences documented between the Transportation Circulation and City Comprehensive Plans. Discontinuity happened due to staffing changes and challenges that occurred and impacted the City planning department over an extended timeframe.

Please be assured the differences between the two plans have no bearing on the conclusions of either document. City planners and engineers have requested this supplemental transportation document to substantiate this supposition (of no impact). Please review this memorandum with the understanding that City officials intend to update both plans concurrently over the next one to two years to be consistent with regional documentation of the Spokane Regional Transportation Council (SRTC), now using a 2045 forecasting horizon.

A summary of minor discrepancies highlighted by City staff and outside agencies are summarized and reviewed in the following sections. Also provided is additional information requested by outside agencies following a review of the Comprehensive Plan.

POPULATION FORECASTS

The Circulation Plan was developed to forecast/address a year 2040 horizon consistent with the past planning horizon of the SRTC. Population forecasts were presented to assert future growth was anticipated by the City, as supported by historical trends, and this would correlate into traffic growth moving into the future. This was a means to justify a baseline traffic growth rate for external volumes traveling through the City. Population data did not influence the land use process used as the primary engine for travel demand forecasting with the Transportation Circulation Plan.

In summary, the Circulation Plan sourced year 1990, 2000, and 2010 U.S. Census data to generate historical growth rates to forecast a population of 10,500 persons by year 2040. The Comprehensive Plan had benefit of new population data that resulted in a higher growth trend versus what had occurred prior to US Census year 2010, with a resulting population projection of 14,300 by year 2037. It is understood there is a large delta between the population forecasts. Yet again, baseline growth and land use forecasts were the basis for travel demand forecasting, not population. The conclusion is the Comprehensive Plan provides the more appropriate population projection without impacting the sited transportation conclusions of the Transportation Circulation Plan, given methodology of traffic forecasting. Note the Comprehensive Plan population forecast

is consistent with year 2037 population forecasts and allocations provided via Resolution 16-0553 of the Spokane County Board of County Commissioners, approved August of 2016.

CITY FUTURE LAND USE, TRIP GENERATION POTENTIALS

Figure 7 of the Circulation Plan references sixteen (16) substantial land use projects that provide the basis for travel demand forecasting for year 2040, as based on specific land uses of the Trip Generation Manual (ITE, 10th Edition, 2016). Small projects (generators equivalent to 10 single family homes or less) were not reviewed as this traffic growth was sufficiently addressed with baseline growth. Congregated in terms of Comprehensive Plan summaries, the Circulation Plan reflects development of 1,080 single and multifamily homes, 1.45 million s.f. of commercial area (includes office, shopping, retail, services/restaurants, and gaming/recreation), and 475,000 s.f. of industrial (industrial, manufacturing, and warehouse). Trip generation for these developments were determined based on Codes provided by the Trip Generation Manual per the Figure 7 map.

The Comprehensive Plan provides housing, land use, and economic forecasts for the City. From this information, it was determined the Comprehensive Plan addresses 1,885 homes, 109-acres of commercial development, and 168 acres of industrial development by year 2037. Trip generation was determined for Comprehensive Plan Codes 210 for single family homes, 220 for multifamily homes, 130 for industrial park, and 770 for business park, with housing distinguished per unit and commercial/industrial assumed at 30-percent land occupancy per acre.

Trip generation potentials for the Circulation Plan and Comprehensive Plan were compared to confirm consistency between documents. A summary of the trip generation comparison is shown in the following Table. Land use potentials and weekday and PM peak hour trip comparisons were provided based on the generalized land use conditions discussed above.

	Transportation Circulation Plan			Comprehensive Plan		
Generalized Land Use	**Units**	**Daily**	**PM Peak**	**Units**	**Daily**	**PM Peak**
Residential Homes	1,080-homes	8,685-trips	850-trips	1,885-homes	15,580-trips	1,440-trips
Commercial Properties	1,450,000-s.f.	28,790-trips	4,965-trips	109-acres	17,730-trips	1,795-trips
Industrial Properties	475,000-s.f.	3,565-trips	450-trips	168-acres	7,400-trips	880-trips
Trip Totals		**41,040-trips**	**6,265-trips**		**40,710-trips**	**4,115-trips**

As shown, cumulative trip generation potentials are comparable between the two documents for the weekday, yet PM peak hour potentials are higher with the Circulation Plan. Even though land use units may be higher with the Comprehensive Plan, the application of specific ITE Codes results in higher trip generation potentials by over 2,000 PM peak hour trips. The conclusion is the Circulation Plan adequately addresses the conditions represented within the Comprehensive Plan, and also is accurate in assessing need for the six-year improvement projects described by both Plans (and as summarized subsequently).

Leeland Memorandum. Working via contract with WSDOT, Leeland Consulting Group generated a memorandum that provides land use forecasts for the West Plains, as based on market versus zoning (or Comprehensive Plan) conditions. This work was done in support of a West Plains Study being performed by WSDOT for I-90, U.S. Route 2 to Four Lakes.

The Leeland land use forecasts are provided on more macroscopic scale, as organized by the transportation analysis zones (TAZs) of the STRC regional travel model for Airway Heights, Spokane, and Spokane County. The TAZs limits can cross jurisdictional boundaries, although not overtly so for the West Plains. Regardless, it is challenging to make correlations between the memorandum with the Transportation Circulation and Comprehensive Plans given the timing goals of the City with their Comprehensive Plan review process.

With that said, Figure 13 of this technical memorandum provides a development map which does compliment Future Land Use map 3.2 of the Comprehensive Plan; at least, there are no significant discrepancies. The conclusion drawn from this cursory review would be analogous to that noted above, in that there could be land use density discrepancy between the Leeland memorandum and the Circulation Plan. However, the calculated trips presented with the Circulation Plan likely exceed what would be calculated from the Leeland memo (given correlation with Comprehensive Plan maps). The improvement conclusions of the Circulation and Comprehensive Plans are still confirmed to be sufficient, given the comparisons with the Leeland memorandum.

Note the City does intend to further vet development potentials with imminent documentation. As indicated (and as described further later), the City intends to update both the Comprehensive Plan and Circulation Plan quickly following adoption of the 2037 "compliance" update. Also, the City has engaged a consultant team to provide travel forecasts in relation to the 6th/12th improvement project, noted next section. Leeland Consulting is on this team and a function of their participation will be refining development assumptions for the influence area of this corridor, which essentially includes Airway Heights north of U.S. Route 2. This document should be available to agencies for consideration by August of 2020 and can influence City Plan updates.

TRANSPORTATION IMPROVEMENT PROJECTS

Several improvements were advocated by the Circulation Plan, which were identified by reference through the Comprehensive Plan. These documents are generally consistent with exception that the Deer Heights and U.S. Route 2 roundabout and the U.S. Route 2, Hayford to Deer Heights, Boulevard safety project have been constructed. Otherwise, the Circulation Plan, Comprehensive Plan, and City Six-Year Transportation Improvement Plan (TIP) are consistent.

Summary projects details are summarized by this section in support of the Comprehensive Plan, noting these projects are also highlighted on the TIP attached to this memorandum. Note the following descriptions are provided for street improvements projects only. Sidewalk and bicycle improvement projects can be viewed by the attached TIP, or with the Circulation plan.

Craig Road/U.S. Route 2 Roundabout

A double lane roundabout is programmed for construction the summer of year 2020 to improve mobility, enhance development access, and promote safety. The intersection would also provide a primary approach for accessing the 12th Avenue/6th Avenue and 21st Avenue congestion relief routes for U.S. Route 2 (described subsequently).

Project Class: Capacity and Safety Improvement

Project Cost Estimate: Approximate Project Costs = $3,200,000

Target Construction Year: 2020

6th Ave/12th Ave, U.S. 2 Congestion Relief, Garfield to Hayford

The 6th Avenue/12th Avenue project would extend a three-lane *urban major collector* with bike lanes, separated sidewalk, and transit stops through Airway Heights and Spokane. This is a multipurpose project intended to provide congestion relief for U.S. Route 2, provide network diversity, multimodal travel option, and access developing properties. Overall, the collector would initiate within the alignment of 6th Avenue and extend 1.75 miles east to Garfield Road, follow Garfield Road 0.25-miles south to the 12th Avenue alignment, and then follow the W. 12th Avenue alignment east to the Deer Heights Road before continuing into Spokane. Phase I of the project would extend from Garfield Road to Hayford Road, which includes 2,650-feet of full new street section plus infill of 1,500-feet of sidewalk prior to Garfield Road.

Project Class: Capacity, Safety, Mobility, Access, and Multimodal Improvement

Project Cost Estimate: Approximately $3,300,000

Target Construction Year: 2021

6th Ave/12th Ave, U.S. 2 Congestion Relief, Hayford Road to Deer Heights Road
This is the second phase of the previously noted project. As this is a developed street section, modifications would include signs and striping improvements to help with wayfinding and flow.

Project Class: Capacity, Safety, Mobility, Access, and Multimodal Improvement

Project Cost Estimate: Approximately $10,000

Target Construction Year: 2021

Hayford Road/12th Avenue Signal or Roundabout
Construction of a signal or half-double lane roundabout would provide an additional access to the 6th Avenue/12th Avenue corridor, a congestion relief project for U.S. Route 2. The improvement would provide for the safety and mobility of vehicles, pedestrians, bicyclists, and transit at the intersection. The cost estimate below reflects a traffic signal project. The cost of a roundabout would triple this cost given Right Of Way and topography challenges.

Project Class: Safety, Mobility, Access, and Multimodal Improvement

Project Cost Estimate: Approximately $450,000

Target Construction Year: 2021

Garfield Road/U.S. Route 2 Improvements
The widening of the south leg with a northbound right-turn lane and signal timing optimization will address capacity issues and help with managing safety. Also, this would help promote improved access to land use developments planned south of U.S. Route 2.

Project Class: Safety, Mobility, and Access

Project Cost Estimate: Approximately $150,000

Target Construction Year: 2022

21st Avenue, U.S. 2 Congestion Relief, Hayford Road to Deer Heights Road
The 21st Avenue improvement has been documented as a need to promote congestion relief for U.S. Route 2, provide network diversity, access, and support pedestrian and bike mobility for Airway Heights and Spokane. 21st Avenue would be an *urban minor arterial* that would ultimately include a five-lane section, although need for the foreseeable future is three lanes, with bike lanes, separated sidewalk, and landscaped areas. The arterial would initiate east of Fairchild Air Force Base, either at Craig Road or departing directly from U.S. Route 2, continuing south ½ mile to the current 21st Avenue alignment. The arterial would follow the current alignment east 3.5 miles (from Craig Road) to Deer Heights Road before continuing into Spokane. Phase I would include a 3,200-foot extension from Hayford Road to Deer Heights Road, including a connection to existing Deer Heights Road. The City would address about 60 percent of project costs and 40 percent addressed by the City of Spokane, as the road is aligned in both Cities (1,950 feet in Airway Heights and 1,300 feet in Spokane).

Project Class: Safety, Mobility, Access, and Multimodal Improvement

Project Cost Estimate: Approximately $4,200,000

Target Construction Year: 2022

McFarlane Road/Hayford Road Improvements
The widening of the west leg with an eastbound right-turn lane will address capacity issues and help with managing safety. Also, this would help promote improved access to land use developments accessing McFarlane Road.

Project Class: Safety, Mobility, and Access

Project Cost Estimate: Approximately $150,000

Target Construction Year: 2022

U.S. Route 2 Boulevard Safety Project, Hayford to Deer Heights
The project includes development of a landscaped center island along U.S. Route 2 to restrict critical left-turn movements at driveways and lessor intersections. The project is proposed from Craig Road to Deer Heights Road. The first phase of the project was developed by WSDOT from Hayford Road to Deer Heights Road in year 2019.

Project Class: Capacity and Safety Improvement
Project Cost Estimate: Approximately $1,240,000
Target Construction Year: 2023

Hayford Road/21st Avenue Signal or Roundabout
Construction of a signal or single lane roundabout would provide an additional access to the 21st Avenue corridor, a congestion relief project for U.S. Route 2. The improvement provides for the safety and mobility of vehicles, pedestrians, bicyclists, and transit at the intersection. The cost estimate below reflects a traffic signal project or a compact urban roundabout for a three-lane road prior to widening 21st Avenue to five-lanes (a long-range improvement).

Project Class: Safety, Mobility, Access, and Multimodal Improvement
Project Cost Estimate: Approximately $450,000
Target Construction Year: 2024

21st Avenue, U.S. 2 Congestion Relief, Garfield to Hayford
This is the second phase of the previously noted project. Existing 21st Avenue in this area is established with narrow-pavement or compact gravel. The improvement includes excavation, followed by reconstruction of the new roadway section.

Project Class: Capacity, Safety, Mobility, Access, and Multimodal Improvement
Project Cost Estimate: Approximately $3,700,000
Target Construction Year: 2025

Russell Street Extension, Sprague to Deno
City officials have historically considered extending Russell Road from Sprague Avenue to Deno Road. This would be a major two to three-lane route for north-south vehicle, bike, and pedestrian travel as the City continues to expand north, eventually helping to relieve traffic demands on Hayford Road. The road would include bike lanes and separated sidewalk with landscaped areas.

Project Class: Capacity, Safety, Mobility, Access, and Multimodal Improvement
Project Cost Estimate: Approximately $4,600,000
Target Construction Year: 2025

Collaborating Documents/Support. The 6th Avenue/12th Avenue and 21st Avenue projects listed above are advocated with regional plans beyond the City Circulation and Comprehensive Plans and are supported by many local agencies. Historically, these projects were highlighted by the notable documents that include:

- US 2 Route Development Plan (WSDOT, 2010)
- West Plains-SIA Transportation Study (SRTC, 2011)
- West Plains Transportation Plan (City of Spokane, 2013)

Since the development of these plans and studies, other public and private documents have noted the corridor alignments (beyond Airway Heights). Examples include master plans and designs developed by the Kalispel Tribe, Deer Heights LLC, Granite Investments, and North 40 for their respective land use projects. A roadway justification report was submitted to the SRTC in May of 2017 by Airway Heights Public Works, and City officials are currently in the process of submitting

applications to revise the 6th/12th alignment from a local street to urban major collector, matching the City of Spokane's effort in securing this designation. The designation for a future minor arterial has already been secured by both Cities for 21st Avenue.

To date, support for the 6th Avenue/12th Avenue and 21st Avenue projects has been offered by: Airway Heights, Spokane, S3R3 (West Plains Public Development Authority), the Washington State Department of Transportation (WSDOT), Spokane Transit Authority (STA), the Kalispel Tribe, the Spokane Tribe, Deer Heights LLC, and Granite Investments. The Spokane Regional Transportation Council (SRTC) is working with Cities to program projects within the regional TIP.

Summary Improvement Data. The TIP list discussed prior identifies roadway improvements that SRTC and WSDOT may wish to code into the regional travel demand model for future evaluation. A summary of relevant information includes confirmation of functional classification, the alignment of the corridor, number of proposed lanes, relative capacity, expected speed limit, and whether this would be a multimodal corridor, identifying the use of other travel modes. Note that capacities are based off measures provided with the Transportation Circulation Plan, which may need to be adjusted to fit measures of the regional model.

Improvement	Functional Class	Alignment	Number Lanes	Capacity Threshold	Speed Limit	Multi-Modal
6th Ave/12th Ave, Garfield to Hayford	Collector	east-west	3, w/TWLT	7,600 ADT	30 mph	Ped, bike, transit
6th Ave/12th Ave, Hayford to Deer Heights	Collector	east-west	3, w/TWLT	7,600 ADT	30 mph	Ped, bike, transit
Deer Heights Rd, terminus to 21st Ave	Collector	north-south	2	6,600 ADT	25 mph	Vehicle only
21st Ave, Hayford to Deer Heights Road	Minor	east-west	3, w/TWLT	15,300 ADT	35 mph	Ped, bike, transit
21st Ave, Garfield to Hayford	Minor	east-west	3, w/TWLT	15,300 ADT	35 mph	Ped, bike, transit
Russell Street, Sprague to Deno	Collector	north-south	2	6,600 ADT	30 mph	Ped and Bike

URBAN EXCHANGE, CITY LAND USE ACTION

A high-density residential development is situated north of 21st Avenue, between Lawson Street and Russell Street. This mix of mobile and single-family homes occupies approximately 50-acres and is located centric to a commercial and light industrial zone of Airway Heights, also within a flight overlay zone for Fairchild Air Force base. Given these circumstances, City officials ultimately plan to relocate these homes and reclassify the area to light industrial.

There are approximately 230 lots within this zone, many occupied. Per the Trip Generation Manual, ITE Code 240, a 230-count mobile home park would generate approximately 1,495 weekday trips with 136 trips generated during the PM peak hour. In comparison, this represents about 340,000 square-feet of industrial buildings, per ITE Code 130 referenced for an industrial park. Assuming the 30-percent coverage assumption also noted previously, this represents the redevelopment of 26 acres of the area.

A purpose of a Comprehensive Plan is to assure the adequacy of public infrastructure to support land use development, including roadways. Assurance of this infrastructure is denoted as meeting "concurrency". Given the trip analysis presented above, the redevelopment of 26-acres can occur prior to loss of concurrency from the perspective of road capacities south of U.S. Route 2, accessing the site. Additional traffic analyses would have to be performed to review street network adequacies if this land area threshold were to be surpassed. As this was an existing residential project at the time Transportation Circulation Plan development, the document inherently address transportation demands for the property (to the trip limit prescribed). Note the full implication of the 50-acres will be explored with the year 2045 Transportation Circulation and Comprehensive Plan updates, discussed subsequently.

HUNTERS CROSSING, PRIVATE LAND USE ACTION

A recent amendment request to the Comprehensive Plan was submitted by Storhaug Engineering for the Hunters Crossing development generally located north of 12th Avenue between Craig Road and Lundstrom Street alignment. The timing of this was such that the proposal is NOT reflected in the 2037 "compliance" update. A traffic letter has been attached to address high level changes in relation to the Comprehensive Plan, as developed by staff with Storhaug Engineering and Sunburst Engineering based on scope coordination with Airway Heights planners and engineers.

In summary, the development proposal would convert a 32-acre area designated for 150 single family and manufactured homes with nearly 90,000 square-feet of supporting commercial facilities (day care, restaurants, a grocery store, and medical offices) into a residential-only district. The 32-acres would instead be developed with 566 single and multifamily homes. This would modify a commercially designated zone/district of the Comprehensive Plan.

The City of Airway Heights reviews transportation concurrency/adequacies based on PM peak hour capacities. Despite the increase of residential homes and densities, the letter indicates the proposal would generate about 660 less PM peak hour trips overall on City streets (local and arterial), with a reduction of about 460 PM peak hour trips impacting arterials only, such as U.S. Route 2 and Hayford Road. Thus, the conclusion of this letter is the proposed land use changes do not impact the conclusions of the Comprehensive Plan, and by extension the Transportation Circulation Plan, as less traffic is being generated by the 32 acres.

A review indicates the letter appears to be technically accurate from the standpoint of land use trip generation forecasts. However, the commercial land uses applied with the letter may be open to interpretation depending on market conditions and viability of locating higher density services off a major corridor such as U.S Route 2. Despite this, this memorandum supports the supposition that the overall trip potentials (of the 32-acres) will decrease with loss of commercial services, as this is logical and consistent with our consulting experiences.

As such, the development proposal and amendment can be supported based on transportation conditions with concurrency verified, subject to the following recommendations:

1) A transportation threshold study or traffic impact analysis be provided to review access and approach conditions prior to the applicant seeking development permits, as based on scope coordination with the City and WSDOT.
2) As a function of the traffic studies, the development would agree to participate in any traffic impact fees developed by the City by time of application, in addition to mitigating project specific impacts.
3) The project performs of Comprehensive Plan Amendment process if the subsequent traffic study results in the generation of 1,000 PM peak hour trips, as the City would no longer be able to certify Concurrency based on current and available information.

Planning will have to determine the mechanism for enforcing these conditions if staff accepts these recommendations. Our experience is a developer's agreement that specifies these conditions would suffice, so long as the agreement stipulate conditions would be passed to subsequent owners if the property were ever sold. Obviously, recommendation would be subject to modification by City planners, engineers, and legal counsel; the intent is what is being conveyed with this memorandum.

CIRCULATION AND COMPREHENSIVE PLAN UPDATES

As indicated, the Transportation Circulation Plan was prepared in 2017. The Comprehensive Plan is a "compliance" update, meaning this has been submitted to meet State requirements for a past

submittal (staffing changes and issues delayed submittal). City officials recognize and desire the prompt update of both documents to meet the year 2045 planning horizon of this region, as used by organizations such as SRTC. This process would initiate quickly following acceptance of the Comprehensive Plan by the City Council.

The City is working to adopt the compliance Comprehensive Plan by June of 2020; at which point, the final document would be submitted to the State. Assuming the State accepts the document within about two months, by August, a budgeting and scope development process would occur the balance of the year. A consultant selection process could occur, allowing City officials (and selected consultants) to develop year 2045 Transportation Circulation and Comprehensive Plan updates. Typically, it requires 12 to 18 months to develop and secure approval for comprehensive plans such as this, depending on the complexity of the projects. That means both plans would be fully adopted, accepted, and recognized by local and State levels by about this time in year 2022, most likely at the latest.

SRTC TAZs. As indicated, a TAZ is a way to organize land use information to support the regional travel demand model. In addition to reviewing the previously noted Leeland memorandum (and subsequent $6^{th}/12^{th}$ analyses), an emphasis of the Year 2045 Transportation Circulation Plan will be organizing land use data in a structure that can be easily adapted into the regional model. To that end, pending update status of the regional model, the City is likely to work with SRTC to help generate travel demand forecasts for arterials and collectors as a function of the Circulation Plan update process. The City confirms they are vested in working with SRTC and WSDOT to generate consistent forecasts for the West Plains region.

CITY OF AIRWAY HEIGHTS

SIX YEAR TRANSPORTATION IMPROVEMENT PLAN (2020-2025)

June 17, 2019 Council Meeting Submitted for Approval

No.	*Project*	*Start*	*End*	*Improvement Type*	*Project Cost Est.*	*Potential Funding Sources*	*Target Completion*
Roadway Corridor/Intersection Improvements:							
2020-1	Craig Road/U.S. 2 Roundabout			Intersection Improvements	$3,200,000	City/Dev	Oct-20
2020-2	Deer Heights Road/U.S. 2 Roundabout (portion)			Intersection Improvements	$100,000	City/Spokane/Dev	Oct-20
2020-3	U.S. Route 2 Boulevard Safety Project (partial)	Hayford	Deer Heights	Safety/Corridor Revitalization	$200,000	City/WSDOT	Oct-20
2021-1	6th Ave/12th Ave, U.S. 2 Congestion Relief	Garfield	Hayford	New Construction	$3,300,000	City/SRTC/TIB/Dev	Oct-21
2021-2	6th Ave/12th Ave, U.S. 2 Congestion Relief	Hayford	Deer Heights	Signage/Striping Modifications	$10,000	City/SRTC	Oct-21
2021-3	Hayford Road/12th Ave Signal or Roundabout			Intersection Improvements	$450,000	City/Dev/SRTC/TIB/WSDOT	Oct-21
2022-1	Garfield Road/U.S. Route 2, Add NBR			Intersection Improvements	$150,000	City/Dev	Oct-22
2022-2	21st Ave, U.S. 2 Congestion Relief (60%)	Hayford	Deer Heights	New Construction	$4,200,000	City/SRTC/TIB/Dev	Oct-22
2022-3	McFarlane EBRT at Hayford			Intersection Improvements	$150,000	City	Oct-22
2023-1	U.S. Route 2 Boulevard Safety Project	Craig	Hayford	Safety/Corridor Revitalization	$1,240,000	City/WSDOT/SRTC	Oct-23
2024-1	Hayford Road/21st Signal or Roundabout			Intersection Improvements	$450,000	City/SRTC	Oct-24
2025-1	21st Ave, U.S. 2 Congestion Relief	Garfield	Hayford	New Construction	$3,700,000	City/SRTC	Oct-25
2025-2	Russell Street Extension	Sprague	Deno	New Construction	$4,590,000	City/SRTC/Dev	Oct-25
Other Planned Projects:							
2020-4	U.S. 2 Gap Path (Northside plus South sidewalk)	D.Q.	Deer Heights	Ped/Bike	$340,000	City/SRTC	Oct-20
2021-4	21st Ave Lane Paving	Lyons	Hayden	Pavement Installation	$350,000	City	Oct-21
2021-5	14th Avenue Chip Seal	Lawson	Campbell	Chip Seal	$100,000	City	Oct-21
2021-6	18th Avenue Chip Seal	Russell	Lawson	Chip Seal	$100,000	City	Oct-21
2021-7	Ped/Bike: Hayford/6th Ped Crossing			Ped/Bike Crossing	$200,000	City/WSDOT	Oct-21
2022-4	21st Ave Lane Paving	Garfield	Lyons	Pavement Installation	$350,000	City	Oct-22
2022-5	Lawson Resurfacing, U.S. 2 - 8th Ave.	U.S. 2	8th	Overlay	$350,000	City/TIB	Oct-22
2022-6	Ped/Bike: U.S. 2 Missing Southerly	Lyons	Hayford	Ped/Bike	$560,000	City/Dev/SRTC	Oct-22
2023-2	21st Ave Lane Paving	Russell	Garfield	Pavement Installation	$350,000	City	Oct-23
2023-3	Lawson Resurfacing, McFarlane - 21st	McFarlane	21st	Overlay	$260,000	City/TIB	Oct-23
2023-4	Ped/Bike: Lundstrom Street, City Hall	U.S. 2	12th	Ped/Bike	$80,000	City/WSDOT	Oct-23
2023-5	12th Avenue Chip Seal, Craig - 300 ft east of Craig	Craig	300 ft east	Chip Seal	$40,000	City	Oct-23
2024-2	Lundstrom Chip Seal, 17th - 21st	17th	21st	Chip Seal	$310,000	City	Oct-24
2024-3	Sunset Elementary, King Street and 8th or 10th Sidewalk			Ped/Bike	$240,000	City/WSDOT	Oct-24
2025-3	Russell Street Chip Seal	U.S. 2	21st	Chip Seal	$270,000	City	Oct-25

DRAFT

May 1, 2020

W.O. No 2011

Bill White
T-O Engineers
121 W Pacific Avenue, Suite 200
Spokane, WA 99201

RE: **Trip Generation Changes Related to Hunter's Crossing Comp Plan Amendment**

Dear Bill:

This letter summarizes the changes in traffic volumes anticipated by approving the comprehensive plan amendment proposed to land included in the Hunter's Crossing portion of Airway Heights. In general, this site lies north of 12th Avenue, east of Craig Road, west of Lindstrom Street and south of Sprague Avenue.

The comprehensive plan amendment affects four distinct areas, as shown on Figure 1 and referred to as Area 1, Area 2, Area 3 and Area 4. Each of these areas have already had land uses assigned to them, some with more specificity and some with less. Areas 1, 2, and 4 are residential and have had preliminary plat layouts assigned to them. They are also allowed a PUD bonus density. Area 3 is planned for commercial, but the exact nature of the commercial was unknown.

In recent meetings with Heather in Planning, best guess land uses for Area 3 were established as follows:

Restaurant(s): 13.5 KSF (KSF = Thousand Square Feet)
Tavern: 3.7 KSF
Supermarket: 47 KSF
Hair Salon: 2.3 KSF
Med / Dental Office: 12 KSF

The changes in land use for Areas 1, 2, and 4 with the comprehensive plan change and subsequent change in zoning is summarized on Table 1.

Table 1 - Land Use Changes for Areas 1, 2, and 4

Location	Existing	Proposed
Area 1	46 SFDU	144 Apts
	5 KSF Daycare	
Area 2A	45 SFDU	147 Apts
	5 KSF Daycare	
Area 2B	14 SFDU	14 SFDU
Area 4	45 Man. Homes	64 SFDU

SFDU - Single Family Dwelling Unit (Includes Duplexes)
Apts - Mid-Rise Multi-family Housing
KSF Daycare - Thousand Square Feet of Daycare Use
Man. Homes - Mobile Home Park

The apartments anticipated in this scenario are expected to be three stories tall to meet the density allowed. Single family houses and duplexes are expected to generate the same amount of traffic as each other and to appeal to the same type of occupant. Some of these single family homes are planned to be small and close together, but are still expected to appeal to the same type of buyer interested in owning their own home, thus generating the same amount of traffic. The housing allowed under the existing zoning is also allowed a PUD bonus density, increasing the density as shown on Table 1.

The changes in land use for Area 3 with the comprehensive plan change and subsequent change in zoning is summarized on Table 2.

Table 2 - Land Use Changes for Area 3

Area 3 Land Use	Existing	Proposed
Restaurant	13.5 KSF	
Tavern	3.7 KSF	
Supermarket	47 KSF	
Hair Salon	2 KSF	
Medical Offices	12 KSF	
Apartments		197 Dwelling Units

The exact type of apartment complex proposed with the comprehensive plan amendment is unknown at this time. The zoning allows general apartment complexes, but this does not discount the option of an age-restricted complex.

The anticipated traffic rates and volumes for these various land uses were determined using the Trip Generation Manual, 10th Edition published by the Institute of Transportation Engineers. This comparison focuses on traffic generated during the p.m. peak hour, since the traffic impact fees are based on that time period. The land use category and p.m. peak hour rate for each of the land uses included on Tables 1 and 2 are summarized on Table 3.

Table 3 - P.M. Peak Hour Traffic Characteristics

Land Use Name	ITE Land Use Code	P.M. Peak Hour Trip Rate	Independent Variable
Single-Family Detached Housing	210	0.99	Dwelling Unit
Multifamily Housing (Mid-Rise)	221	0.44	Dwelling Unit
Daycare	565	11.12	KSF
Mobile Home Park	240	0.46	Dwelling Unit
Fast Casual Restaurant*	930	14.13 (40%)	KSF
Drinking Place	925	11.36	KSF
Supermarket*	850	9.25(36%)	KSF
Hair Salon	918	1.45	KSF
Medical / Dental Office	720	3.46	KSF

* Land Use has pass-by traffic associated with it - amount in parentheses

The "Fast Casual Restaurant" land use category was chosen to represent the restaurants since that is the most popular style restaurant currently being built. However, as it is a relatively new land use category, not all data about it has been collected. This includes pass-by traffic. Therefore, the amount of pass-by for Quality

Restaurants (44%), and High-Turnover (Sit-down) Restaurants (43%) was examined. The pass-by characteristics for this new land use category is likely to be similar to these.

Note that other commercial land uses could locate on Area 3, such as coffee / donut shop or fast food restaurant with drive-thru or pharmacy with drive-thru. These land uses could show higher total trip generation rates and volumes, but by the time the internal trips (for example, those going to the pharmacy and coffee shop in one trip) and the pass-by trips (89% for coffee shop), the actual new destination trips to these land uses would be similar to that contained in this scenario.

In lieu of accounting for pass-by traffic separately, and in keeping with assumptions in the City of Airway Heights Transportation Circulation Plan (2014), trips not involving US 2 account for 30% of the total traffic volumes. This 30% reduction will be applied to all traffic generated by Areas 1, 2, 3 and 4.

Using the information on Tables 1, 2, and 3, the anticipated change in traffic during the p.m. peak hour due to approval of the comprehensive plan change, with the resultant zone changes is summarized on Table 4.

Table 4 - Total Trip Generation of Areas 1, 2, 3 & 4

Land Use Name	Location / Amount	P.M. Peak Hour Trip Rate	Existing Traffic Volume	Proposed Traffic Volume
Single-Family Detached Housing	Area 1 / 46	0.99	46	
Daycare	Area 1 / 5	11.12	56	
Multifamily Housing (Mid-Rise)	Area 1 / 144	0.44		63
Single-Family Detached Housing	Area 2A / 45	0.99	45	
Daycare	Area 2 / 5	11.12	56	
Multifamily Housing (Mid-Rise)	Area 2A / 147	0.44		65
Single-Family Detached Housing	Area 2B / 14	0.99	14	
Single-Family Detached Housing	Area 2B / 14	0.99		14
Fast Casual Restaurant	Area 3 / 13.5	14.13	191	
Drinking Place	Area 3 / 3.7	11.36	42	
Supermarket	Area 3 / 47	9.25	435	
Hair Salon	Area 3 / 2	1.45	3	
Medical / Dental Office	Area 3 / 12	3.46	43	
Apartments	Area 3 / 197	0.44		87
Mobile Home Park	Area 4 / 45	0.46	21	
Single-Family Detached Housing	Area 4 / 64	0.99		63
Total*			952 (666)	292 (204)

* Amount of traffic using US 2 noted in parentheses

Based on the total change in traffic volumes anticipated by the approval of the comprehensive plan amendment, the total traffic volumes generated by Areas 1, 2, 3 & 4 cumulatively will decrease traffic by 660 vehicles during the p.m. peak hour.

Under the existing zoning, Areas 1, 2, 3 and 4 would be expected to add 666 p.m. peak hour trips to US 2. If the comprehensive plan amendment is approved, these areas are expected to add 204 trips to US 2.

In addition to this trip generation information, trip assignment will be made as it relates to four intersections on US 2: Craig Road, Lawson Road, Garfield Road, and Hayford Road. In general, the Transportation Circulation Plan assumes the traffic within Airway Heights travels outside the city limits using the following distribution:

US 2 west: 20%
US 2 east: 50%
Hayford Road North: 15%
Hayford Road South: 10%
Craig Road South: 5%

Since this site has better access to Craig Road than most of Airway Heights, it is anticipated that the trip assignment would lean more heavily on Craig Road and less on Hayford Road. For example, traffic headed north from this area is more likely to use Craig Road to Deno Road to Trails Road (Hayford Road), rather than Craig Road to US 2 to Hayford Road. In a similar way, it is anticipated that traffic headed south from Airway Heights would use Craig Road rather than Hayford Road. The presence of a roundabout at SR 291 / Craig Road increases the attractiveness of this route.

Therefore, for this area of town the assignment of traffic is expected to be:

US 2 west: 20%
US 2 east: 50%
Hayford Road North: 0%
Hayford Road South: 0%
Craig Road South: 15%
Craig Road North: 15%

This is shown pictorially on Figure 3, and is expected to reflect the routes chosen by traffic from the site if developed under the existing zoning, or if the comprehensive plan amendment is approved.

Using this information, the anticipated traffic volumes at the four US 2 intersections is shown pictorially on Figure 4 (existing zoning) and Figure 5 (comprehensive plan amendment approved).

Based upon this information, the approval of the comprehensive plan amendment will decrease overall traffic numbers and thus the impact to the traffic system are positive. Therefore, this analysis supports approval of the comprehensive plan amendment.

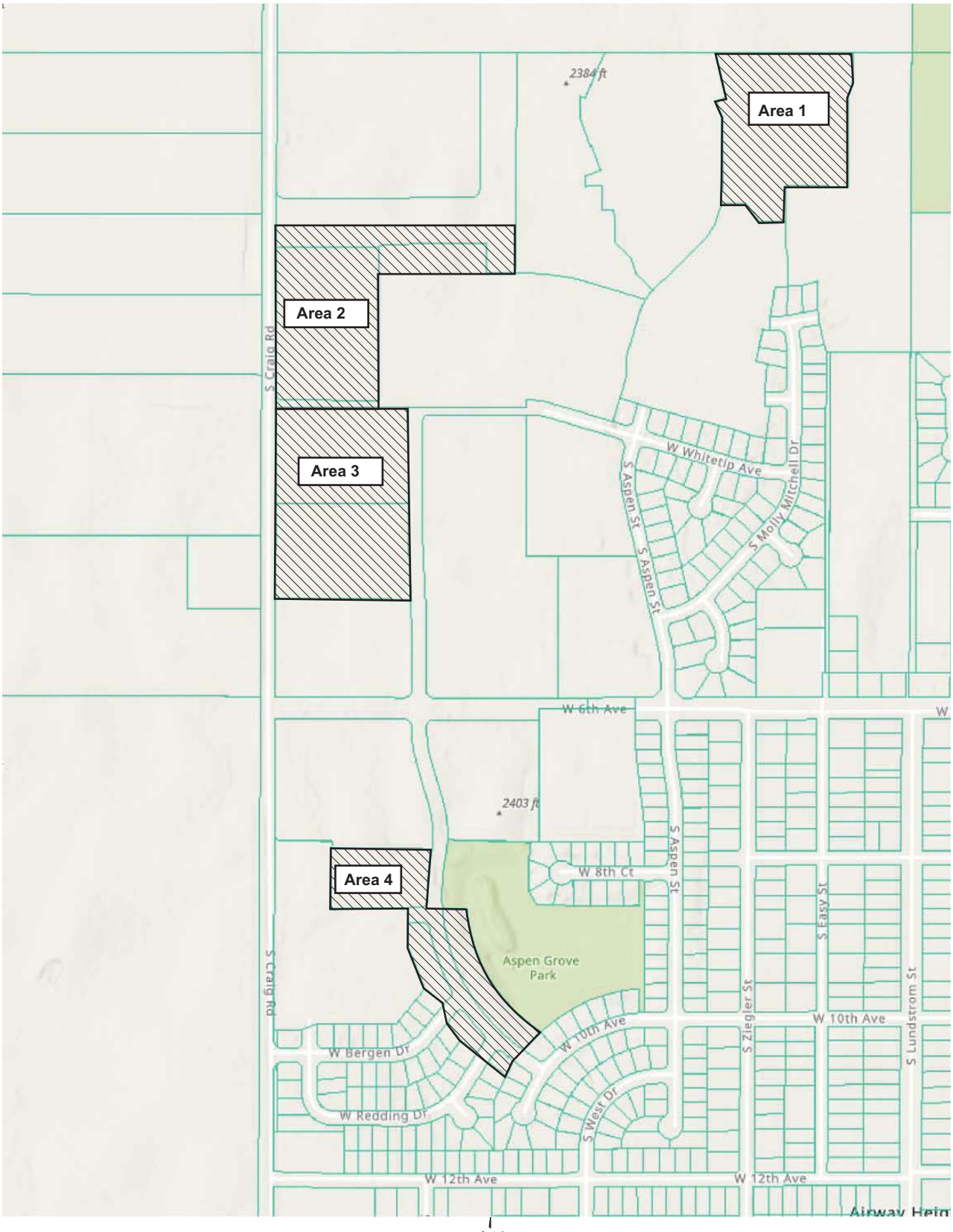
If the comprehensive plan amendment is approved, additional land use actions will be necessary, including such things as building permits and plat approvals. When these projects are brought forward for approval, additional traffic analysis may be required. The ultimate land uses, number of lots and other specific characteristics will be known at that time. The numbers included in this analysis represent a high, but justifiable amount.

Please let me know if there will be additional information required.

Sincerely,
Sunburst Engineering

Ann L. Winkler, P.E.
President

cc: Greg Figg, WSDOT
Heather Trautman, Airway Heights Planning
Jerry Storhaug, Storhaug Engineering
Wil Sinclair, Storhaug Engineering



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Hunter's Crossing
Comp Plan Amendment

Trip Distribution Letter

Figure 1

Vicinity Map

Hunter's Crossing Overall Site Plan

- SINGLE FAMILY RESIDENTIAL
- COTTAGE RESIDENTIAL
- DUPLEX RESIDENTIAL
- TOWNHOME RESIDENTIAL
- SENIOR COMMUNITY
- COMMERCIAL
- PARK AREAS

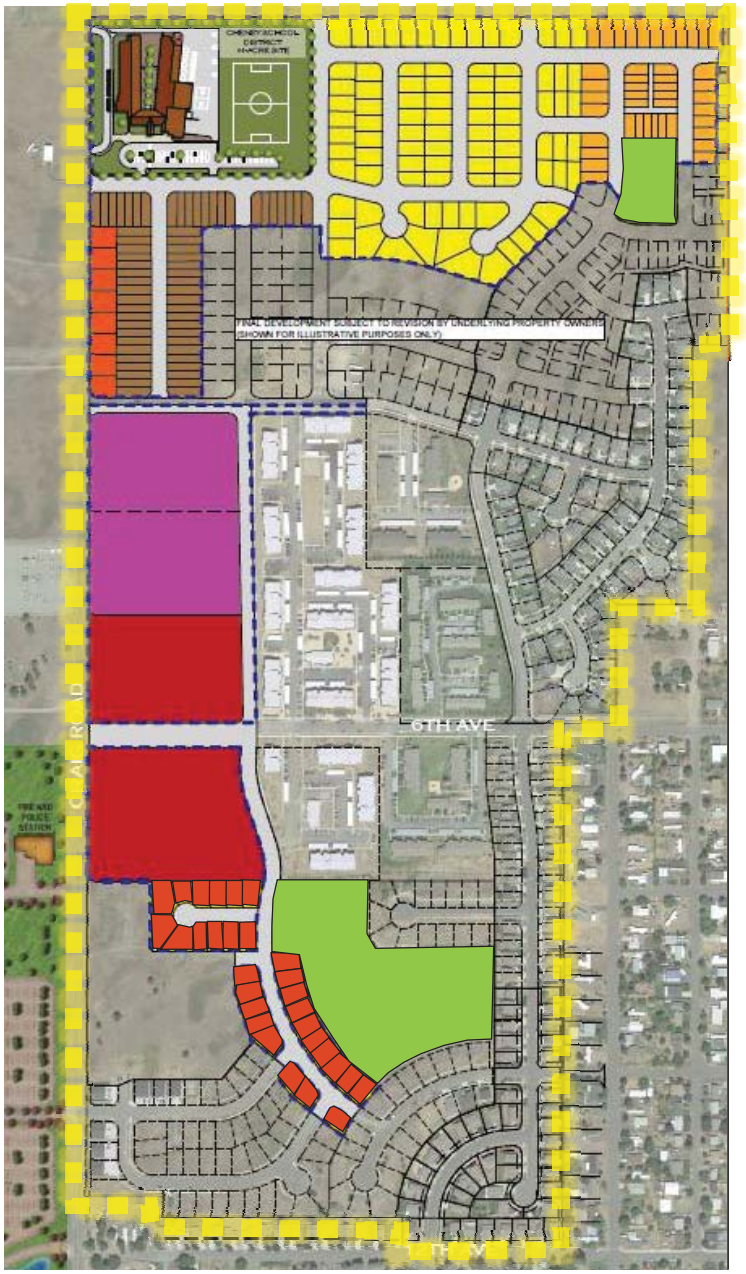

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Figure 2

Overall Site Plan with Comp Plan Approved

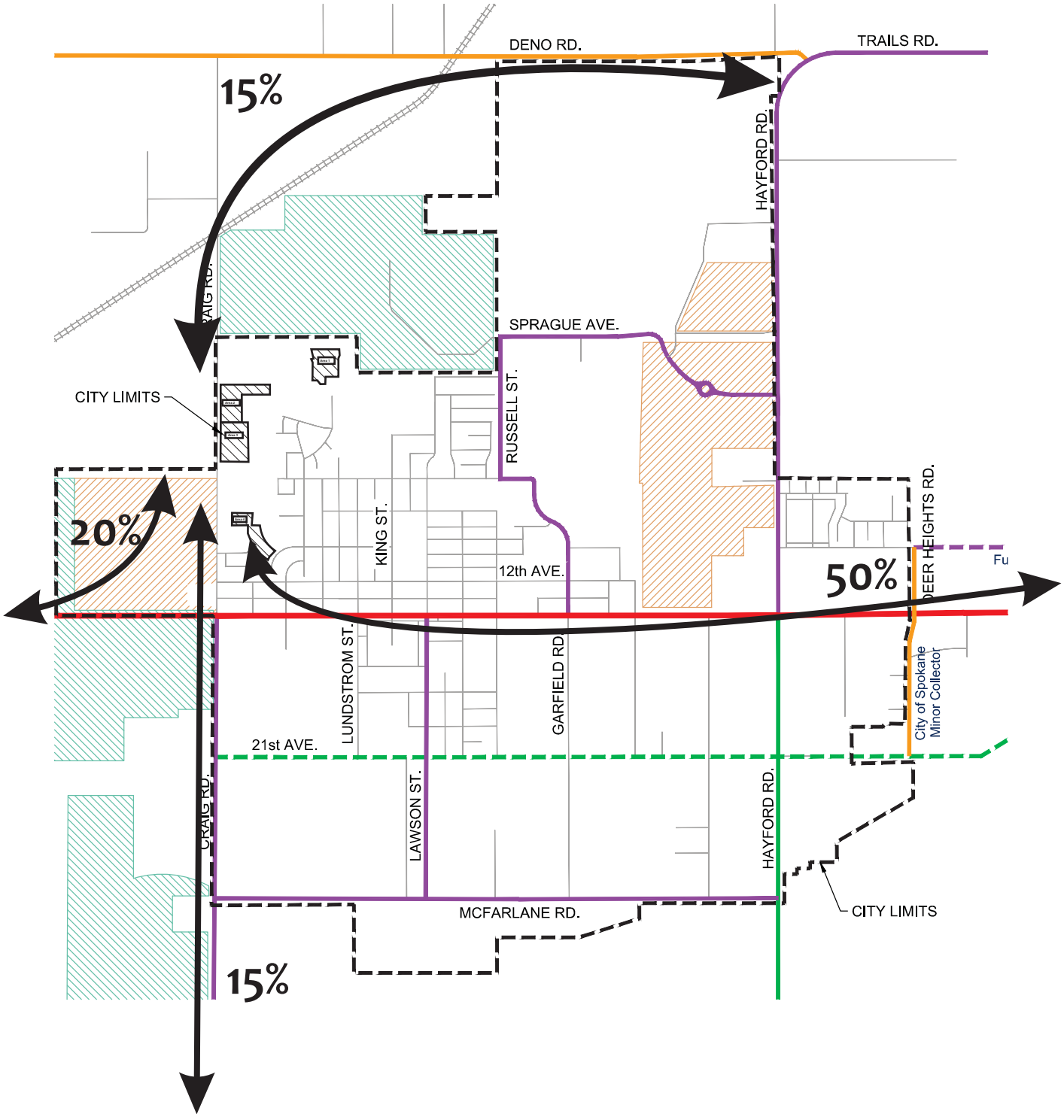

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Figure 3

Distribution Map

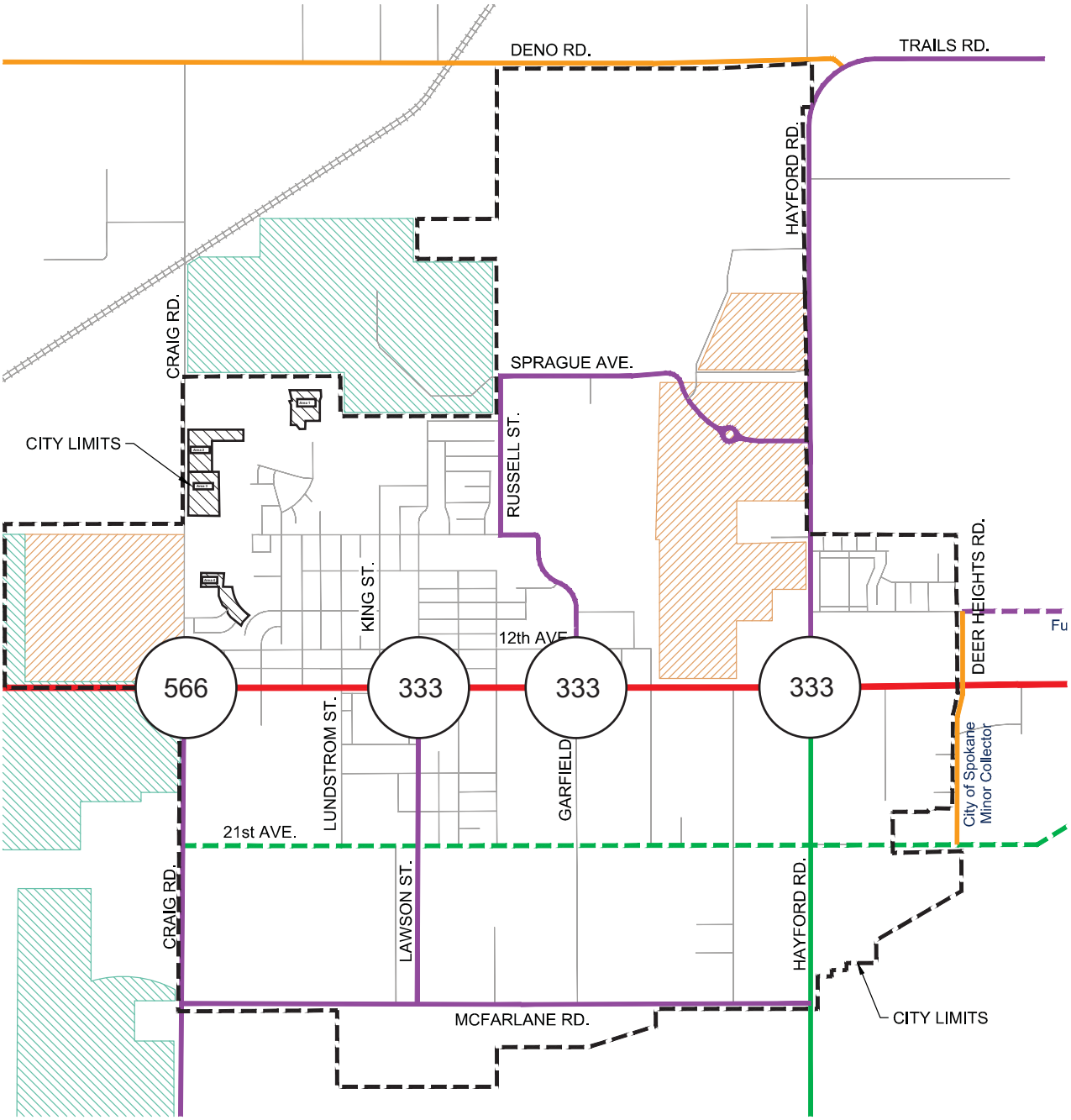

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Figure 4
Additional Traffic Volumes - Existing Zoning

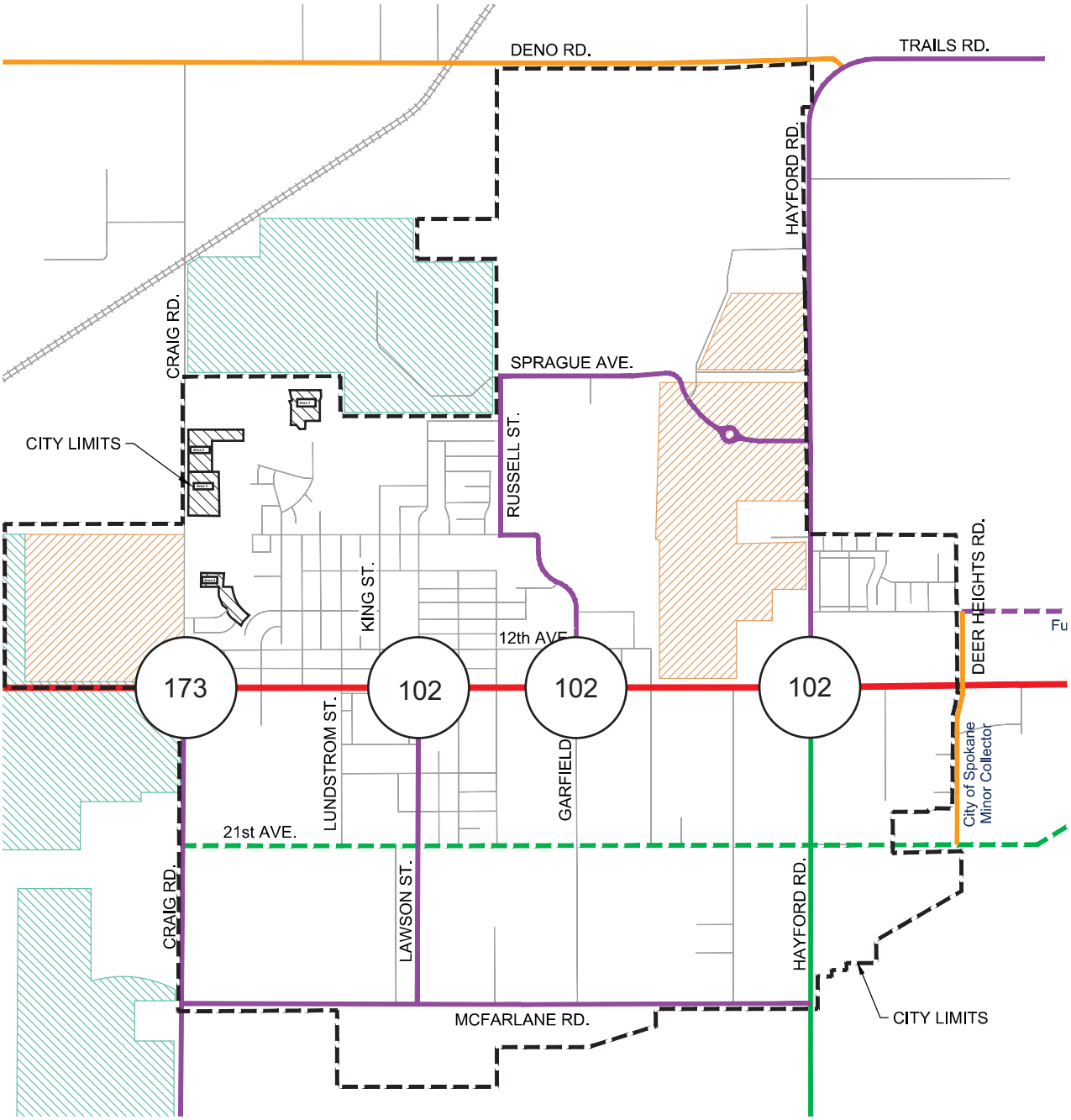

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Figure 5
Additional Traffic Volumes - Proposed Zoning