



MEMORANDUM

Date: June 26, 2020 (Revised March 9, 2021)

To: Bonnie Gow, *Washington State Department of Transportation*

From: Kara Hall and Don Samdahl

Subject: West Plains Sub Area Land Use & Trip Generation Methodology - REVISED

SE18-0645

March 2021 Revisions

This memorandum has been updated to reflect the final land use growth forecast for the West Plains as of March 2021. This update reflects comments provided by Washington State Department of Transportation (WSDOT) and City of Spokane following completion of the market analysis. The land use information presented in **Table 1** is the final land use used for the West Plains Study and other regional studies, including the US 195/I-90 Transportation Study. **Table 1** shows the land use growth forecast to occur by 2040 within the West Plains study area. All comments received and changes made to the land use inputs are documented in the final West Plains Trip Generation Spreadsheet provided to WSDOT in February 2021.

Introduction

WSDOT is leading a study to evaluate the future needs of the transportation system in the West Plains. To understand future traffic volume based on land use growth in the area, WSDOT will use the regional travel demand model developed by Spokane Regional Transportation Council (SRTC).

As part of this study, WSDOT will update the future year land use in the travel demand model based on the land use inputs summarized below. This memorandum also documents the process for validating future trip generation rates based on land use inputs. This is an important step in confirming that the regional travel demand model is forecasting the appropriate amount of growth based on industry standard trip generation rates.



FEHR & PEERS

Table 1. Final Land Use Growth Forecasts for 2040

TAZ	No. of Dwelling Units		No. of Employees									
	SFDU	MFDU	CBD RETAIL	FIRES	HOTELS	INDUSTRIAL	MEDICAL	OFFICE	EDUCATION EMPLOYEES	Non CBD Retail	STUDENTS UNIVERSITY	UNIVERSITY EMPLOYEES
459	773	773	0	3	0	0	3	0	35	10	0	0
460	0	0	0	0	0	150	0	0	0	0	0	0
461	164	0	0	0	5	0	0	251	0	6	0	0
462	263	400	0	3	0	333	3	2	0	45	0	0
463	0	0	0	0	61	0	0	201	0	52	0	0
464	0	0	0	4	0	475	0	90	0	42	0	0
546	0	0	0	5	0	0	3	0	0	0	0	0
547	0	0	0	0	0	0	0	0	0	0	0	0
549	0	0	0	13	0	6	2	344	3	238	0	0
550	0	0	0	60	0	772	50	815	0	155	0	0
551	0	0	0	0	129	4084	0	145	0	401	0	0
552	0	0	0	61	62	299	0	0	15	45	0	0
553	567	224	0	0	1	179	0	34	0	59	0	0
556	34	0	0	0	0	173	0	2	0	135	0	0
558	159	163	0	0	0	1500	0	0	0	0	0	0
559	442	340	0	0	25	283	0	8	0	14	0	0
579	147	0	0	1	0	0	0	0	0	0	0	0



Trip Generation Rates

The expected PM peak hour vehicle trip generation estimates were developed using the number of employees expected, number of single-family dwelling units (SFDUs) and multi-family dwelling units (MFDUs) expected, and trip generation rates from the *Institute of Traffic Engineers (ITE) Trip Generation Manual, 10th Edition*. Trip rates per employee were used for retail, industrial, and commercial land uses, while trip rates per dwelling unit for SFDU and MFDU were used for residential land uses.

The study area includes a number of land uses that were identified as “Special Generators”. These uses include Fairchild Air Force Base (FAFB), Spokane International Airport (SIA), and the Amazon Distribution Center. Trip generation estimates for these land uses were developed separately due to limited land use information and expected differences from standard ITE trip generation rates. Special generators are described in detail below.

Market-Based Analysis

An independent market-based development forecast was completed to identify net new development estimates on vacant and under-utilized sites. The documentation and findings from that study are included as **Attachment A** to this memorandum. The market analysis forecasts growth expected to occur within the West Plains over the next 20-years and serves as the baseline for the 2040 land use inputs.

Special Generators

There were several locations within the study area where Special Generator land use estimates were needed. These occurred in two situations: (1) locations where limited information was available regarding future land use plans, and (2) where the identified land uses were not expected to generate trips consistent with rates documented in the ITE Trip Generation Manual. These areas and land uses were identified as Special Generators, for which land use estimates and trip generation rates were developed using the methodologies described below.

Fairchild Air Force Base

Land use and trip generation estimates for FAFB were developed using the best available information provided by Air Force representatives on the Technical Advisory Committee. For future land use and employee estimates, an existing baseline was established using the 2016 Fiscal Statement for FAFB.



This statement provides information on the number of Active Duty, National Guard, and Reserve members stationed at FAFB. Information on the number of civilians and total personal were also provided in this information.

Recent and planned growth information for FAFB was based on the best available information provided to the project team. Available information indicated that 200 additional Active Duty Airmen were recently stationed at FAFB and future growth plans include the addition of 600 more Active Duty Airmen.

To develop a conservative estimate of future growth, it was assumed that as additional Airmen were added the total personnel on base would also increase proportionally. As a result, ratios between Active Duty Airmen and all other personal groups were assumed to remain constant with future growth.

To establish a current baseline, the 200 Active Duty Airmen were added to the 2016 personnel. All other personnel were increased proportionally to represent a 2018 baseline. To develop projected numbers to be utilized in the trip generation analysis, an additional 600 Airmen were then added to the baseline numbers with respective growth across all base personnel. Current and projected employment numbers for FAFB are summarized in **Attachment B**.

To develop a trip generation rate for FAFB traffic counts collected in 2018 at the US 2 and Mitchell Street, which serves as the primary access point for the base, along with the 2018 employment data were utilized to develop a trip per employee rate.

The current trip rate during the PM peak hour was found to be 0.10 trips per employee. As this land use is identified as a Special Generator and does not align with any of the land use categories within the travel demand model, this trip rate was used to determine the number of employees that should be added to the travel demand model to best replicate the expected trip generation from FAFB based on future growth. The final model land use inputs are included in the West Plains Trip Generation.xlsx included as **Attachment C** to this memorandum.

Amazon Distribution Center

Information for the Amazon Distribution Center is documented in the *Project Rose Traffic Impact Analysis* (May, 2018). As noted in the TIA completed for the project, the proposed distribution center will provide 2,560,000 square feet of warehousing and distribution. Amazon Distribution Centers tend to generate a much higher trip rate than typical warehousing uses. A trip generation



study for similar fulfillment centers was completed as part of the TIA for Project Rose, which resulted in an expected trip generation for the Project Rose site of 1.25 trips/1,000 square feet (KSF) or 0.90 trips per employee.

The typical trip generation rate per employee for industrial uses is 0.49 trips per employee, approximately half of what was measured at a similar facility. While development associated with the Amazon Distribution Center was considered in the market analysis described above, to account for the higher trip generation expected from this site, the number of employees included in the land use inputs for the model were factored up. The number of trips expected from the Amazon Distribution Center, trip generation rates, and land use inputs are summarized in **Attachment C**.

Spokane International Airport

Two factors are expected to contribute to growth in the area controlled by Spokane International Airport. The first is continued growth in operations at Spokane International Airport, including the future addition of a third runway. The second factor is growth in development on land around the airport, which is expected to be developed by a mix of commercial and industrial uses. Development expected to occur over the next 20 years in the area surrounding the airport was considered in the market analysis described above; however, growth associated with airport operations was considered separately.

The best available metric to estimate growth associated with airport operations was determined to be the number of enplanements. The number of enplanements in 2015 was used to establish a baseline along with employment data. Using the number of enplanements and the number of employees, determined using On the Map Census data, a baseline number of employees per enplanement was established. Using the number of employees per enplanement and the forecasts for 2030 enplanements from the Spokane International Airport Master Plan a future number of employees was calculated. Calculations for the airport land use are summarized in **Attachment D**.

Traffic Forecasting Approach

This section describes how the results of the land use analysis and trip generation calculations described above are planned to be incorporated by WSDOT into the regional travel demand model for the West Planes area.

The first step in the future land use updates for the 2040 travel demand model is validating the trip generation step of the model within the study area.



To validate the trip generation for the primary land uses within the study area five dynamic tests will be performed to establish model trip generation rates. The five tests completed for a TAZ containing each of the land uses below include:

- Add 100 single family dwelling units
- Add 100 multifamily dwelling units
- Add 100 non-CDB retail employees
- Add 100 office employees
- Add 100 industrial employees

The PM peak hour trips generated before adding the test land uses will then be compared to the PM peak hour trips generated after adding the test land uses to verify the trip rates assumed in the travel demand model for each land use type. These rates will be compared to trip generation rates found in the current Institute of Transportation Engineers (ITE) manual and summarized as part of the effort described above.

Through this process a proposed multiplier will be identified for each of the land use types. This multiplier will then be applied to the appropriate land use types for each TAZ in the study area. Through an iterative process, the trips generated with the proposed multiplier will be compared to the expected generation. This process will need to be iterated until it is determined that the trips generated from the travel demand model and the expected trip generation rates are within an acceptable threshold (approximately +/- 10%).

Once the land use multipliers result in a trip generation that is within 10% of the expected trip generation, the factored land uses will be used to develop traffic forecasts for 2040.

Attachment A. Market Analysis Findings



Market Analysis and Development Forecast

Date August 21, 2019
To Kara Hall, Don Samdahl
Fehr & Peers
From Sam Brookham, Chris Zahas
Leland Consulting Group
Subject Market Analysis and Development Forecast
Project West Plains Transportation Management Plan

INTRODUCTION AND PURPOSE

Project Overview

The US 2 West Plains Subarea Management Plan refines previous studies that have been completed in the West Plains area. Previous studies have indicated performance concerns mobility gaps (congestion) for the US 2 corridor in Airway Heights, as well as a need for a local parallel roadway network. This study addresses the mobility gaps along US 2 between the US 2 & I-90 interchange and Fairchild Air Force Base entrance. This study also looks at other possible parallel frontage road connections for 6th/12th and 18th/21st, to help alleviate traffic loading directly onto the US 2 corridor.

In recent years, land use developments in the West Plains area has been growing at a fast pace. There is a need to understand the land use growth and the impacts it will have on the transportation system, so we can plan accordingly. This transportation-focused study will help position the West Plains for continued growth, prioritize improvements and maximize return on investments, secure scarce funding, and plan for dedication of needed right-of-way.¹

Economic Analysis

This economic analysis is aimed to help WSDOT better understand the future development potential of the study area for residential, commercial, and industrial uses by providing data relating to new jobs and residents to populate new traffic models based on realistic development trends in the area.

A market-based development forecast for the next 20 years summarizes future conditions by identifying net new development on vacant and underutilized sites. While the analysis is largely undertaken at the parcel-level, the development forecast is aggregated into TAZ shapefiles to populate traffic models.

The forecast is informed by a market analysis, which includes an assessment of current and future demographic conditions, land use conditions, real estate dynamics, and West Plains strengths and weakness. The analysis

¹ From WSDOT Project Home Page, [URL](#)

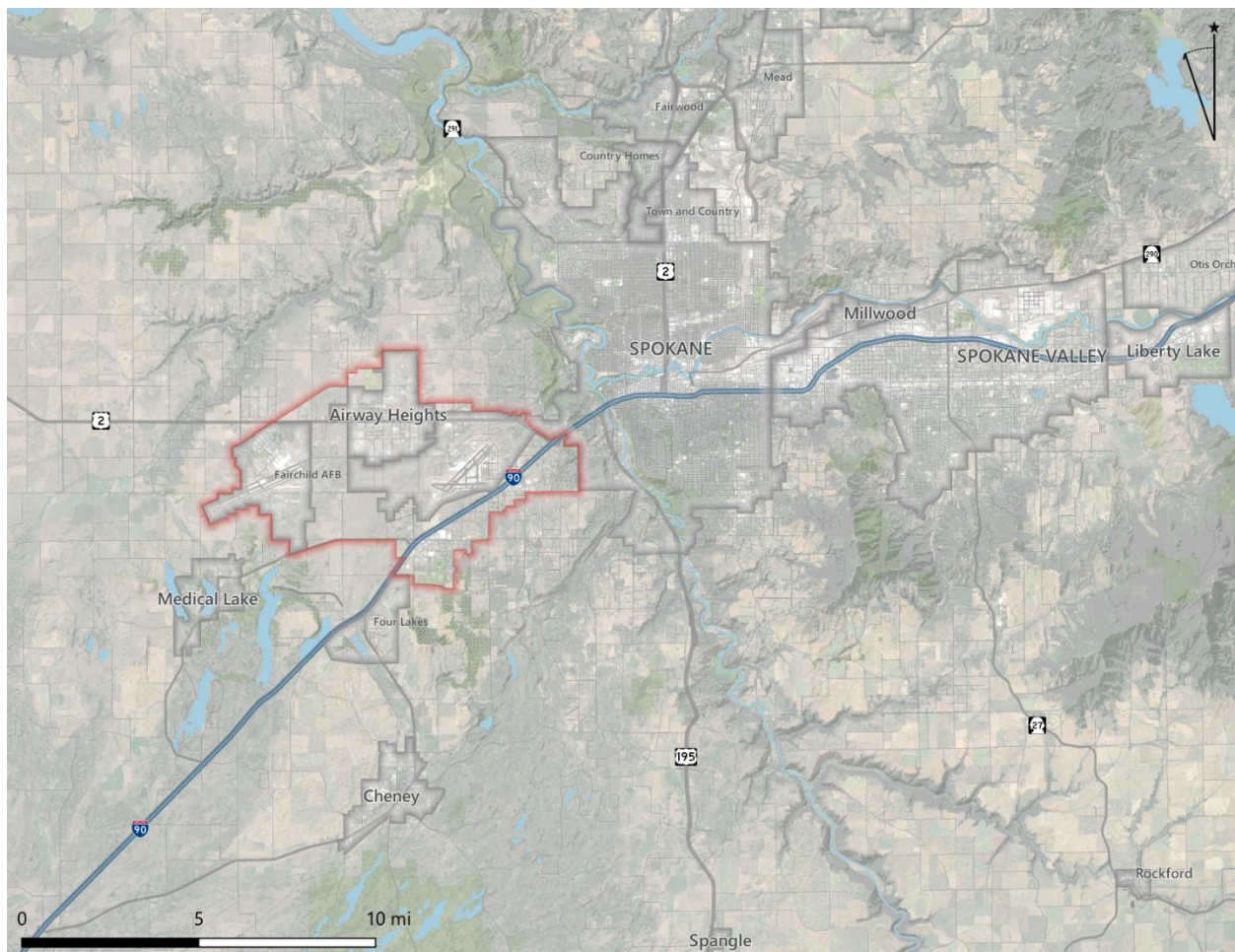
culminates with the characterization of long-term growth potential and expected development types for each expected land use in the study area.

Related to many, if not all, components of this market research are a series of stakeholder interviews. Stakeholder interviews are critical in building a basic understanding of development trends, the area's strengths and weaknesses, expected development projects, as well as how the area might change as a direct result of infrastructure investment. This memorandum includes a summary of these interviews.

West Plains Study Area

West Plains is located on the western edge of the Spokane metro region in Spokane County, Washington, centered around Highway 2 and Interstate 90. Fairchild Air Force Base, the City of Airway Heights, the City of Spokane, the Kalispel Tribe, the Spokane Tribe, Spokane County, and Spokane International Airport are all prominent stakeholders. With few cities or towns to the west, and only the cities of Medical Lake and Cheney nearby to the south, West Plains has a substantial trade area which is unique to the rest of the Spokane metro region.

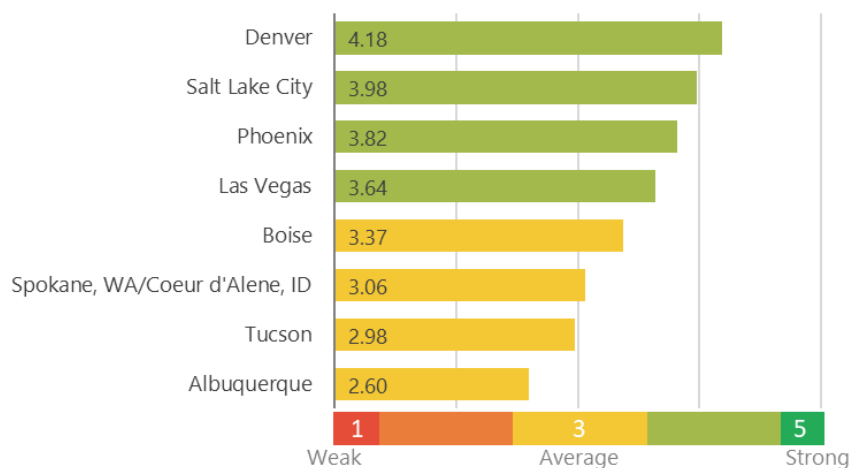
Figure 1. West Plains Study Area and Regional Context



Source: TIGER, Spokane County, State of Washington, Google (imagery), Leland Consulting Group

REGIONAL CONTEXT

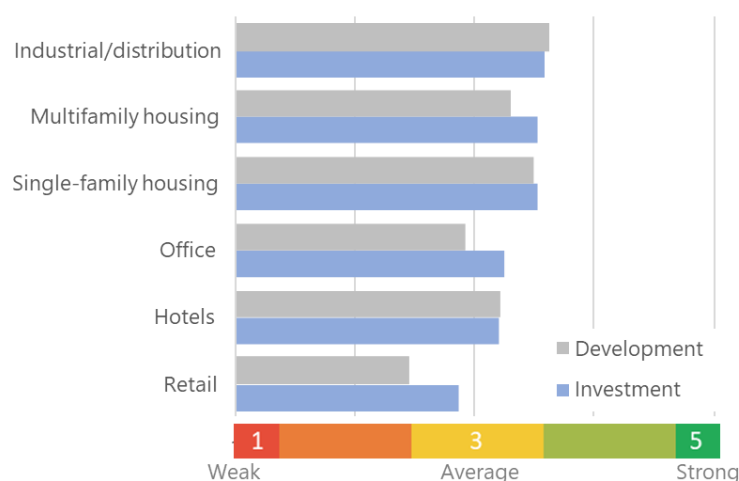
In recent years, the Spokane metropolitan regional market has not been considered a hotbed of investment. Indeed, Spokane ranked 64th out of the 79 markets identified by the Urban Land Institute (ULI) in its annual “Emerging Trends in Real Estate” publication. This score is based on participants’ opinions on the strength of the local economy, investor demand, capital availability, development and redevelopment opportunities, public/private investments, and the local development community.



Generally, however, ULI maintains that the Mountain region will “continue to exhibit strong demographic and economic growth,” and the “comparatively low cost of living and [cost] of doing business is considered attractive to new residents and conducive to employment growth.” Indeed, the Spokane metro region has added population and jobs faster than the USA average, although income growth is expected to grow at a slower rate.

Emerging Trends also advises on the types of development that are likely to be most desirable in the coming years from both a developer and investor perspective. While this is a national outlook, the guidance is relevant for most local markets, including West Plains and the greater Spokane region.

The figure below shows ULI’s high-level summary of national investment and development prospects for 2019. Industrial and housing top the list, with office, hotels, and retail falling somewhat far behind. Industrial and distribution uses have become increasingly popular investments in recent years, largely due to the rapid rise of ecommerce.



Focus groups conducted by ULI for the Spokane/Coeur d’Alene region report that their metro could benefit from increased infrastructure investment, and that they continue to see rising interest from national and regional investors.

However, like most cities across the nation, Spokane is experiencing significant issues with a shortage of construction labor and higher construction costs, which is amplified locally by stagnant rent growth.

EXISTING CONDITIONS ANALYSIS

This section presents demographic and employment conditions for the study area and surrounding region, as well as high-level assessment of land supply conditions in the study area.

Demographic Summary

The data provided in this section pertains to West Plains, Spokane County, and the State of Washington. Also included is the “subregion,” referring to the area generally defined by the West Plains study area, Medical Lake, Cheney, Four Lakes, and Cheney Spokane Road—roughly a 7.5-mile radius around the 902/I-90 interchange. This subregion represents the residential market area, reflecting the area that shares similar characteristics with the West Plains study area and from which most competitive development will originate.

The following table shows population trends over the past 18 years. The West Plains study area has seen higher-than-average growth compared to the wider region, county, and state. It is important to note that although the data shows a 2.2 percent compound annual growth rate in West Plains’ population from 2010 to 2019, the last year saw almost 4.8 percent growth, highlighting the rapid increase in the rate of growth in very recent years. West Plains’ existing employment focus is highly apparent, as the only area showing more workers than residents for “daytime population.”

Also significant is the proportion of the population in group quarters (17.5 percent), reflecting the presence of the Airway Heights Correctional Facility.

Table 1. Population Summary, 2000-2019

Population	West Plains	Subregion	Spokane Co.	Washington
2000 Total	12,418	33,815	417,939	5,894,121
2010 Total	14,344	40,313	471,221	6,724,540
2019 Total	17,415	46,033	515,061	7,608,571
00-19 CAGR	1.90%	1.73%	1.17%	1.43%
10-19 CAGR	2.18%	1.67%	1.12%	1.56%
2019 Daytime Pop	22,749	47,883	524,440	7,526,959
Workers	13,892	23,648	238,181	3,701,657
Residents	8,857	24,235	286,259	3,825,302
% In Group Quarters ('19)	17.5%	11.5%	2.9%	2.0%

Source: ESRI

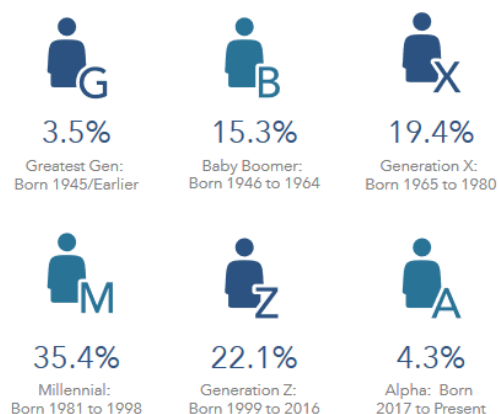
The following table shows age distribution and the percent of the population aged 25 and over that have a bachelor’s degree or higher. This part of the Spokane metro region is significantly younger than the rest, with an average age of only 32.1 versus 38.1 for the county. Most significantly, well in excess of half the population is under 35 years old. A smaller proportion of seniors (aged 65 and over) is potentially indicative of the area’s employment-heavy focus and isolation from the rest of the Spokane metro, where a greater array of transit options, amenities, services, and housing is more accessible.

Table 2. Population Age Distribution and Education, 2019

	West Plains	Subregion	Spokane Co	Washington
Median Age	32.3	32.1	38.1	38.6
% Under 18	21.8%	19.6%	21.3%	21.3%
% 18-34	33.3%	34.8%	24.5%	23.5%
% 35-64	35.6%	33.6%	37.9%	39.1%
% 65+	9.3%	12.0%	16.3%	16.1%
% with bachelor's degree	19.8%	28.6%	31.1%	36.0%

Source: ESRI

The following graphic provides a more detailed breakdown of the West Plains population by generation. Different generations typically share similar lifestyle preferences and trends. This is particularly true for housing, recreation, and amenities. People belonging to the Millennial and Boomer generations typically place the highest demand for multifamily housing and affordable, smaller single-family homes (including townhomes and small single-family structures). Generation Xers, of which West Plains has a significant population, typically drives demand for larger “move-up” single-family homes. Generation Z—largely the children of older Millennials and Gen Xers—are likely to either move out of the area for college or enter the local workforce. Gen Z preferences remain open-ended, but it is likely that they will continue to drive demand for multifamily and, more selectively, student housing.



According to data from the Washington Office of Financial Management, Spokane County is projected to experience major population growth in Baby Boomer and Millennial generations over the next 10 years.

The stakeholder interviews conducted for this analysis—summarized in more detail later in the report—highlighted substantial projected growth for the Cheney School District. This data would appear to support that notion, with Alpha’s (the newest, youngest generation) already totaling more than four percent of the total population, despite only being born in the last two to three years.

The following table shows a range of housing characteristics, highlighting the high proportion of rental housing in West Plains, despite the fact that the area has not historically been a hotbed of apartment construction. Indeed, the fact that West Plains also has the highest average household size of other comparison areas appears to reflect the single-family nature of the housing market. Along with the previous data showing West Plains’ significantly younger population, this appears to suggest young families living in rented single-family homes, perhaps driven by the presence of larger institutions like Fairchild Air Force Base.

Table 3. Household Summary, 2019

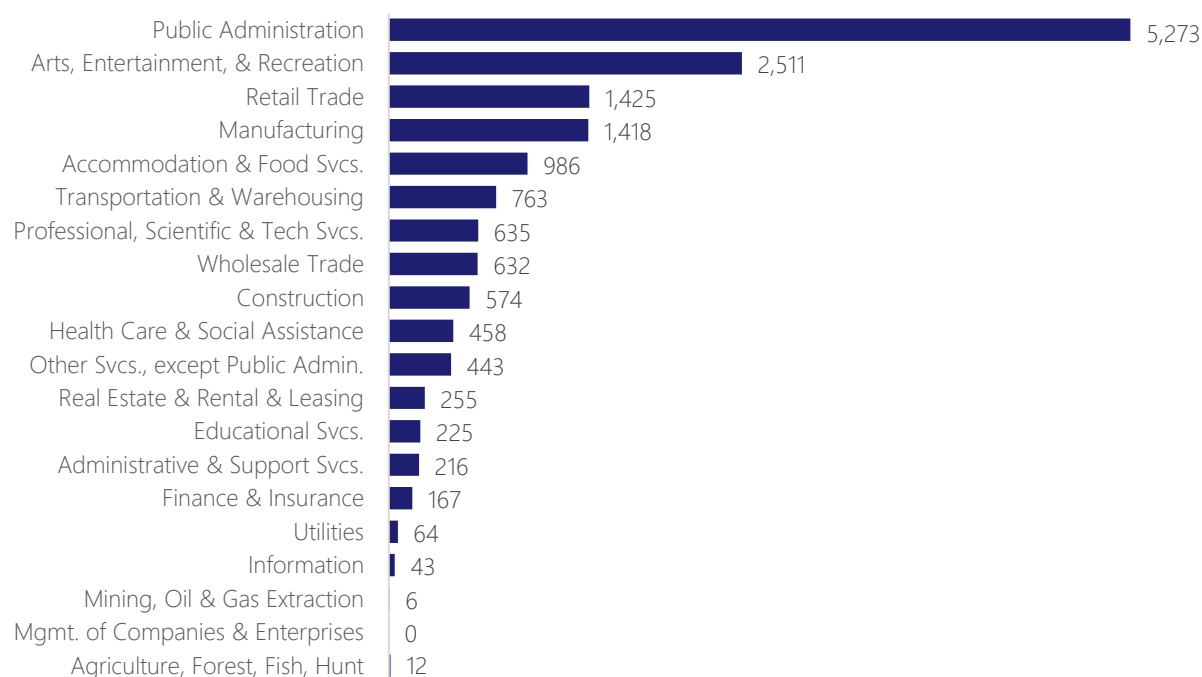
	West Plains	Subregion	Spokane Co	Washington
Avg. Household Size	2.60	2.52	2.48	2.54
1- & 2-Person HHs	57.3%	61.1%	63.5%	61.7%
Med. HH Income	\$52,684	\$53,338	\$56,511	\$73,627
Med. Home Val.	\$220,970	\$250,158	\$225,078	\$370,055
% Renter Occupied	49%	45%	37%	36%

Source: ESRI

Employment Summary

This section provides an overview of employment and commute patterns in West Plains. The following chart provides a high-level summary of West Plains employment profile.

Figure 2. West Plains Employment Profile, 2018 (est.)



Source: ESRI

The graph shows “public administration” accounting for about one-third of all jobs in West Plains. Public administration encompasses the many public or semi-public agencies or jobs in West Plains, such as the Airway Heights Corrections Facility, Fairchild Air Force Base (military) and Spokane International Airport (notably, security).

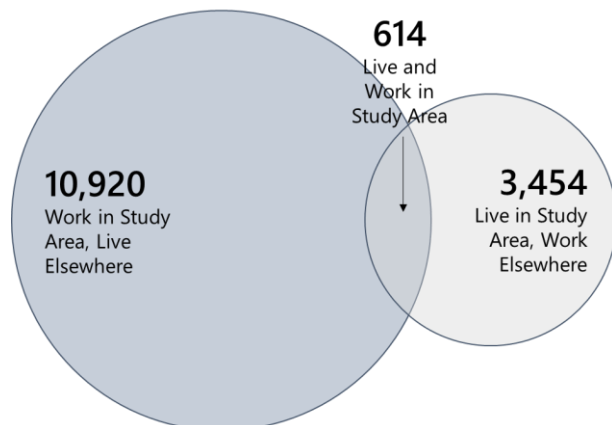
Entertainment and recreation jobs are also very prominent, largely because of the Spokane Tribe Casino and the Northern Quest Resort and Casino. Both these institutions are expected to expand in the near future, so jobs in the art, entertainment, and recreation industry are likely to continue to feature prominently. Similarly, retail

trade and accommodation and food services are both prominent industries and expected to grow as the Tribes develop their land, more housing units are built in the area, and tourism emerges as a prominent sector.

Most significantly, however, manufacturing, transportation and warehousing, professional, scientific, and technical services, and wholesale trade—which collectively account for almost one-fifth of all jobs—are expected to grow at a faster rate than the rest of the region. West Plains presents a significant competitive advantage for manufacturing and transportation and warehousing, in particular, both regionally and further afield, and will drive industrial development in the area. Employment growth in the professional, scientific, and technical services industry will drive office demand but the industry is smaller and unlikely to achieve the same rate of growth as more prominent office locations in the Spokane metro, such as downtown Spokane. The Pacific Northwest Tech Park may be one of the few places that well-suited office tenants may locate.

Commute Patterns

Figure 3. Employment Inflow/Outflow, 2015



The figure at left shows—using 2015 data (the latest available)—the number of employees that worked, lived, or both worked and lived in West Plains. Despite a larger geographical area, very few people lived *and* worked in the area in 2015.²

The data also shows a significantly higher number of employees than employed residents, demonstrating West Plains' status as a strong employment hub in the region.

Source: LEHD

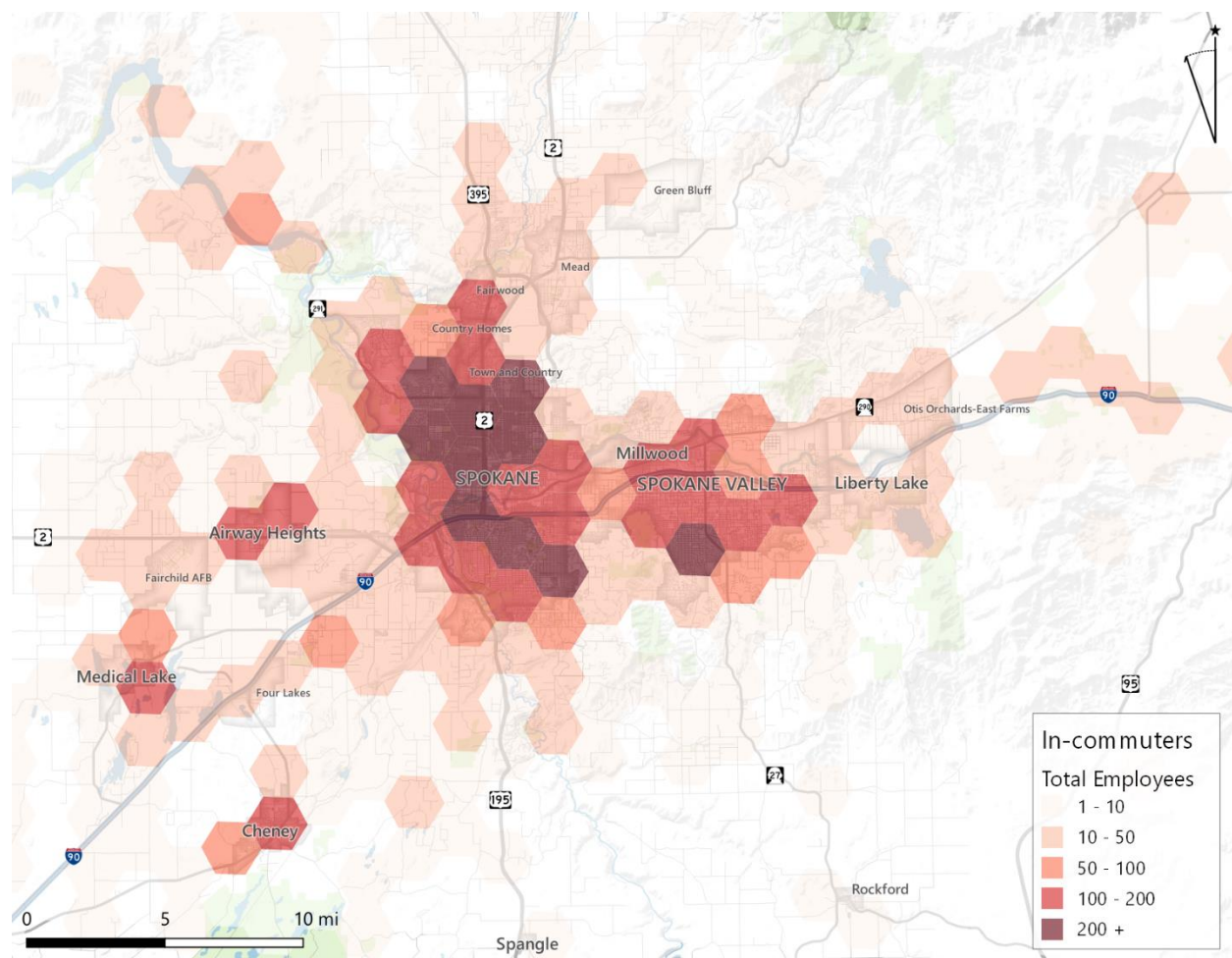
The past three years has seen significant growth in both residential and employment-based construction, so some of these numbers may have changed. Anecdotally, it is also understood that quality of life, housing quality, and housing availability have all improved in recent years. However, there is likely still an opportunity to provide additional housing that meets the needs and desires of those working in West Plains.

To reinforce this point, the following map shows the home location of people working West Plains. Most people that commute *into* the region for work live further east in Spokane and Spokane Valley. West Plains is unlikely to attract people to live in the area purely based on commute time as the transportation network provides quick cross-metro travel times. Instead, West Plains is challenged with creating a place that offers an attractive mix of housing, recreational and commercial amenities, and high-quality schools³, among other elements.

² Typically, the larger the area, the higher the percentage of employed persons and work and live in the area.

³ The Cheney School District, which encompasses West Plains and is not seen as attractive relative to other school districts in the Spokane metro region, is considered a barrier to major growth.

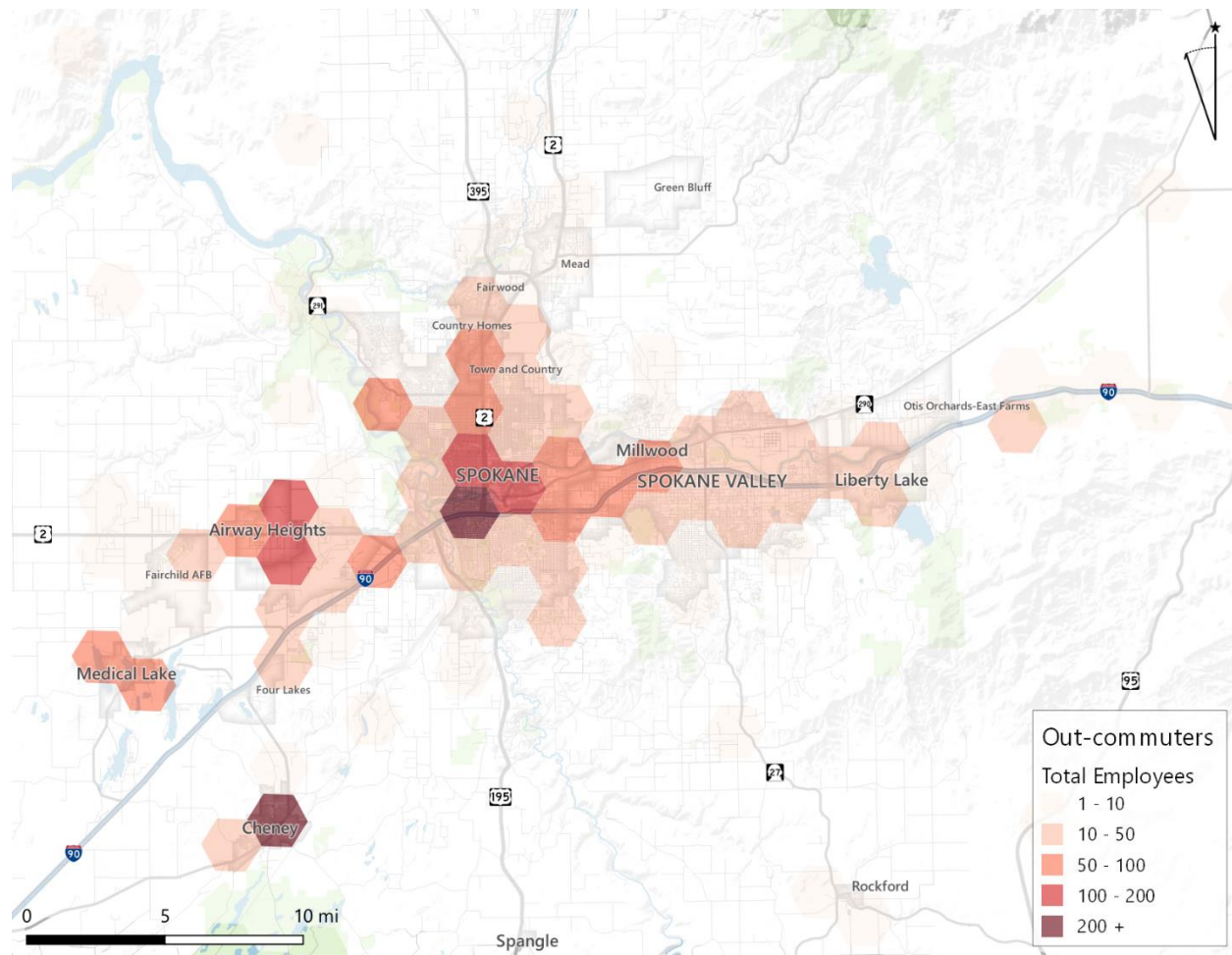
Figure 4. Where West Plains Workers Live, 2015



Source: LEHD, Leland Consulting Group

The following map shows the employment location of people living West Plains. The highest concentrations of workers are in Cheney—likely driven by Eastern Washington University, and downtown Spokane—the main office cluster in the metro. West Plain residents also work throughout the rest of the metro, in employment corridors centered around I-90 and US-2. West Plains appears to be a relatively attractive place to live for those working in these areas.

Figure 5. Where West Plains Residents Work, 2015



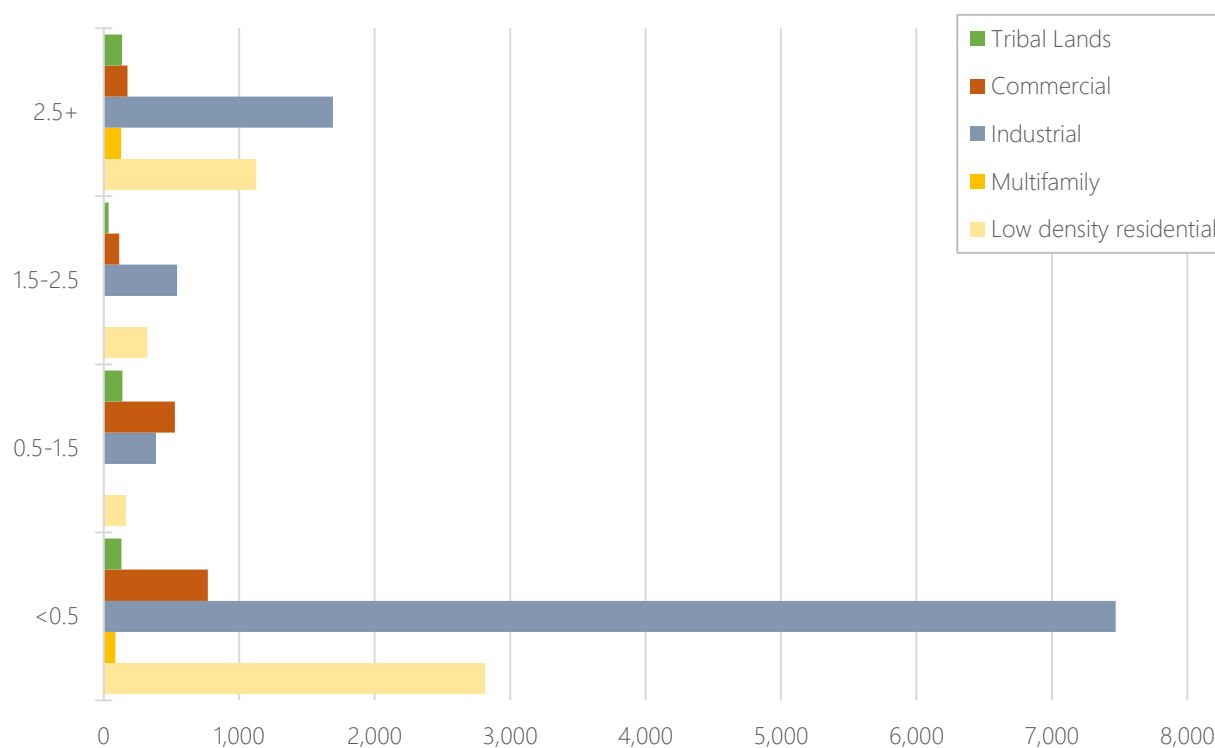
Source: LEHD, Leland Consulting Group

Land Conditions

Cataloging the amount of developable land is critical to a land development Land supply is a critical component of a land development forecast. To this end, land utilization, zoning, and ownership are all important factors.

The following information portrays the aggregated zoning for the entire West Plains study area. These zones were considered when forecasting future development. Light industrial zoned land is the dominant zoning type, largely due to the presence of the airport, which also owns a substantial portion of the land in central West Plains.

Figure 7. Acreage by Land Utilization and Zoning



Source: City of Airway Heights, City of Spokane, Spokane County, Leland Consulting Group

STAKEHOLDER INTERVIEW SUMMARY

Stakeholder interviews are an integral component of the analysis, as they help to ground truth preliminary market findings, identify trends that would not otherwise be seen in more traditional data sources, and highlight the area's nuanced strengths and weaknesses. Stakeholder interviews are especially critical in areas with multiple jurisdictions, significant landowners, and other organizations, such as the West Plains. For example, plans for development on Tribe-owned land or on Spokane International Airport property are likely to register with traditional, market-driven sources of real estate data.

The interviews involved a number of public representatives, namely from Spokane International Airport, the Spokane Tribe, the Kalispel Tribe, Airway Heights, City of Spokane, Spokane Transit Authority (STA), West Plains Public Development Authority (PDA), and West Plains Chamber. Additionally, a significant landowner and two commercial and industrial brokers were interviewed to gain an understanding of markets trends from the perspective of the private sector.

Findings from the interviews, including strengths, challenges, opportunities, and development trends, are summarized as follow. These findings will be carried through the remainder of the memorandum and—where applicable—elaborated. As much of the interview content focused on not-yet-public information, the findings are typically presented as key takeaways and major themes.

Strengths

- **Substantial Growth.** There has been a recent uptick in growth—particularly with regard to industrial and residential land uses. The rate of growth is expected among stakeholders to continue ramp up.
- **Good Access.** West Plains benefits from access to major transportation networks, rail, and the airport, which is attractive to industrial users, in particular.
- **Industrial Land Supply.** The West Plains area is one of the few places in the entire region where an industrial user can find large tracts (e.g. 15 acres) of industrial-zoned land that can be served by adequate infrastructure.
- **Strengthening Housing Market.** Rapidly increasing housing prices and declining vacancies reflect the growing strength of the housing market. Despite the recent uptick in growth, the rate of construction is still not keeping pace with demand. New units are therefore almost immediately absorbed by the market.
- **Significant Aerospace Cluster.** The region has one of the strongest aerospace manufacturing industry clusters in the nation, with around 240 aerospace-related manufacturing businesses and approximately 8,000 jobs. Significant growth could occur within the next few decades, especially if a large user is successfully attracted to airport land.
- **Strong Workforce.** The area boasts a young, educated workforce and strong workforce development programs in partnership with educational and other institutions throughout the region.
- **Affordable Housing Market.** Housing is cheaper than the rest of the Spokane metro region, although housing prices are increasing. Housing construction cannot keep up with demand, particularly with regard to workforce housing.

Challenges

- Highway 2 is considered “at capacity,” with the performance of many key intersections expected to worsen as the rate of growth in the area continues. Potentially troublesome pinch points include Hwy 2 & Hayford, Hwy 2 & Craig.
- **FAA Restrictions.** While Spokane International Airport owns a significant portion of the land in West Plains, it is unlikely to attract small- to medium-sized private developers. Due to FAA regulations, the airport has little choice but to ground lease land to developers. If the airport desires to sell any land, they must go through an extensive, time-consuming process with the FAA. This is likely to deter near- and mid-term development while other, less complicated land is still available in the area. Larger companies—particularly aerospace-related—are less likely to be deterred.
- **Restrictive Overlay Zone.** The airport overlay zone impacts allowed development and building types and extends into the surrounding areas where development might otherwise be possible. The zone largely impacts land within the City of Spokane and in unincorporated Spokane County.
- **Adequate Infrastructure** to support high-intensity users is lacking in many places. Additional infrastructure investment—which is understood to be planned—would greatly increase development prospects by providing shovel-ready land and heighten development feasibility for all users, particularly with regard to land to the south of US 2 (in and near Airway Heights).
- **Wetlands** present a barrier to development in some places that must be mitigated prior to new development.
- **Fairchild Air Force Base** may prefer to remain isolated from adjacent development. As such, prospective developers looking to locate projects near the base face challenges on the basis of encroachment.

- **Image Issue.** West Plains and the greater Spokane region does not typically attract significant national interest, but the area is beginning to “get on the map” due to a number of new large businesses and an extensive marketing effort. This also extends to substandard perceptions about the school district and quality of life, irrespective of actualities.
- **Regional Competition.** Post Falls and Spokane Valley may also prove difficult to compete against for industrial development. However, West Plains possesses unique competitive advantages with the airport, tribal land development plans, Fairchild AFB, and the new Amazon facility.
- **Lack of Households for Retail.** West Plains has about 35 square feet of retail space per capita, significantly higher than the 15 to 20 square feet that is typically considered “equilibrium.” While the West Plains trade area extends significantly beyond its boundaries to the southwest (i.e. the area containing the consumer base that existing retail serves), retailers are today placing increasingly more importance on activity densities and income levels. While prospective retail tenants in the past have struggled to see a significant market in West Plains for new development—citing feasibility concerns in addition to a saturated market—significant household growth and mid-wage job growth is expected to improve retail prospects.

Opportunities

- **Residential Demand.** Demand for residential uses typically follow large job generators, such as Amazon, Kenworth Trucking, Caterpillar, casino growth, etc. These types of uses are especially driving demand for workforce housing. Residential development is allowed in the County area south of I-90 despite a designation as light industrial in the Spokane comprehensive plan, resulting in several new subdivisions and other residential projects. This is likely to continue until the existing developable residential land has built out. Rezoning certain areas or removing regulatory and physical barriers to development would likely result in further residential development within the next few decades.
- **Fairchild Air Force Base Growth.** Fairchild has been selected to receive 12 additional KC-135 refueling aircraft, which will begin arriving in 2020. Fairchild is said to be planning to reactivate its 97th Air Refueling Squadron, as well as an unnamed maintenance unit, to handle the Stratotankers. About 1,000 additional airmen and family members combined are expected to move to the Spokane region, potentially having a profound positive impact on demand for housing and commercial amenities in West Plains. Beyond this known near-term growth, there is the potential for further employment growth.
- **Industrial Growth.** Manufacturing, transportation, and distribution are likely to drive industrial development, but these users are not necessarily expected to require access to the airport. Instead, transportation infrastructure and clustering nearby mutualistically beneficial users is of greater importance.
- **New Transload Facility.** The new transload facility and rail spur presents a tremendous opportunity for major industrial development and employment generation. The facility is expected to support the expansion of existing industries and improve the prospects of attracting major companies to the area.
- **Opportunity Zone.** Much of West Plains is considered an Opportunity Zone—a tax incentive program that is likely to increase development in the area. However, Spokane also has several Opportunity Zones in prime development locations, so this may prove less significant.
- **Plentiful Land Supply.** There is plentiful vacant land that is ripe for new development—depending on the provision of adequate infrastructure and the successful navigation of the regulatory restrictions that apply to some of the land (e.g. FAA regulations, flight overlay zones, etc.).
- **The I-90 corridor** is a desirable place to develop for industrial and commercial users, and benefits from City of Spokane infrastructure (versus Airway Heights, where there is less infrastructure capacity for these users).

- **Strong Transit System.** STA is adding new routes to accommodate residential and employment growth in the area. New transit routes help connect the area, especially people living in Cheney and Medical Lake to jobs in and around Airway Heights. STA anticipates these new routes, as well as a planned BRT route in 2040 along US-2, to induce growth.
- **New Infrastructure Investment.** The PDA is undertaking a regional stormwater study and aim to invest in critical stormwater infrastructure to support new investment in the next two to three years. This will be a coordinated effort focused on implementing other infrastructure elements, largely made possible by a recent grant.

Development Trends

- **Tribal Land.** There is significant development interest in both Tribe areas, with both Tribes expressing a desire for development. Immediate plans include casino/event space expansions. Additional development is expected to be market-driven, with a range of land uses on the table, including housing, retail, entertainment, and hotel.
- **Amazon.** The new Amazon facility is expected to drive significant interest for associated distribution, logistics, and other industrial uses in the near-term.
- **Phasing.** Highway 2 and I-90 corridors are likely to approach build-out in the next 20 to 30 years, particularly with regard to residential land. The area east of Airway Heights along US-2 may see build out achieved even sooner. Industrial development surrounding Macfarlane Road and the new transload facility is anticipated in the near-term, but only with new investments in infrastructure.
- **Airport Development.** Spokane International Airport and the PDA are targeting large aerospace manufacturing companies for its land to the west of the airport. A third runway is planned in this area which will absorb a significant chunk of the land, particularly once the land at either end is subsequently classified non-developable due to aircraft takeoff/landing zones. The additional runway is still considered a long-term project and construction may occur beyond the 2040 planning horizon of this project.

This land is a key component in the airport's efforts to attract Boeing or other relating suppliers as Boeing targets 2025 for its new midsize aircraft (NMA). Spokane is thought to be competing with North Carolina for the opportunity to home Boeing. If successful, around 300 acres of aeronautical land will be developed, potentially generating around 5,000 new jobs.

- Spokane International Airport also owns the land east of Spotted Road (roughly bounded by the US-2 and Geiger Blvd.)—about 590 acres of vacant space that has had some infrastructure investment. However, despite investments in roads more than 15 years ago the area has remained vacant with little development interest. This is unlikely to change, although there is a planned interchange and new road that may improve access and, subsequently, prospects.
- **Hotel Growth.** Additional hotel development is expected in the I-90 corridor and near the airport.
- **Limited Office Market.** While the office market is considered limited, new development is likely to occur north of the airport. The PDA is looking into an innovation park, which will include research and development (R&D) to partner with the extensive number of local educational institutions in the area.
- **Increasing Rate of Development.** Development over the past few decades has been highly constrained. However, the rate of development over the past two to three years has been unprecedented and is likely to continue as long as the economy remains strong. Continuing growth largely depends on infrastructure

availability and capacity, the success of the PDA to attract a large aerospace-related user, and the lifting of regulatory barriers to development.

- **Multifamily Development.** Several large apartment projects have been recently constructed or are in the near-term pipeline. Historically challenging market conditions and long-lasting impacts from the recession potentially resulted in a highly constrained housing market with pent-up demand. As absorption slows and the market right-sizes, there may be a glut of multifamily units in the next five years, but the housing market is likely to remain strong.

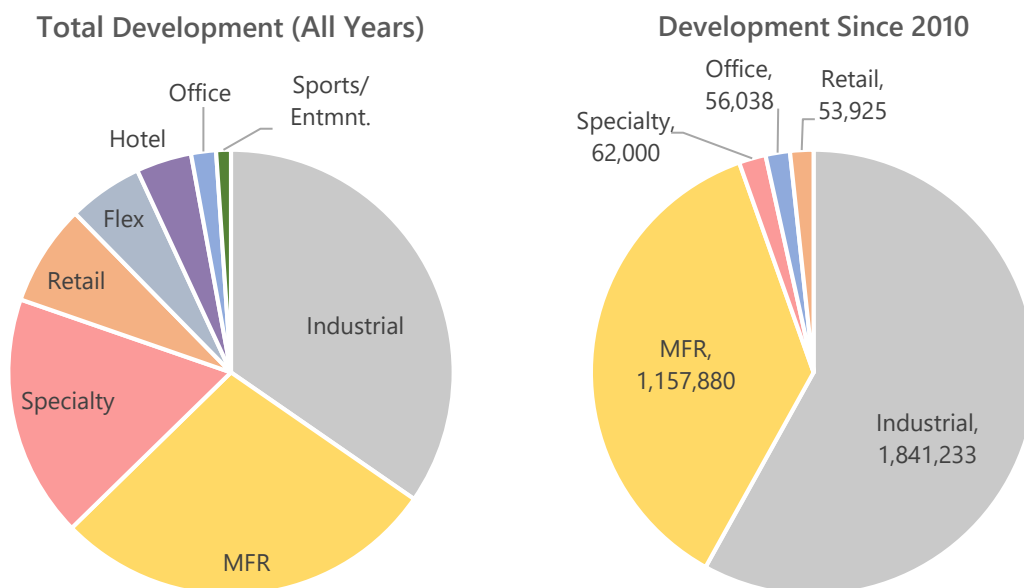
MARKET ANALYSIS

Real Estate Market Summary

With regard to non-institutional or non-single-family residential land uses, the West Plains study area is primarily made up of industrial and multifamily land uses, with a relatively small amount of retail, flex, office, and other developments, as shown in Figure 8, below. These are usually more equally proportioned, and the retail sector is typically one of the largest in terms of square footage. For West Plains, it would appear that these other real estate sectors are lagging behind industrial and residential development.

Since 2010, this trend has only intensified, with multifamily development increasing the pre-2010 inventory by about 50 percent and the industrial market also showing significant growth (not including under construction or planned developments, such as Amazon and Kenworth Trucking). As an earlier section highlight national development and investment prospects, this closely follows national trends that suggest strong support for industrial and residential development.

Figure 8. West Plains Development by Total Square Feet and Year Built



Source: Costar

These trends go some way in underlining West Plains' industrial character. The lack of retail is a curious phenomenon: in contrasting form to much of the retail sector throughout the rest of the United States, it would appear that continued residential and employment growth in West Plains would only underpin the need and demand for significant retail construction going forward. As such, as we move into the demand forecast later in this report, land use projections indicate significantly higher rates of retail development over the next 20 year.

Market Sectors

This section includes a summary of current market trends at both the Spokane metro region (market) and West Plains (submarket) levels.

Residential Market

Multifamily Residential. Spokane's multifamily sector continues to benefit from strong fundamentals. Vacancy remained tight in 2018, even as over 900 new units came online. Though annual rent growth has moderated, rents are growing more quickly in Spokane than nationally. Buyers are taking increasing notice of the Spokane multifamily sector's strength: multifamily sales volume more than doubled in 2018, and investment benefits from numerous transactions.

Market data pertaining to the West Spokane County Submarket is as follows.

- The local multifamily market appears more constrained than the metro market, with very low vacancies (3.1 percent) and historically low deliveries (average of 45 units per year over the past 10 years).
- Average rents are relatively consistent with those throughout the Spokane metro region, with high rent growth likely reflecting the addition of several new projects.
- The rate of multifamily construction has increased recently, with 232 units delivered over the past year—seven percent of the total inventory and the first deliveries since 2015. This growth is clearly in line with demand, with the market showing almost instant absorption.
- Average rents remain around \$815 per unit, on average, but new construction been upwards of \$900 to \$1,000—in line with averages in the rest of the Spokane market. New multifamily construction on the Kalispel Tribal land, for example, is looking to rent for even more (between \$1,000 and \$1,500 for one-, two-, and three-bedroom units), which would easily be a historical high for the submarket. Generally, however, rent growth remains slower than the wider market, at 3.27 percent versus 5.21 percent for the submarket and market, respectively.
- Anecdotal, it is understood that significant demand exists for apartments, with several developers poised to develop if the opportunity arises. However, significant barriers exist, such as the airport overlay zone, the glut of light industrial zoning, and a lack of quality infrastructure in places.

Area	12 Month Deliveries	12 Month Absorption	Vacancy Rate (%)	Average Rent	12 Month Rent Growth
Metro	542 units	561 units	5.0%	\$1.08 PSF	5.4%
Submarket	232 units	212 units	3.1%	\$1.03 PSF	4.2%

Source: Costar

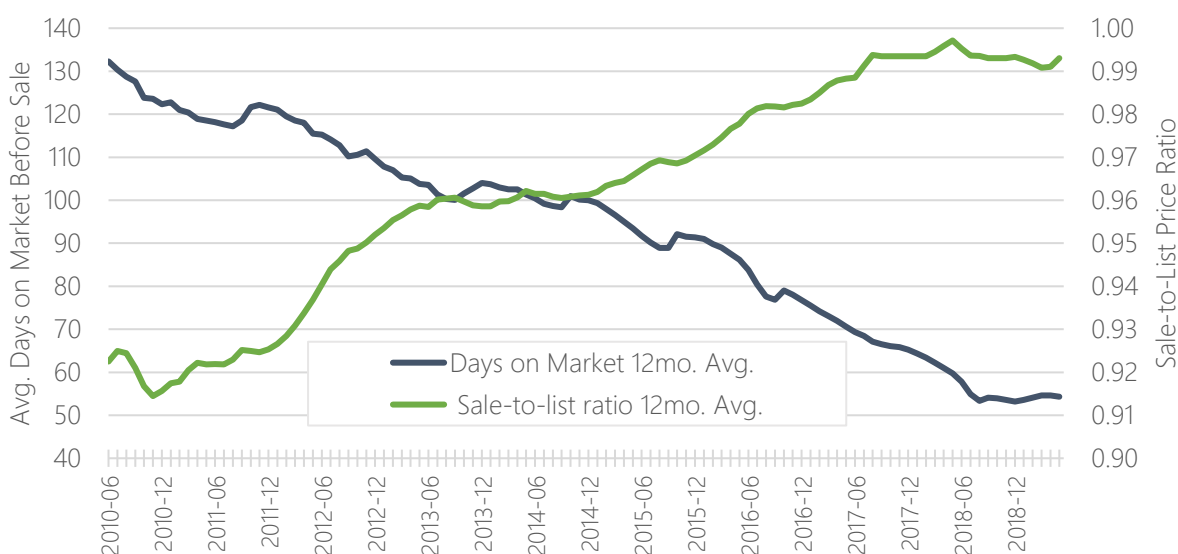
Single-family Residential. The West Plains residential market has been—at least historically—predominantly single-family oriented. Development activity has increased in Airway Heights and in Spokane County south of I-90, with many new single-family subdivisions coming online.

The Spokane housing market is viewed as affordable when compared to Seattle and Portland. It was also ranked fourth out of 300 cities in a national Realtor.com survey of the hottest markets, trailing Midland, Texas; Chico, California; and Colorado Springs, Colorado. The survey, released in March, measures listing views per property and the average amount of time a home is on the market. With such a hot market, it is not uncommon for sellers to receive multiple offers on homes, especially in the \$300,000-or-less price range. However, high demand will usually drive up home prices. In the Spokane market, home prices rose more than 11 percent over the past year.

Two key indicators of market strength in the for-sale housing market are the average number of days on the market from list date to sale (closing) date, as well as the ratio of sale price to list price. These trends are presented below in Figure 9.

- For **days on market**, decreasing numbers indicate a strengthening market. Spokane County has continued to experience a decreasing average since the Great Recession.
- For **sale-to-list ratio**, a ratio of 1.0 indicates that homes are being sold for the original list price, on average. If this ratio is anywhere near or even above 1.0, the housing market is considered very tight and a seller's market. At 0.99, this rings true for Spokane County, and demand for new housing is strong.

Figure 9. Spokane County For-Sale Market Trends



Source: Zillow Market Research

The strength of the Spokane metro market has certainly spilled over into West Plains, with data indicating a very tight market. Indeed, current home listings account for less than three months of standing inventory, and new homes (built in the past five years) account for one-third of these sales. Strong demand exists for all housing types, but particularly for homes priced under \$300,000, with only 1.7 months of standing inventory.

Additional information pertaining to the West Plains single-family housing market is as follows.

- Over the past five years, about 60 new homes have been built and purchased annually. A similar rate of construction and absorption over the next 21 years would see up to 1,300 new single-family homes built. However, the rate of construction has been increasing with each passing year, increasing to around 90 homes over the past year (an increase of 50 percent). While this trend is unlikely to see exponential increases through the study's horizon year of 2040, West Plains may see at least a tripling of this annual development rate (around 200 units per year). Indeed, with more than 3,000 known residential units (both single-family multifamily) in the pipeline, this is highly likely.
- With this said, land supply may soon be an issue. While there are several locations that could accommodate additional residential uses, particularly south of I-90 in unincorporated county land, much of this land is within the airfield overlay zone for Spokane International Airport and/or zoned for light industrial, limiting alternative land uses in these areas. Alleviating these regulatory barriers may be one strategy to accommodate additional residential growth. However, if not possible, residential growth immediate east of the West Plains study area boundary has seen moderate residential development activity. This could extend west into the West Plains area, but a lack of infrastructure and fragmented land ownership, among other reasons, is likely to cause this development to occur beyond the 2040 planning horizon for this study.

Home Price	Closed Sales	Percent of Total	Absorption (Units Sold per Month)	Active Listings	Months of Inventory
Under \$200k	17	7%	1.4	1	0.7
\$200k to \$300k	197	81%	16.4	28	1.7
\$300k to \$400k	24	10%	2.0	22	11.0
\$400k to \$500k	4	2%	0.3	2	6.0
Total	242		20	53	2.6

Source: Redfin, Leland Consulting Group

Retail Market

Market indicators show mixed support for the Spokane retail sector. Low vacancies have tightened over the cycle, with absorption typically outpacing new deliveries. Spokane has also weathered a number of store closures, and all three of the metro's Shopko locations are set to close in the first half of 2019. However, rent growth is consistently low, and rental rates remain below the prerecession peak. Though 2018 saw the largest new retail delivery since the recession, a Costco build-to-suit, inventory has increased by only 1 percent this cycle.

Market data pertaining to the West Spokane County Submarket retail sector is as follows.

- With 1.1 million square feet of standing inventory in West Plains—equating to approximately 63 square foot per resident—the retail sector is currently only a local market (in other words, it fails to draw customers from outside its trade area).
- While only approximately 54,000 square foot of new retail development has been built since 2010, the next few years will see some significant deliveries, including the North 40 outfitters, a handful of new gas stations

and convenience stores, Dutch Bros coffee, and continued development interest in the Cross Pointe commercial center. Further, not-yet-planned retail development is also likely in the near-term.

- Very low vacancies suggest a constrained market, but with zero to negative absorption and a volatile national market, there is reason to be guarded about the strength of Spokane’s retail sector.
- Retail rents are consistent with averages for the metro, with marginally faster annual rent growth. New strip center retail is expected to rent for around \$22 to \$24 per square foot—significantly higher than current averages.
- The retail sector is struggling nationally, with retailers challenged to compete with the rapidly growing ecommerce sector. West Plains stands to benefit from high-traffic routes and good visibility along both the US-2 and I-90 corridors, potentially mitigating some of the negative impacts that ecommerce has had on traditional brick-and-mortar retail. The lack of existing retail development in these corridors means that new development is not constrained by the increasingly unpopular land use patterns that auto-oriented retailers and big box retail centers have created across the United States. Instead, West Plains has the opportunity to shape its commercial centers in a way that remains popular: as accessible, interesting, unique places that cater to a diverse array of needs.

Area	12 Month Deliveries	12 Month Absorption	Vacancy Rate (%)	Average Rent	12 Month Rent Growth
Metro	196k sf	-383k sf	5.1%	\$13.35	0.5%
Submarket	0k sf	14.1k sf	3.0%	\$13.34	0.9%

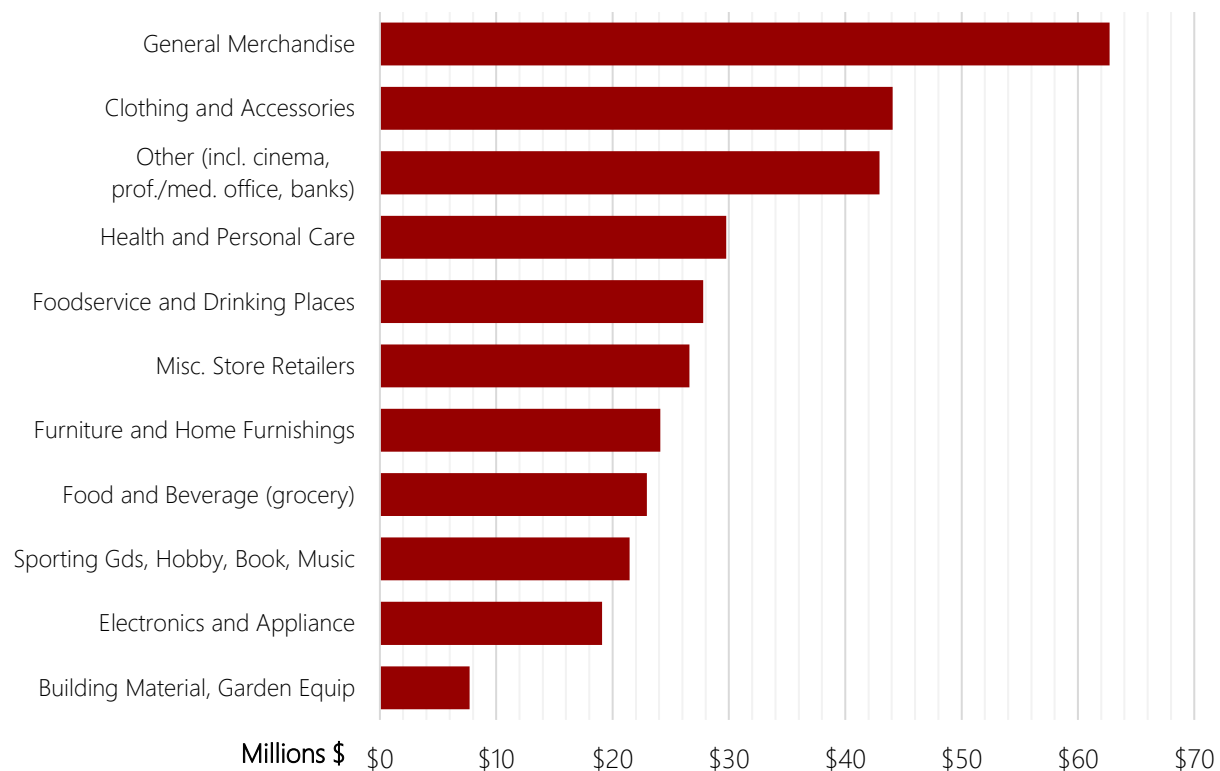
Source: Costar

National retail tenants are unlikely to have expressed significant interest in West Plains due to the lack of residential rooftops, lower household incomes, and stagnant growth. This has arguably resulted in an under-retailed environment with the majority of West Plains residents doing their shopping in the City of Spokane—the closest retail center.

This has perhaps contributed to significant spending leakage across *all* retail categories, as shown in the following chart. Leakage occur when household spending is not captured within the defined trade area. When local demand for a specific product is not being met within a trade area, consumers are going elsewhere to shop, creating retail leakage.

Opportunities appear to abound to recapture a substantial portion of existing leakage within West Plains in the form of new retail development. Recapturing all or even half of leakage is highly unlikely. Instead, community-serving retailers, such as restaurants, grocery stores, and health stores are likely to make significant inroads in recapturing existing leakage.

Figure 10. Spending Leakage by Retail Category



Industrial Market

The new Amazon distribution center aside, Spokane's industrial sector remains a local market despite exhibiting very strong fundamentals. Rent growth has posted substantial gains for years, and vacancies are well below the historical average. However, construction has been limited. Inventory has increased by only 3.7 percent since 2010, with absorption steadily outpacing new supply. The Spokane metro's moderate sales volume is in line with the historical average. Many properties trade hands each year, though at low prices, and typically both buyers and sellers are based within the region.

With this said, economic development and other marketing efforts have intensified in recent years to broaden the reach of Spokane's economy and attract and expand companies to the region. Indeed, the metro region currently boasts the fifth largest aerospace manufacturing cluster in the United States and the industrial market stands to gain a significant impetus if these economic development efforts are successful in attracting related industries.

Market data pertaining to the West Spokane County Submarket (West Plains) is as follows.

- Absorption has fallen in West Plains over the past 12 months, although the last 10 years has averaged around 110,000 square feet of positive net absorption. This is largely due to significant new vacancies in 2018, resulting in a vacancy rate spike. Vacancies have otherwise been very low over the past decade.
- Rent growth remains high—a positive sign for new development—although industrial development typically follows buy/sell trends than rental trends.

- Upcoming projects include the 2,560,000 square foot Amazon facility, Kenworth Trucking (80,000 sq. ft.), and a number of proposed projects in and around the Pacific Northwest Tech Park along US-2 that have not been finalized.
- Despite the lack of deliveries in in the last year, approximately 1.2 million square feet of new industrial space was built (not including flex) since 2010—accounting for more than one-quarter of existing inventory. The recent construction surge indicates an emerging industrial market in the West Plains that appears set to continue.

Area	12 Month Deliveries	12 Month Absorption	Vacancy Rate (%)	Average Rent	12 Month Rent Growth
Metro	266k sf	-81.3k sq. ft.	2.7%	\$6.90	4.2%
Submarket	0k sf	-83.6k sq. ft.	6.1%	\$6.78	4.5%

Source: Costar

Office Market

The Spokane office market presents mixed indicators. Though pipeline activity remains limited, vacancy rates have fluctuated significantly. Deliveries during the current cycle have largely been build-to-suits, and more recent speculative projects are experiencing lease-up challenges. However, though rent growth remains fairly low, it remains stronger than both the historical average and the three preceding years. Additionally, investment in Spokane is increasing. Sales volume in 2018 was near the cycle peak, seeing the largest office trade of the post-recession era. That said, the office market appears limited to downtown, with even higher vacancies, lower rent growth, limited construction, and negative absorption in the north county submarket.

Market data pertaining to the West Spokane County Submarket is as follows.

- With only 536,000 square feet, West Plains' office sector is considered local. New construction has been very limited, although new medical-related offices have recently been in the pipeline.
- Vacancies have fluctuated significantly despite the lack of new construction, providing signs that the market would support new development.
- Rent growth among the existing inventory has been stagnant, with rents averaging around \$17 per square foot (gross).
- With regard to absorption, the West Plains submarket has actually performed better than the wider region, helping to lower vacancies. A prolonged period of positive absorption may help attract office developers to the area.
- Despite weaker office market fundamentals (such as slower rent growth, relatively stagnant construction activity, and moderate average rents), office development is likely to ramp up, albeit as a secondary land use (to industrial, retail, and residential uses) and only in select locations. New development is likely to locate primarily around Flint Road near existing and planned office development. Continued infrastructure investment and successful economic development efforts are likely to support additional office growth. Further, residential growth will heighten the need for medical offices, such as clinics and dentists, and support specialized office developments, such as coworking spaces, business incubators, and small-scale speculative office space.

Office Market Trends, Spokane Metro Region, 2019 Q2

Area	12 Month Deliveries	12 Month Absorption	Vacancy Rate (%)	Average Rent	12 Month Rent Growth
Metro	6.3k sf	493k sq. ft.	8.2%	\$17.27 PSF	2.8%
Submarket	0k sf	74.7k sf	5.7%	\$17.14 PSF	2.6%

Source: Costar

Demand Forecasts

Demand forecasts for retail, residential, office and industrial development over the next 20 years are shown in the following pages. Both the retail and residential forecasts utilize projected annual household growth rates. Given the lack of geographically specific projected growth rates for West Plains, LCG has triangulated multiple data sources—including existing county-wide projections and historical growth rates—to come up with a 2.6 percent annual growth rate in an attempt to minimize the potential margin of error.

Methodology

Retail Demand Forecast

The retail demand model provides estimated demand by square feet per retail category for the primary trade area, which extends west in a semi-circle 35-miles from near the US-2 and I-90 interchange, in an area encompassing Davenport, Harrington, Sprague, and Spangle. The primary trade area represents the area from which most retail spending will be derived.

LCG's demand model is built from consumer spending reports that show existing household demand and spending for every retail category. Projected annual growth rates are then applied to existing demand, leakage recapture potential is assessed, and an assumption is made about the level of redevelopment or replacement of standing inventory due to obsolescence.

The resulting demand model shows the total estimated square feet of *new* retail development that can be expected over the next 20 years in the primary trade area.

Residential Demand Forecast

The residential demand model provides the estimated number of single-family and multifamily housing units expected in the residential market area over the next 20 years. The residential market area is generally defined by the West Plains study area, Medical Lake, Cheney, Four Lakes, and Cheney Spokane Road—roughly a 7.5-mile radius around the 902/I-90 interchange. This subregion represents the residential market area, reflecting the area that shares similar characteristics with the West Plains study area and from which most competitive development will originate.

The residential model similarly utilizes triangulated growth rate projections to build off the existing housing inventory. The models apply these growth rates to the existing number of households by income to provide a breakdown of total demand by future income level. Assessing tenure trends (i.e. rent versus own) distinguishes the number of rental apartments to owned single-family homes and townhomes.

Office and Industrial Demand Forecast

The employment demand model provides the estimated amount of industrial and office development by new square feet in West Plains over the next 20 years. Given the lack of competing employment lands elsewhere in the region (namely to the south and west of the West Plains study area) and the unique market characteristics of the West Plains, the West Plains boundary serves as the primary employment market area.

To calculate demand for employment uses, we apply annual growth rates to current employment data. Growth rates are triangulated for each industry based on published projected growth rates for the region, expected growth from new projects in the pipeline, and historical trends. Applying industry standards to these job totals, such as space needs and the percentage of workers in either office or industrial space, then provides total estimated building square footage.

Retail Demand

Total retail demand for the primary trade area over the next 21 years is shown in the following figure. This shows the total retail square footage expected to be supported by existing and future households and visitors.

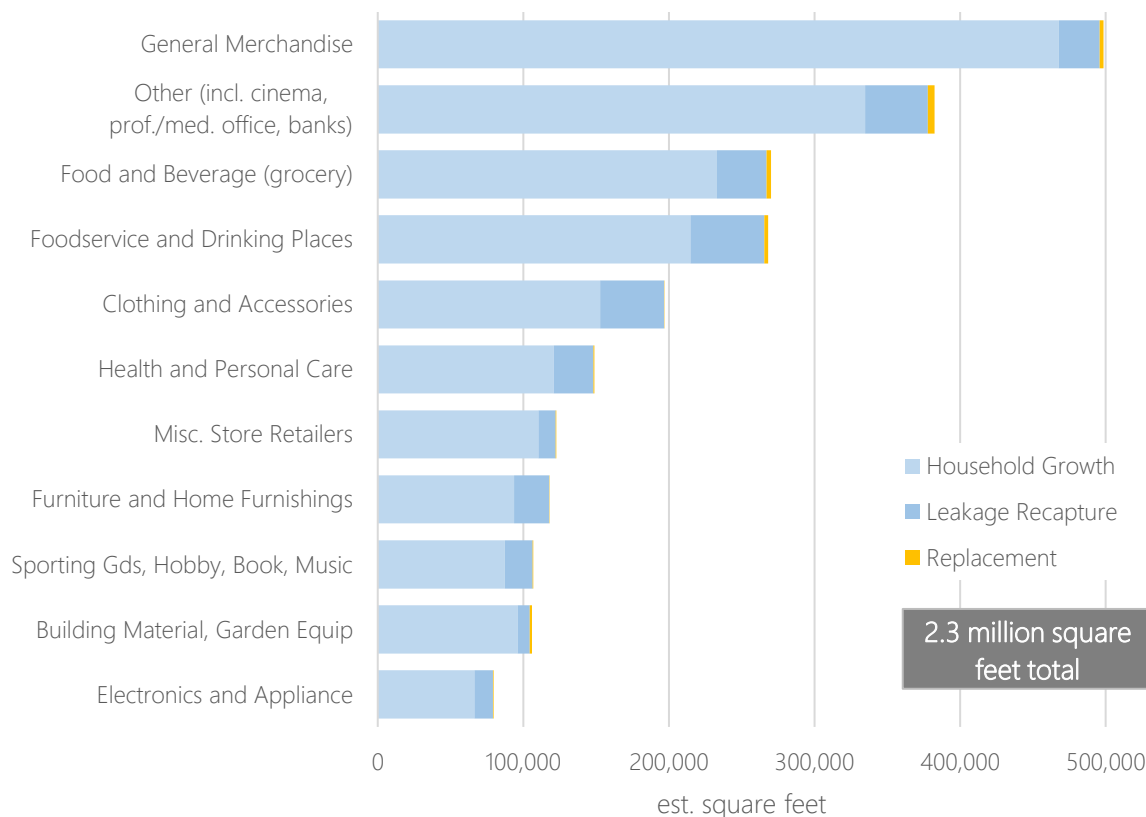
The chart shows three sources of demand for the development of new retail space:

- Household growth, i.e., from new households moving into the market area;
- Leakage recapture, i.e., by “recapturing” some of the retail spending that households are making outside of the market area; and
- Replacement, reflecting the fact that existing space becomes obsolete over time. This is a small share of overall demand.

Retail demand for the entire primary trade area accounts for 2.3 million square feet over the next 21 years. With the model utilizing a 2.6 percent annual household growth rate, it is reasonable to think that additional demand may arise with other demand drivers, such as significant employment generation and tourism efforts.

Given the lack of other competing areas of retail throughout the primary trade area, West Plains can expect to capture the vast majority of total retail demand. Recent development trends show West Plains capturing upward of 75 percent of new retail demand in the trade area. Using this same metric, West Plains might capture 1.7 million square feet of retail within its boundaries, depending on available land, infrastructure capacity, and continued residential and employment growth.

Figure 11. Retail Demand, Primary Trade Area, 2019-2040



Residential Demand

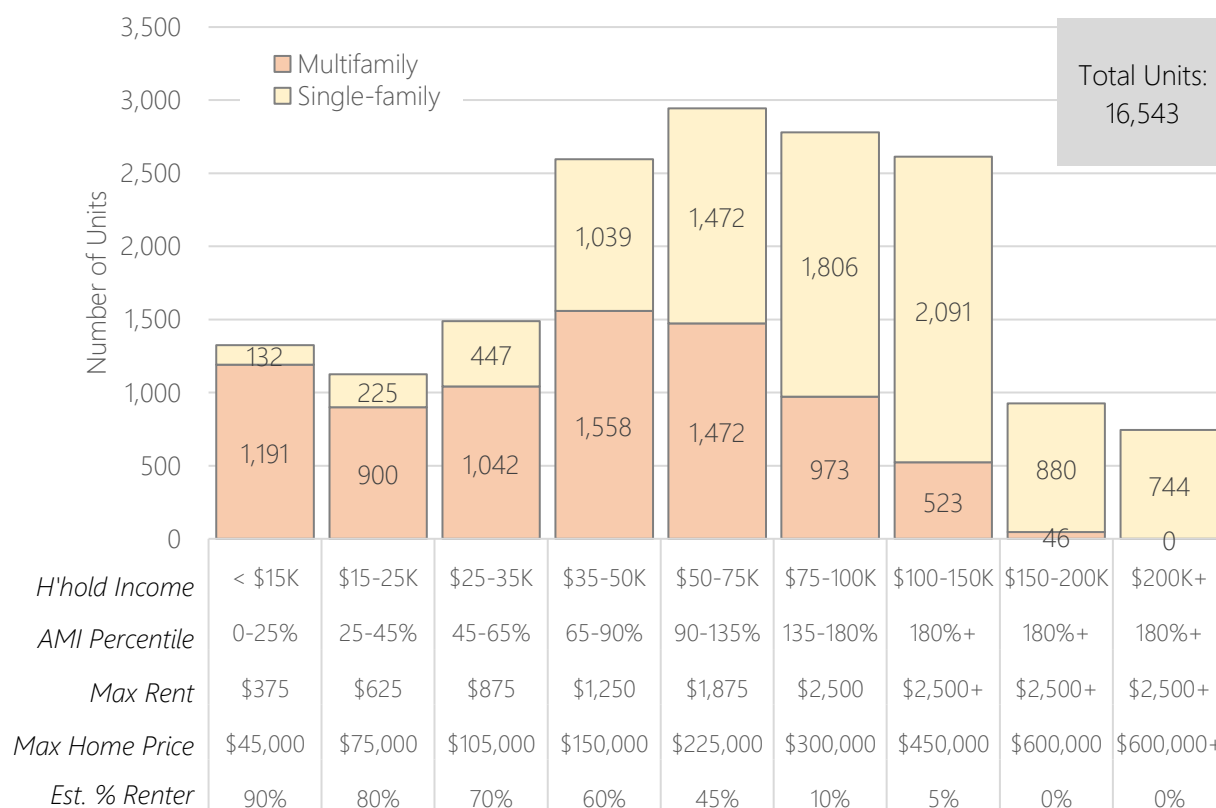
The following chart shows total market area demand for multifamily and single-family housing units. In total, we project demand for 16,500 new residential units in the market area—an area containing Medical Lake, Cheney, and extending west about 7.5 miles from the 902/I-90 interchange.

As West Plains is unlikely to capture 100 percent of total market area demand, a capture rate needs to be established based on historical trends and anticipated future trends. Medical Lake, Cheney, and the surrounding unincorporated county land will continue to grow and capture a significant portion of demand. However, West Plains is well-poised to capture denser housing typologies, such as apartments and townhomes, as well as a smaller share of single-family homes. Indeed, a look at recent trends suggest that this is highly likely, particularly as subdivisions are completed and land becomes scarcer.

Between 2000 and 2019, West Plains was responsible for about 35 percent of new growth in the residential market area, up from 25 percent between 2000 and 2010, suggesting an increasing preference for residential development in West Plains.

As such, while we anticipate a similar rate of growth to continue in West Plains, we expect the area to be able to capture about 30 percent of total market area demand, equating to about 5,000 units. A conservative estimate of attainable capture, with 10 percent of single-family detached, 25 percent of single-family attached, and 40 percent of rental apartments would equate to 3,940 total units.

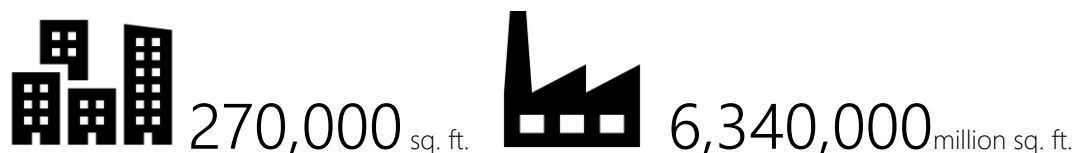
Figure 12. Residential Demand, Residential Market Area, New Units, 2019-2040



Office and Industrial Demand

Primary drivers of demand are likely to remain industrial-oriented, particularly with Amazon's new facility creating additional interest for associated warehousing and distribution. Aerospace manufacturing growth at and around Spokane International Airport will support manufacturing growth and, to a lesser extent, research and development. Successful economic development efforts may provide even more impetus to this industry. Also, while not necessarily market-driven, the continued growth of "public administration" jobs will continue to support both office and industrial development, particularly at Fairchild and the airport.

New estimated demand for office and industrial development over the next 21 years is as follows.



Flex space, which can often bridge the gap between office and industrial, depending on total market demand, currently accounts for about 15 percent of office, industrial, and flex space in West Plains. At a similar rate, flex development would account for an additional 1.0 million square feet. However, flex is particularly challenging to forecast, so we would simply expect that any potential market gaps in the future would be plugged by new flex space.

DEVELOPMENT PROGRAM

This section describes total predicted new development, based on known projects, land supply analysis, planning documents, and general development trends in the area, among other elements. The development forecast applies the findings from the market analysis to the West Plains study area at the parcel level, highlighting potential development opportunities on a site-by-site basis.

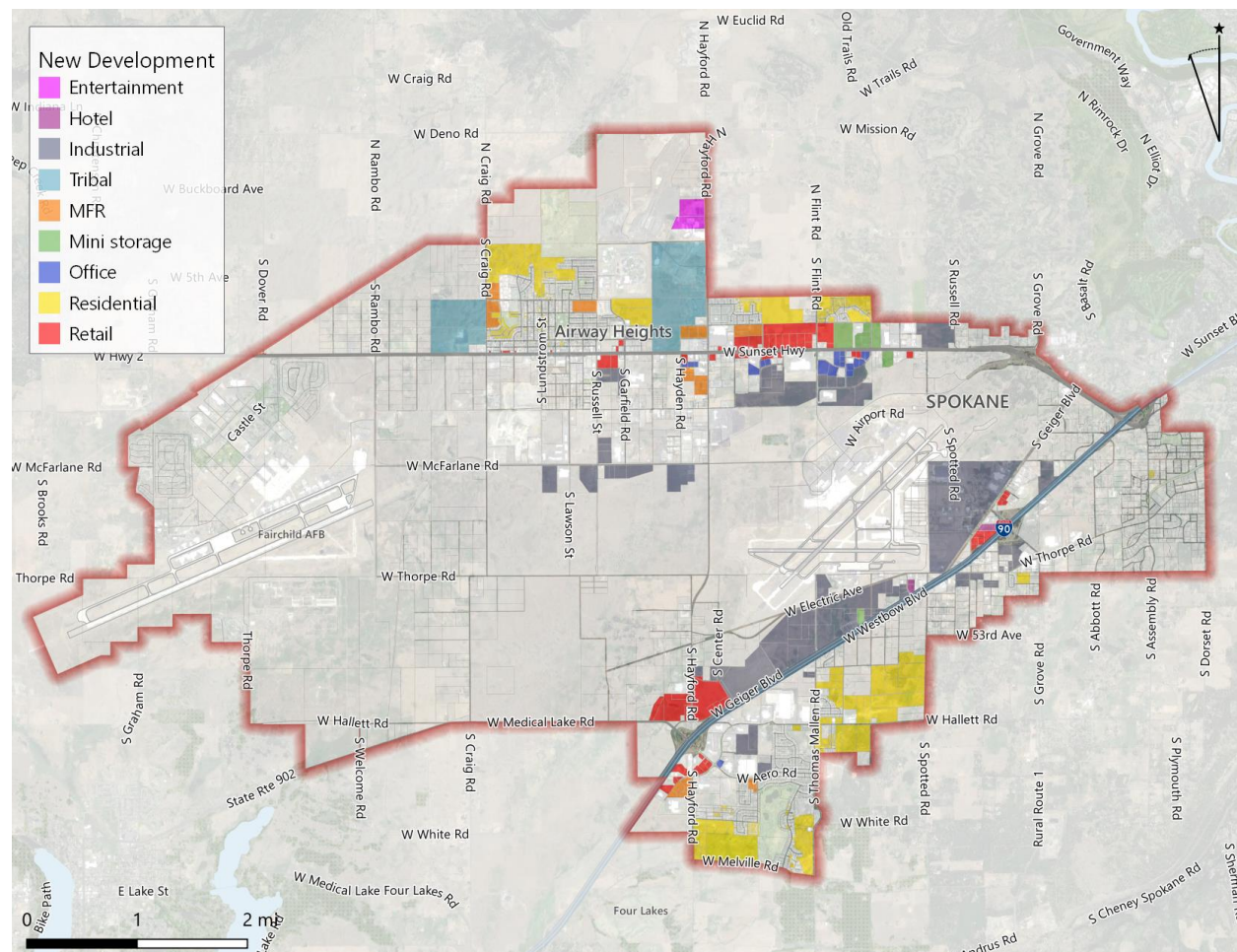
Generally, the Hwy 2 (City of Spokane segment) and I-90 corridors are likely to see the most development activity based on current development trends, existing infrastructure capacity, and a number of planned projects providing impetus to the market. Key takeaways, including phasing notes, additional rationale, and other findings relating to each development type are discussed below.

- For **industrial**, development to the south of the airport is likely to follow in Amazon's footsteps. New infrastructure investments and access to high quality transportation networks make this area particularly attractive to transportation, distribution, and warehousing companies. The new Geiger Rail Spur and planned transload facility will also improve prospects for industrial users, like manufacturers, for the area surrounding McFarlane Road, although much of this land is owned by the airport. The remaining areas likely to see additional industrial development are the Pacific Northwest Tech Park, the area south of Triumph, and the airport business. These areas are served by existing infrastructure and transportation networks and development interest have recently peaked.
- **Development of airport-owned land** is challenging to forecast for a number of reasons. There is a concerted effort to attract large companies to the area that are tied to the aerospace industry, but these rarely follow regular market dynamics. We understand that talks are underway with a number of companies but may not necessarily result in new development projects. Another complication for airport-owned land are the FAA regulations that restrict the sale of the land for private development, which is to be considered a barrier to development. If the PDA and airport's economic development efforts are successful in attracting a number of large companies to the area, full build-out numbers are more likely to apply (development would likely impact TAZ 460, 546, and potentially 551). The aforementioned transload facility will likely increase the appeal of this land to these companies.
- For **residential**, development activity is largely expected in Airway Heights, on Kalispel Tribal land, and south of I-90. Single-family residential will continue to be highly sought after, particular homes in the \$200,000 to \$300,000 range that give West Plains a competitive advantage over its neighboring area. Continued residential construction of lots in the County south of I-90 and outside the overlay zone is expected, adding significant residential activity to the area and supporting retail demand. Substantial residential activity is also planned for the Kalispel Tribal land, which will capitalize on the high demand for multifamily units. Airway Heights' residential areas to the north of Hwy 2 will likely continue to see residential construction until full build-out is achieved, likely before the 2040 planning horizon. At which point, increasing the availability of buildable residential land through rezoning or annexation may be needed; the strength of the housing market is likely to support almost all additional development.
- For **retail**, there are a few areas identified for significant retail development, largely based on available land, suitable zoning, visibility and access. These include eastern Airway Heights and further along US-2 (near the proposed North 40 outfitters), as well as surrounding each of the I-90 interchanges. Retail is currently challenging on industrially zoned land in the City of Spokane and Spokane County within the airport overlay zone. Commercial developments and expansions of existing property (potentially including retail, hotel, and other entertainment uses) are also expected on both Kalispel and Spokane Tribal Lands.

- The **office** market is limited and is unlikely to see the same uptick in development activity as residential and industrial. Some data points to a handful of small- and medium-sized office projects on or near existing business parks to the north and east of the airport. The development forecast summary table, below, presents about 90,000 additional square feet of office space than the demand forecast in the previous section identified. This is to be considered a “buffer” that would largely be accommodated by flex development, although flex space is likely to assume a larger market share than 90,000 square feet over the next 20 years.
- **Significant infrastructure investment** is required to increase the development capacity of the West Plains, particularly in order to attract high-intensity industrial users. Water remains an issue to be addressed, especially in Airway Heights, and improvements to the transportation network have highlighted as necessary for the area’s continued development. With an understanding that there are plans for major infrastructure, this investment would greatly increase development prospects by helping to prepare shovel-ready land and heighten development feasibility for all users, particularly with regard to land to the south of Hwy 2 (in and near Airway Heights).

These site-specific development projections are presented in the following map.

Figure 13. Anticipated New Development, 2019-2040



Source: Leland Consulting Group

Development Forecast Summary

In order to populate traffic models, these site-specific development projections are packaged into areas called traffic analysis zones (TAZ). Development projections for each land use in each TAZ are presented in the following table. Basic metrics (such as average square feet per employee for each land use and people per household) are provided to show estimated job generation and population growth. For industrial job generation, we assume a lower density to reflect the propensity of new industrial to be largely tied to logistics, warehousing, and distribution. Additional manufacturing jobs—particularly aerospace-related—would be expected to be higher density. Several additional notes are provided below the table.

Table 4. Market-based Development Forecast, 2019-2040

TAZ Number	Housing Units	Industrial	Office	Retail	Hotel	Storage	Other/Misc. ⁴
459	1,098			25,744			
460		500,000 ^a					
461							150,000
462	567	118,021					
463				120,000	100,000		120,000
464	241	475,060	31,494	105,851			
546	249						
547	78	201,705		120,160		368,015	
549							
550	204	769,416	285,274	387,629		64,040	
551		3,520,215 ^b		407,460	63,824	38,021	
552		298,916		113,555	104,361		
553	791	177,829	12,000	146,362			
556				295,206			
558	8						
559	897	201,979					
579	147						
Total Dev't.	4,274	6,263,141	328,768^e	1,721,967	268,185	470,076	270,000
Est. Employees⁵		8,563 ^c	939	2,870	107	19	450
Est. Pop (2.60/HH)	11,112	Total Est. Employment: 12,949^d					

Source: Leland Consulting Group

⁴ "Other/Misc." here refers to non-specific commercial uses associated with the potential development on Tribal Lands, which may include hotel(s), entertainment uses, retail, etc.

⁵ These employment projections are calculated using a combination of direct employment inputs for planned and under construction projects with known project details and estimated forecasts for projected development using average industry standards for square footage per job (the rationale for which is provided on the following page).

^a Mullen Technologies Inc. planned development for 500,000 square foot manufacturing plant adjacent to the planned Transload Facility employing around 800 people (625 sq. ft. per employee). An additional 800,000 (1.3 total) square feet and 2,200 jobs (3,000 total) may be possible with a potential lithium battery R&D and production facility (potential expansion, not planned). Only the first, known phase of development is included in this analysis.

^b Includes known 2.6m sq. ft. Amazon facility, set to employ between 1,500 and 1,800 employees, with seasonal influxes up to 2,300 (model uses an average of 2,000 employees—an equivalent of 1,300 sq. ft. per employee).

^c Job density calculations are used for speculative development only. That is, for large planned and under construction projects—such as Kenworth Trucking, Amazon, Mullen Technologies, etc.—this job data is added directly to the model, rather than as an employment density calculation. That said, it is expected that, cumulatively, new development will largely follow industry standards.

^d This employment forecast is significantly higher than most employment projections sources indicate. That is because these projections are typically based on historical averages and high-level trends. This analysis, on the other hand, blends market research and analysis with a detailed understanding of the development pipeline, highlighting several substantial projects that do not abide by typical market dynamics (for example, a market analysis cannot provide guidance on whether a development as large as Amazon will occur because there are far more important elements at play, nor can it indicate significant growth in government institutions, such as Fairchild Air Force Base).

^e Assumes additional development beyond the office demand presented in the previous section due to demand for flex space.

Employment Density

Existing employment at a specific site can be known with certainty. But often, industry averages serve as a starting point for communities planning future land use. Several institutions have research on the average square feet typically utilized by employees for different land uses. These include the Building Owners and Managers Association (BOMA), the U.S. Energy Information Administration (EIA), commercial brokers, and local governments that have conducted surveys of commercial buildings to identify space utilization averages for specific building types or industries. The variability of the data is typically broad, so a certain level of customization is required depending on anticipated land uses. For example, big box retail and warehouse industrial or high tech industrial data centers will have fewer employees per square foot than food-service retail and manufacturing industrial. Total employment generation for known development projects in the region also help ground truth some of these density assumptions.

The following table provides an explanation of the rationale behind the employment density used in the development forecast.

Table 5. Typical Space Utilization Per Job

Land Use	Sq. Ft./ Emp	Rationale
Industrial	1,000	EIA recommends 1,500 square feet (sf) for warehouse, using 2012 data, while Energy Star estimates 1,700 sf. Building Owners and Managers Association (BOMA) recommends 469 sf per employee for industrial (primarily manufacturing). Snohomish County's 2007 employment density study estimated 1,000 for wholesale, transportation, and utilities (WTU), and 500 for manufacturing. With industrial development expected to largely mostly WTU and warehousing, we expect a marginally higher-than-average employment density metric of 900 to 1,100 sf.
Office	350	<p>EIA recommends 600 sf per office job, and 550 for medical offices. However, EIA uses 2012 data and new research (C&W, URL) indicates office space utilization trending towards 180 sf. BOMA, as of 2018, also recommends 288 sf per worker for private sector office buildings. Several other planning agencies have documented 250 sf for traditional office, 350 for R&D or flex, and 400 for medical office.</p> <p>For the West Plains area, where office space is likely to be limited to land uses that require more space, such as flex buildings, medical offices, and secondary office buildings (i.e. in support of other industries, like construction), employment density is likely marginally lower than the BOMA and broker numbers, which would apply mostly to established urban office locations.</p>
Retail	600	Retail development can be either food service establishments strip/big box retail, or others, each of which have different employment densities. Regional planning entities have these ranging from 200 sf for food service, to 600 or more for traditional mercantile retail, and 1,000 for a supermarket. EIA estimates are high, at 920 sf for traditional retail and 567 for food service but reflect the range of metrics presented by different entities. Retail in West Plains is likely to be predominantly traditional mercantile, so an upper range of 600 is reasonable.
Hotel	2,500	EIA's estimates for hotel employment density is approximately 2,500 sf. While the data is from 2012, there have been few changes in the manner in which hotels operate over the past decade, so it is reasonable to assume this information still rings true. More recent data provided by Energy Star also uses a ratio of 0.32 workers per 1,000 sf, the equivalent of about one employee per 2,500 sf (URL).
Self-Storage	25,000	Self-storage typically only employs a full-time attendant and one or two others due to its hands-off and often automated nature. This is reflected in the fact that it is one of the lowest employment generators across all land uses.
Other/ Misc.	600	For properties that do not necessarily fit within the above categories, such as entertainment uses associated with the casino and/or others, are likely to follow a similar trend to retail.

Source: Leland Consulting Group

B. FAFB Build Out Land Use				
2016 Fiscal Statement		Ratios	Current	Projected
Active Duty	2828 -		3028	3628
Washington Air National Guard	947	0.33	1014	1215
Army Nation Guard/Army Reserve	685	0.24	733	879
Total Military	4,460	1.58	4,775	5,722
General Schedule	611	0.22	654	784
Federal Wage System	94	0.03	101	121
Defense Commisary Agency	58	0.02	62	74
Non-Appropriated Fund Civilians	221	0.08	237	284
Contract Civilians	363	0.13	389	466
AAFES Civilians	103	0.04	110	132
Branch Banks/Credit Union Civilians	10	0.00	11	13
Other Civilian Vendors	15	0.01	16	19
Total Civilians	1,475	0.52	1,579	1,892
Total Dependants	5,935	2.10	6,355	7,614
Total Personal	11,870	4.20	12,709	15,228
Current Estimates = 2016 Economic Impact Statement + 200 Airmen added recently.				
Projected Estimates = Current + 600 Airmen planned to be added.				

D. Spokane International Airport Operations Projected Growth

2015 Census Data		Enplanements		
Employment Sector	Jobs	2015 Enplanements	2030 Enplanements	2030 Projected Employees
Manufacturing	6	3.30E-06	-	10
Retail Trade	31	1.70E-05	-	53
Transportation and Warehousing	431	2.37E-04	-	739
Information	14	7.69E-06	-	24
Real Estate Rental and Leasing	96	5.27E-05	-	165
Professional Scientific and Technical Ser	20	1.10E-05	-	34
Admin & Support	78	4.29E-05	-	134
Educational Services	66	3.63E-05	-	113
Accommodation and Food Services	165	9.07E-05	-	283
Total	907	1,820,148	3,119,876	1,555