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H.1 INTRODUCTION

The land surrounding the Yakima Air Terminal/McAllister Field (YKM) is a mixture of residential, commercial, industrial and undeveloped property in three distinct political jurisdictions, the City of Yakima, Yakima County and the City of Union Gap. Figure H-1 shows the current situation.

It is recognized that incompatible development around an airport results in potential adverse consequences to airport safety, efficiency, operation, and economic viability. In addition, development near an airport may reduce property available for aviation operations and safety areas. Incompatible development in the vicinity of an airport has been shown to have the following negative consequences on both the community and the airport:

- It reduces the public's access to air transportation.
- It reduces the value of public investment in airport facilities, both currently and in the future.
- It creates a situation where opportunity for economic development within the community is reduced.
- An overall reduction in the quality of life for people living in residential developments that have been located in incompatible areas results from noise and other airport impacts.

To assure that YKM remains compatible with development in the City of Yakima, Yakima County and the City of Union Gap, a range of critical factors must be considered, particularly focused on the interactions that occur between the airport and the neighborhoods. These are focused on;

1. **Noise:** Using the DNL65db noise contour for the year 2030 as generated in the airport master plan the analysis addresses potential impacts that could be disruptive to land use activities.
2. **Airspace protection:** The airspace surfaces identified in the FAR Part 77 Imaginary Surfaces for the ultimate airport layout as shown on the Airport Layout Plan Sheets 3 through 7 are used to assess the areas required for safe airport operations.

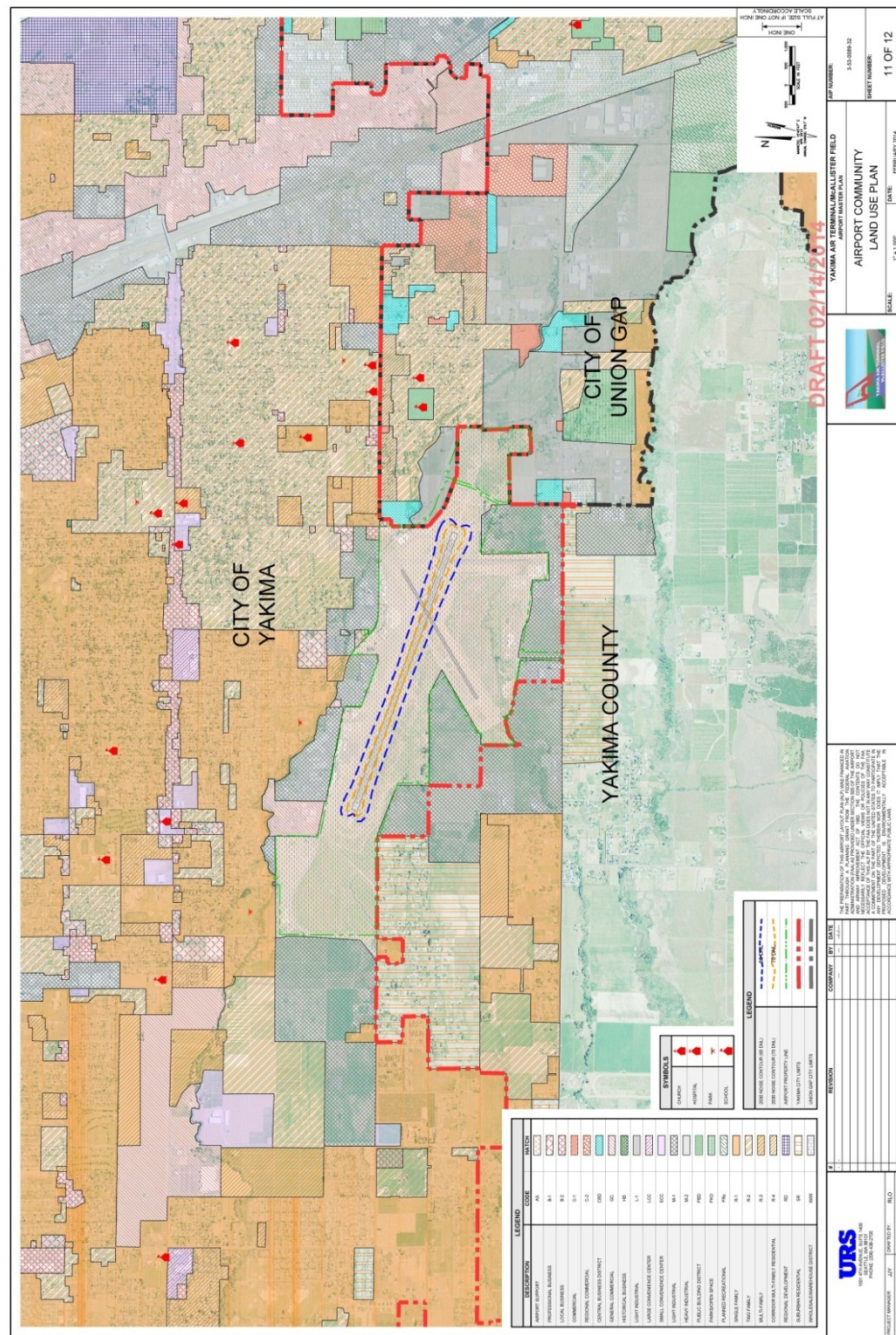


Figure H-1: Airport Community Land Use Plan

1. **Safety:** A series of safety zones referenced in the WSDOT report “Airports and Compatible Land Use Guidebook” are used to consider the consequences of potential accidents in the airport area.

Noise

At present, aircraft operations at YKM do not generate much noise since most are conducted by small, piston powered aircraft and noise levels exceeding DNL 65 are contained on airport property both today and in the 20-year future. Therefore, the airport’s noise impact on the surrounding communities will not change as a result of the recommended improvements.

Airspace Protection

Height restrictions around the airport are defined by FAR Part 77, Objects Affecting Navigable Airspace. The Part 77 Surfaces surrounding YKM have been discussed and defined previously in Chapter 6. These drawings illustrate the airspace that needs to be kept clear of obstructions, including objects of natural growth, man-made objects, and terrain to assure safe, all-weather operations.

Safety

The Washington State “Airports and Compatible Land Use Guidebook” provides guidance for identifying Airport Safety Zones near airports. These zones are based on the airport’s runway system and associated activity. The objective is to preclude development of non-compatible land uses in locations that statistically, account for potential impacts of aircraft flight including noise, airspace, vibration, odor, and annoyance.

The six zones include;

Zone 1 – Runway Protection Zone – This zone encompasses the runway protection zone (RPZ) at the end of each runway. Also included in the zone are the strips of land immediately adjacent to the runway where FAA standards preclude structures. Zone 1 is where the greatest concentration of accidents take place.

Zone 2 – Inner Approach/Departure Zone – This zone wraps around and extends beyond Zone 1 along the runway centerline. Next to the RPZ, it represents the area where the risk of aircraft accidents is the greatest. On departure, aircraft are typically at full power in the initial phase of climb. On approach, they are at low altitude as they prepare for landing.

Zone 3 – Inner Turning Zone – This zone is a wedge-shaped area lying along the sides of Zone 2. It is primarily significant where most of the flights are visual. When operating visually,

departing aircraft may begin turning over this area to fly toward their destination or to remain in the traffic pattern. Arriving aircraft often overfly this area as well, especially if they are flying a tight pattern. One type of accident known to occur in this area is a low-altitude stall- spin that can happen if a pilot attempts to make too tight of a turn.

Zone 4 – Outer Approach/Departure Zone – This area lies beyond Zone 3 along the extended runway centerline. Aircraft flying straight out or in overfly this area at low-altitude. The zone is particularly significant on runways where much of the operations are on instrument procedures and at busy airports where elongated traffic patterns are common. The risks in this area are moderate, but less than in Zones 1 through 3.

Zone 5 – Sideline Zone – Lying in narrow bands along each side of the runway, aircraft do not normally fly over the sideline zone. The principal risk is from aircraft that lose directional control while landing or just after takeoff. The risks are lower than in Zones 1 through 3 and similar to those of Zone 5.

Zone 6 – Traffic Pattern Zone – The final zone contains the remainder of the airport environment where aircraft fly as they approach and depart the airport or are engaged in flight training. In area, Zone 6 is typically larger than the other zones combined. A substantial percentage of accidents take place here, but they are scattered over the large area.

These Safety Zones applied to the YKM are depicted on Figure H-2.

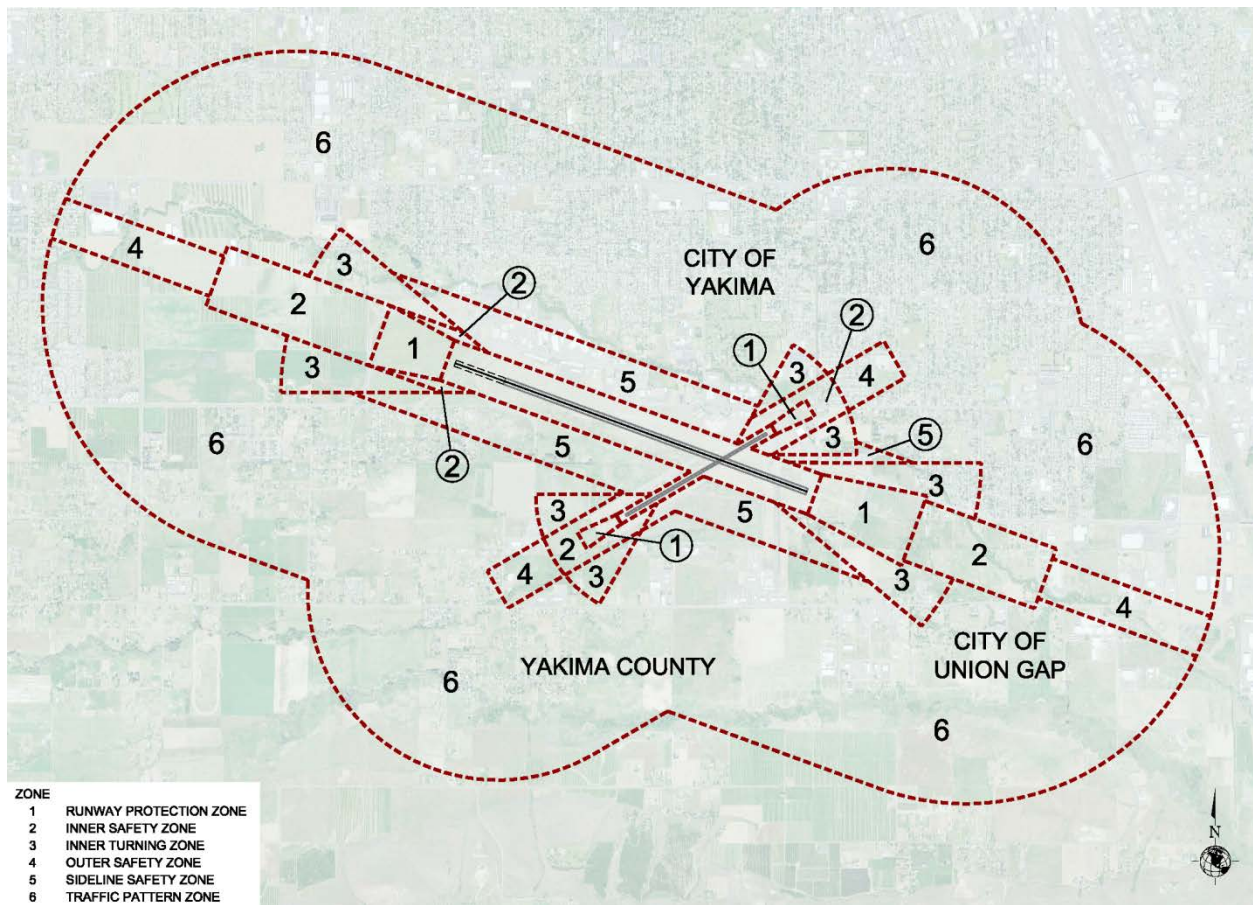


Figure H-2: Aircraft Safety Zones

The recommendations on the compatible and non-compatible land use activities within each of the zones are presented in the following tables. Community land use is shown overlaid with the Safety Zones in Figure H-3.

Table H-1: Washington State Guidelines for Accident Safety Zones

	Compatibility Zones					
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
A. Resource Operations						
1. Agricultural (Commercial)						
Agriculture, horticulture, general farming (crops only, not feedlots and stockyards)	P	P	P	P	P	P
Agricultural building	L	L	P	P	P	P
Agricultural chemical sales/storage	X	L	P	P	P	P
Agricultural Housing/Farm labor	X	X	L	P	L	P
Agricultural housing/farm labor	X	X	L	P	L	P
Agricultural market	X	X	P	P	X	P
Agricultural related industries	X	L	P	P	P	P
Animal husbandry	X	L	L	L	X	P
Agricultural feeding operation or stockyards	X	X	X	X	X	X
Agriculture or food processing facility	X	L	P	P	L	P
Livestock auction	X	X	X	L	X	P
Fairgrounds	X	X	X	X	X	P
Floriculture, aquaculture	X	L	P	P	P	P
Fruit bin sales/storage	X	L	P	P	P	P
2. Forest (Commercial)						
General forest silver culture	L	L	P	P	P	P
Forest product processing	X	L	P	P	P	P
3. Mining/Refining/Offsite Hazardous Waste Treatment						
Asphalt paving and roofing materials, rock crushing	X	X	L	L	L	P
Mining including sand and gravel pits	X	L	L	L	X	P
Stockpiling of earthen materials	X	L	L	L	X	P
B. Rural Development						
1. Rural Residential						
Single-family dwelling (large lot, 5 acres or greater*)	X	L	L	P	X	P
Single-family dwelling, rural centers	X	X	L	L	X	L
Residential Cluster Development, 40% open	X	X	LSC	X	X	P
Multi-family dwelling	X	X	X	X	X	P
Temporary farm housing	X	X	P	P	L	P

	Compatibility Zones					
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
2. Rural Centers						
Single-family dwelling; up to 12 dwelling units/acre	X	X	L	L	X	L
Two - Four family dwelling (duplex) (*)	X	X	X	X	X	L
Multi-family dwelling; 12-20 units/acre	X	X	L	X	X	P
21+ units/acre	X	X	P	P	X	P
Agriculture/forest/mineral resources or industry (see item A)						
Community services (see item D2)						
Retail and commercial service (see items D4 & D5)						
Industrial/manufacturing (see item D4s & D5)						
C. Education Facilities						
Junior or community college	X	X	L	L	L	P
Schools, K-12 elementary, middle, senior high	X	X	X	X	X	X
Business school	X	L	L	L	L	P
Vocational schools	X	L	L	L	L	P
D. Urban Development						
1. Residential						
Single-family dwelling; up to 12 dwelling units/acre	X	X	X	X	X	L
Two - four-family dwelling (duplex)(*)	X	X	X	X	X	L
Multi-family dwelling(*): 15 or more	X	X	LSC	X	X	P
Mixed-use office/commercial/residential use	X	X	P	P	X	P
Residential development cluster 40% > open space	X	X	L	L	X	L
Residential infill	X	X	L	L	L	P
Mobile home parks	X	X	L	L	X	L
Boarding house	X	X	L	L	L	L
Retirement homes	X	X	X	X	X	L

	Compatibility Zones					
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
2. Community Services						
Cemetery	P	P	P	P	L	P
Churches, synagogues, temples	X	X	L	L	X	L
Community center meeting halls, fraternal organizations	X	X	L	L	X	P
Convalescent, nursing home and group homes	X	X	X	X	X	L
Day care facilities, family in-home	X	X	L	L	X	L
Day care center	X	X	L	L	X	L
Funeral home	X	X	P	P	X	P
Police, fire stations, ambulance service	X	L	P	P	P	P
Hospital	X	X	X	X	X	X
Medical clinic	X	X	L	L	X	P
Correction facilities	X	L	L	L	L	L
Libraries	X	X	P	P	X	P
Museums and art galleries	X	X	L	P	P	P
Zoo	X	X	P	P	X	P
3. Amusement and Recreation						
Amusement park (permanent)	X	X	L	L	X	L
Bowling alleys	X	X	P	P	X	P
Campground	X	L	L	P	L	P
Recreational vehicle parks; short term	X	L	L	P	L	P
Drive-in theatres	X	X	L	L	X	P
Fairgrounds	X	X	P	L	L	P
Golf courses	X	L	P	P	X	P
Gymnasiums, exercise facilities	X	L	L	L	L	P
Horse racing tracks, speedways	X	X	X	X	X	X
Miniature golf courses	X	X	P	P	X	P
Movie theatres, auditoriums exhibition halls	X	X	L	L	X	P
Parks	L	L	P	P	L	P
Roller skating rink	X	X	L	L	X	P

	Compatibility Zones					
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
4. Retail Trade and Service						
Addressing, mailing, and stenographic services	X	L	P	P	L	P
Advertising agencies	X	L	P	P	L	P
Airport uses and activities commercial/industrial	L	P	P	P	P	P
Animal clinic/hospital	L	P	P	P	P	P
Antique stores	X	L	P	P	X	P
Automobile, truck, manufactured home, and travel trailer sales	L	P	P	P	P	P
Automobile and recreational vehicle (RV) sales; weekend	L	P	P	P	L	P
Automotive: car wash	L	P	P	P	L	P
Sales lot/auto center	L	P	P	P	P	P
Parking lots and garages	L	P	P	P	P	P
Maintenance and repair shops	X	P	P	P	P	P
Paint and body repair shops	L	P	P	P	P	P
Parts and accessories (tires, batteries, etc.)	X	P	P	P	P	P
Specialized repair shops (radiator, etc.)	L	P	P	P	P	P
Towing services	L	P	P	P	P	P
Wrecking and dismantling yard	L	P	P	P	L	P
Bakery	X	P	P	P	L	P
Beauty and barber shops	X	L	P	P	X	P
Bed and breakfast inn	X	X	L	L	X	P
Boats and marine accessories	X Except	P	P	P	P	P
Books, stationery, office supplies	Storage only	P	P	P	L	P
Building and trade (plumbing, heating, electrical, painting, etc.)	Storage only	P	P	P	L	P
Clothing and accessories	X	L	P	P	L	P
Communication towers	X	X	L	L	L	L
Computer and electronic stores	X	L	P	P	L	P
Department, discount, variety stores	X	X	P	P	X	P
Drug stores (optical goods, orthopedic supplies)	X	L	P	P	L	P
Employment agencies (private)	X	P	P	P	L	P

	Compatibility Zones					
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Farm and implements, tools and heavy construction equipment	X	L	P	P	P	P
Farm supplies	L	P	P	P	P	P
Financial institutions	X	P	P	P	L	P
Food store	X	P	P	P	L	P
Furniture, home furnishings, appliances	X	P	P	P	L	P
General hardware, garden equipment and supplies	X	P	P	P	L	P
Grocery and convenience stores	X	L	P	P	L	P
Heavy equipment storage, maintenance and repair	X	L	P	P	L	P
Insurance agents, brokers, and service agencies	X	P	P	P	L	P
Kennels	L	P	P	P	L	P
Laundries, laundromats, and dry cleaning plants	X	P	P	P	L	P
Liquor stores	X	P	P	P	L	P
Lumber yards	L	P	P	P	L	P
Medical and dental laboratory, offices and clinic	X	X	L	P	x	P
Mini Storage	L	P	P	P	P	P
Motels and Hotels	X	X	P	P	P	P
Motorcycles sales/repair (including maintenance)	X	P	P	P	L	P
Paint, glass, and wallpaper stores	X	P	P	P	L	P
Pet stores, pet supplies, and dog grooming	X	L	P	P	L	
Professional office buildings for architects, attorneys, government, etc.	X	L	P	P	P	P
Rental: auto, truck, trailer, fleet leasing services	L	P	P	P	L	P
Repairs: small appliances, TV, business machines, watches, etc.	L	P	P	P	L	P
Restaurant, cafe and drive-in eating facilities	X	L	P	P	P	P
Service station	X	L	P	P	L	P
Sporting goods, bicycle shops	X	P	P	P	P	P
Taverns, bars, dance establishments	X	L	P	P	L	P

	Compatibility Zones					
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
5. Industry/Manufacturing						
Aircraft parts	Storage only	L	P	P	P	P
Aircraft industrial	Storage only	L	P	P	P	P
Apparel and accessories	X	L	P	P	X	P
Bakery products (wholesale)	Storage only	L	P	P	X	P
Beverage industry	Storage only	L	P	P	X	P
Canning, preserving, and packaging fruits, vegetables, and other foods	X	L	L	L	X	P
Cement and concrete plants	X	L	L	L	X	P
Chemicals (industrial, agricultural, wood, etc.)	X	X	L	L	X	L
Concrete, gypsum, and plaster products	Storage only	L	P	L	L	P
Confectionery and related products (wholesale)	Storage only	P	P	P	L	P
Mini storage	P	P	P	P	P	P
Product assembly	Storage only	L	P	P	L	P
Prefabricated structural wood products and containers	Storage only	P	P	P	L	P
Printing, publishing, and binding	Storage only	P	P	P	L	P
Rendering plants, slaughter houses	X	X	X	X	X	L
Rubber products	X	L	P	P	L	P
Sawmills and planing mills	Storage only	L	P	P	L	P
Sheet metal and welding shops	Storage only	P	P	P	L	P
Stone products (includes finishing of monuments for retail sale)	Storage only	P	P	P	L	P

	Compatibility Zones					
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
6. Wholesale Trade-Storage						
Warehouses	Storage only	P	P	P	P	P
Wholesale trade	Storage only	P	P	P	P	P
Storage facilities; bulk	L	P	P	P	P	P
commercial	L	P	P	P	P	P
mini-storage	L	P	P	P	P	P
E. Transportation and Utilities						
1. Transportation						
Bus terminals	X	L	P	P	L	P
Transportation storage and maintenance facilities	Storage only	P	P	P	P	P
Transportation brokerage offices; without truck parking	X	P	P	P	P	P
with truck parking	L	P	P	P	P	P
Contract truck hauling, rental of trucks with drivers	L	P	P	P	P	P
Rail, truck terminals (for short-term storage, office)	L	P	P	P	P	P
Air storage and office use	Storage only	P	P	P	P	P
Railroad switch yards, maintenance, and repair facilities, etc.	X	P	P	P	P	P
Taxicab terminals, maintenance, and dispatching centers, etc.	X	P	P	P	P	P
2. Utilities						
Power generating facilities	L	L	L	L	L	L
Utility services (substations, etc.)	L	L	L	L	L	P
Wholesale trade	L	P	P	P	L	P
Storage facilities; bulk	L	P	P	P	P	P
Commercial	L	P	P	P	P	P

Chart Symbols

- **“L” Limited** – Uses or activities that may be compatible with airport operations depending on their location, size, bulk, height, density and intensity of use.
- **“LSC” Limited Special Conditions** – Development should be moved away from the extended runway centerline. Open space should be devoted to areas that experience elevated risk.
- **“P” permitted** – Uses or activities that should be permitted, however, these activities should be reviewed to ensure that they will not create height hazard obstructions, smoke, glare, electronic, wildlife attractants, or other airspace hazards.
- **“X” Prohibited** – uses or activities that should not be constructed near the airport.

All uses or activities identified herein are subject to intensity and density limitations set forth in Table F-1. Particular attention should be given to developments that when located in combination with other permitted or limited activities may create cumulative impacts on airport operations. All uses should be reviewed to ensure that they will not create airspace hazards.

Source: Washington State Department of Transportation, Aviation Division, "Airports and Compatible Land Use Guidebook", January 2011.

Based on this information it is recommended that the City work with the land use and comprehensive planning agencies to:

1. Adopt the master plan by reference into local comprehensive plans.
2. Describe airport facilities and operations, existing and future, in the transportation inventory.
3. Discourage incompatible land uses adjacent to public-use airports.
4. Identify the airport as an essential public facility.
5. Identify the important role of airports in local and regional economic development.

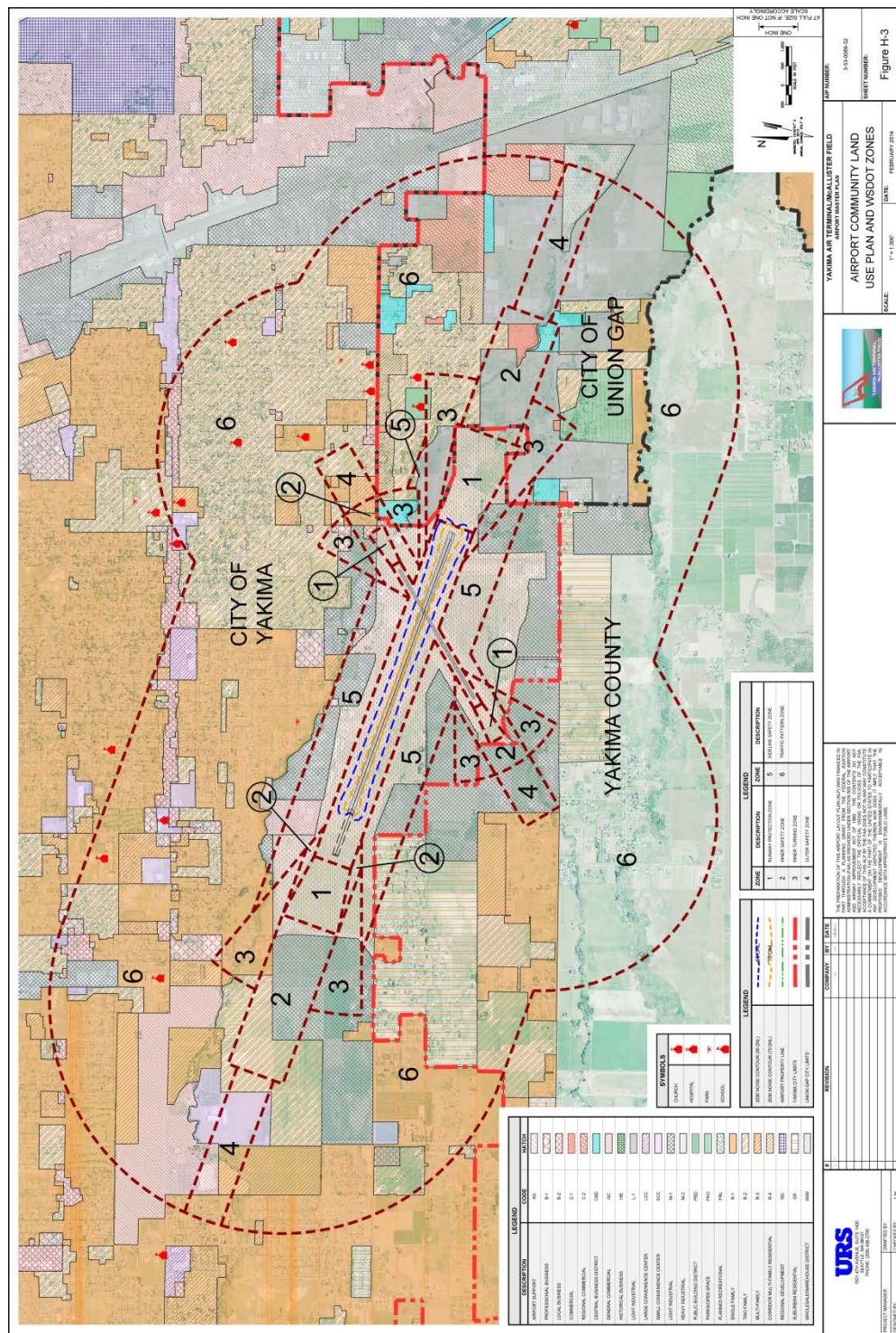


Figure H-3: Community Land Use and WSDOT Zones