



# PEDESTRIAN MASTER PLAN

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CITY OF SPOKANE



ADOPTED NOVEMBER 2, 2015

**Pedestrian Master Plan**  
City of Spokane

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# 1 SPOKANE PEDESTRIAN MASTER PLAN

## PLAN PURPOSE

Walking is the most fundamental transportation choice -- the starting place for all journeys, even as people walk to their cars, transit, or bicycle to move between the places they visit throughout the day. Despite the fact that nearly all Spokane residents walk at some point, the details of the walking environment go largely unexamined; as for most people in Spokane the duration of a walking trip is so short that a facility of any quality that connects two places with the shortest path will do.

Like many cities, Spokane has focused its attention over the last 60 years on planning and design solutions that improve motor vehicle access and mobility. Street and intersection designs have come to accommodate high motor vehicle speeds and traffic volumes with limited delay. Furthermore, the probability of choosing transit or walking as a primary mode is reduced by missing or deteriorated sidewalks, a lack of high quality crossings on higher speed and volume streets such as arterial streets, and long trip distances along curvilinear streets.

In response to these conditions, and a demand for more safe transportation options, Spokane, like cities across the country is choosing to redesign its streets. These redesigns can provide a high quality barrier-free walking environment that supports increased levels of physical activity, important connections to transit, and more transportation options for all. Of particular note in considering these changes is that the Millennial generation (born between 1981 and 2000) is expecting diverse shared mobility options. According to the 2010 Census, the 85.4 million Millennials who make up close to 28% of the total U.S. population are traveling differently. Compared to their parents' generation, Millennials are:

- Purchasing fewer cars and driving less<sup>1 2</sup>
- Not obtaining their driver's license<sup>3</sup>
- Biking, walking, and taking transit more<sup>4 5</sup>

**This chapter includes the following sections to support a more walkable Spokane:**

- Goals for the pedestrian environment
- Description of the basic elements of providing a quality pedestrian experience
- Assessment of existing conditions for walking today
- Recommended policies and actions

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<sup>1</sup> American Public Transportation Association. "Millennials & Mobility: Understanding the Millennial Mindset." <http://www.apta.com/resources/reportsandpublications/Documents/APTA-Millennials-and-Mobility.pdf>

<sup>2</sup> Ibid.

<sup>3</sup> Federal Highway Administration, *Highway Statistics 2010—Table DL-20*, September 2011.

<sup>4</sup> American Public Transportation Association. "Millennials & Mobility: Understanding the Millennial Mindset." <http://www.apta.com/resources/reportsandpublications/Documents/APTA-Millennials-and-Mobility.pdf>

<sup>5</sup> U.S. PIRG. "A New Direction." 2013. <http://uspig.org/sites/pirg/files/reports/A%20New%20Direction%20vUS.pdf>.

This chapter also provides a number of relevant best practices which are intended to serve as a toolbox for Spokane as it addresses key pedestrian improvements. The best practices should be used to inform opportunities to improve and enhance Spokane’s existing pedestrian environment.

## Vision and Goals

Five goals guide the continued enhancement of the pedestrian environment in Spokane.

- **Goal 1 Well Connected and Complete Pedestrian Network** - Provide a connected, equitable and complete pedestrian network within and between centers and corridors and Pedestrian Priority Zones that includes sidewalks, connections to trails, and other pedestrian facilities, while striving to provide barrier-free mobility for all populations.
- **Goal 2 Maintenance and Repair of Pedestrian Facilities** - Provide maintenance for and improve the state of repair of existing pedestrian facilities.
- **Goal 3 Year-Round Accessibility** - Address the impacts of snow, ice, flooding, debris, vegetation and other weather and seasonal conditions that impact the year-round usability of pedestrian facilities.
- **Goal 4 Safe and Inviting Pedestrian Settings** - Create a safe, walkable city that encourages pedestrian activity and economic vitality by providing safe, secure, and attractive pedestrian facilities and surroundings.
- **Goal 5 Education** - Educate citizens, community groups, business associations, government agency staff, and developers on the safety, health, and civic benefits of a walkable community.

### ***Pedestrian Priority Zones***

The Pedestrian Master Plan establishes Pedestrian Priority Zones to guide investments to areas with the greatest potential to support walking access to destinations such as employment, schools, parks, and transit stops. Priority zones were identified using an analysis of pedestrian demand and deficiency found later in this chapter. Identification of these zones will help the City target investments in pedestrian infrastructure such as sidewalks, curb ramps, and pedestrian crossings.

## EXISTING GUIDING DOCUMENTS

Spokane's current plans, design guidelines, and best practices influence the recommendations in this chapter.

### Neighborhood Plans Addressing Pedestrians

Since the adoption of the 2001 City of Spokane Comprehensive Plan, several neighborhoods have participated in localized planning efforts. They have engaged stakeholders, evaluated existing conditions, established visions and goals and identified key projects and implementation steps to improve neighborhood livability. Among other things, the neighborhood plans address many topics including pedestrian transportation, connectivity and safety. The following neighborhood plans have been adopted by resolution by the Spokane City Council:

- Browne's Addition: Master Plan for Coeur d'Alene Park - Spokane Park Board Approval
- East Central: City Council resolution number: RES 2006-0032
- Emerson-Garfield: City Council resolution number: RES 2014-0086
- Five Mile: City Council resolution number: RES 2012-0007
- Grandview/Thorpe: City Council resolution number: underway
- Logan: City Council resolution number: RES 2006-0069
- Logan Neighborhood Identity Plan and Model Form-Based Code for Hamilton Corridor: RES 2014-0053
- Nevada Lidgerwood: City Council resolution number: RES 2012-0009
- North Hill: City Council resolution number: underway
- Peaceful Valley: City Council resolution number : underway
- Southgate: City Council resolution number: RES 2012-0008
- South Hill Coalition: City Council resolution number: RES 2014-0067
- West Central: City Council resolution number: RES 2013-0012

Many neighborhood plans include consideration of pedestrian improvements (see examples below). Although these plans will require further study for implementation, they provide direction to the City of Spokane as to the future desires of the neighborhood and are a useful tool for planning capital projects within a neighborhood. In the context of the Pedestrian Master Plan, the neighborhood plans are valuable for addressing neighborhood based connectivity improvements and in setting priorities for future projects. It is anticipated that the Spokane City Council will adopt additional neighborhood/subarea plans in the future that consider pedestrian improvements.



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Southgate Neighborhood Connectivity Master Plan

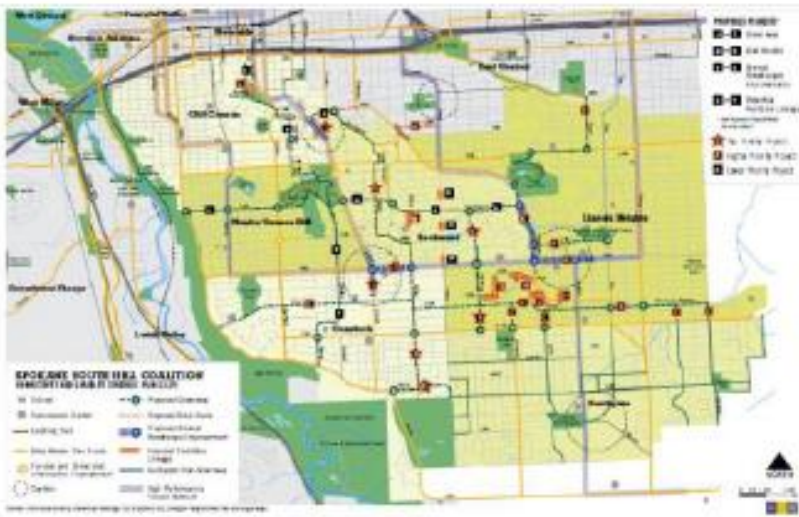


Emerson-Garfield  
Neighborhood  
Action Plan 2014

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**Pedestrian Improvement Plan—Five Mile Prairie Neighborhood Plan**



**South Hill Coalition Connectivity and Livability Strategic Plan**

## **Downtown Spokane Streetscape Inventory, SPVV Landscape Architects, November 2014**

The Downtown Spokane Sidewalk Inventory and Assessment was completed in November of 2014. The inventory included the downtown area from Spokane Falls Boulevard to Interstate 90; west side of Monroe Street to the east side of Browne Street.

The goal of the Inventory and Assessment project was to gain an understanding of the conditions of the pedestrian surfaces in Downtown Spokane, including the pavement types and conditions; street furnishings; street trees and accessible ramps. The inventory process took place between August and October, 2014, and included data collection in the field in the form of written notes, photographs, preparation of narratives for each block, and area take-offs that identify square



footages of pedestrian surfaces needing replacement or repair; locations and types of street trees, tree grates, benches, trash receptacles, media boxes and other street furnishings; locations of access hatches into structural sidewalks; and identification of compliant- and non-compliant pedestrian cross-walks. The document contains individual chapters for each block within the study area, including a map graphic with colored representations of each type of sidewalk surfacing that needs repair/replacement, along with supporting photographs of each block and major elements within the inventory. In addition to graphic information found here, substantial amounts of information were uploaded to the City of Spokane GIS database regarding site furnishings, street trees, tree grates, etc.

## **Spokane Design Guidelines**

The City's current design standards for pedestrian facilities are found in the adopted Comprehensive Plan, Unified Development Code, Street Design Standards, and Spokane's Standard Plans. The Street Design Standards developed as part of the Transportation Plan Update will become the design standards for the City.

## **NACTO Urban Street Design Guide**

In November 2014, the Spokane City Council endorsed the National Association of City Transportation Officials (NACTO) Urban Street Design Guide and Urban Bikeway Design Guide.<sup>6</sup> The NACTO guide offers a blueprint for modern urban streets, guiding design decisions for streets, intersections, and traffic control. The guide holistically integrates pedestrian planning into street design. Additionally, it offers documented guidance to support engineering decisions to use innovative treatments that are not yet found in other guides.

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<sup>6</sup> City of Spokane Council Resolution RES 2014-0113, December 11, 2014. Accessed online: [http://nacto.org/wp-content/uploads/2014/12/Spokane-WA\\_USDG-UBDG-Resolution.pdf](http://nacto.org/wp-content/uploads/2014/12/Spokane-WA_USDG-UBDG-Resolution.pdf)

## WHAT IS THE QUALITY OF THE WALKING EXPERIENCE IN SPOKANE TODAY?

According to the US Census Bureau's American Community Survey (ACS), approximately 4% of Spokane's residents walk to work<sup>7</sup> while another 4% use public transportation, a trip that most often requires a pedestrian trip on one or both ends of the journey<sup>8</sup>.

Short blocks, complete sidewalks, and marked crossings result in a walkable environment in the downtown core. Older streetcar suburbs like Browne's Addition feature shaded streets, sidewalks with planted buffers, and quieter streets that are comfortable to cross. Walking conditions are more challenging in other parts of the city, such as portions of North Division, where narrow sidewalks adjacent to high speed traffic are relatively uncomfortable to walk along and contain barriers for disabled populations where there is inadequate space to navigate around street furniture or utility poles. Other parts of the city have few or no sidewalks and a lack of marked crossing opportunities.

Any walking experience is made more safe and comfortable by design strategies that establish a clear path of travel for pedestrians separated from other modes, both along street segments and at intersections. In addition, because the pace of people walking is slower, intriguing and interesting adjacent buildings and land uses make the walk more pleasant. This section describes best practices for design and land use conditions and compares them to the state of walking in Spokane today, focusing on the considerations that have significant impact on the quality of the pedestrian experience:

- Continuous sidewalks and buffers
- Pedestrian accommodation at signalized intersections
- Convenient marked pedestrian crossings
- Driveway curb cuts
- Street connectivity
- Land use and building design
- Safe routes to school
- Universal accessibility

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<sup>7</sup> US Census, "Commuting Characteristics by Sex, 2009-2013 American Community Survey, 5-Year Estimates." Accessed January 12, 2015 online: [http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_13\\_5YR\\_S0801&prodType=table](http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_5YR_S0801&prodType=table)

<sup>8</sup> ACS asks respondents to report their most common means of transportation taken to work, meaning it is possible that some residents choose to walk to work sometimes, but that travel goes unreported. Additionally, the journey to work is only one of a large number of purposes that generate daily travel activity. In 2013, work trips accounted for just 15.6% of all trips and 27.8% of vehicle miles of travel. It is for this reason that the Census journey to work question generally underestimates the amount of walking in a community.

## Continuous Sidewalks and Buffers

Because they provide a place to walk that is physically separated from traffic, sidewalks are the most effective way to avoid pedestrian involved collisions. Yet they are often taken for granted as a basic design element.

### Best Practices

A system of pedestrian ‘zones’ helps to organize sidewalk space and buffer cars from pedestrians:

- The Curb Zone provides a physical buffer between the walking/seating areas of the sidewalk and the roadway.
- Pedestrian Buffer Strip provides a place for shade trees that give shade and further physical separation between moving vehicles and pedestrians. The pedestrian buffer strip ideally includes landscaping and trees to add to the appeal and perceived safety of the street. Depending on the land use context, typical elements in the pedestrian buffer strip include pedestrian lighting, trash receptacles, seating, transit stops, and street utilities such as traffic signal controls and fire hydrants. Street trees in a landscaped buffer similarly protect the sidewalks from the cars beyond them and also create a perceptual narrowing of the street that can lower driving speeds.
- The Pedestrian Through Zone is the open sidewalk area for pedestrian movement, and should be free of obstacles. Commercial and activity districts tend to feature the widest pedestrian zones, often allowing people to walk side by side.
- The Frontage Zone is the area in front of buildings used for tables/chairs or displaying “wares” to entice shoppers.
- On-Street Parking complements the pedestrian buffer strip. Whether parallel or angled, occupied on-street parking provides a physical barrier between moving traffic and the sidewalk. It can also slow traffic, because drivers tend to slow down out of concern for possible conflicts with cars parking or pulling out.
- Lighting contributes to personal security, traffic safety and a high quality pedestrian environment.

### Spokane’s Design Guidance regarding Sidewalks and Pedestrian Buffer

The City’s current design standards for sidewalks and pedestrian buffer widths are found in the adopted Comprehensive Plan, Unified Development Code, Street Design Standards, and Spokane’s Standard Plans. In Spokane’s four adopted standards, sidewalks are required on both sides of streets, with widths ranging from 5 feet to 12 feet depending on the land use context. There have historically been some discrepancies among the Design Standards, Unified Development Code, Standard Plans and the Comprehensive Plan, with respect to terminology and required dimensions within each land use type. A part of the Transportation Plan Update is updated Street Design Standards that provide sidewalk and buffer recommendations that should be reflected in future revisions to the Standard Plans.

## Existing Sidewalk Conditions in Spokane

Wall Street, downtown Spokane



South Perry Street, a Neighborhood Center



Intersection of Mission Street and Greene Street



Decatur Avenue



Pedestrian conditions vary along neighborhood streets, largely based on the age of the neighborhood. In older historic neighborhoods such as Browne's Addition, sidewalks on both sides of streets include wide pedestrian buffer strips; streets in older (up to the mid-20<sup>th</sup> century) neighborhoods such as Cliff/Cannon include sidewalks on both sides, with sidewalks and buffer strips narrower than historic neighborhoods. Mid-20<sup>th</sup> century to late 20<sup>th</sup>-century neighborhoods such as Southgate and the Nevada/Lidgerwood neighborhoods have a mix of streets with and without sidewalks, sometimes featuring sidewalks on one side of the street or with numerous sidewalk gaps.

Downtown sidewalks tend to be more than 12-feet wide, located alongside slower automobile traffic or buffered by parking. On arterials, it is common to find narrow sidewalks with widths of 5-feet or less and no landscaped buffer to separate pedestrians from adjacent traffic. Many arterial sidewalks have frequent obstructions, such as utility poles and signs. Sidewalk conditions vary depending on the age of the sidewalk. Many sidewalks are in need of repair due to tree root damage.

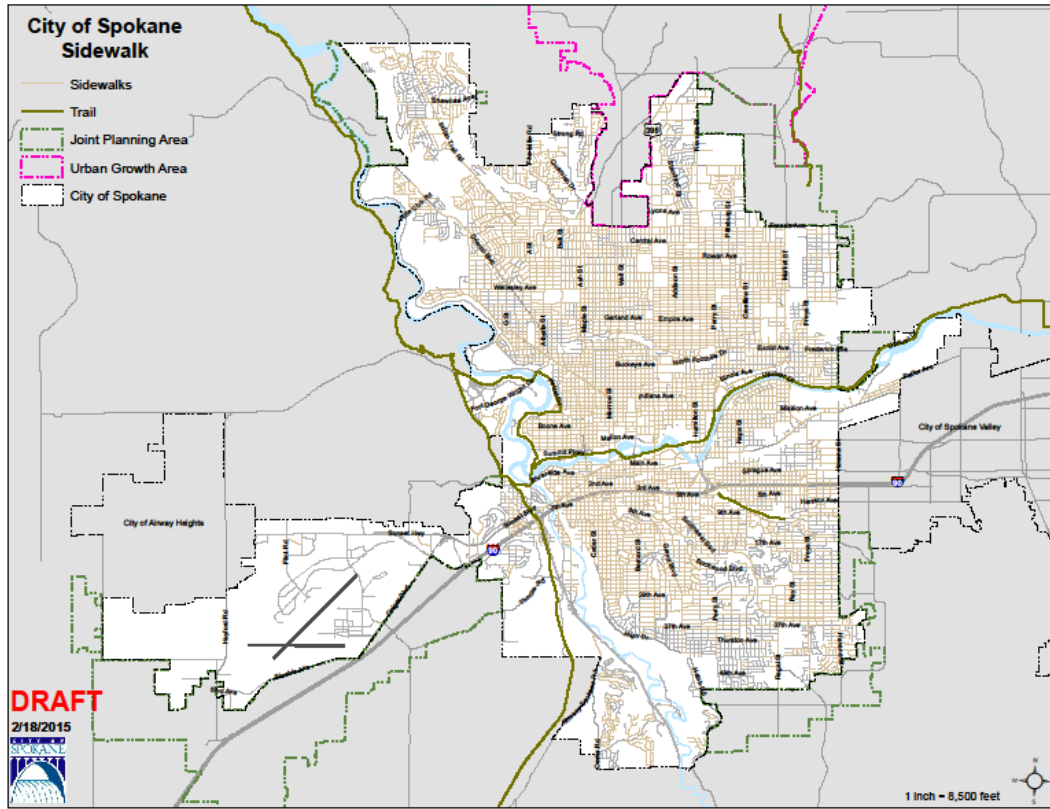
Citywide, sidewalks are missing on 38% (381 miles) of the 981 roadway miles suitable for sidewalks.<sup>9</sup> Over 55% of City streets have sidewalks on both sides of the street while 6% have sidewalks on one side.<sup>10</sup>

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<sup>9</sup> City of Spokane. DRAFT ADA Transition Plan, 2014-2019. Accessed online: <https://static.spokanecity.org/documents/about/spokanecity/accessibility/ada-transition-plans-draft.pdf>

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Figure 1 - Spokane's Sidewalk and Path Network, Existing 2015

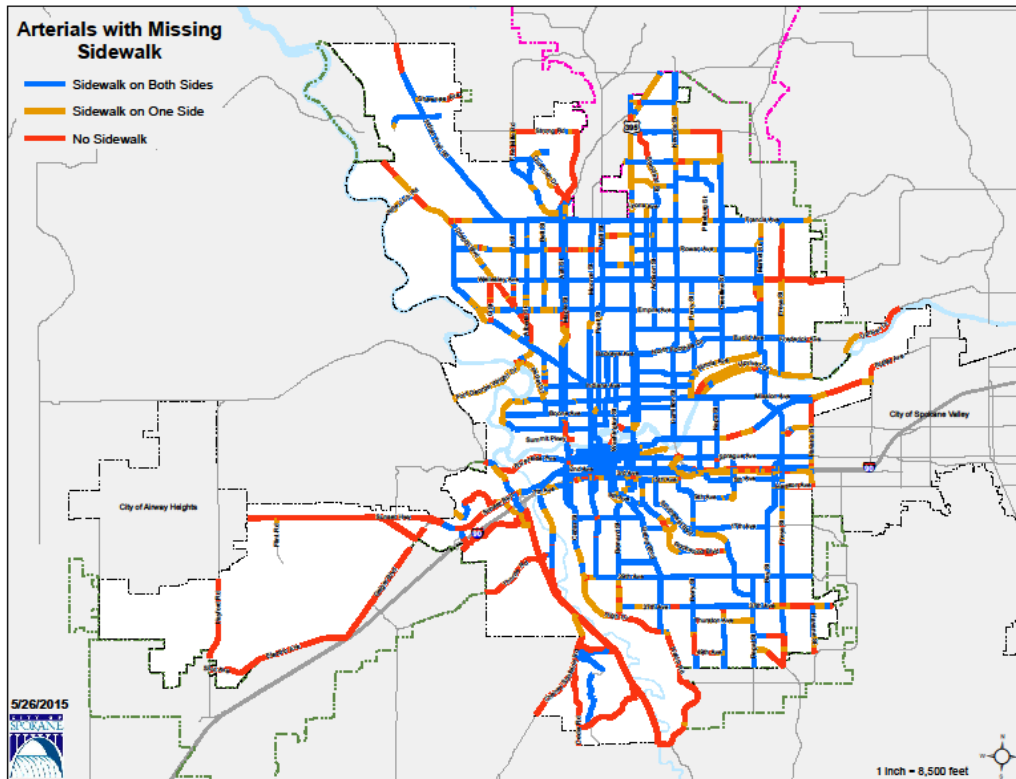


<sup>10</sup> City of Spokane. DRAFT ADA Transition Plan, 2014-2019. Accessed online:  
<https://static.spokanecity.org/documents/about/spokanecity/accessibility/ada-transition-plans-draft.pdf>

### Sidewalks along Arterial Streets

Figure 2 shows the existing arterial streets in Spokane and identifies the arterial streets with sidewalk on both sides, sidewalk on one side, and no sidewalks. Most of the arterial streets have sidewalks along one or both sides. This map is useful for the identification of gaps in the sidewalk network and the prioritization of capital projects.

Figure 2 – Sidewalks along Arterial Streets





## Pedestrian Accommodation at Signalized Intersections

The traffic operations of higher volume intersections typically benefit from signalization. However, the phased separation of conflicting motor vehicle phases also introduces pedestrian delay and conflict. The delay is caused by the need of the pedestrian to wait for their turn to move in the sequence after pressing the pedestrian push button, regardless of suitable gaps in traffic. Signalized intersections tend to be over-represented in collisions.

### Best Practices

A number of tactics can improve pedestrian comfort and safety at signalized intersections:

- High visibility crosswalks (e.g. continental (zebra) striping or special paving) - raise driver awareness at unsignalized intersections that are in a zone where pedestrians are expected to be crossing.
- Leading pedestrian interval - gives pedestrians a few seconds head start to claim the right-of-way ahead of turning traffic, this may reduce conflicts with turning vehicles.
- Prohibiting right turns on red - prevents vehicles from turning into crossing pedestrians. Signal phases need to accommodate adequate time for through-movement to reduce the urge to violate the no-turn-on-red signal.
- Reducing intersection widths - improves visual contact between drivers and pedestrians and reduces crossing distances and the time needed to cross on foot.
- Curb extensions are often placed at the end of on-street parking lanes so that pedestrians standing on the curb can see and be seen by drivers before crossing. These can also be placed mid-block to effectively shorten block lengths.
- Rightsizing to reduce the width or number of travel lanes, often by converting a 4-lane street into a 2- or 3-lane plus bike lane and/or a center turn lane. This reduces crossing distances, vehicle speeds, and the number of travel lanes to cross the street. When using this approach, the entire traffic corridor must be considered, not just one intersection.
- Pedestrian recall – describes the situation where pedestrian is given the ‘walk’ signal at every signal phase, without having to push a button. Pedestrian recall is presently used in areas with higher levels of pedestrian activity (e.g., downtown), and could be considered in new locations with high pedestrian traffic. Some intersections work best using recall during busier hours of the day and switching to pushbutton operation at night.

### Spokane’s Signalized Intersection Design Guidance

The City of Spokane operates over 250 signalized intersections. This number will change over time as new signalized intersections are added. Signal installation is warranted according to the Manual on Uniform Traffic Control Devices (MUTCD), and local guidance provides for basic signal timing parameters. Traffic signals are found in the Central Business District downtown, along major corridors, arterials and locations with high pedestrian volumes. The city uses the MUTCD standard of 3.5-feet per second to time the clearance phase, meaning that someone walking 3.5-feet per second who leaves the curb while the walk symbol is on can make it to the far curb before the conflicting motor vehicles get a green light.

### Existing Signalized Intersection Conditions in Spokane

Signalized intersections represent about 4% of all intersections in the city. Most include pedestrian signal heads indicating the walking interval. Instead of recalling to the walking symbol

icon when through-traffic has a green light, many intersections require pedestrians to push a push-button to ‘actuate’ or trigger the walking phase.

The intersections of arterials can create cross sections in excess of seven lanes to accommodate left- and right-turn pockets. These large intersections increase pedestrian exposure due to the long distance between the curbs. Slower pedestrians may be unable to make it all the way across the crosswalk before the conflicting light turns green.

Many signalized intersections have protected left turning phases, meaning only left turning vehicles move during the phase. While left turn phases introduce additional wait time for pedestrians, the benefit of this treatment is that it minimizes the chance of a left turning vehicle having a collision with oncoming traffic or a pedestrian in the crosswalk.

Drivers are often observed encroaching on pedestrians in crosswalks, both as they wait in the crosswalk and pass closely in front or behind them while pedestrians have the right of way. Washington State law requires operators of all vehicles to stop and remain stopped to allow pedestrians in marked or unmarked crosswalks to completely clear the lane of the operator.<sup>11</sup>

## Convenient Marked Pedestrian Crossings

People generally cross where it is most convenient, expedient, efficient, and in as direct a line to their destination as possible. This is known as the ‘desire line.’ A network of convenient and comfortable marked pedestrian crossings is essential to increase predictability for all road users.

South Grand Boulevard



14<sup>th</sup> and Monroe



### Best Practices

The placement of marked crosswalks should be considered carefully. Crossings should be provided where an analysis shows a concentration of origins and destinations across from each other.

- Crossings should be located according to the walking network rather than the driving network.
- There is no hard and fast rule for crossing spacing. Generally speaking, people will not travel far out of their way in order to cross at a signalized crossing, making midblock or marked crosswalks at unsignalized crossings important for connectivity.

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<sup>11</sup> Washington State Legislature, Revised Code of Washington, RCW 46.61.235, Crosswalks.

There are circumstances in which a marked crosswalk alone is insufficient. The type of crossing treatment is largely a function of automobile speed, automobile volume, pedestrian volume, and roadway configuration. People informally cross narrow streets of low automobile speed and volume without marked crossings. On the other hand, in general, a marked crosswalk alone is insufficient for crossing more than two lanes of traffic. The following principles inform the selection of enhanced crossing treatments:

- Multi-lane, high-speed, and high-volume roads require more aggressive treatments such as lane narrowings, curb extensions, high visibility continental (zebra) crosswalks, median refuge islands, flashing beacons, overhead signs, and advance stop lines. The City Street Design Standards provide guidance for enhanced crossing treatments.
- Enhanced crosswalks are more visible and thus make it more clear to pedestrians where crossing is intended, and increases the probability that people driving will stop for them.
- Small curb radii and curb extensions reduce vehicle-turning speeds to 15 mph or less for passenger vehicles. Making the corner bigger through smaller curb radii also increases storage for people waiting to cross, and makes pedestrians more visible.

### **Spokane's Design Guidance regarding Marked Crossings**

Spokane City Council adopted a new crosswalk ordinance in the fall of 2014 that lays out criteria for placement and design (see SMC 17H.010.210). These changes, summarized below, are intended to improve the connectivity and safety of Spokane's crossings:

- Marked crosswalks to be installed at intersections in centers and corridors adjacent to schools, parks, hospitals, trail crossings, and other pedestrian traffic-generating locations, at signalized intersections, and priority pedestrian areas.
- Mid-block crossings are permitted on arterial streets at pedestrian generators or where pedestrian conditions warrant. Exceptions are allowed if engineering studies determine that the proposed crosswalk does not meet nationally-recognized safety standards.
- Advanced stop-lines shall precede each crosswalk at arterial intersections and any mid-block crosswalks in pedestrian-generators in centers and corridors per direction from the Manual on Uniform Traffic Control Devices.
- On arterial streets with three or more lanes per direction in centers and corridors adjacent to schools, parks, hospitals, trail crossings, and other pedestrian-traffic generators, marked crossings with pedestrian refuge islands shall be constructed during the next street rehabilitation project such as resurfacing, unless the installation is in conflict with sub-area or neighborhood plans or contrary to engineering studies.
- Travel lanes may be narrowed, additional existing right-of-way may be utilized, and/or the number of travel lanes may be reduced to accommodate pedestrian refuges.
- Elevated crosswalks may be installed in lieu of pedestrian refuges.

## Existing Crossing Conditions in Spokane

Outside of the dense street network in the downtown core, it is not uncommon for there to be distances of a half-mile or more between marked pedestrian crossings on streets such as south Grand Boulevard, east Sprague Avenue, north Greene Street, north Division Street, west Garland Avenue, and west Northwest Boulevard. Because pedestrians are typically unwilling to endure long distance out of direction travel, pedestrians must instead wait for breaks in traffic or rely on driver's yield compliance in accordance with Washington State law, which designates all intersections as crosswalks, whether or not they are marked. (State law RCW 46.61.235).<sup>12</sup>

The City of Spokane is increasingly using state-of-the-practice pedestrian design interventions to improve the pedestrian environment, particularly in locations with limited pedestrian amenities as well as areas with long distances between marked pedestrian crossings. Treatments such as median refuge islands, curb extensions, and High intensity Activated crossWalk (HAWK) beacons (such as installed near Gonzaga University at Hamilton Street and Desmet Avenue), have been demonstrated to improve visibility and increase yielding by motorists.

Figure 3 - Pedestrian crossing Grand Blvd



Figure 3a – Median Refuge Island Grand Blvd



Figure 4 - Bus rider crossing Francis & Belt



Figure 4a – Curb extensions in the Perry District



## Driveway Curb Cuts

Parking lots and drive-through facilities introduce hazards and psychological barriers to people on foot as each driveway introduces a potential conflict area with motor vehicles.

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<sup>12</sup> Revised Code of Washington, RCW 46.61.235; Crosswalks. Accessed online: <http://apps.leg.wa.gov/RCW/default.aspx?cite=46.61.235>

## Best Practice

Efforts should be made to consolidate driveways across the sidewalk whenever possible. Corridor access management, which limits the frequency and width of driveways, is recognized by FHWA as a 'proven' safety countermeasure.<sup>13</sup>

## Driveway Conditions in Spokane

On-the-ground access management in Spokane is inconsistent. Due to factors such as land use changes over time and changing design guidance, the number and width of driveways on some sections of arterials, such as Grand Boulevard and Division Street, exceeds the design guidelines. This creates uncomfortable walking conditions as the pedestrian traverses frequent and wide driveways, some with multiple lanes of traffic entering or exiting the street.

In the urban context, the Federal Highway Administration (FHWA) recommends smaller driveway radii of 25 to 35 feet as narrower driveway throats are more sensitive to pedestrian crossing. While FHWA does not provide direct guidance for driveway spacing, in urban contexts, FHWA recommends driveways positioned as upstream from intersections as possible.<sup>14</sup>

In designated Centers and Corridors curb cut limitations are placed on development. In the *Initial Design Standards and Guidelines for Centers and Corridors*, a curb cut for a nonresidential use should not exceed 30 feet for combined entry/exits. Where a sidewalk crosses a driveway, the driveway width should not exceed 24 feet. No driveways should be located on designated Pedestrian Streets.<sup>15</sup>

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<sup>13</sup> [http://safety.fhwa.dot.gov/provencountermeasures/fhwa\\_sa\\_12\\_006.cfm](http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_006.cfm)

<sup>14</sup> Federal Highway Administration, Technical Summary, *Access Management in the Vicinity of Intersections FHWA-SA-10-002*. Accessed online: <http://safety.fhwa.dot.gov/intersection/resources/fhwasa10002/>

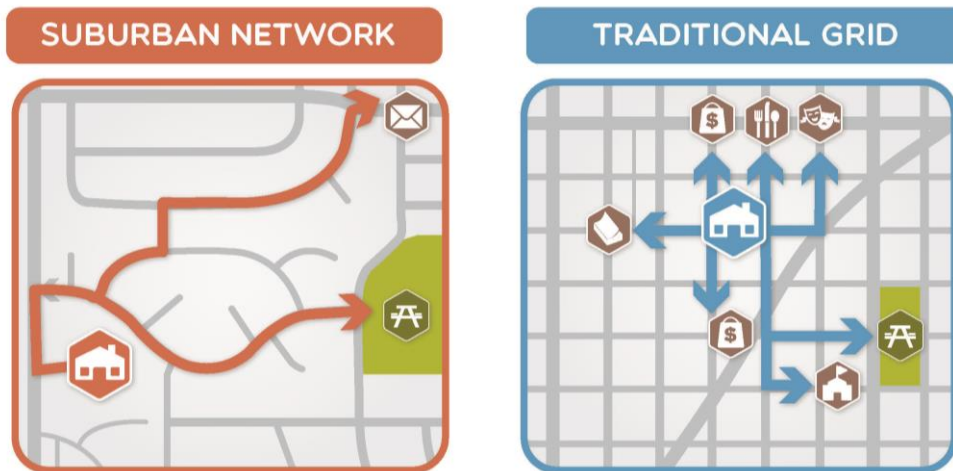
<sup>15</sup> City of Spokane, *Initial Design Standards and Guidelines for Centers and Corridors*. Adopted August 2002. Accessed online: <https://static.spokanecity.org/documents/business/resources/compplan/centerscorridors/centers-corridors-design-standards.pdf>



## Street Connectivity

### Best Practice

Street connectivity and block length have strong relationships with walking, bicycling, and transit use. Interconnected streets organized in a grid pattern tend to shorten distances for walking and biking trips. Neighborhoods where all roads are designed to connect to arterials or collector streets also allow transit customers to reach bus stops without walking out of their way and provide more efficient routing options that can support efficient transit service. These types of streets place destinations closer to each other, increasing the likelihood of walking.



### Spokane's Street Connectivity Guidance

Spokane's Comprehensive Plan directs external and internal connections to neighborhoods. External connections apply to new subdivisions and planned unit developments (PUDs). Comprehensive Plan Policy TR 4.5 states, "design subdivisions and planned unit developments to be well-connected to adjacent properties and streets on all sides."<sup>16</sup> Connections are needed for all transportation users and can take the form of both streets and paths. Policy 4.5 notes that well-connected neighborhoods with good connections for pedestrians, bicyclists, and automobiles, spreads traffic more evenly and reduces congestion and impacts on adjacent land uses.

Internal connections apply to all neighborhoods, subdivisions, and PUDs. Comprehensive Plan Policy TR 4.6 states, "design communities to have open, well-connected internal transportation connections."<sup>17</sup> The Comprehensive Plan directs that designers promote ease of access through avoiding long, confusing routes and by using shorter block lengths. Policy 4.6 notes that internal connections are promoted by connecting streets and avoiding cul-de-sacs. Where cul-de-sacs and vacating streets cannot be avoided, Policy 4.6 recommends pedestrian pathways that link areas. Comprehensive Plan Policy LU 4.5 states, "Block lengths of approximately 250 to 350 feet on average are preferable, recognizing that environmental conditions, (e.g., topography or rock outcroppings), might constrain these shorter block lengths in some areas."<sup>18</sup>

<sup>16</sup> City of Spokane, Comprehensive Plan, Revised Edition: June 2015, TR 4.5 External Connections.

<sup>17</sup> City of Spokane, Comprehensive Plan, Revised Edition: June 2015, TR 4.6 Internal Connections.

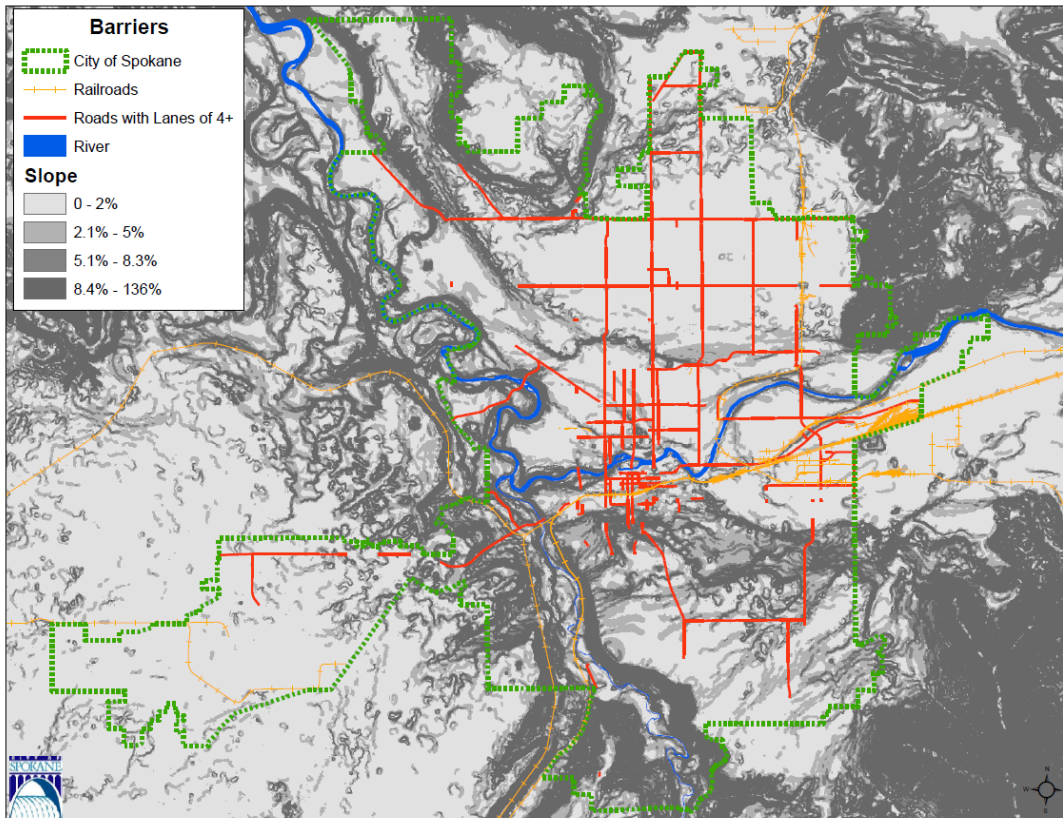
<sup>18</sup> City of Spokane, Comprehensive Plan, Revised Edition: June 2015, LU 4.5 Block Length



## Pedestrian Network Connectivity and Block Length in Spokane Today

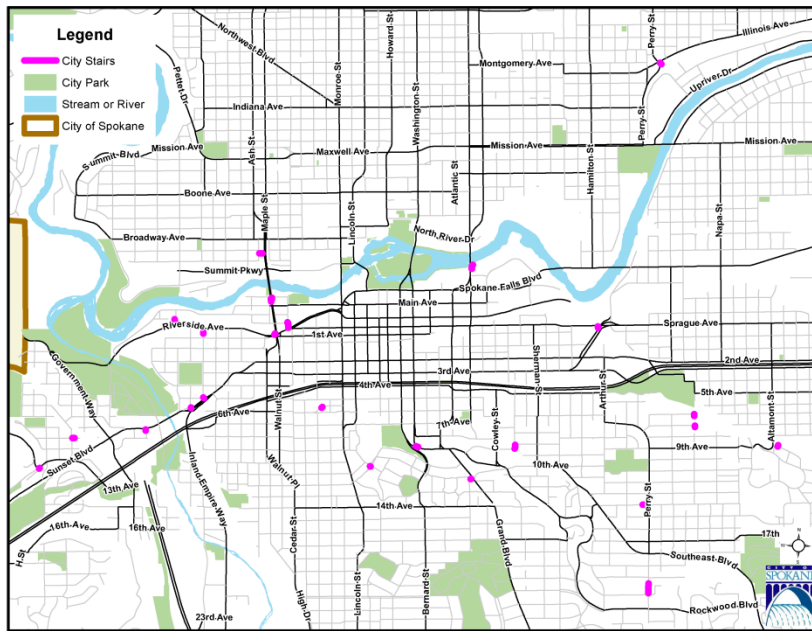
Mid-20<sup>th</sup> century to late 20<sup>th</sup>-century neighborhoods such as Southgate and the North Indian Trail Neighborhood have a street network with features such as winding streets, dead ends and cul-de-sacs. This type of street pattern is less supportive of pedestrian travel as it makes walking trips longer and less intuitive. Many recent developments include sidewalks but feature a roadway network design that lacks pedestrian connections as walking routes are much longer than a more traditional grid street network. In addition, these streets often lack destinations nearby, like neighborhood shops, schools, and parks. Therefore walking activity is likely limited to recreational trips or trips to reach transit.

In areas of Spokane where the existing street grid provides smaller blocks, it is easier to get around by walking compared to many suburban areas. On the other hand, the ability to walk is more difficult in locations where the street grid is much larger due to the freeway, railroads, and large developments, and where there are natural barriers such as the river and steep slopes. Low pedestrian network connectivity in these areas deters walking by increasing walking distances and walking times.



The City of Spokane has 24 sets of pedestrian stairways available for public use. The stairways are located in public rights-of-way or on city-owned parcels in neighborhoods generally closer to the city center. Typically the stairways are found in areas with steep slopes and provide important connections for pedestrians, allowing them to avoid lengthy detours to move between higher and lower lying areas. Publicly-accessible staircases are located throughout the city, making connections between locations such as Peaceful Valley and Riverside Avenue, and connecting South Perry Street between 20<sup>th</sup> Avenue and Overbluff Road. Where formal paths or staircases do not exist, such as Glass Avenue and Courtland Avenue, it is common to see informal “social paths” worn into the grass illustrating pedestrian demand.

Anecdotal evidence regarding the origins of the stairways is available from news media stories and other sources. Some stairs may have been developed to provide connections to former streetcar routes, while others, such as along Perry Street north of 20<sup>th</sup> Avenue, provided a way for people to get up steep hillsides to go to work. The stairs were said to connect Overbluff area mansions with their staff, who often lived below in the smaller, working class homes in the Perry District.



The City’s stair inventory provides information about stair locations, condition, and maintenance. Most of the stairways are very old, though dates of construction are not available. The type of material used in the construction of most of the stairs is concrete with railings made of metal pipe. The newer stairs are steel grate with pipe rails. The inventory notes that Spokane’s one wooden stairway (located on Spruce Street between Riverside Avenue and Bennett Avenue) is in disrepair.

The historic Tiger Trail is an example of a path/trail that is used to overcome a barrier (steep slopes). The Tiger Trail is a very steep set of stairs and an unimproved pathway located in Pioneer Park near the Corbin and Moore-Turner Heritage Gardens. It generally connects the area between West Cliff Avenue and 7<sup>th</sup> Avenue. It is named Tiger Trail because students from Lewis & Clark High School use the trail to get to and from school. Walkers and joggers in the neighborhood also use the trail. The South Hill Coalition Connectivity and Livability Strategic Plan identifies this as a potential Ped-Bike Linkage to improve neighborhood grid connectivity.

There is a need to complete additional planning for areas with low pedestrian network connectivity. This planning includes defining, mapping and identification of improvements including features for these areas such as bicycle/pedestrian trails and bridges, new streets with sidewalks, new sidewalk “shortcuts” through large blocks and new or updated stairways.

## Land Use and Building Design

### Best Practice

Buildings and streetscapes that activate the environment, such as sidewalk cafes and parks, build community and stimulate the desire to walk to reach destinations. Transparent building facades with windows at street level create interest and open up the pedestrian realm so people are not forced to walk beside an imposing blank wall. Active sidewalks and transparent building facades both create ‘eyes on the street’, which provide pedestrians with a sense of security. Land uses that attract pedestrians include coffee shops, grocery stores, and small-scale retail.

### Spokane’s Land Use and Building Design Guidance

Spokane’s Comprehensive Plan directs the City’s zoning, including the urban growth strategies that focus on increasing the mix and density of uses at designated centers and along specific corridors. This is supported through zoning changes, municipal code requirements, the Centers and Corridors Design Guidelines, neighborhood plans, and economic development incentives.

Centers and Corridors are intended to promote pedestrian-orientation through limiting auto-orientation such as parking between and in front of buildings, curb cuts for driveways, and certain land uses such as drive-through restaurants. Direction for pedestrian scale lighting, pedestrian connections in parking lots, and pedestrian streets are detailed in the Municipal Code. Spokane’s Centers and Corridors include the corridors of North Hamilton Street near Gonzaga University and North Monroe Street from the river north to Cora Avenue and centers like the Garland District and South Perry Neighborhood.

The Comprehensive Plan defines Centers and Corridors as important places to encourage employment, shopping, and residential activities. In addition to district, employment, and neighborhood centers, pedestrian activity areas include locations along transit routes, near schools and community spaces, and near recreational facilities such as play fields and parks.

### Land Use and Building Design in Spokane Today

Spokane’s Comprehensive Plan encourages much of the future growth to occur in district centers, employment centers, neighborhood centers, corridors and downtown. Downtown Spokane is the Regional Center and is a thriving neighborhood with a diversity of activities and a mix of uses. Another area of focus is the University District. In addition to centers and corridors, the comprehensive plan describes land uses throughout the city including a full range of residential, commercial, institutional, industrial and open space/recreational designations.

The Unified Development Code (UDC) guides the growth and development of the city. UDC standards for building and site features encourage building and site development that is consistent with the vision of the comprehensive plan. The UDC requires new development to provide features that support pedestrians, such as sidewalks. Site development is directed to provide pedestrian elements and building design that incorporate features that encourage walking and improve the pedestrian experience.

For the Pedestrian Master Plan it is helpful to further define the general city development pattern into two land use contexts:

- Urban –These are places with high levels of pedestrian activity and include retail and commercial hubs. All Centers and Corridors are in the Urban Context as defined in the proposed Street Design Standards.

- Mobility –Areas without much expected pedestrian activity, including state highways, corridors connecting retail centers, or areas without active land use frontages.

### **The Urban Context**

The Downtown Core hosts government buildings, the Financial District, and the Davenport Arts District. Downtown is home to more than 13% of Spokane County’s jobs.<sup>19</sup> Residential growth is expected in the downtown area including the University District. The downtown district’s businesses and residences benefit from the city’s most walkable area. WalkScore, which collects information such as block length, intersection density, and nearby amenities like shops, restaurants, and food stores, scores Downtown Spokane as 90/100. The University District has a Walk Score above 75.<sup>20</sup>

Downtown streets have the highest level of pedestrian amenities in the city, with features including pedestrian countdown timers at signalized intersections, wider sidewalks, pedestrian areas protected from the elements by the overhang of adjacent buildings, and curb extensions to increase pedestrian visibility and shorten crossing distances. The Spokane Municipal Code requires permits and provides standards for placing sidewalk cafés, signs, bike racks and other features in or upon sidewalks in the public right-of-way. The standards address details such as insurance, terms, conditions, and clear distance (unobstructed width). Downtown also includes shared realms that minimize the demarcations between spaces for pedestrians and motor vehicles, such as Wall Street between Spokane Falls Boulevard and Riverside Avenue. The pedestrian network connects to multi-use paths along the river, offering transportation and recreational opportunities as well as connecting to destinations such as the University District, shopping, and recreational opportunities.

Spokane also features a popular skywalk system that offers pedestrians access throughout much of downtown. These walkways offer walking routes that are protected from the weather, passing from building to building, though walking routes are not always direct. Opportunities exist to improve wayfinding to help users navigate the skywalk system. The existence of these routes may reduce pedestrian activity along storefronts on the street below.

As Spokane grows—and grows more pedestrian friendly—many streets in designated Centers and Corridors will be redesigned in the urban context. Today, conditions on those streets vary depending on their location and age of development. Some of the existing districts included in the urban context include the Garland and Perry Districts and the University District.

The Spokane Transit Authority operates along many of the designated Corridors and through Centers. Some busy locations with transit stops, (e.g., The Grand District Center, along East 29<sup>th</sup> Avenue near the East 29<sup>th</sup> Avenue and South Grand Boulevard neighborhood center), lack marked crossings near bus stops causing riders to attempt risky crossings or to walk long distances out of direction to reach a signalized intersection. An analysis of such crossings should be considered in these situations to address possible issues with stop placement.

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<sup>19</sup> Spokane Central City Transit Alternatives Analysis Process Summary Report

<sup>20</sup> Walk Score: [www.walkscore.com](http://www.walkscore.com)



### **The Mobility Context**

Many of the Centers and Corridors remain strongly auto-oriented with high-speed arterial streets, limited marked crossings, long block lengths, and numerous driveways. Throughout the city, it is common to have more than half-mile stretches between marked crossings on arterial streets.

Today, approximately 52% of Spokane’s arterial streets have sidewalks on both sides and another 19% have sidewalks on one side, leaving over 76 miles of arterials without sidewalks on either side.<sup>21</sup> Where there are sidewalks, they are often narrow, and many are in a deteriorating condition, interrupted by frequent driveways, or obstructed by poles or utility vaults. To bring these streets up to the Centers and Corridors standards, they will need to have both “pedestrian emphasis... and [be] automobile-accommodating.”<sup>22</sup>

The Spokane Transit Authority uses many of the City’s mobility-context arterials, locating stops along streets that may lack adequate sidewalks and crossings.



**Indian Trail at Barnes is an arterial in the mobility context that is a planned Neighborhood Center.**

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<sup>21</sup> City of Spokane. Draft ADA Transition Plan, 2014-2019. Accessed online: <https://static.spokanecity.org/documents/about/spokanecity/accessibility/ada-transition-plans-draft.pdf>

<sup>22</sup> City of Spokane Planning Services. Initial Design Standards and Guidelines for Centers and Corridors. Adopted 08/11/02. Accessed online: <https://static.spokanecity.org/documents/business/resources/compplan/centerscorridors/centers-corridors-design-standards.pdf>



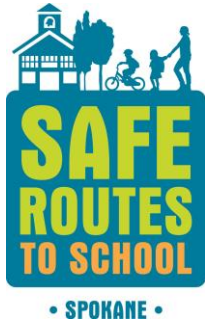
## Safe Routes to School

### Best Practice

Safe Routes to School is a national movement to improve school zone safety and encourage more children to walk and bicycle to school. Successful programs typically integrate engineering, education, enforcement, education and encouragement to foster a safe active transportation culture.

### Safe Routes to School Spokane

In February 2015, the Spokane Regional Health District (SRHD) launched its Safe Routes to School Spokane program (<http://www.srhd.org/news.asp?id=457>). The intent is to encourage more of Spokane's children to safely walk and bike to school. SRHD notes that the program to support walking or biking to school benefits children, families and the community. The program is slated to roll out to seven area public grade schools during the next three years, the program is being introduced this spring to two of them—Holmes Elementary in Spokane and Seth Woodard Elementary in Spokane Valley. The five other elementary schools include Stevens, Logan, Sunset, Bemiss and Moran Prairie. SRHD staff is designing the program to benefit each of the schools in ways unique to the barriers each faces in getting more students walking and



biking safely.

### Spokane Public Schools Suggested Walk Routes

Spokane Public Schools provides information on its website regarding school attendance boundaries for all elementary, middle and high schools. These maps include school location, suggested walk routes, crosswalks, bus stops, and bus service areas (<http://www.spokaneschools.org/site/Default.aspx?PageID=89>).

The suggested walking route information has been converted to a GIS map in the City of Spokane GIS database. Figure 4 below shows the suggested walk routes information for all Spokane Public Schools consolidated on a single map. The map also shows the suggested walk routes that presently do not have sidewalks. Where there are no sidewalks, the suggested walk routes usually follow unimproved paths paralleling a low traffic residential street. The suggested walk routes guide children to school along the most favorable walking routes that lead to sidewalks and crosswalks with crossing guards. It should be noted that the suggested walk routes information is recognized as a guide and is subject to adjustment and change over time.

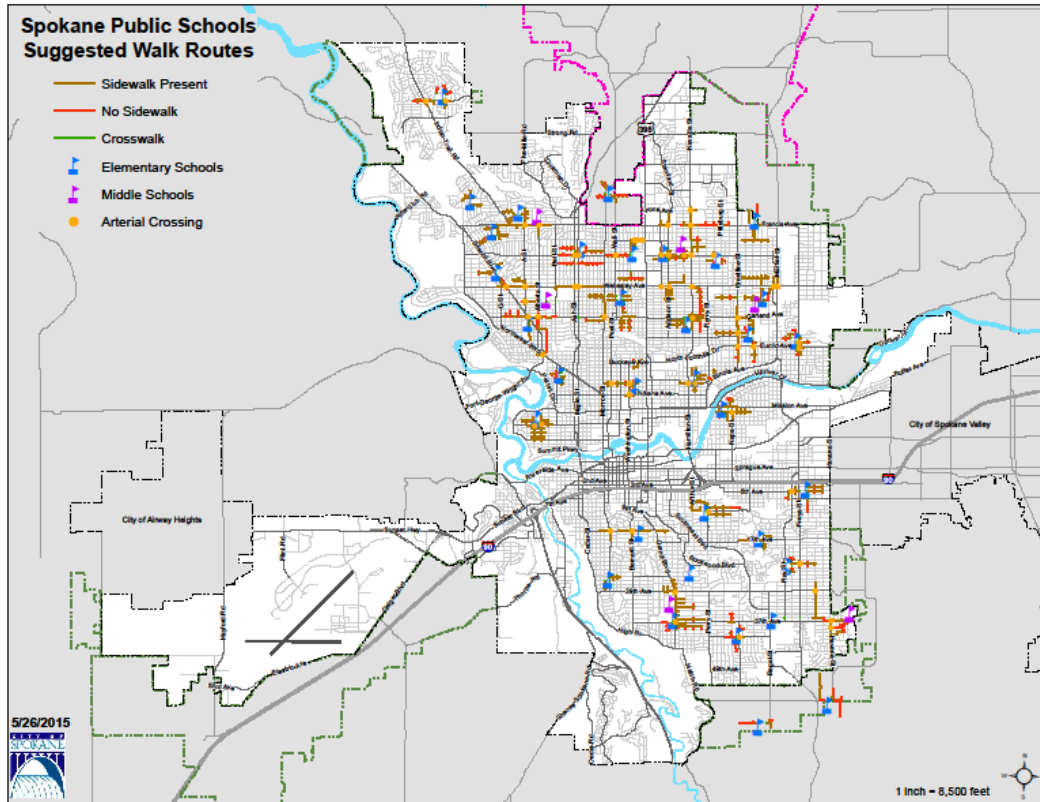
There are three school districts operating within the current Spokane city limits. The vast majority of the City of Spokane is served by Spokane Public School District. Cheney School District serves some small corners in the southwest area of the city and the west plains. Mead School District is generally located on Five-Mile Prairie and north of Lincoln Road. Any available Safe Routes to School information from Cheney and Mead School Districts should be considered in the identification of pedestrian facility development projects.

The information in Figure 4 related to the suggested walk routes and those without sidewalks is useful for the identification of gaps in the sidewalk network and the prioritization of capital projects.



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Figure 4 – Spokane Public School Elementary School Suggested Walk Routes



## Universal Accessibility

### Universal Access Best Practice

Streets that are designed for children, the elderly, and people with mobility impairments serve everyone better.

- Americans with Disabilities Act (ADA) guidelines and requirements guide appropriate sidewalk, driveway cut design, curb ramp placement at intersections and building entrances. Driveway cuts should be limited, grades leveled, and cross-slopes reduced to make sidewalks safer and more comfortable for those using mobility devices like wheelchairs or canes.
- Obstacles such as litter, utility poles, and trash cans should be removed from the sidewalk to create a clear path for everyone.
- Visible and consistent placement of signage makes wayfinding systems more navigable and helpful for all people on foot.
- Pedestrians of all abilities benefit from adequate green signal phases with audible countdown signals to allow ample time to cross.
- When unique paving materials or raised crosswalks are used to provide a visual and tactile enhancement to the pedestrian environment, care must be given to ensure that any pavement treatments do not hinder movement for those using wheelchairs or canes.
- Pedestrians need street lighting which contributes to personal safety, traffic safety and a high quality pedestrian environment. Some areas in Spokane have missing or infrequent street lighting.

### Spokane's Universal Accessibility Design Guidance

ADA accessibility requires a navigable, safe pedestrian environment for all people, including those with physical disabilities. This includes curb ramps with shallow approach angles and smooth transitions, detectable warning strips with truncated domes, and ideally includes audible crossing signals at priority locations. The City of Spokane uses ADAAG (Americans with Disabilities Act Accessibility Guidelines) guidance to inform all capital projects and land development and consistently utilizes PROWAG (Public Right of Way Accessibility Guidelines) which exceed ADAAG standards.<sup>23</sup>

### Accessibility in Spokane Today

The City of Spokane's Draft ADA Transition Plan and the Pedestrian Master Plan identify the City's inventory and need for sidewalk and curb cut gaps. The ADA Transition Plan finds that 38% of the City's roadway miles that are suitable for sidewalks do not have sidewalks on either side and 6% have sidewalks on one side. About 52% of arterial streets have sidewalks on both sides and an additional 19% of arterials have sidewalks on one side.

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<sup>23</sup> City of Spokane. Draft ADA Transition Plan, 2014-2019. Accessed online:  
<https://static.spokanecity.org/documents/about/spokanecity/accessibility/ada-transition-plans-draft.pdf>

The curb ramp inventory of the ADA Transition plan states that of the 6,928 intersections included in the inventory, 82% are missing at least one access ramp, 1,700 on arterial and highway street intersections and 4,000 on local street intersections.<sup>24</sup>

## **Pedestrian Needs Analysis**

This section provides a pedestrian needs analysis that considers factors indicative of walking potential as compared to the supply (or lack thereof) of pedestrian infrastructure, to illustrate where there is a mismatch in the demand for and availability of walking infrastructure. Indicators included in the analysis are described below. Each indicator is given a numerical value ranging from 1 to 5 according to the visual and physical qualities tied to each indicator, along with weights for each factor. Generally speaking, areas with higher demand (i.e., walking potential) and lower supply (i.e., supply deficiency) are higher priorities for investment as compared to areas with higher demand / higher supply or areas with lower demand / lower supply. This analysis identifies the Pedestrian Priority Zones described in Goal 1.

### *Pedestrian Demand (Walking Potential)*

Figure 5 presents a composite map of the factors included in the analysis of walking potential:

- Employment density - Major employment centers such as downtown and the University District, can generate walking trips both on the journey to and from work (including in connection with other modes) as well as mid-day activity for lunch, errands, etc.
- Population density - Higher density residential areas tend to be more supportive of having destinations within a walkable distance, with a mix of land uses located in close proximity to each other.
- Proximity to destinations (Centers and Corridors, neighborhood shopping, social services, transit stops, schools, parks) – These destinations attract walking trips. Neighborhood shopping and schools are major destinations for daily activities, most transit trips in Spokane begin or end with a walking trip, and children are potential walkers to school.
- Demographic factors from the US Census (% of people with no vehicle available, % of households below the poverty level, % of people under 18, and % of people 65 or over) – These population groups can be dependent on walking due to financial considerations or a lack of access to a personal vehicle.

### Demand Map Observations

- Higher demand areas correspond with designated centers and corridors and STA's High Performance Transit Network and high usage transit stops
- The Highest demand areas include Holy Family, Hillyard, North Monroe, West Central, North Riverbank, Gonzaga/Logan, Browne's Addition, Downtown, Lower South Hill, East Sprague/East Central, Sacred Heart Medical Center, 9th and Perry, Manito Shopping Center, and Lincoln Heights Shopping Center
- Higher demand corridors on the north side of Spokane include Monroe, Hamilton/Nevada, east and west along Wellesley between Shadle and Hillyard, and Market Street

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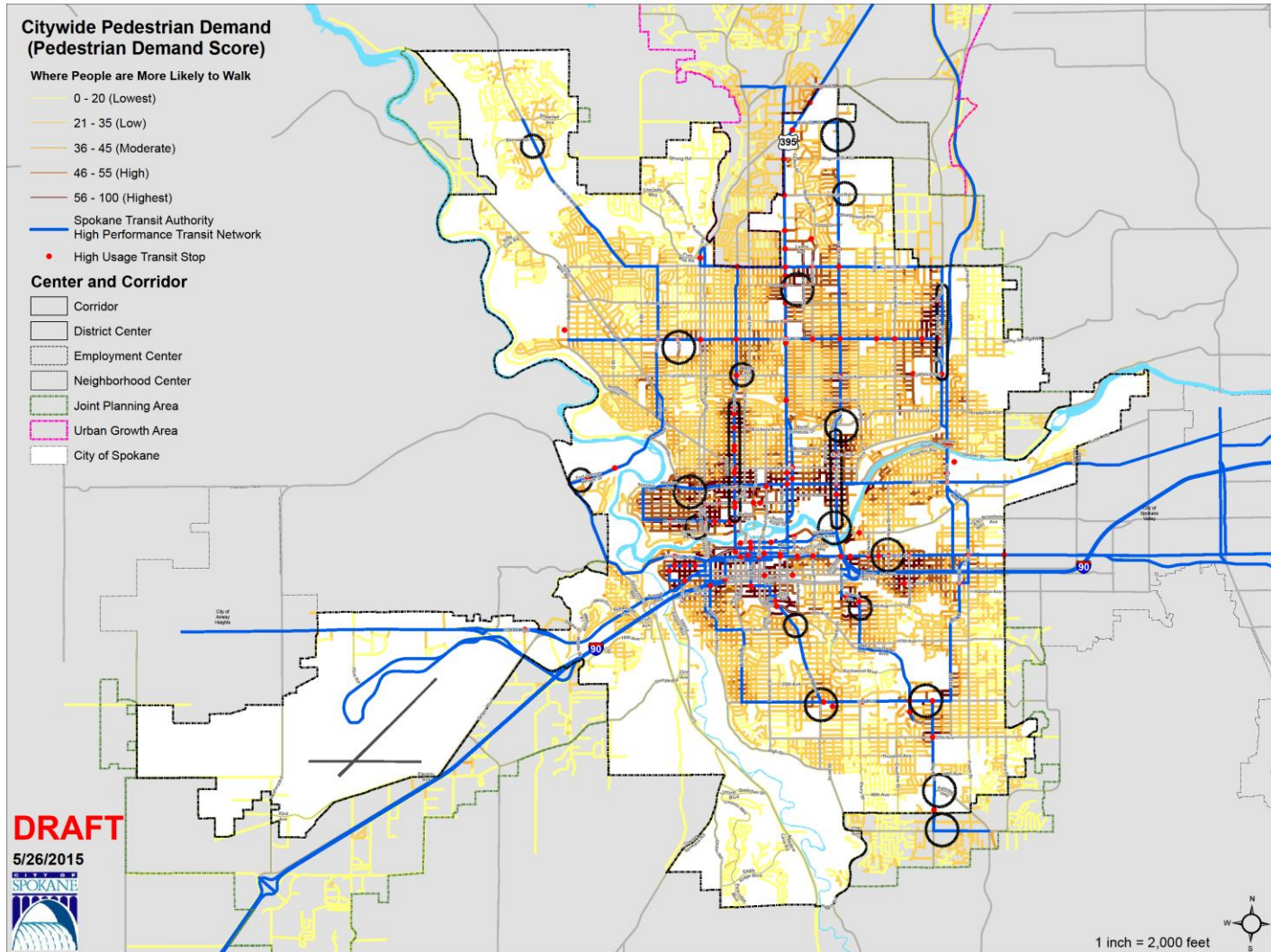
<sup>24</sup> City of Spokane. Draft ADA Transition Plan, 2014-2019. Accessed online:  
<https://static.spokanecity.org/documents/about/spokanecity/accessibility/ada-transition-plans-draft.pdf>

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- Higher demand areas on the north side of Spokane include the area near Franklin Park Commons, Tombari Center, and Lowe's.
- Higher demand areas on the South Hill include Lincoln Street near Wilson Elementary School and the area near 29<sup>th</sup> Avenue and Grand Boulevard, the intersection of 29<sup>th</sup> Avenue and Regal, and the intersection of 37<sup>th</sup> Avenue and Regal.
- In general, single family residential areas display lower demand, which increases with proximity to a school, park, or bus route.

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Figure 5 – Pedestrian Demand map





### Pedestrian Deficiency

Figure 6 presents a composite map of the factors included in the pedestrian deficiency analysis:

- Presence of sidewalks - Sidewalks provide a dedicated facility separated from the roadway (may or may not provide a pedestrian buffer strip)
- Width of the street – Wider roads tend to enable higher vehicle speeds, which reduces comfort for pedestrians and makes roadway crossings more difficult <sup>25</sup> <sup>26</sup>
- Collision history – A history of multiple pedestrian collisions likely reflects difficult walking or crossing conditions.

#### Deficiency Map Observations

- The highest deficiency scores tend to align with streets that lack sidewalks, cul-de-sacs, unpaved streets, long street segments (e.g., Antietam Drive south of Magnesium Road) and very wide streets without sidewalks (e.g., Oak Street near Sinto Avenue and Sycamore Street east of Freya Street north of Sprague Avenue)
- High deficiency scores are common on wider streets (about 36 to 40 feet curb to curb) that lack sidewalks on both sides of the street. (e.g., Nevada Street between Calkins Drive and St. Thomas Moore Way)
- Most arterial streets have sidewalks and about half have sidewalks on both sides. Arterial streets that lack sidewalks (e.g., Cochran Street-Alberta Street-Northwest Boulevard area; Maple Street and Ash Street south of Garland Avenue) score high on the deficiency map
- Areas with longer block lengths show moderate deficiency due the longer distances between crossing opportunities (e.g., Broad Avenue between Alberta Street and Nettleton Street, Longfellow Avenue between Alberta Street and Belt Street, and Northwest Boulevard west of Assembly Street)
- Several areas with moderate to high deficiency are areas with a history of pedestrian collisions (e.g., streets throughout downtown).

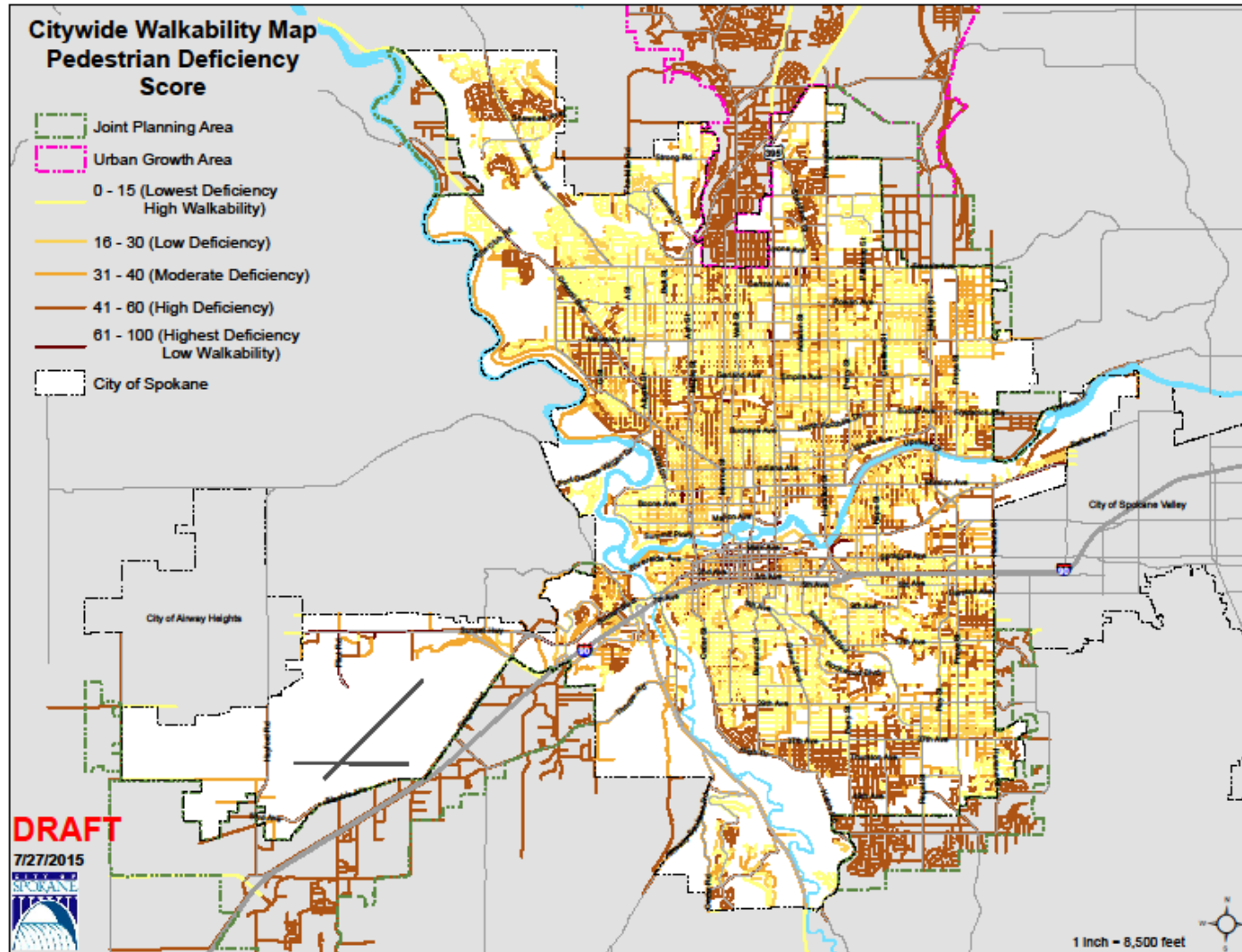
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<sup>25</sup> “Previous research has shown various estimates of relationship between lane width and travel speed. One account estimated that each additional foot of lane width related to a 2.9 mph increase in driver speed.” Kay Fitzpatrick, Paul Carlson, Marcus Brewer, and Mark Wooldridge, “[Design Factors That Affect Driver Speed on Suburban Arterials](#)”: Transportation Research Record 1751 (2000):18–25.

<sup>26</sup> “Longer crossing distances not only pose as a pedestrian barrier but also require longer traffic signal cycle times which may have an impact on general traffic circulation.” Macdonald, Elizabeth, Rebecca Sanders and Paul Supawanich. [The Effects of Transportation Corridors’ Roadside Design Features on User Behavior and Safety, and Their Contributions to Health, Environmental Quality, and Community Economic Vitality: a Literature Review](#). UCTC Research Paper No. 878. 2008.

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Figure 6 – Pedestrian Deficiency Map



### **Composite Pedestrian Needs Map: Pedestrian Priority Zones**

Figure 7 illustrates the results of the composite map which combines the assessment of pedestrian demand and pedestrian deficiency. This map serves to clarify where the pedestrian needs in the city are greatest. Figures 14 and 15 below provide additional data regarding pedestrian and vehicle collisions between 2005 and 2012. Areas with higher demand and deficiency scores are candidates for designation as Pedestrian Priority Zones and include:

- **Downtown/Browne's Addition/University District**
  - **Where:** Throughout downtown, Browne's Addition and the University District
  - **Why:** Downtown and the University District have the highest pedestrian demand and a vibrant mix of uses and destinations. While downtown has relatively good pedestrian infrastructure, this area still has a significant number of collisions involving pedestrians, offering opportunities for further improvement.
- **West Central/Emerson-Garfield/Logan neighborhoods north of the Spokane River**
  - **Where:** Boone Avenue at Maple Street/Ash Street; along Maxwell Avenue/Mission Avenue between Belt Street and Hamilton Street.
  - **Why:** Neighborhoods includes a mix of residential, employment areas such as Spokane County offices, and recreational activities including Spokane Arena. Major arterial crossings make pedestrian connections difficult. One area with many pedestrian-vehicle collisions is the intersection of Division Street & North River Drive.
- **Holy Family Employment Center/Norhttown/Francis -Division**
  - **Where:** Along Francis near Division; near Holy Family Hospital, Franklin Park, Franklin Park Commons and Northtown Mall.
  - **Why:** The Holy Family Employment Center, the two shopping centers and the higher intensity land uses including offices, high density residential living, as well as an elementary school and major park are significant generators of pedestrian demand. The streets in this area have very high pedestrian demand scores. Vehicle speeds on Francis Avenue and Division Street are often very high. This area includes a designated Employment Center and a pedestrian fatality took place near the intersection of Division and Francis. Access to Franklin Park from the east side of Division Street is challenging due to high speeds and traffic.
- **Mission Park/Mission and Napa area**
  - **Where:** In the area near Mission Park and the Spokane River extending to the east including Stevens Elementary School and the Mission and Napa neighborhood business area.
  - **Why:** This is an active area with a concentration of activities including mixed land uses, schools, employment, and connections to the Centennial Trail.
- **Lincoln Heights activity area**
  - **Where:** Area in the vicinity of the 29<sup>th</sup> Avenue and Southeast Boulevard intersection east to Ray and along Regal south to 37<sup>th</sup> Avenue.
  - **Why:** The Lincoln Heights District Center is the principal activity node of surrounding neighborhoods. The area is a shopping center close to two parks, a senior center, and schools. The area also includes three grocery stores. Pedestrian deficiency scores are high in several locations within this area.

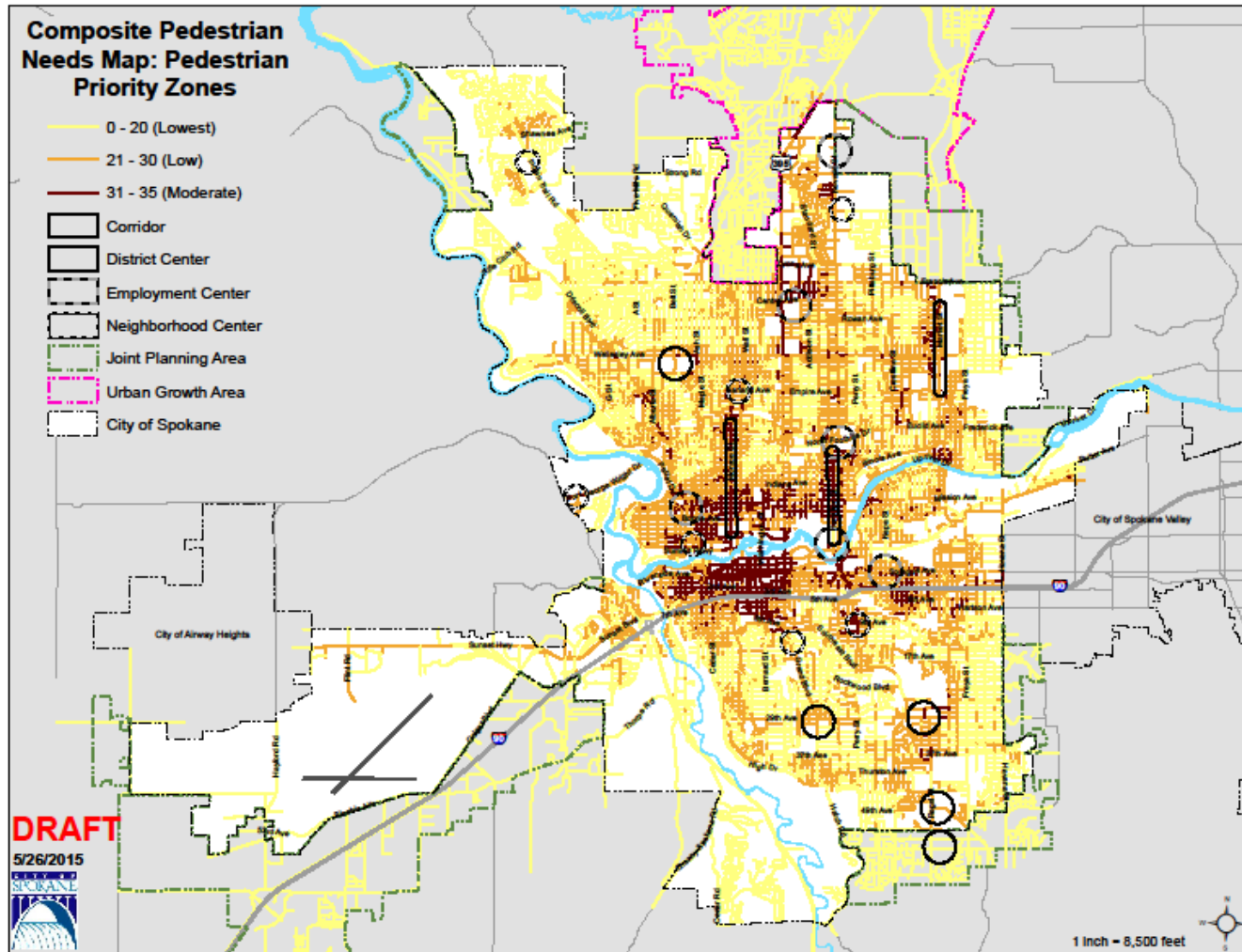
- North Monroe Street Corridor
  - Where: From the Spokane River north along Monroe Street to the Garland District
  - Why: Pedestrian need is relatively low in the residential neighborhoods bordering Monroe, but people in these neighborhoods rely on a variety of services along the corridor, creating high pedestrian demand. The Garland District is a designated Neighborhood Center.
- Market Street, Hillyard Business Corridor
  - Where: Market Street between Wellesley Avenue and Francis Avenue.
  - Why: Developing commercial corridor with residential and employment areas nearby. Demand is very high and pedestrian deficiency scores are moderate.
- South University District, Sprague Avenue
  - Where: Along Sprague Avenue, in the vicinity of Sherman Street.
  - Why: This is a part of the South University District and is an employment area with a mix of commercial and industrial uses. This area is expected to develop with residential uses and along with the planned University District Bridge providing a north-south connection to the University District campus, significant pedestrian demand is anticipated. Demand and overall need scores are high.
- Hamilton Street
  - Where: Hamilton Street, north of the Spokane River to Foothills Drive.
  - Why: Rapidly growing high demand corridor near Gonzaga University which includes parks, grocery stores, employment, and schools. Hamilton is an arterial roadway that is a designated Corridor. Hamilton divides many university uses and passes through residential areas. This corridor illustrates moderate to high pedestrian need scores.
- East Sprague/5<sup>th</sup> and Altamont
  - Where: In the neighborhood of East Sprague Avenue and extending south of Sprague in the area near Altamont Street.
  - Why: The East Sprague – Sprague and Napa Employment Center is an area with higher pedestrian demand scores, a school, social services and a commercial corridor. Altamont Street connects the neighborhood south of I-90 with Sprague. The area west of Altamont is the location of the East Central Community Center and the East Side Library. There have been recent improvements to the pedestrian environment in portions of this area along Sprague Avenue.
- Driscoll Boulevard/Northwest Boulevard/Alberta/Cochran
  - Where: In the area generally north of Northwest Boulevard along Alberta and Cochran Streets and connecting to Driscoll Boulevard.
  - Why: These arterial streets have higher pedestrian deficiency scores largely because of a lack of sidewalks. The pedestrian demand score for the areas nearby are moderate to high. High traffic volumes on these major arterials make pedestrian crossings difficult.
- Lincoln and Nevada - future opportunity – new development Lincoln and Nevada Neighborhood Center
  - Where: Lincoln Road and Nevada Street.

- Why: Many residential streets north of Lincoln lack sidewalks but connect to destinations including schools and parks. Vehicle speeds on Nevada Street are often very high. This area includes a Neighborhood Center. A pedestrian fatality took place at the intersection of Magnesium and Nevada to the north when a city truck hit a teenager while turning at the signal. Sidewalk exists on the west side of Nevada. Sidewalk on the east side of Nevada will be constructed as this area develops in the future.
- South Perry
  - Where: In the neighborhood of South Perry Street and 9<sup>th</sup> Avenue.
  - Why: The South Perry Neighborhood Center is an area with higher pedestrian demand scores, an elementary school, higher density housing, a city park, and social services. Perry Street is a minor arterial that connects to the vicinity of the University District to the north and Southeast Boulevard to the south. The heart of the Perry District is an active business center. There have been recent improvements to the pedestrian environment in this area with improved sidewalks, street trees and other features.
- Lower South Hill/Sacred Heart Medical Center
  - Where: The lower South Hill area generally extending from Maple Street to Cowley Street.
  - Why: This area has some of the highest employment and population density in the city. Sacred Heart Medical Center is a major employer and there are significant office uses in this area. Higher density residential housing is located throughout this area of the South Hill. Lewis and Clark High School generates a large amount of pedestrian activity. Other generators of pedestrian demand include city parks and social services in nearby downtown Spokane.



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Figure 7- Composite Pedestrian Needs Map: Pedestrian Priority Zones



## Crash Analysis

This section provides a snapshot of pedestrian-involved crashes in Spokane between 2005 and 2012. Figure 8 below identifies the number of reported pedestrian collisions and fatalities in Spokane by year. Over this time period, there has been an average of 172 reported pedestrian collisions per year, while the number of pedestrian fatalities in a given year varies significantly.

**Figure 8 – Summary of Pedestrian-Vehicle Collisions by Year**

Year	Non-Fatal	Fatalities
2005	104	1
2006	198	2
2007	128	4
2008	111	0
2009	107	8
2010	118	1
2011	117	4
2012	131	5

Approximately 90% of reported pedestrian collisions took place at an intersection. Figure 9 relates the number of intersection collisions during this period with the traffic control present. During this period, about 88% of all pedestrian-involved collisions at intersections took place at locations with some form of traffic control, either stop signs or traffic signals. Eleven-percent of pedestrian-involved collisions took place at locations without a traffic control device. The large number of collisions at locations with some form of traffic control suggests a need to improve these conditions through protected turn phases, enhanced crosswalks, driver behavior change, and other strategies.

**Figure 9 - Location of Pedestrian-Vehicle Collisions (2005-2012)**

Location of Pedestrian-Vehicle Collision	Collision Count
Collision at intersection with no traffic control	94
Collision at traffic signal	379
Collision at stop control	343
Collision at traffic circle	0
<b>Total number of collisions at intersections</b>	<b>816</b>

Figure 10 provides a map of all pedestrian crashes, with fatal crashes identified in red. Figure 11 utilizes a density analysis to illustrate further high crash corridors and intersections. These maps illustrate locations with concentrations of pedestrian-involved collisions.

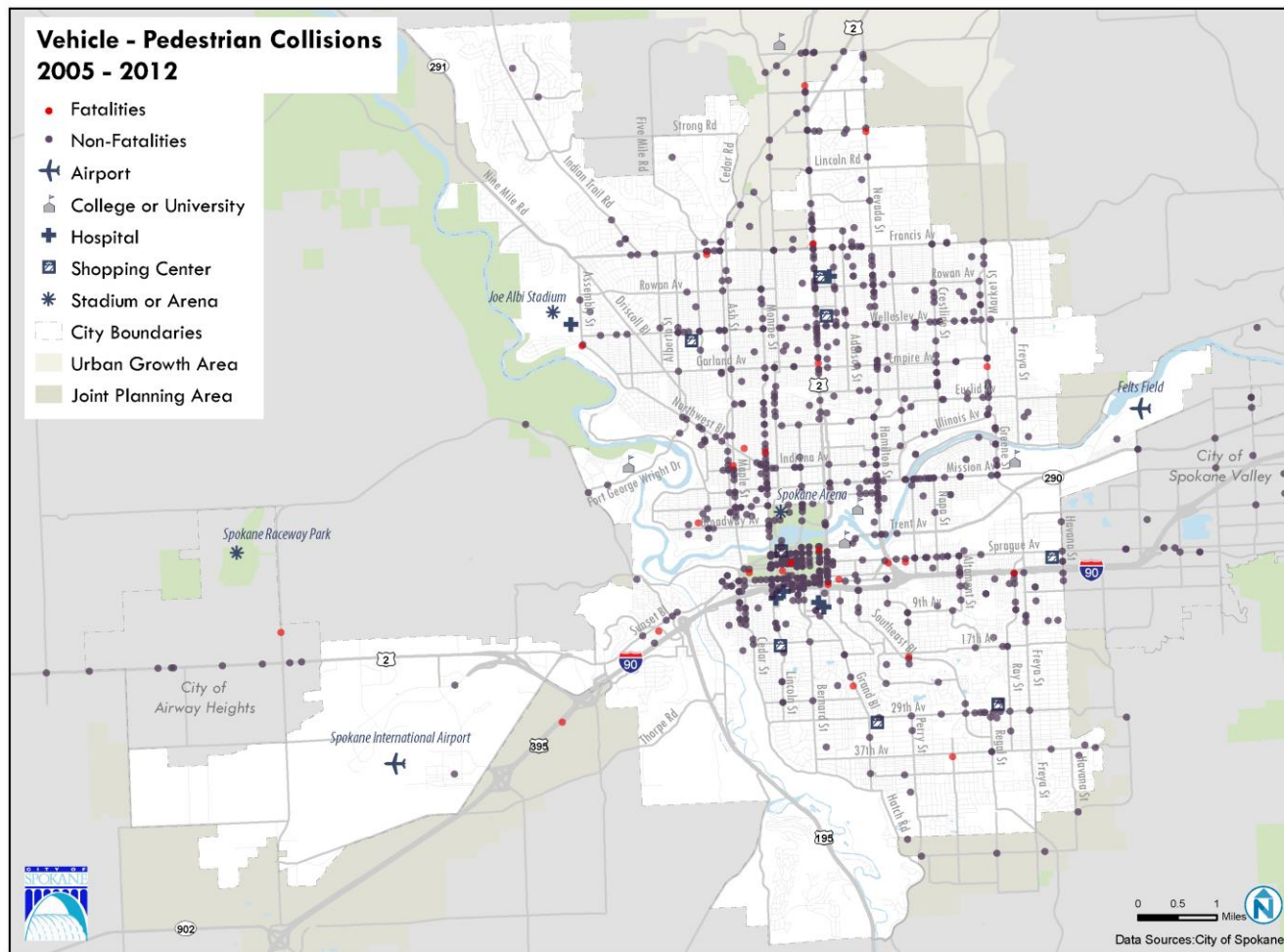
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The highest amount of pedestrian activity takes place in Downtown Spokane and this is where the greatest concentration of pedestrian-vehicle collisions took place during the analysis period. Intersections in downtown with the highest concentration of pedestrian-vehicle collisions include Second Avenue & Washington Street (11 collisions), Pacific Avenue & Browne Street (9 collisions), Second Avenue & Monroe Street (8 collisions), Second Avenue & Maple Street (7 collisions), Sprague Avenue & Wall Street (7 collisions) Sprague Avenue & Stevens Street (7 collisions) and Sprague Avenue & Browne Street (7 collisions).

Many crashes are concentrated along arterial streets, including those that are wide and with higher posted speeds that make them difficult to cross without marked crossings such as traffic signals or pedestrian refuge islands. Outside of Downtown, a number of corridors register including multiple intersections along Division Street, Mission Avenue in the Chief Garry Park neighborhood, Hamilton Street near Gonzaga University and the intersection of Francis Avenue and Ash Street.

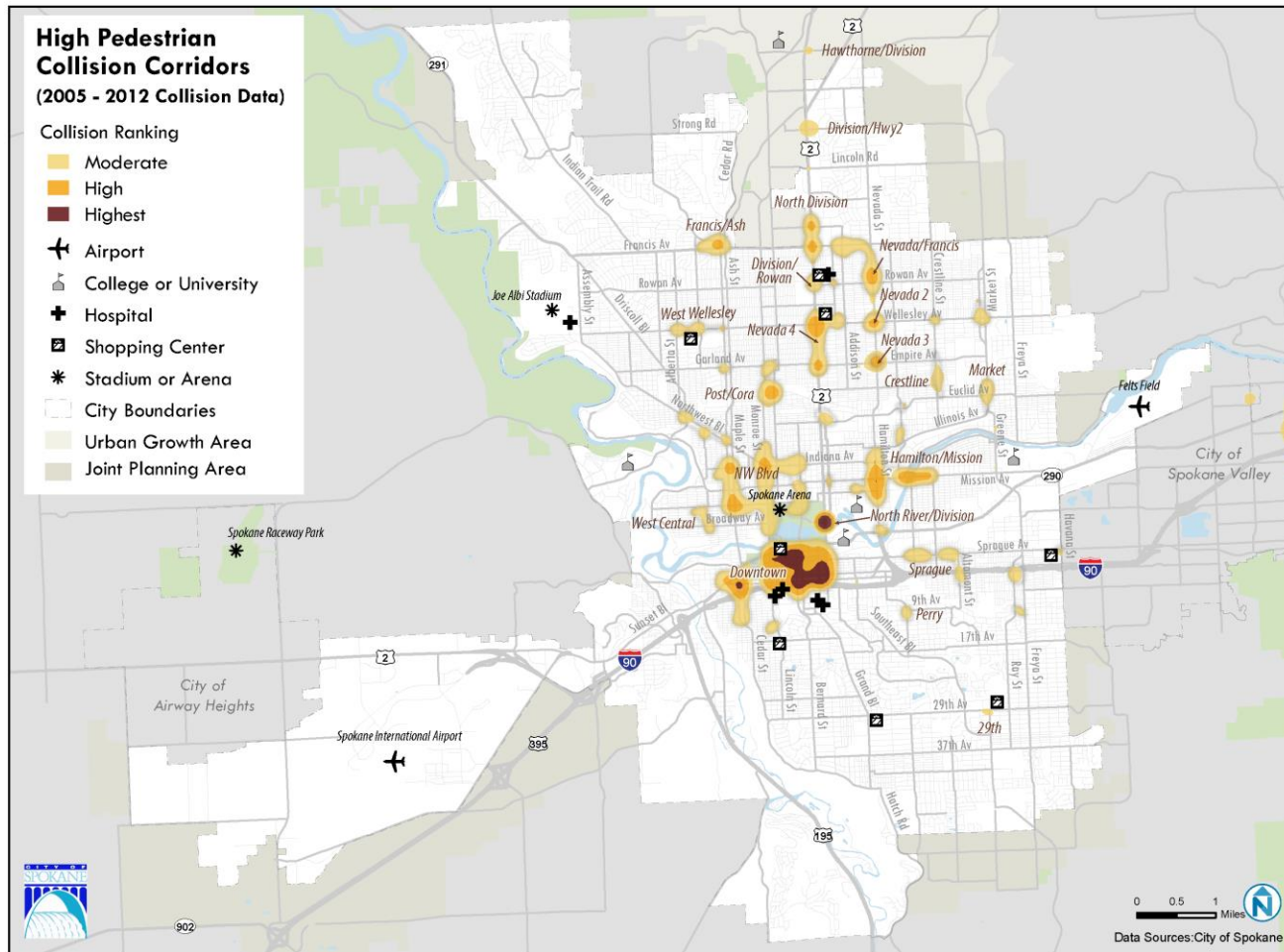
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Figure 10 – Map of Pedestrian Collisions, 2005-2012



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**Figure 11 – Map of High Concentrations of Pedestrian Collisions, 2005-2012**





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**Figure 12 – High Crash Corridors, 2005-2012**

Street	Crashes	Fatalities	Length (Miles)	Crashes/Mile	High Crash Intersections
Hamilton from Illinois to Cataldo	36	0	0.8	45	Hamilton & Mission(11), Hamilton & Indiana(4), Hamilton & Sharp(6)
Washington from Maxwell to North River	10	0	0.4	33.3	Sinto & Washington(2), Maxwell & Washington(1), Boone & Washington(3)
Division/Ruby from Desmet to Division St. Bridge (This location requires further analysis due to possible collision data mapping anomalies.)			0.5		Division & North River(2)
Mission from Perry to Lee	19	0	0.6	31.6	Mission & South Riverton(4), Mission & Upriver(3), Magnolia & Mission(5)
Market from Courtland to Cleveland	7	0	0.3	23.3	Euclid & Market(1), Liberty & Market(2), Bridgeport & Market(2)
Division from Wedgewood to Gordon	49	2	2.1	23.3	Division & Lyons(5), Division & Wellesley(9), Division & Empire(2)
Crestline from Empire to Bridgeport	7	0	0.3	23.3	Crestline & Gordon (3), Crestline & Empire (1)
Sprague from Ivory to Cook	19	1	0.9	21.1	Lee & Sprague(4), Pittsburg & Sprague(4), Helena & Sprague(3), Altamont & Sprague(3)
Nevada from Lyons to Garland	35	0	1.8	19.4	Joseph & Nevada(6), Nevada & Wellesley(6), Empire & Nevada(7), Nevada & Rowan(3)
Monroe from Garland to Monroe St Bridge	36	1	2.2	16.4	Boone & Monroe(2), Monroe & Spofford(3), Maxwell & Monroe(2), Indiana & Monroe(2), Garland & Monroe(1)
Wellesley from Milton to Maple	12	0	0.8	15	Wellesley & Belt(3), Wellesley & Alberta(3), Wellesley & Ash(2)
Wellesley from Martin to Greene	10	0	0.8	12.5	Lee & Wellesley(2), Lacey & Wellesley (2), Crestline & Wellesley(1)
Francis from Alberta to Cedar	9	1	0.8	11.25	No intersections along Five Mile Shopping
Maple/Ash from Knox to Maple St Bridge	22	1	2.2	10	Indiana & Maple(4), Ash & Gardner(2), Maple & Maxwell(2), Boone & Maple(2), Ash & Maxwell(1)
Northwest from Fairview to Maple	6	0	0.8	7.5	Cochran & Northwest(1),

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**Figure 13 - Top Crash Intersections within high crash corridors, 2005-2012**

Intersection	Traffic Control	Crashes	Corridor
Second Av & Washington St	Signal	11	Downtown
Hamilton St & Mission Av	Signal	10	Hamilton
Browne St & Pacific Av	None	9	Downtown
Monroe St & Second Av	Signal	8	Downtown
Maple St & Second Av	Signal	7	Downtown
Sprague Av & Wall St	Signal	7	Downtown
Sprague Av & Stevens St	Signal	7	Downtown
Browne St & Sprague Av	Signal	7	Downtown
Empire Av & Nevada St	Signal	7	Nevada
Joseph Av & Nevada St	Stop	6	Nevada
Hamilton St & Sharp Av	Signal	6	Hamilton
Fourth Av & Maple St	Signal	6	Downtown
Nevada St & Wellesley Av	Signal	6	Nevada
Browne St & Second Av	Signal	5	Downtown
Browne St & Third Av	Signal	5	Downtown
Division St & Lyons Av	Signal	5	North Division
Division St & Second Av	Signal	5	Downtown
Monroe St & Sprague Av	Signal	5	Downtown
Magnolia St & Mission Av	Stop	5	Mission
Hamilton St & Indiana Av	Signal	4	Hamilton
First Av & Washington St	Signal	4	Downtown
Riverside Av & Stevens St	Signal	4	Downtown
Mission Av & South Riverton Av	Stop	4	Mission*
Mission Av & Upriver Dr	Stop	3	Mission
Division St & North River Dr	Signal	2	North River
Boone Av & Monroe St	Signal	2	Monroe

\*This intersection has been modified to right-in, right-out from South Riverton Avenue to Mission Avenue

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**Figure 14 – Top Crash Intersections independent of high crash corridors, 2005-2012**

Intersection	Traffic Control	Crashes
9th Av & Perry St	Stop	5
Boone Av & Walnut St	Stop	4
Garland Av & Post St	Signal	4
Ash St & Five Mile Rd	Signal	3

## PROGRAMMATIC RECOMMENDATIONS

This section provides a series of goals, policies and actions to continue making Spokane a more walkable community over time. Making steady progress by implementing these and other actions will help Spokane achieve recognition as a Walk Friendly Community as well as support other community initiatives related to livability, public health and economic development. By applying for a Walk Friendly Community designation, the city will receive specific suggestions and resources on how to make needed changes for pedestrian safety. Through the questions in the assessment tool, the city will be able to identify the areas of needed improvements that can form the framework for a comprehensive pedestrian improvement plan. Communities awarded with a Walk Friendly Community designation will receive national recognition for their efforts to improve a wide range of conditions related to walking, including safety, mobility, access and comfort.

### Goal 1 Well Connected and Complete

**Pedestrian Network** - Provide a connected, equitable and complete pedestrian network within and between centers and corridors and Pedestrian Priority Zones that includes sidewalks, connections to trails, and other pedestrian facilities, while striving to provide barrier-free mobility for all populations.

- Policy 1.1 Create walkable environments through short and connected blocks.
  - Action 1.1.1 Review concurrency and developer requirements and recommend modifications to achieve greater connectivity.
- Policy 1.2 Create direct connections for users of all abilities.
  - Action 1.2.1 Map concentrations of vulnerable users such as older adults, children, or people with disabilities.
  - Action 1.2.2 Create design standards for these areas, including consideration of longer street crossing clearance intervals, if appropriate.
  - Action 1.2.3 Implement the City’s ADA Disability Transition Plan for Physical Facilities.
- Policy 1.3 Close gaps in the sidewalk network.
  - Action 1.3.1 Apply a prioritization methodology to identify capital projects, including ADA retrofits and sidewalk infill.
  - Action 1.3.2 Identify new funding sources for construction of sidewalks and crossings.
  - Action 1.3.3 Program projects in the capital budget.

#### **Definition of Programmatic Recommendations’ Organization**

The adopted Spokane Comprehensive Plan states, “Goals and policies provide specificity for planning and decision-making. Overall, they indicate desired directions, accomplishments, or aims in relation to the growth and development of Spokane.”

- A **goal** is a general statement of the community’s desired outcome
- **Policies** are a course of action that a community will take to meet its goals. They are focused and direct actions
- **Actions** are specific projects and activities directed to achieve the goals.

- Policy 1.4 Document the number of each type of improvement to the pedestrian system.
  - Action 1.4.1 Continue and expand the sidewalk inventory, curb ramp inventory, and crosswalk inventory.
  - Action 1.4.2 Track and report new pedestrian facilities and investments.
- Policy 1.5 Support the continued development and identification of shared-use pedestrian and bicycle pathways.
- Policy 1.6 Provide connections for pedestrians to adjacent jurisdictions.

**Goal 2 Maintenance and Repair of Pedestrian Facilities** - Provide maintenance for and improve the state of repair of existing pedestrian facilities.

- Policy 2.1 Increase funding for maintenance of pedestrian facilities.
  - Action 2.1.1 Continue and expand the crosswalk maintenance program.
  - Action 2.1.2 Develop an annual program to repair and replace broken sidewalks in Pedestrian Priority Zones.

**Goal 3 Year-Round Accessibility** - Address the impacts of snow, ice, flooding, debris, vegetation and other weather and seasonal conditions that impact the year-round usability of pedestrian facilities.

- Policy 3.1 Define and maintain the walkable zone to facilitate clear pedestrian travelways.
  - Action 3.1.1 Use available funding sources for maintenance of pedestrian facilities, including snow clearance on regional trail system.
- Policy 3.2 Improve awareness and enforcement of snow clearing and maintenance policies.
  - Action 3.2.1 Improve public information resources for pedestrian facility maintenance.
  - Action 3.2.2 Implement the improvements to the public information resources and document the impacts.

**Goal 4 Safe and Inviting Pedestrian Settings** - Create a safe, walkable city that encourages pedestrian activity and economic vitality by providing safe, secure, and attractive pedestrian facilities and surroundings.

- Policy 4.1 Increase pedestrian safety both along and across the roadway.
  - Action 4.1.1 Use targeted enforcement programs to ensure the safety and security of pedestrians in crosswalks and on city streets, trails, and walkways.
  - Action 4.1.2 Build new sidewalks and crossings in accordance with street design standards.
- Policy 4.2 Remediate areas of known pedestrian safety incidents.
  - Action 4.2.1 Conduct regular coordination of traffic engineers and planners to work with police to review sites in need of safety improvement for motorists and pedestrians.
  - Action 4.2.2. Use pedestrian crash data to identify problem areas and potential solutions.
- Policy 4.3 Create vibrant places that invite walking and gathering.



- Action 4.3.1 Create a pilot parklet program.
- Action 4.3.2 Adopt development standards and guidelines to encourage lively, attractive, safe and walkable pedestrian environments.
- Policy 4.4 Evaluate the impacts of pedestrian improvements.
  - Action 4.4.1 As warranted, conduct field studies to assess changing conditions including yield compliance, visibility triangles, and prevailing speed at project locations.
  - Action 4.4.2 Explore pedestrian count technology to assess change in activity over time.
  - Action 4.4.3 Consider pursuing application for Walk Friendly Community designation.

**Goal 5 Education** - Educate citizens, community groups, business associations, government agency staff, and developers on the safety, health, and civic benefits of a walkable community.

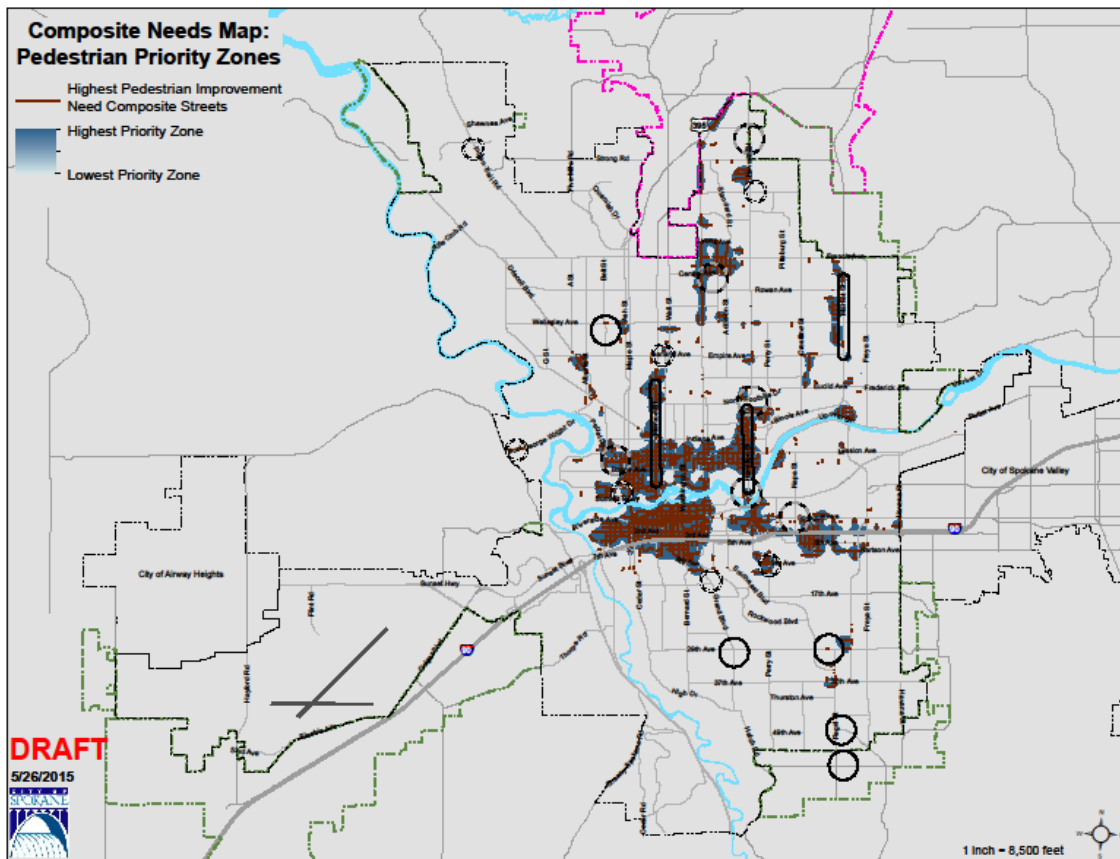
- Policy 5.1. Partner with other agencies in the promotion of the benefits of walking.
  - Action 5.1.1 Develop and train staff to implement a citywide pedestrian education program based on national best practices.
  - Action 5.1.2 Provide information to Spokane residents about the benefits of new pedestrian facilities.
  - Action 5.1.3 Develop pedestrian messaging campaigns, including public health campaigns related to walking and the benefits of investing in pedestrian facilities.
  - Action 5.1.4 Develop public service announcements to encourage safe walking and driving.
  - Action 5.1.5 Identify funding and partnering opportunities with City agencies and local, regional, and national partners for effective and wide dissemination of the walking encouragement programs.
  - Action 5.1.6 Develop Walking maps (e.g., neighborhood maps, school route maps, city-wide maps, trails and greenways, etc.).
  - Action 5.1.7 Support implementation of a uniform pedestrian wayfinding system.

## PROJECT IDENTIFICATION/PEDESTRIAN IMPROVEMENT METHODOLOGY

The Pedestrian Priority Zones provide guidance for identifying high priority areas for future pedestrian improvements. The Pedestrian Priority Zones were identified using the pedestrian needs analysis. The Pedestrian Needs Analysis compares pedestrian demand indicators with existing pedestrian infrastructure, and is used to compare different locations to help make data-driven decisions that are equitable and fair. This is only one tool to assist with prioritizing locations for pedestrian projects; it should not be used as the sole determinant for making decisions. An integrated approach that includes availability and stipulations of funding, community support, and cost sharing opportunities with other planned projects will be considered in the decision making process. Pedestrian projects and other street projects are identified in the Six-Year Comprehensive Street Program which is updated annually.

Figure 15 shows the general location of the Pedestrian Priority Zones.

Figure 15 – Pedestrian Priority Zones



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Figure 16 shows the Pedestrian Priority Zones with the 2015 construction projects that include pedestrian facilities and the 2016-2021 6-year Street Program projects that include pedestrian facilities. The street projects incorporate calming traffic and improving safety for pedestrians by reducing road and lane width; providing wider sidewalk, installation of curb extensions; modifying ADA ramps; adding a pedestrian pathway; improving transit accessibility; placing missing sidewalk; repairing sidewalk; installation of pedestrian lighting; improved median refuge islands; and other improvements. Many of the projects are within Pedestrian Priority Zones and are consistent with the guidance provided by the Pedestrian Master Plan.

**Figure 16 – 2015 Construction Projects and 2016-2021 6-year Street Program projects that include pedestrian facilities**

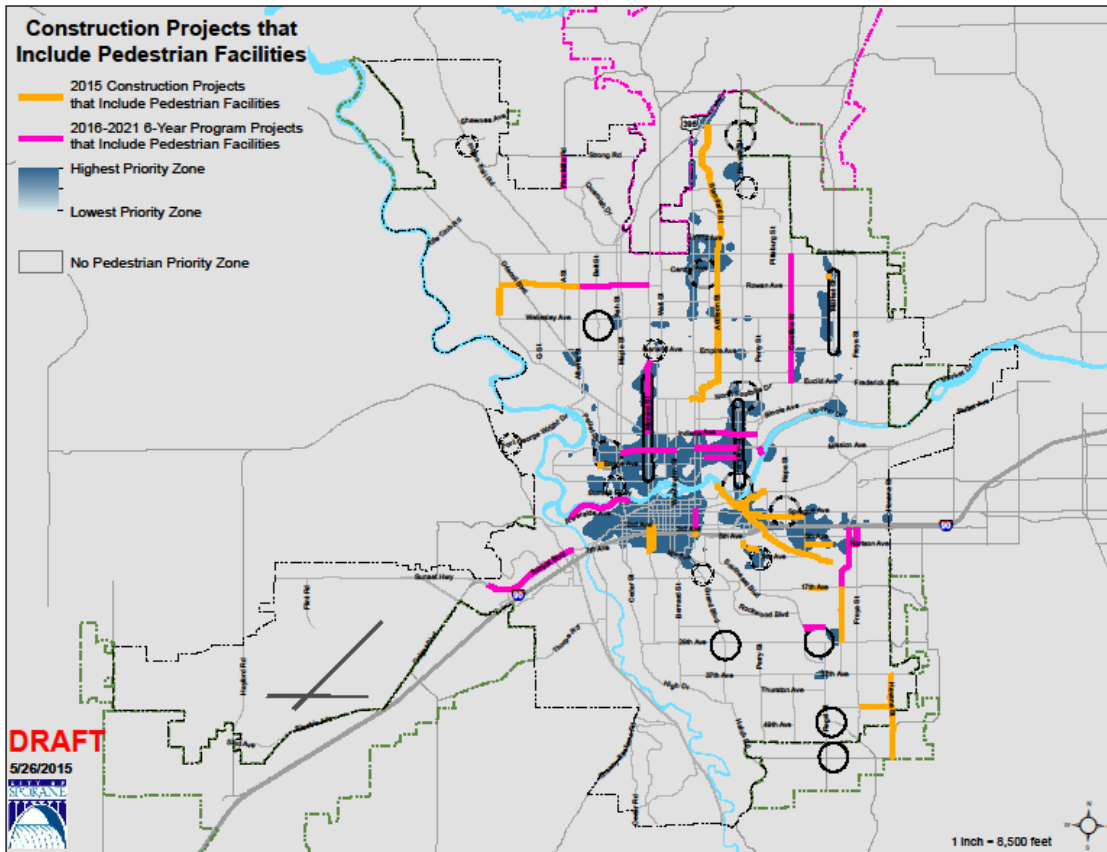
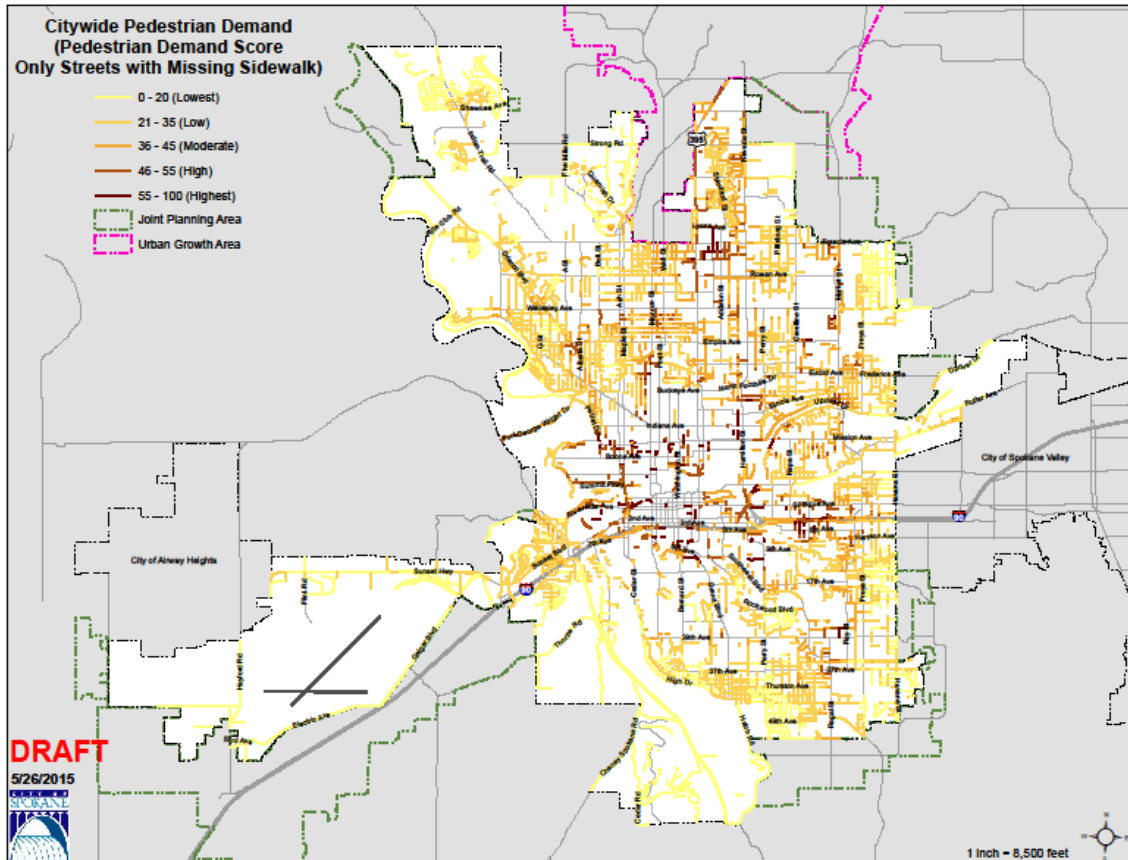


Figure 17 provides an example of how potential sidewalk improvement projects may be identified using the pedestrian demand analysis. The map identifies missing sidewalks on one or both sides of a street. The missing sidewalk data is compared to the Pedestrian Demand Score. The result is an identification of locations where there is missing sidewalk in areas with the highest pedestrian demand.

Figure 17 – Comparison of Pedestrian Demand and Missing Sidewalk



## POTENTIAL FUNDING SOURCES

The Pedestrian Master Plan should be used as a guide to identify pedestrian improvement projects and decide which to fund. The evaluation of pedestrian improvement needs should be considered as a part of all projects when city controlled sources of funding are eligible to pay for pedestrian projects.

Several examples of funding sources available for financing pedestrian improvement projects are included below. Other funding sources should be identified and utilized whenever opportunities arise.

## **Local**

- **Transportation Benefit District (TBD)**  
On February 14th 2011, City Council adopted Ordinance No. C34690 establishing the allocation of 10% of the Transportation Benefit District (TBD) revenue generated to implement the Pedestrian Program of the City of Spokane's Six-Year Comprehensive Street Program. The funding will remain in place for six years beginning in 2012. The collection of the TBD funds began in September of 2011. The Pedestrian Master Plan will help identify the pedestrian facilities that would ultimately be funded with TBD revenue under the Pedestrian & Bikeways section of the Program. TBD funding available in 2012 is on the order of \$150,000 and is expected to be at almost \$180,000 in subsequent years. The front-work of the Pedestrian Master Plan was utilized to select projects for 2012, and future projects under this program will also be identified from the Pedestrian Master Plan.
- **Local Improvement District (LID) bonds**  
A major fund source for the construction of new residential streets and alleys is the use of Local Improvement District (LID) bonds. These bonds are financed through direct property assessment. General obligation bonds financed through property tax (GO bonds) are also used to fund specific projects. Sidewalk construction may be included as a part of an LID project.
- **Automated Traffic Safety Cameras funding allocation**  
On September 30, 2013 the City Council passed Resolution No. 2013-0070 related to allocation of funds from infractions issued with automated traffic safety cameras. Among the items to be allocated funding, the resolution provides a flexible matching fund for neighborhood traffic calming projects, neighborhood business districts, streetscape improvement or community development projects related to public safety.
- **2014 Street Levy**  
In 2014 city voters passed a 20-year levy to create a sustainable, long-term funding source for streets. The levy concentrates new investments on the arterial streets, which account for more than 90 percent of vehicle miles traveled through the City. The levy supports the City's "integrated" way of looking at streets. Integrated streets consider pavement conditions, multi-modal transportation components (including pedestrian facilities), stormwater management, water and wastewater infrastructure, and economic development opportunities. The levy will generate about \$5 million a year to fund new street work. Those funds would be matched with local utility dollars and state and federal matching funds to support about \$25 million in street improvements annually.

## **State**

- **Paths and Trails Reserve**  
A portion of the State gasoline tax revenue which, by Washington State Law, is returned to local government to be used for the development and maintenance of paths and trails. One half of one percent (0.5%) of the tax is returned to the City. Presently the City receives approximately \$14,000 per year from this funding source. Both pedestrian and bike facilities can utilize these funds, however historically these funds have been extremely limited.

- **State Arterial Street Funds**  
State Arterial Street Funds may be obtained for both pedestrian and bikeway facilities as long as the facility is a component part of a street improvement project and available for funding.
- **State Transportation Improvement Board (TIB) Funds**  
A sidewalk program is included in TIB's funding program. Historically these funds have been limited to projects under \$250,000 and TIB will not participate in any needed right-of-way costs.

### **Federal**

- **Community Development Block Grant Program**  
This funding comes from the Housing and Community Development Act of 1974 and authorizes the Department of Housing and Urban Development to distribute funds to local governments for the purpose of improving their community. The Community Development Block Grant (CDBG) program primarily addresses capital construction needs in low-to-moderate income neighborhoods. Funds for pedestrian and bicycle facilities are included.
- **Federal Arterial Street Funds**  
Pedestrian facilities may utilize these funds, as long as the facility is a component part of a street improvement project and available for funding.

Implementing new programs and solutions will require funding and there likely will never be enough money to do everything. As a way to prioritize projects, the Pedestrian Master Plan supports incorporating pedestrian safety and accessibility improvements (including ADA) into existing transportation projects that fall within the City's priority areas.

Any project being designed in the public right-of-way, from a street being resurfaced to the placement of the new transit stop, should be reviewed to ensure that pedestrian safety and accessibility improvements are included. For example, as mentioned above, projects funded using the 2014 Street Levy will incorporate multimodal transportation components including pedestrian improvements. Other street projects, including those involving non-arterial streets, will include improvements to meet ADA standards such as the addition of new curb ramps or replacement curb ramps. There will also be an assessment of existing pedestrian facilities such as sidewalks and repair or replacements will be completed as necessary.

Another potential resource is the partnering with other agencies, foundations and the private sector for future awareness and education campaigns. The City should continue partnering with other agencies like the Spokane Regional Health District that have a considerable interest in improving pedestrian safety. Strengthening these partnerships and forming new ones will provide additional opportunities to increase awareness of pedestrian safety issues.



# Appendix A - Pedestrian Needs Analysis Methodology

A pedestrian needs analysis was completed that considered factors indicative of walking potential (pedestrian demand) as compared to the supply (or lack thereof) of pedestrian infrastructure (pedestrian deficiencies), to illustrate where there is a mismatch in the demand for and availability of walking infrastructure. Indicators included in the pedestrian demand analysis are:

- Employment density - Major employment centers such as downtown and the University District can generate walking trips both on the journey to and from work (including in connection with other modes) as well as mid-day activity for lunch, errands, etc.
- Population density - Higher density residential areas tend to be more supportive of having destinations within a walkable distance, with a mix of land uses located in close proximity to each other.
- Proximity to destinations (Centers and Corridors, neighborhood shopping, social services, transit stops, schools, parks,) – These destinations attract walking trips. Neighborhood shopping and schools are major destinations for daily activities, most transit trips in Spokane begin or end with a walking trip, and children are potential walkers to school.
- Demographic factors from the US Census (% of people with no vehicle available, % of households below the poverty level, % of people under 18, and % of people 65 or over) – These population groups can be dependent on walking due to financial considerations or a lack of access to a personal vehicle.

The methodology's premise is that the highest priority improvements should be located in those areas where walking potentials (pedestrian demand) are high and pedestrian facilities are lacking. Each street segment received a pedestrian demand score rating and an infrastructure deficiency rating. The rating values were applied to each street segment based on a conversion of the unique indicator measurement units into a common set of rating criteria. Additionally, the methodology weighted the importance of each indicator relative to other indicators. Pedestrian demand indicators were weighted separately from infrastructure deficiency indicators to support the methodology's two separate indices.

After all street segments received their weighted scores for pedestrian demand and infrastructure deficiency, the highest scoring segments on both indices were found by taking the geometric mean of the two score sets. This produced the pedestrian priority zones which are the areas with the greatest need for improvements.

For the pedestrian demand scoring, using the relative weighting allows placement of emphasis on indicators that are likely to generate more pedestrian demand than other indicators. The results more accurately reflect how an indicator influences pedestrian demand. As an example, employment density is given a higher weight because major employment centers such as

downtown and the University District, can generate walking trips both on the journey to and from work as well as mid-day activity for lunch, errands, etc.

Figure 20 and 21 below shows the factors that were considered in the pedestrian needs analysis. The City's GIS database was used to map the indicators and the relative weighting based on the importance of each indicator relative to the other indicators.

Figure 7 of the Pedestrian Master Plan provides the results of the pedestrian demand mapping.

Pedestrian deficiency indicators were also mapped. See Figure 2 below. Indicators included in the pedestrian deficiency analysis are:

- Presence of sidewalks - Sidewalks provide a dedicated facility separated from the roadway (may or may not provide a pedestrian buffer strip).
- Width of the street – Wider roads tend to enable higher vehicle speeds, which reduces comfort for pedestrians and makes roadway crossings more difficult.
- Collision history – A history of multiple pedestrian collisions likely reflects difficult walking or crossing conditions.

Figure 8 of the Pedestrian Master Plan provides the results of the pedestrian deficiency mapping.

Figure 9 of the Pedestrian Master Plan illustrates the results of the composite map which combines the assessment of pedestrian demand and pedestrian deficiency. This map serves to clarify where the pedestrian needs in the city are greatest. Areas with higher demand and deficiency scores are candidates for designation as Pedestrian Priority Zones.

Maps with background information used in the Pedestrian Needs Analysis follow the Pedestrian Demand Score and Pedestrian Deficiency Score tables. See Figure 20 through below.

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**Figure 18 – Pedestrian Demand Score**

Indicator	Weight	Indicator Score	Rating Value	
Centers and Corridors	5	0-330	500	*Using City Zoning (CC1, CC2, DTC, DTG, DTS & DTU), City Zoning Overlay (CC3), County Zoning (NC, MU)
		330-660	375	
		660-990	250	
		990-1320	125	
		1320+	0	
Street Segment Length (ft)	10	0-400	500	* Left segments broken as they are in the street network.
		400-500	400	
		500-750	300	
		750-1000	200	
		1000-1500	100	
		1500+	0	
Employees per Acre	15	0-3.5	0	*Employees by TAZ given to us from SRTC. These numbers were generated by SRTC to show in their Horizon 2040
		3.5-8	100	
		8.1-16	200	
		16-32	300	
		32-80	400	
		80+	500	
Population per Acre	15	0-5	0	*Using Block 2010 Census
		5-10	100	
		10-15	200	
		15-20	300	
		20-25	400	
		25+	500	
Neighborhood Shopping Proximity (ft.)	5	0-330	500	*Using City Zoning (NR)
		330-660	375	
		660-990	250	
		990-1320	125	
		1320+	0	
Social Service Proximity (ft.)	5	0-330	500	* Used list of Resources for Disabled
		330-660	375	
		660-990	250	
		990-1320	125	
		1320+	0	
Transit Proximity (ft.)	10	0-330	500	*Used STA HPTN Bus Routes
		330-660	375	
		660-990	250	
		990-1320	125	
		1320+	0	
Park Proximity (ft.)	5	0-330	500	*Used City GIS layer but only kept neighborhood parks, major parks and community parks
		330-660	375	
		660-990	250	
		990-1320	125	
		1320+	0	
School Proximity & Community Centers (ft.)	10	0-330	500	*Used City GIS layer for schools. Also Included Community Centers
		330-660	375	
		660-990	250	
		990-1320	125	
		1320+	0	
People with No Vehicle Available (%)	5	0-3.2%	0	*Used tract data from American Community Survey. The categories were created by using natural breaks.
		3.3% - 4.9%	125	
		5% - 8.4%	250	
		8.5% - 15.4%	375	
		15.5%+	500	
Below Poverty Level (%)	5	0-6.92	0	*Used tract data from American Community Survey.
		6.93 - 11.43	100	
		11.44 - 19.36	200	
		19.37 - 26.4	300	
		26.41 - 32.9	400	
32.91 +	500			
Under 18, 65 or Over (%)	5	0%	0	*Used block from 2010 Census data
		1 - 24%	100	
		24.1 - 32.14%	200	
		32.15 - 38%	300	
		38.1 - 44.74%	400	
44.75% +	500			
Bus Stop (ft.)	5	0-330	500	*Used STA Bus Stops
		330-660	375	
		660-990	250	
		990-1320	125	
		1320+	0	
Total Weight	100			

**Figure 19 – Pedestrian Deficiency Score**

Indicator	Weight	Indicator Score	Rating Value
Street Width (ft.)	20	0-25	0
		25-35	100
		35-45	200
		45-55	300
		55-65	400
		65+	500
Sidewalk (%)	50	0 - 20	500
		20 - 35	400
		35 - 50	300
		50 - 65	200
		65 - 80	100
		80 - 100	0
Accidents	30	0 - 13.37	0
		13.38 - 66.88	100
		66.89 - 173.91	200
		173.92 - 356.73	300
		356.74 - 642.11	400
		642.12+	500

\*Used City of Spokane Pavement Management System data

\* Numbers are based on a raster dataset.

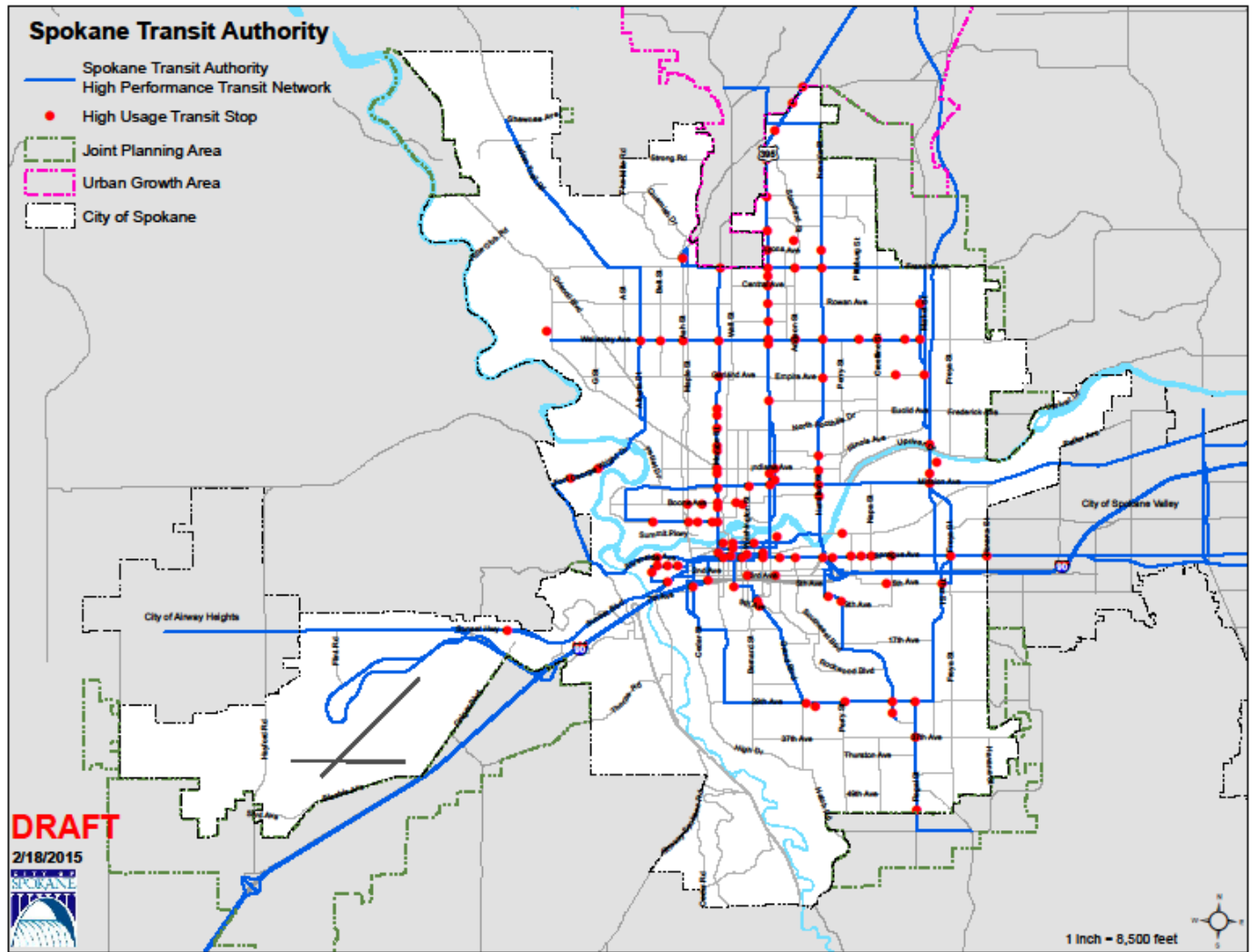
The background maps for the Pedestrian Master Plan Pedestrian Needs Analysis are provided below:

- STA HPTN and Transit Stops (Figure 20)
- Street Width (Figure 21)
- Street Segment Length (Figure 22)
- Social Services (Figure 23)
- Sidewalk Coverage (Figure 24)
- Schools and Community Centers (Figure 25)
- Percentage of Population Below Poverty Level (Figure 26)
- Population Density (Figure 27)
- Percentage of Population with No Vehicle Available (Figure 28)
- Parks (Figure 29)
- Neighborhood Retail Zoned Areas (Figure 30)
- Employment Density (Figure 31)
- Center and Corridor and Downtown Zoning (Figure 32)
- Percentage of the Population Under 18 and 65 and Over ( )
- Pedestrian Serious Injuries and Fatalities, 2010-2014 (Figure 35)
- Crash Fatalities Density, Crashes 2002-2014 Overview (Figure 36)
- Crash Fatalities Density, Crashes 2002-2014 West Focus Area (Figure 37)
- Crash Fatalities Density, Crashes 2002-2014 Central Focus Area (Figure 38)

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- Crash Fatalities Density, Crashes 2002-2014 East Focus Area (Figure 39)
- Crash Fatalities Density, Crashes 2002-2014 North Focus Area (Figure 40)
- Minor and Serious Injury Crash Density, Crashes 2010-2015 Q1 Overview (Figure 41)
- Minor and Serious Injury Crash Density, Crashes 2010-2015 Q1 East Focus Area (Figure 42)
- Minor and Serious Injury Crash Density, Crashes 2010-2015 Q1 North Focus Area (Figure 43)
- Minor and Serious Injury Crash Density, Crashes 2010-2015 Q1 West Focus Area (Figure 44)

Figure 20 - STA HPTN and Transit Stops





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Figure 21 – Street Width

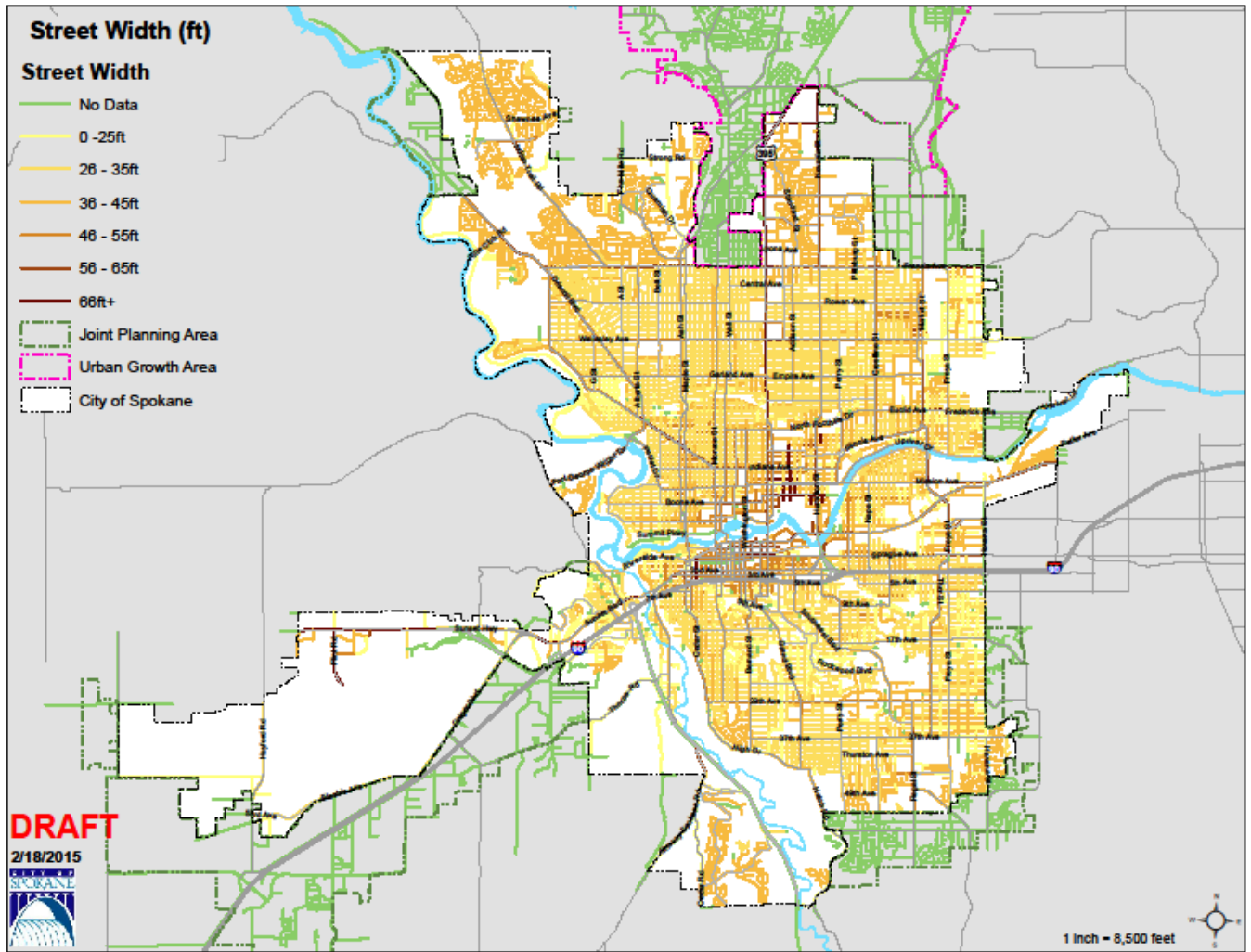


Figure 22 - Street Segment Length

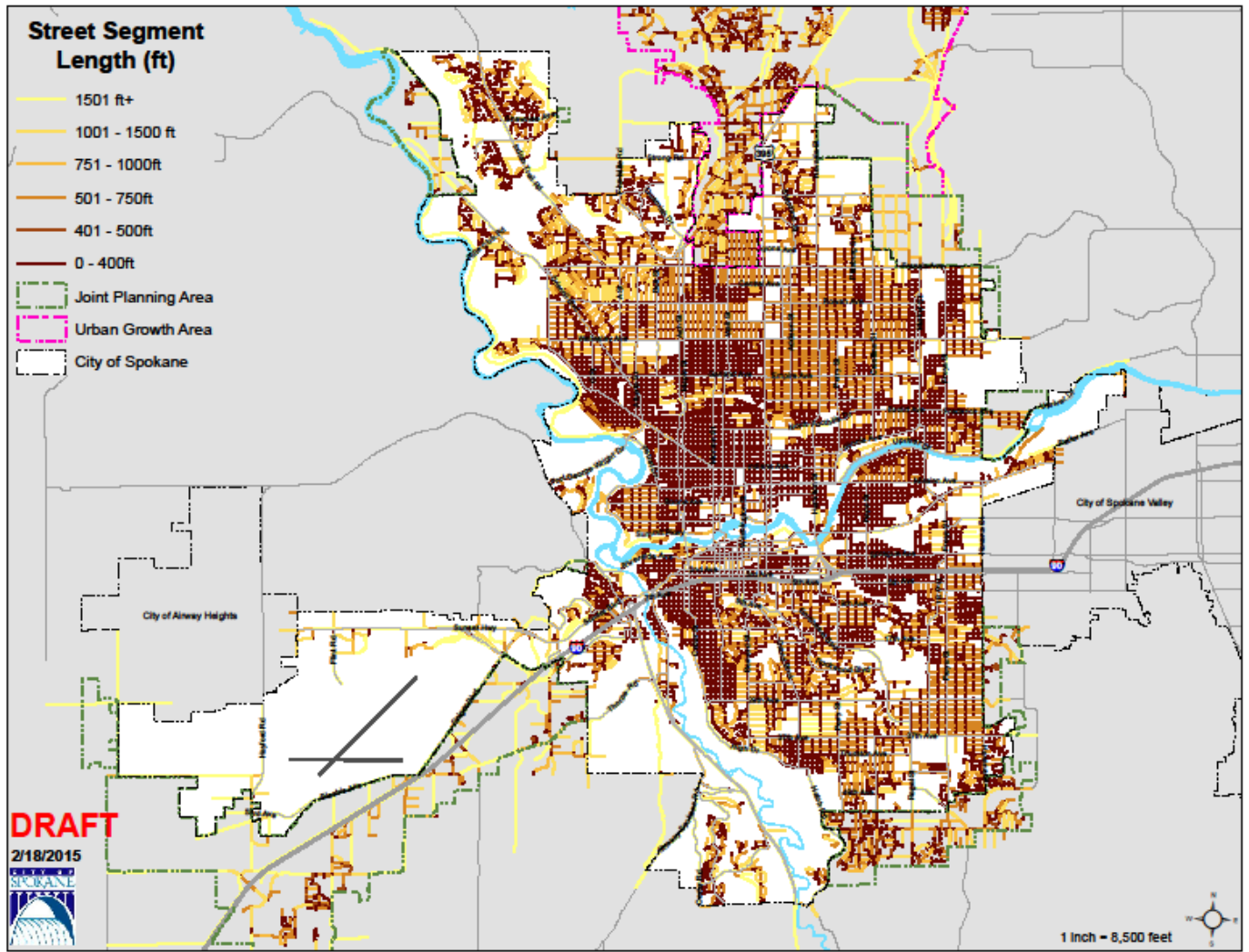
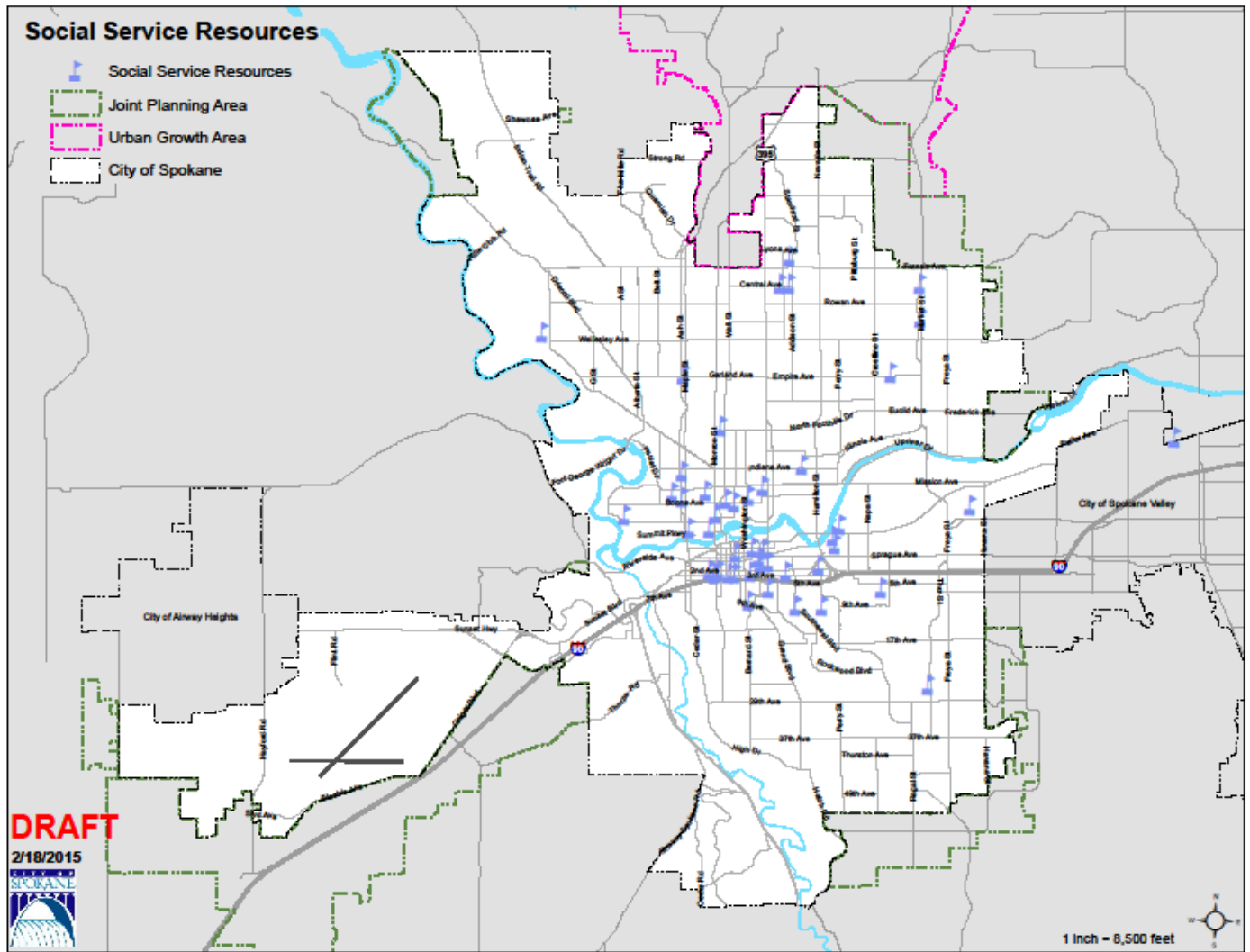
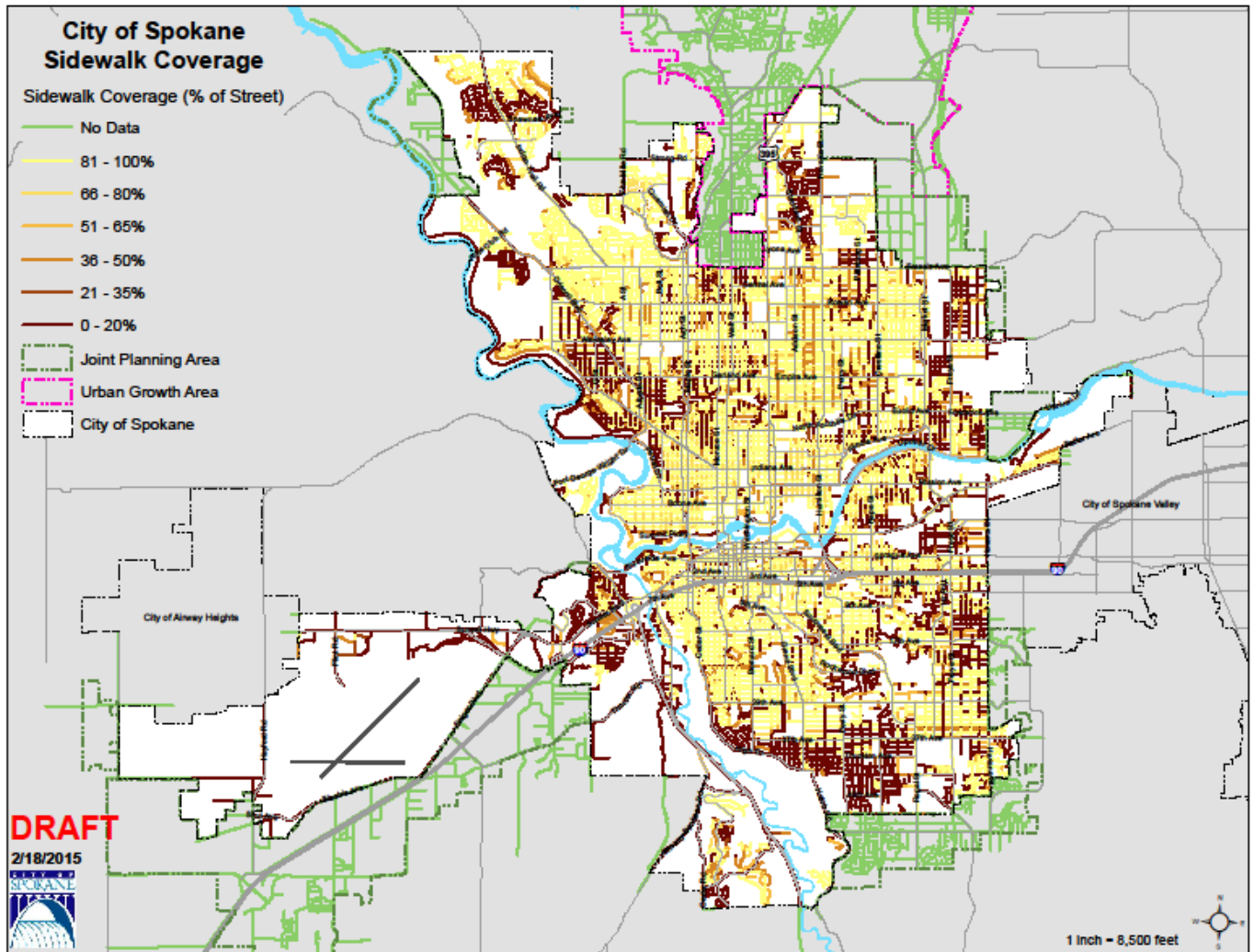


Figure 23 - Social Services



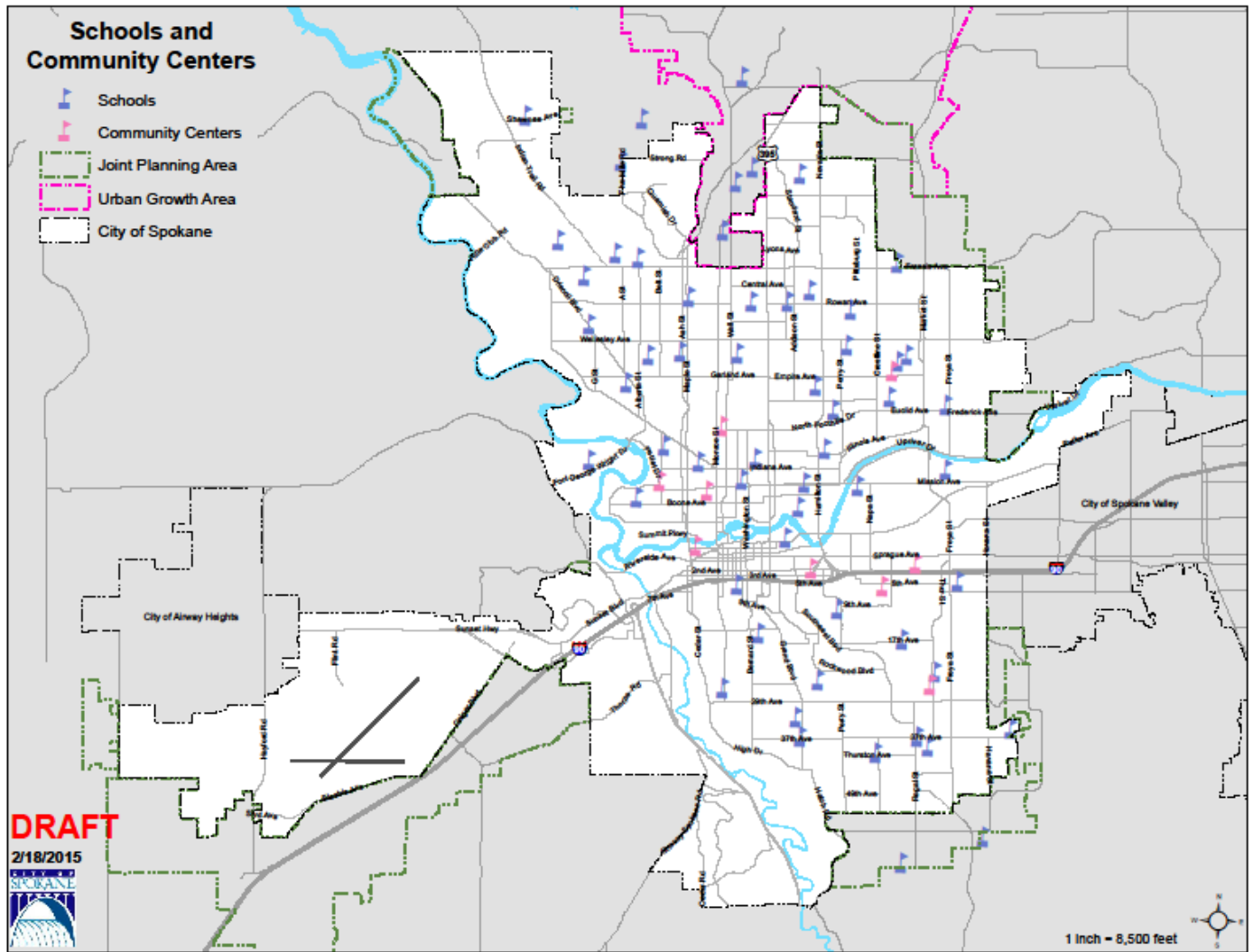
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Figure 24 - Sidewalk Coverage



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Figure 25 – Schools and Community Centers.



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Figure 26 - Percentage of Population below Poverty Level

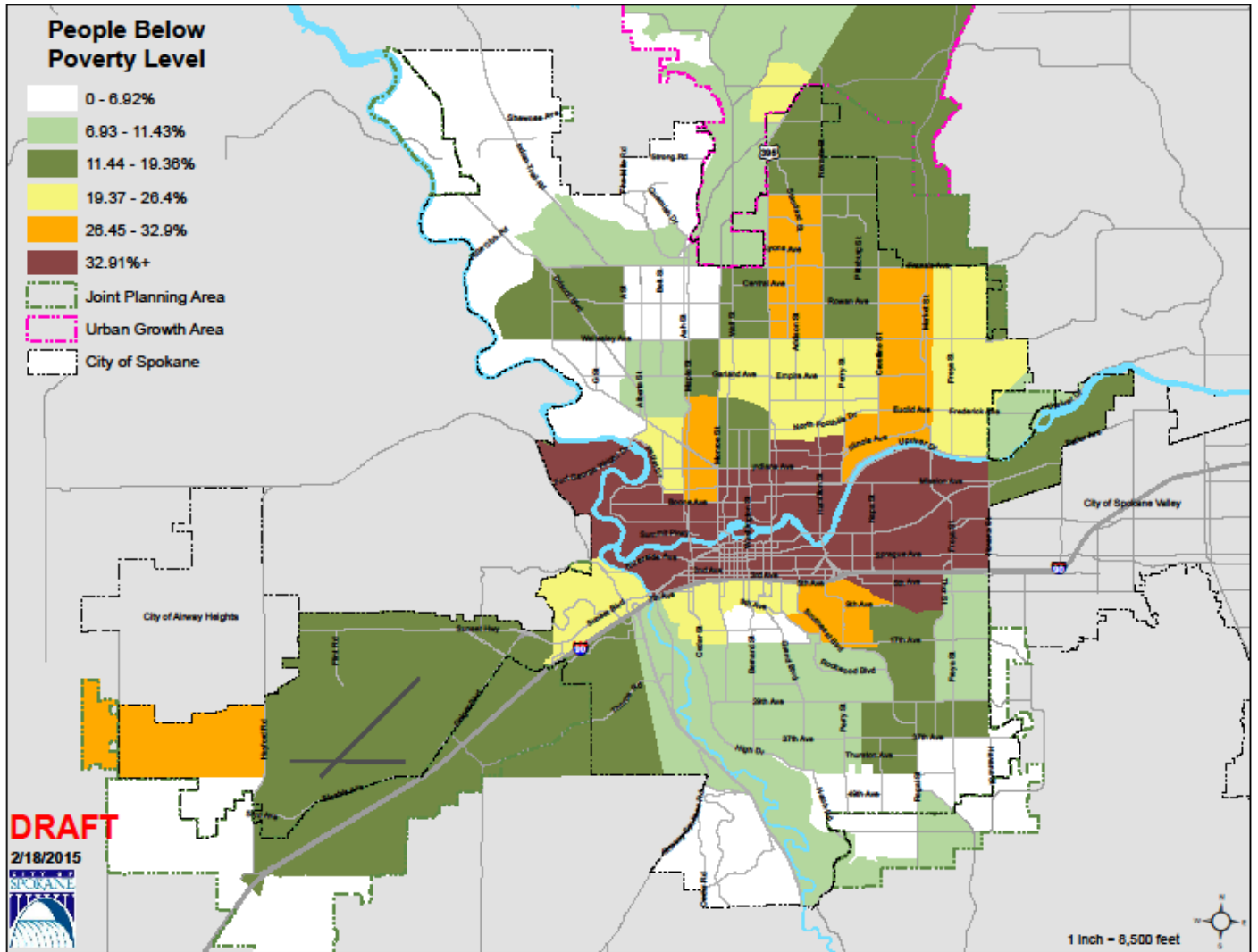
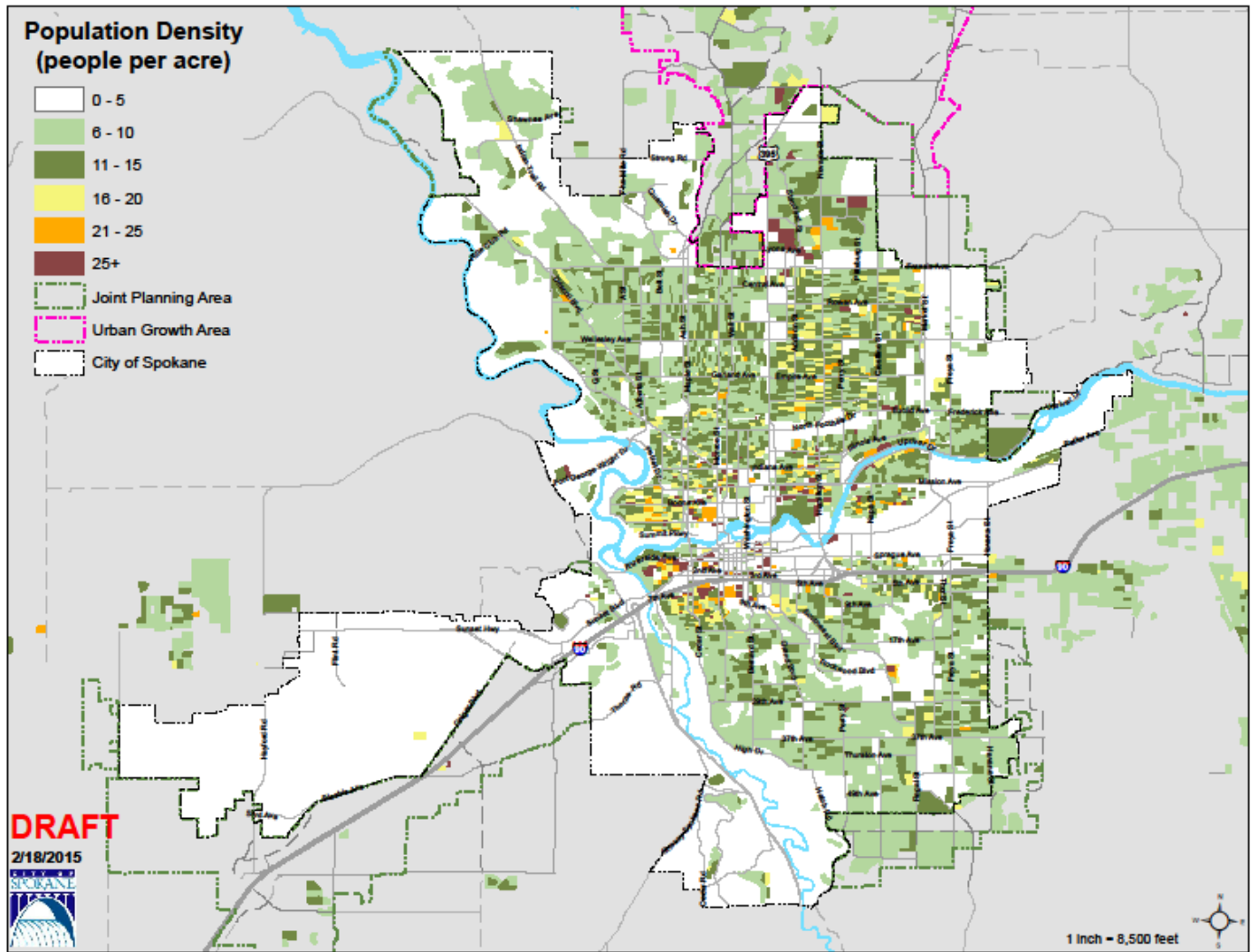


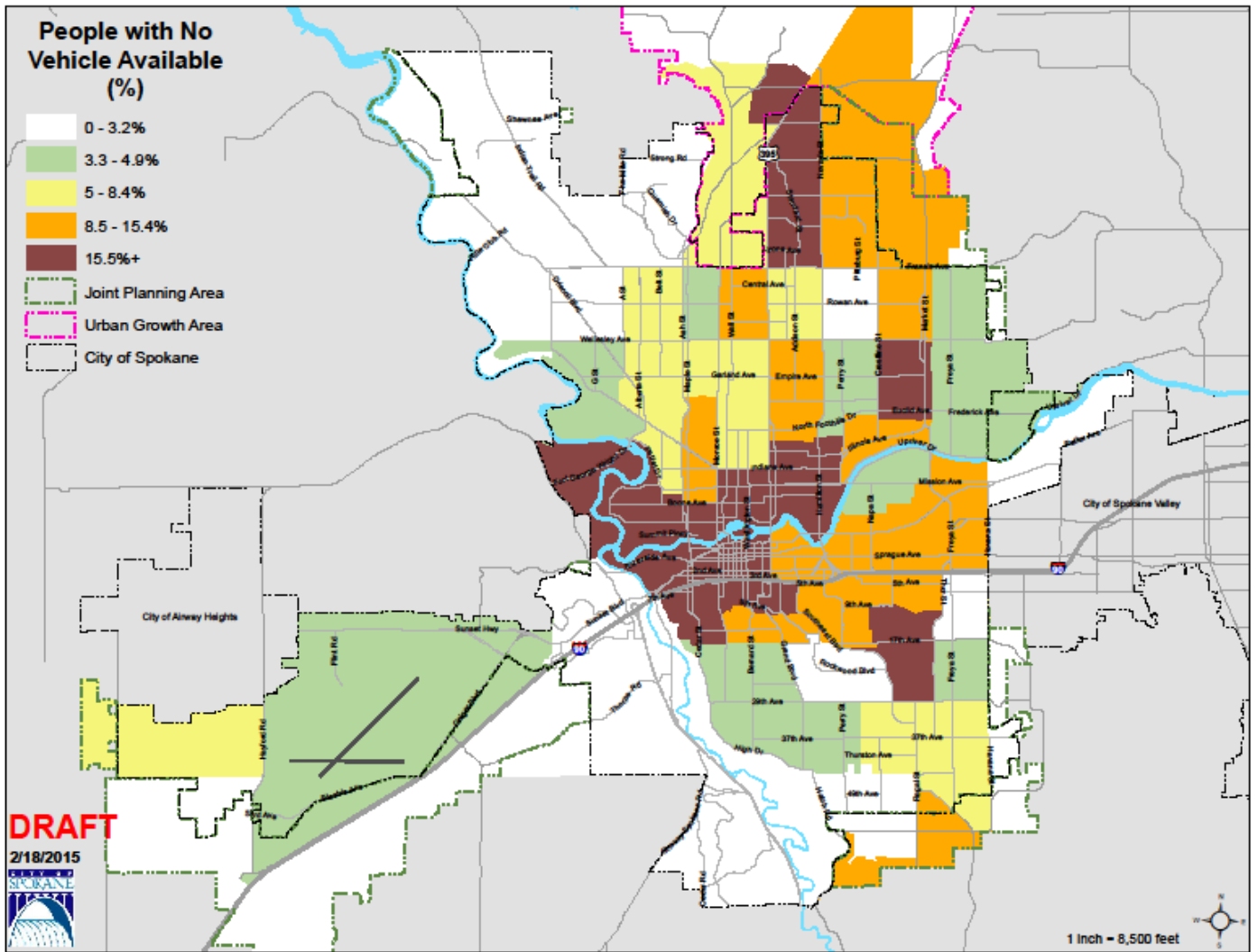


Figure 27 - Population Density



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**Figure 28 - Percentage of Population with No Vehicle Available**



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Figure 29 – Parks

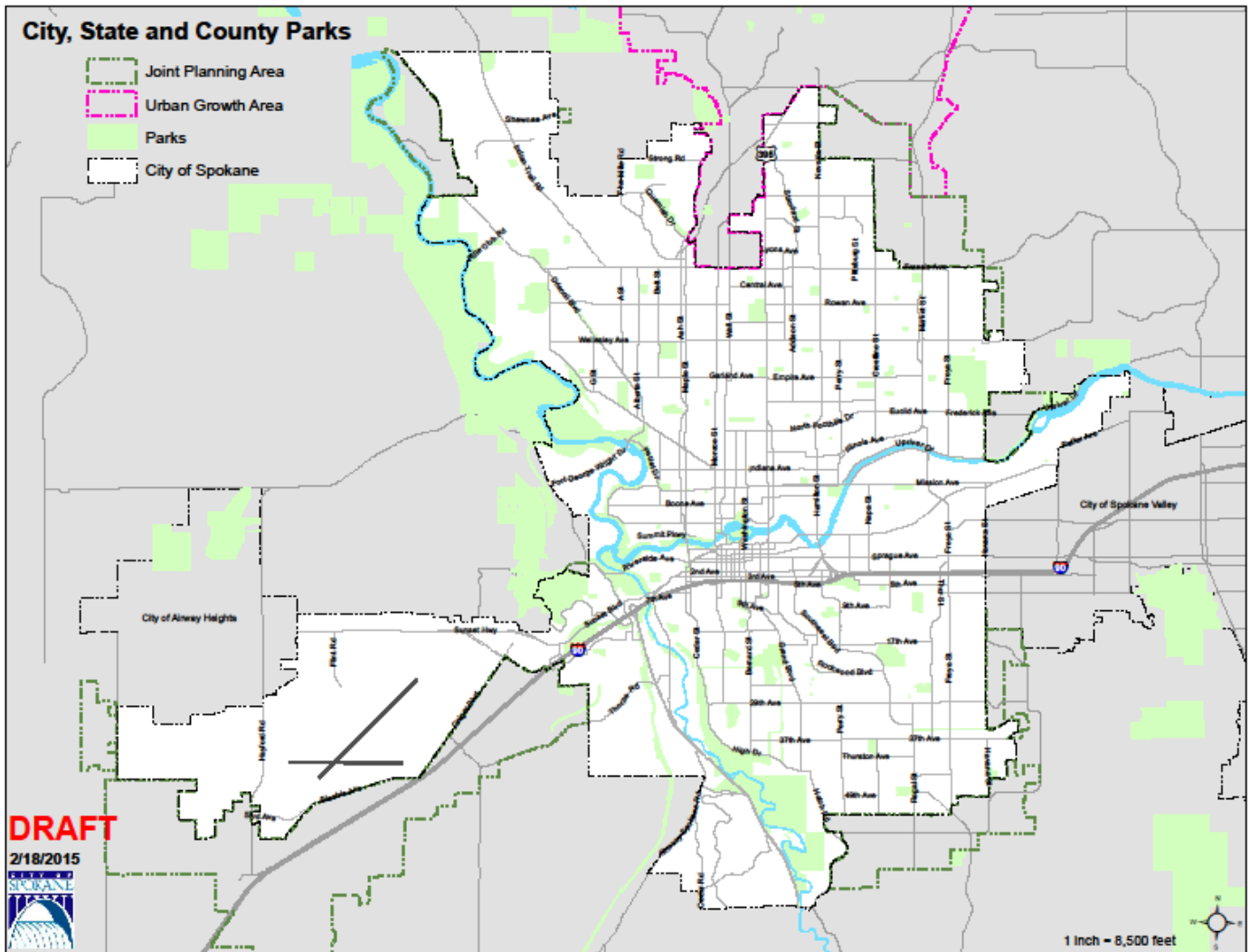


Figure 30 - Neighborhood Retail Zoned Areas

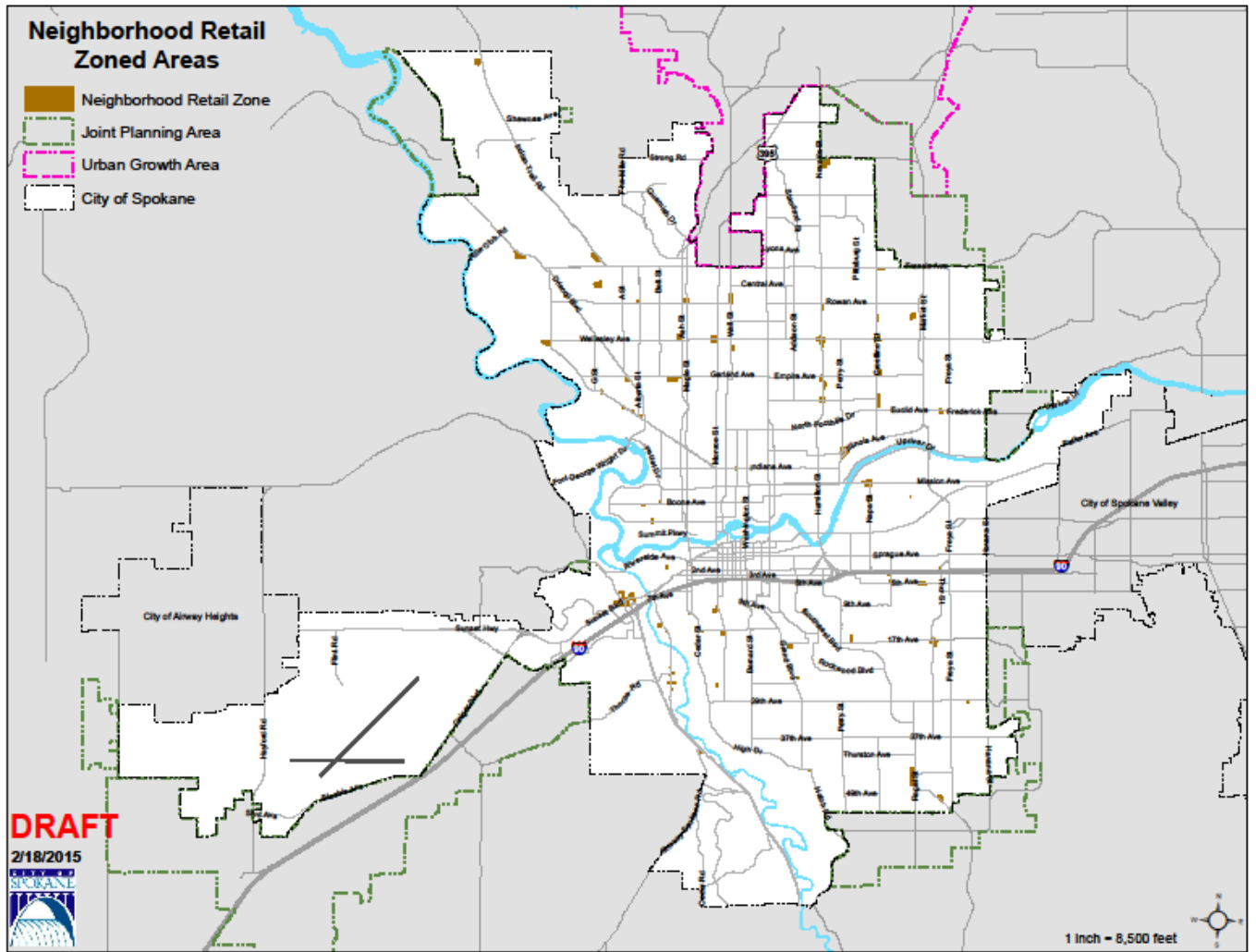


Figure 31 - Employment Density

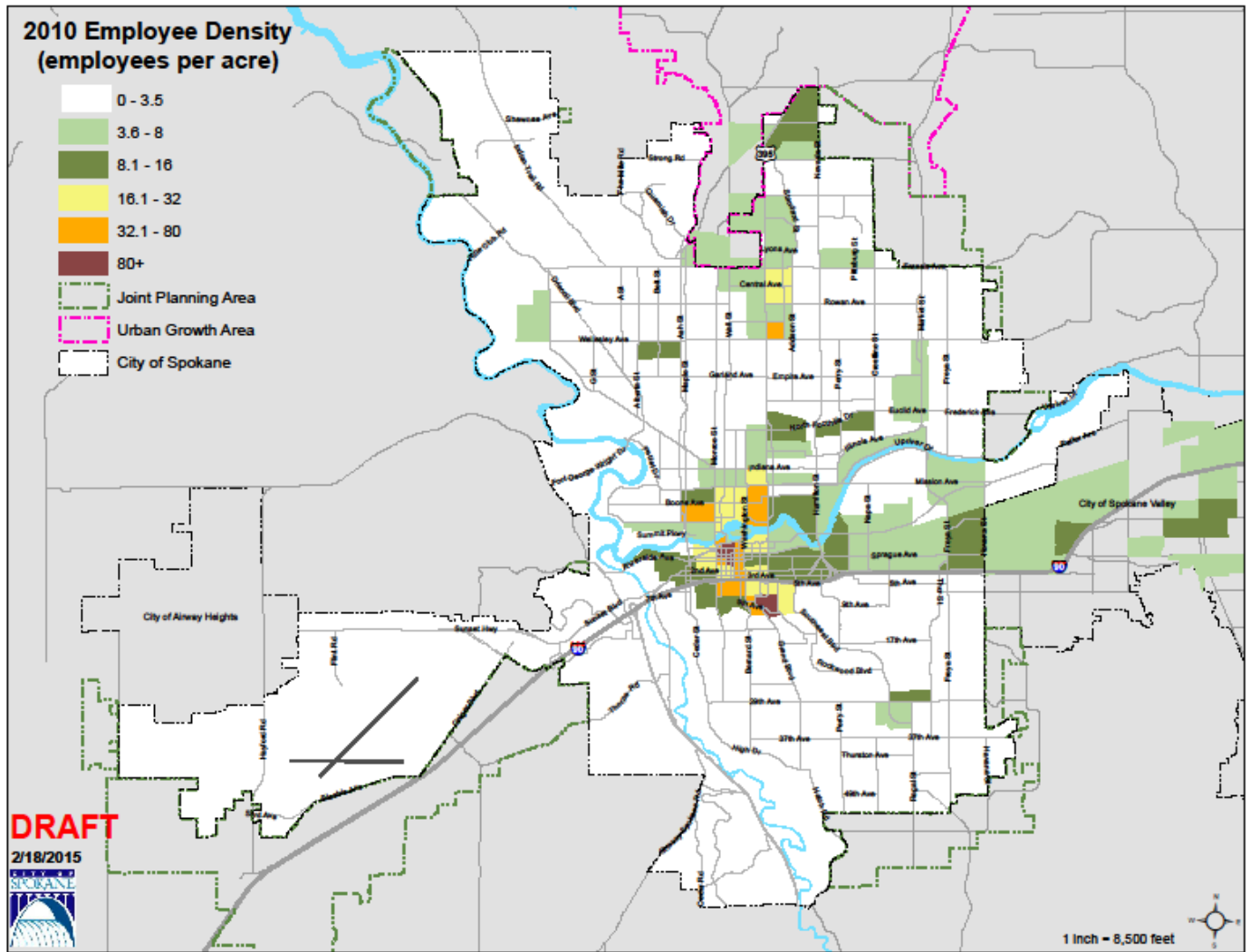
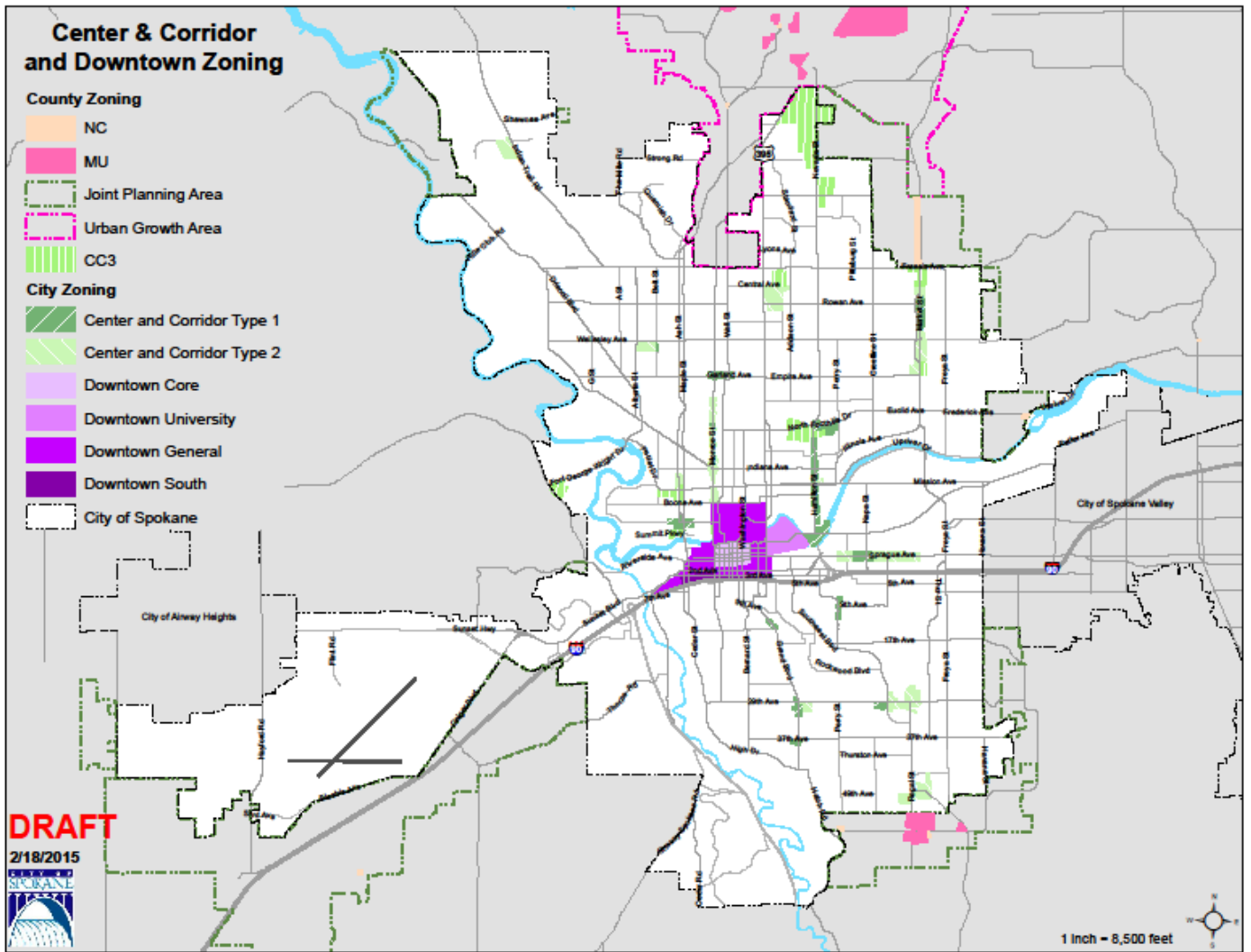


Figure 32 - Centers and Corridors and Downtown Zoning





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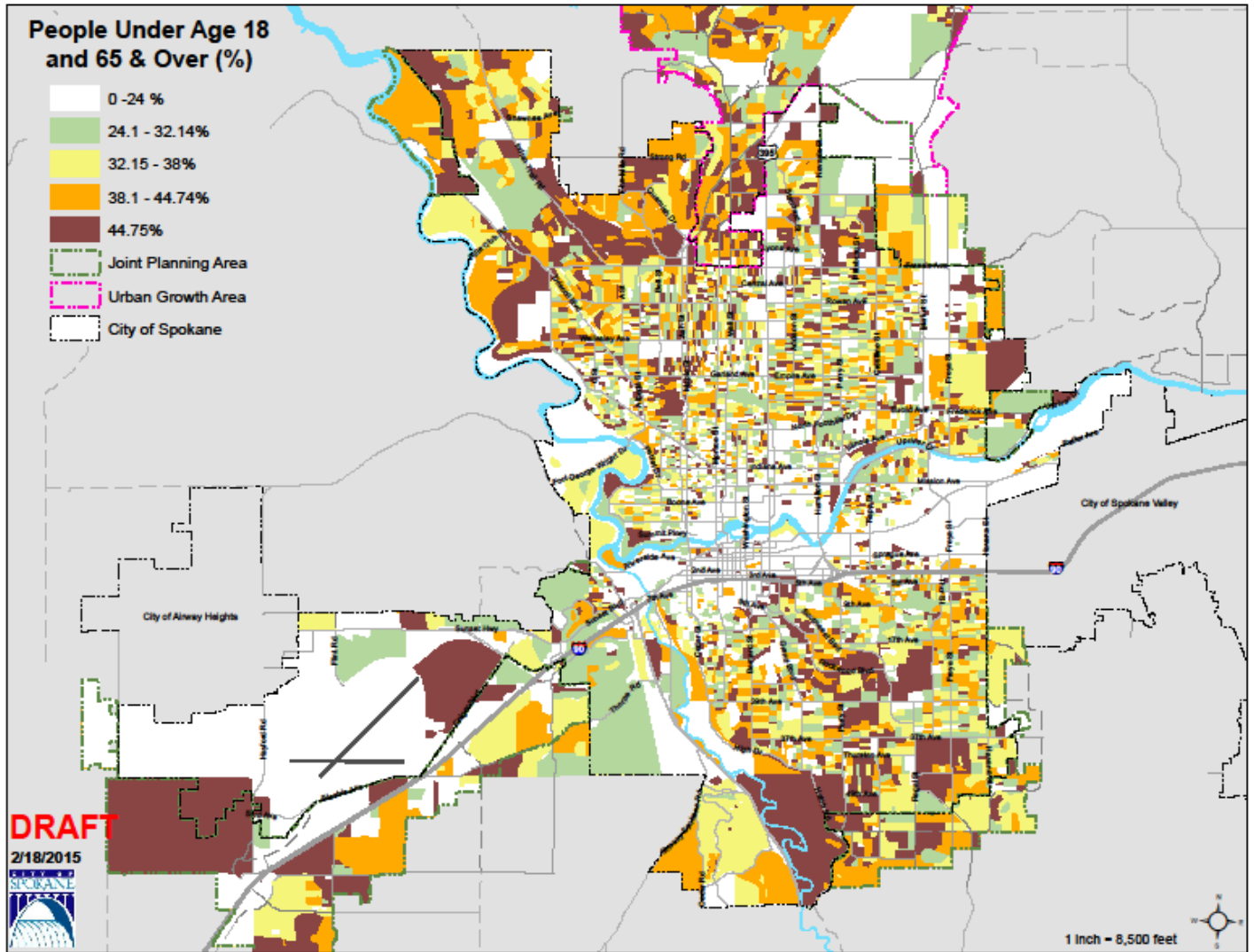
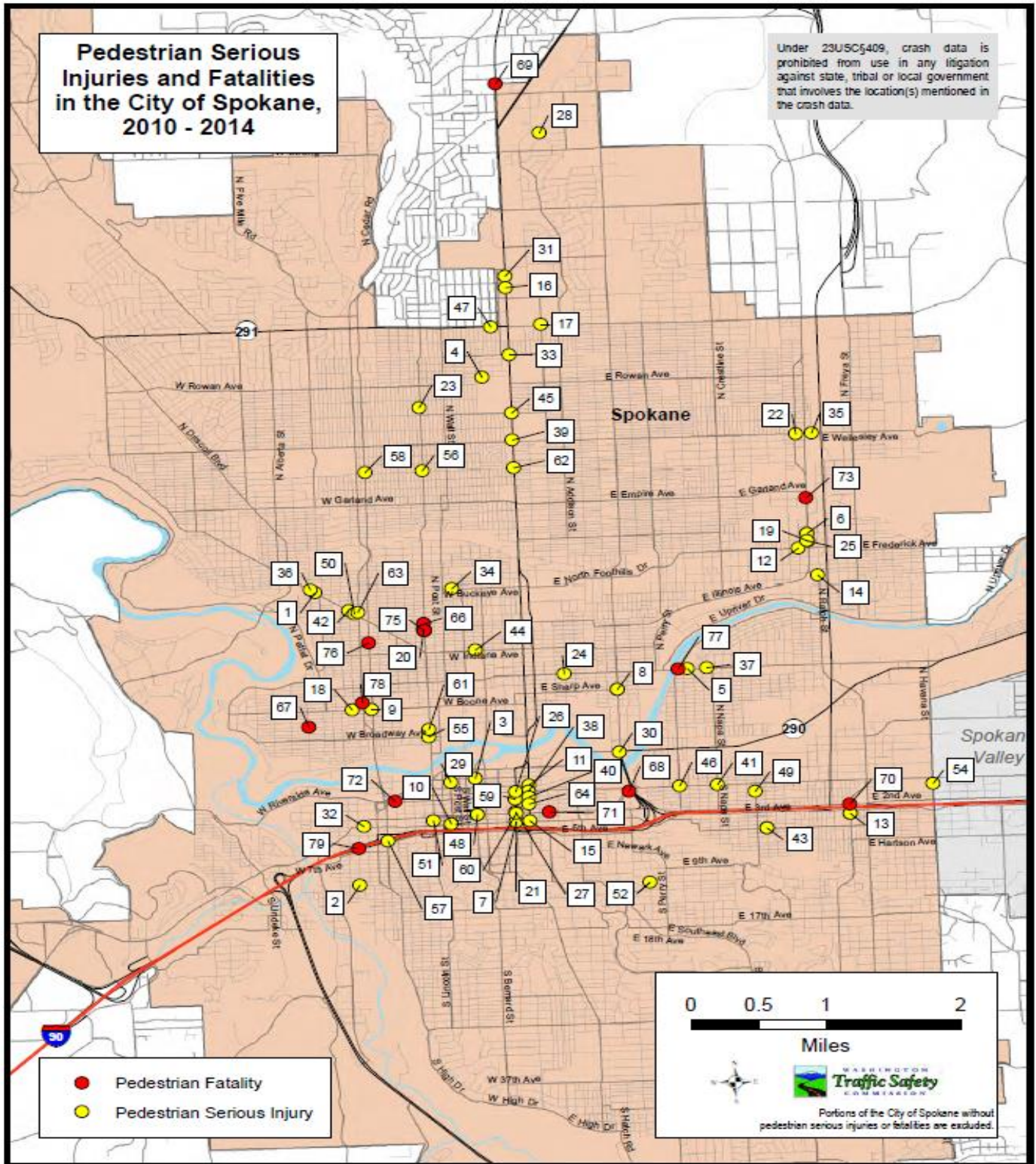


Figure 33 - Percentage of the Population under 18 and 65 and Over

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Figure 34 Pedestrian Serious Injuries and Fatalities, 2010-2014, Washington Traffic Safety Commission



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**Figure 35 Key - Pedestrian Serious Injuries and Fatalities, 2010-2014**

Key	Crash Data	Crash Time	Number of Pedestrians	Driver Contributing Circumstances	Pedestrian Action
1	10/25/2010	17:47	1	Fail RW to NM	Xing at Intersection - No Signal
2	2/22/2010	12:20	1	Other	Standing or Working in Roadway
3	7/2/2010	14:05	1	None	Xing at Intersection Against Signal
4	3/26/2010	16:30	1	Over Cent Line	Not in Roadway
5	12/22/2010	18:30	1	None	Xing - Non Intersection - No X Walk
6	11/27/2011	16:40	2	Fail RW to NM	Xing at Intersection - No Signal
6	11/27/2011	16:40	2	Fail RW to NM	Xing at Intersection - No Signal
7	1/7/2010	8:49	1	Fail RW to NM	Xing at Intersection with Signal
8	2/5/2011	23:54	2	Alcohol	At Intersection Not Using Crosswalk
8	2/5/2011	23:54	2	Alcohol	At Intersection Not Using Crosswalk
9	6/18/2010	2:29	1	Fail RW to NM	All Other Actions
10	8/1/2010	21:09	1	Alcohol	Xing - Non Intersection - No X Walk
11	5/10/2011	11:28	1	Fail RW to NM	Xing at Intersection with Signal
12	3/6/2010	22:40	1	Fail RW to NM	Xing at Intersection - No Signal
13	7/12/2012	21:52	2	None	Xing - Non Intersection - No X Walk
13	7/12/2012	21:52	2	None	Xing - Non Intersection - No X Walk
14	6/24/2010	8:13	1	Other	Walking on Roadway Shoulder with Traffic
15	10/16/2011	8:49	1	Fail RW to NM	Xing at Intersection with Signal
16	7/5/2012	0:33	1	Other	Xing - Non Intersection - No X Walk
17	7/6/2012	14:09	1	Fail RW to NM	Xing at Intersection - No Signal
18	1/4/2014	17:29	1	None	Xing - Non Intersection - No X Walk
19	10/30/2011	1:12	1	Def Equip	Xing - Non Intersection - No X Walk
20	10/18/2013	18:29	3	Inattention	Xing - Non Intersection - No X Walk
20	10/18/2013	18:29	3	Inattention	Xing - Non Intersection - No X Walk
20	10/18/2013	18:29	3	Inattention	Xing - Non Intersection - No X Walk
21	7/24/2011	13:14	1	Fail RW to NM	Xing at Intersection with Signal
22	8/10/2011	13:13	1	Fail RW to NM	Xing at Intersection with Signal
23	4/23/2011	4:31	1	Smoking	Standing or Working in Roadway
24	11/16/2010	14:30	1	Fail RW to NM	Xing at Intersection - No Signal
25	1/20/2013	1:42	1	None	Walking in Roadway with Traffic
26	11/14/2014	12:45	1	Fail RW to NM	Xing at Intersection with Signal
27	10/9/2013	2:58	1	Inattention	Xing - Non Intersection - No X Walk
28	10/21/2013	3:28	1	Fail RW to NM	All Other Actions
29	6/27/2014	20:22	1	Excd Safe Speed	Playing in Roadway
30	11/22/2013	17:57	1	Unk Dist	At Intersection Not Using Crosswalk
31	11/12/2010	16:30	1	None	Xing - Non Intersection - No X Walk
32	9/30/2011	18:55	1	None	Xing - Non Intersection - No X Walk
33	10/24/2011	18:33	1	Fail RW to NM	Xing at Intersection with Signal
34	1/28/2012	21:42	1	Alcohol	Xing at Intersection - No Signal
35	2/12/2012	1:53	1	Other	Walking in Roadway with Traffic
36	2/13/2012	19:02	1	None	Xing - Non Intersection - No X Walk
37	3/12/2012	8:12	1	Fail RW to NM	Xing at Intersection - No Signal
38	6/7/2012	16:48	1	Fail RW to NM	Xing at Intersection with Signal
39	6/27/2012	15:56	1	Fail RW to NM	Xing at Intersection - No Signal
40	7/25/2012	21:55	1	None	At Intersection Not Using Crosswalk
41	9/5/2012	9:59	1	Fail RW to NM	Xing at Intersection with Signal
42	10/29/2012	18:30	1	None	Xing at Intersection - No Signal
43	11/1/2012	15:29	2	None	Xing at Intersection - No Signal
43	11/1/2012	15:29	2	None	Xing at Intersection - No Signal
44	11/14/2012	20:47	1	None	Xing - Non Intersection - No X Walk
45	12/11/2012	18:25	1	None	Walking in Roadway with Traffic
46	12/17/2012	6:50	1	Fail RW to NM	Xing at Intersection with Signal
47	1/4/2013	19:19	1	None	Xing at Intersection - No Signal
48	5/13/2013	16:53	2	Fail RW to NM	Xing at Intersection with Signal
48	5/13/2013	16:53	2	Fail RW to NM	Xing at Intersection with Signal
49	9/5/2013	2:43	1	Other	Xing at Intersection - No Signal
50	9/15/2013	21:01	1	None	Xing - Non Intersection - No X Walk
51	9/15/2013	19:58	1	Other	All Other Actions
52	10/6/2013	16:50	1	None	Playing in Roadway
53	11/11/2013	16:33	1	Fail RW to NM	Xing - Non Intersection - In X Walk
54	12/16/2013	18:10	1	Fail RW to NM	Xing - Non Intersection - No X Walk
55	1/3/2014	17:37	1	Fail RW to NM	Xing at Intersection with Signal
56	2/6/2014	14:09	1	None	From Behind Parked Vehicle
57	3/12/2014	18:35	1	None	Walking in Roadway with Traffic
58	4/18/2014	15:59	1	Other	Walking on Roadway Shoulder with Traffic
59	5/21/2014	21:46	1	None	All Other Actions
60	10/6/2014	16:20	1	Inattention	Xing at Intersection with Signal
61	10/23/2014	12:02	1	Fail RW to NM	Xing at Intersection with Signal
62	11/12/2014	15:28	1	Fail RW to NM	Xing at Intersection - No Signal
63	12/24/2014	21:16	1	Other	Fell or Pushed into Path of Vehicle
64	12/31/2014	13:39	1	None	A

\*(cont.)

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Key	Crash Date	Crash Time	Number of Pedestrians	Driver Contributing Circumstance	Pedestrian Contributing Circumstance 1
66	1/30/2011	22:04	1	No factors	Failure to Obey Traffic Signs, Signals or Officer
67	7/2/2012	11:25	1	No factors	Other
68	8/30/2011	11:06	1	No factors	Dart-Out
69	1/8/2010	18:50	1	No factors	In Roadway Improperly (Standing, Lying, Working, Playing, etc.)
70	11/23/2011	5:51	1	No factors	Failure to Yield Right-Of-Way
71	9/26/2012	14:21	1	Failure to Yield Right-of-Way	None Noted
72	2/14/2012	17:24	1	Failure to Yield Right-of-Way	Not Visible (Dark Clothing, No Lighting, etc.)
73	1/28/2012	2:11	1	Failure to Yield Right-of-Way	Unreported
74	8/11/2012	19:40	1	No factors	None Noted
75	10/18/2013	18:29	3	No factors	Inattentive (Talking, Eating, etc.)
75	10/18/2013	18:29	3	No factors	Inattentive (Talking, Eating, etc.)
75	10/18/2013	18:29	3	No factors	Inattentive (Talking, Eating, etc.)
76	11/7/2011	21:08	1	No factors	Jaywalking
77	2/9/2014	20:47	1	No factors	Failure to Obey Traffic Signs, Signals or Officer
78	6/19/2014	23:54	1	No factors	Failure to Obey Traffic Signs, Signals or Officer
79	7/25/2014	21:50	1	No factors	Failure to Obey Traffic Signs, Signals or Officer

\*There is no item 65 so is not shown on the map nor included in the list above.



Figure 36 Crash Fatalities Density, Crashes 2002-2014, Washington Traffic Safety Commission

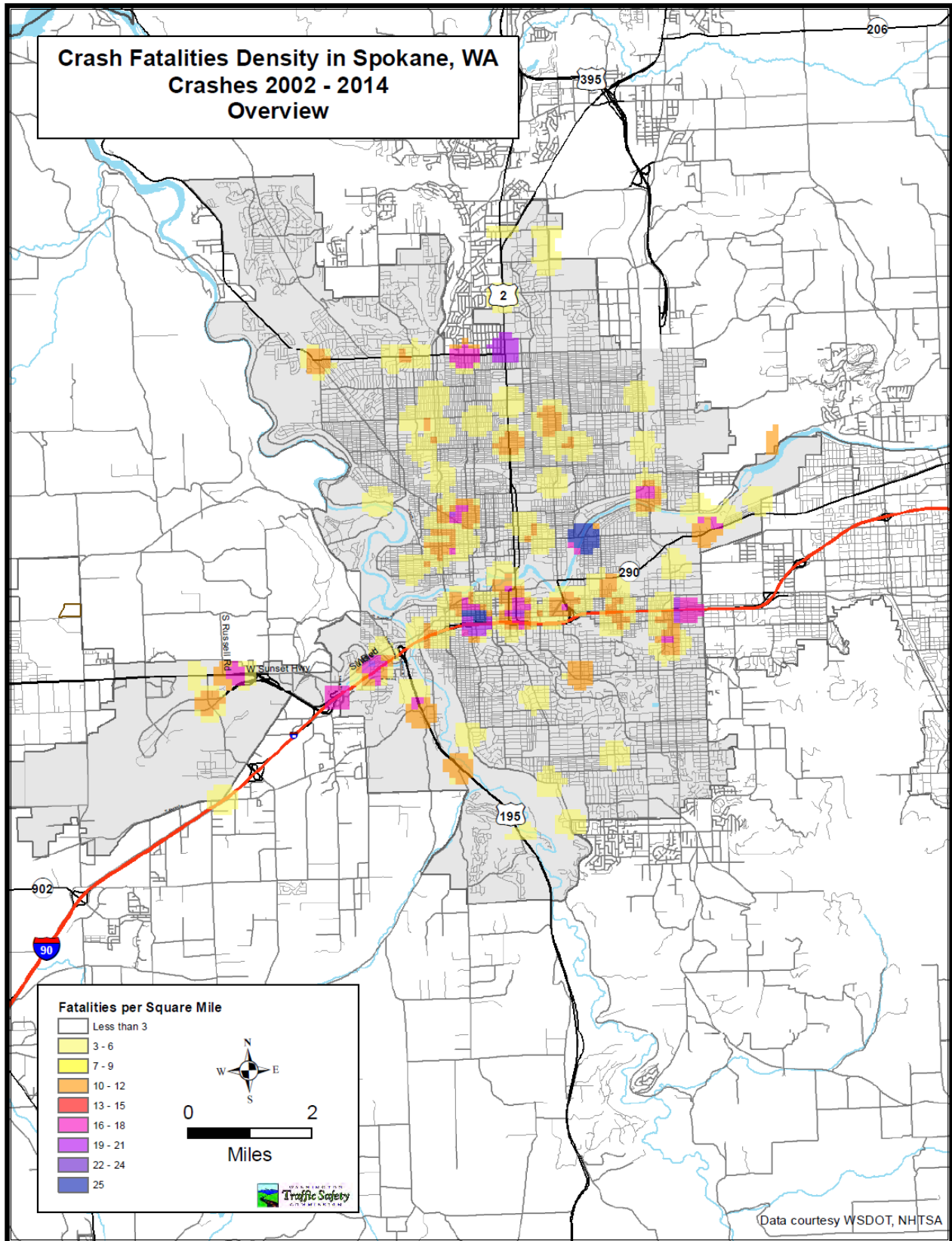
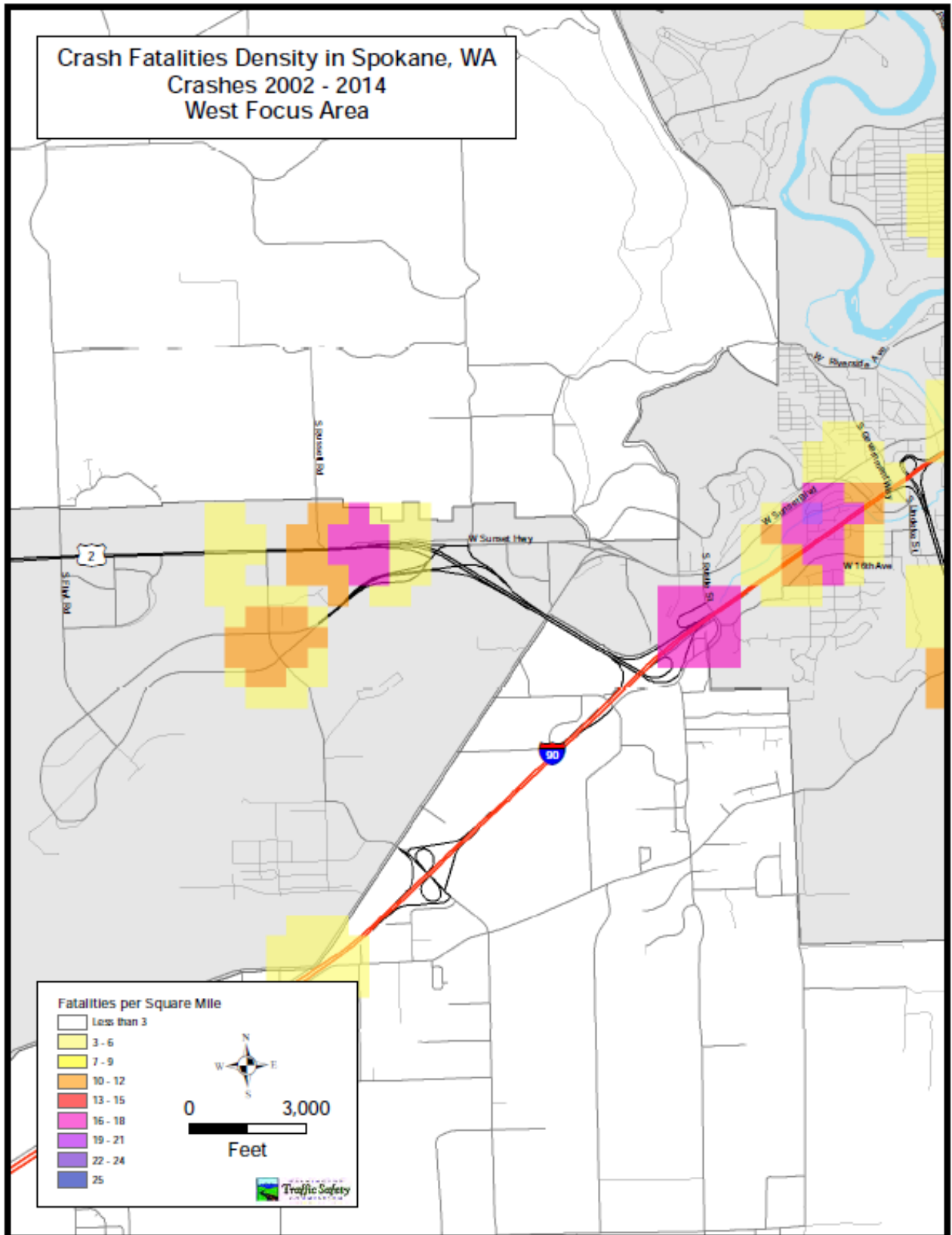


Figure 37 Crash Fatalities Density, Crashes 2002-2014 West Focus Area, Washington Traffic Safety Commission





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**Figure 38 Crash Fatalities Density, Crashes 2002-2014 Central Focus Area, Washington Traffic Safety Commission**

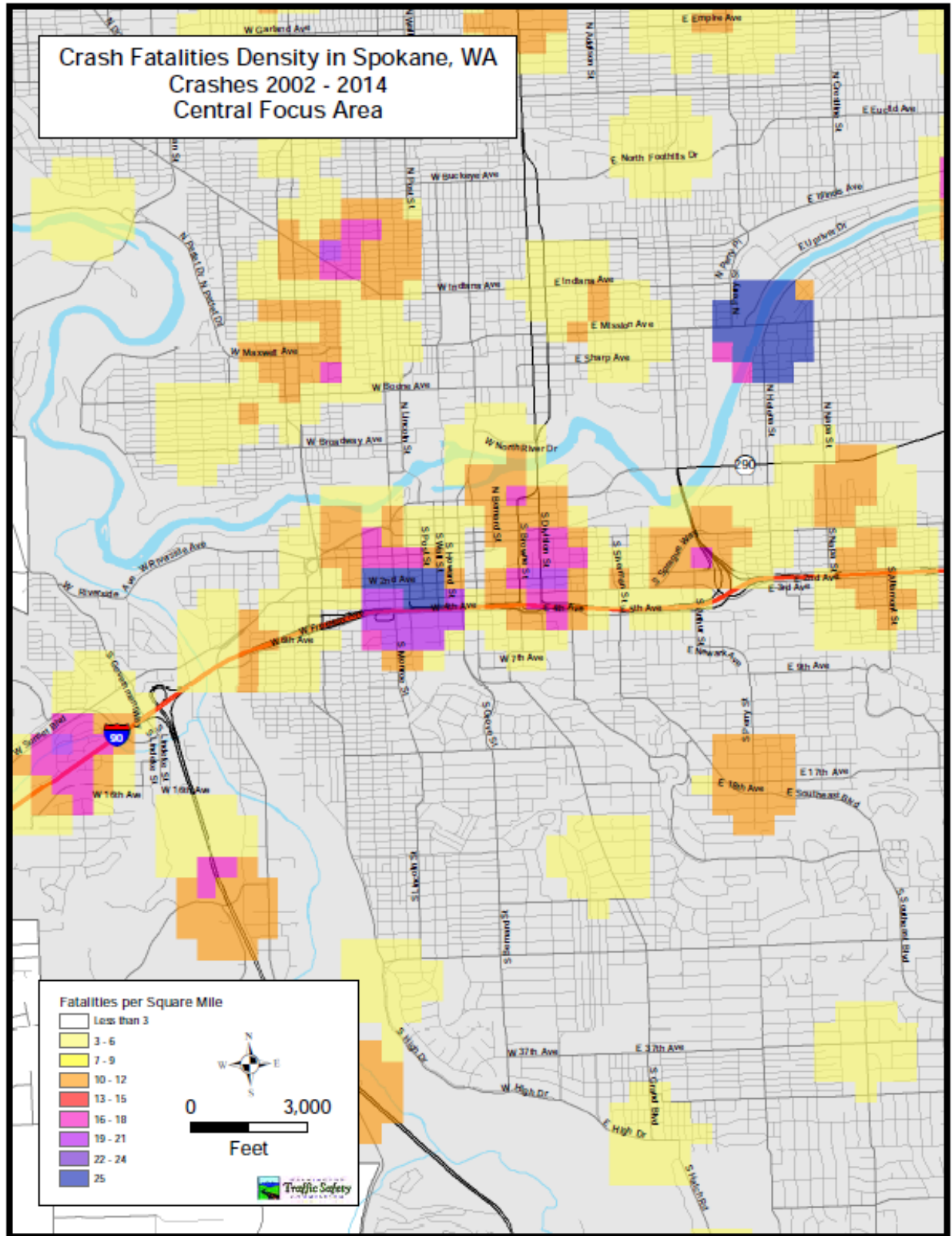
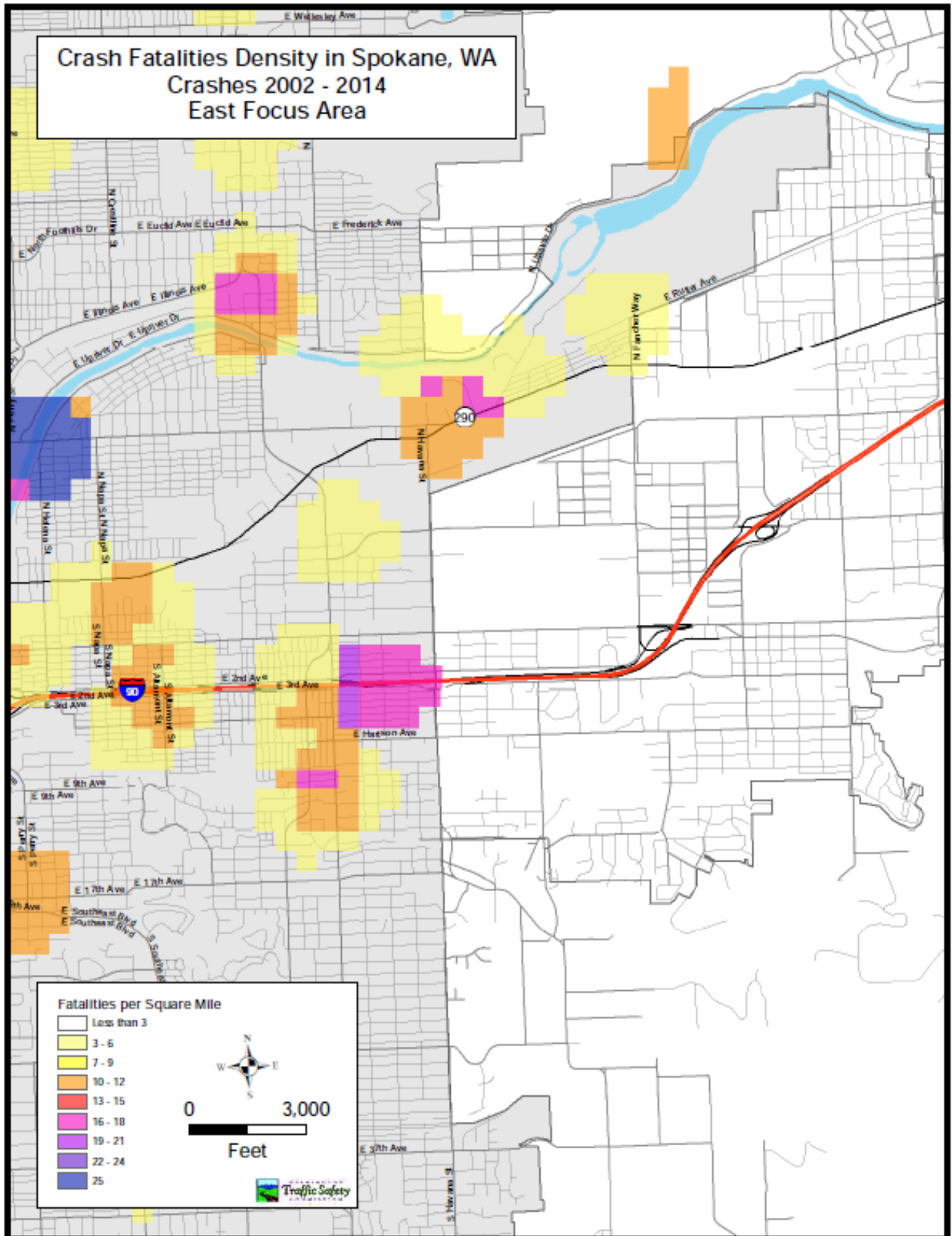


Figure 39 Crash Fatalities Density, Crashes 2002-2014 East Focus Area, Washington Traffic Safety Commission



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**Figure 40 Crash Fatalities Density, Crashes 2002-2014 North Focus Area, Washington Traffic Safety Commission**

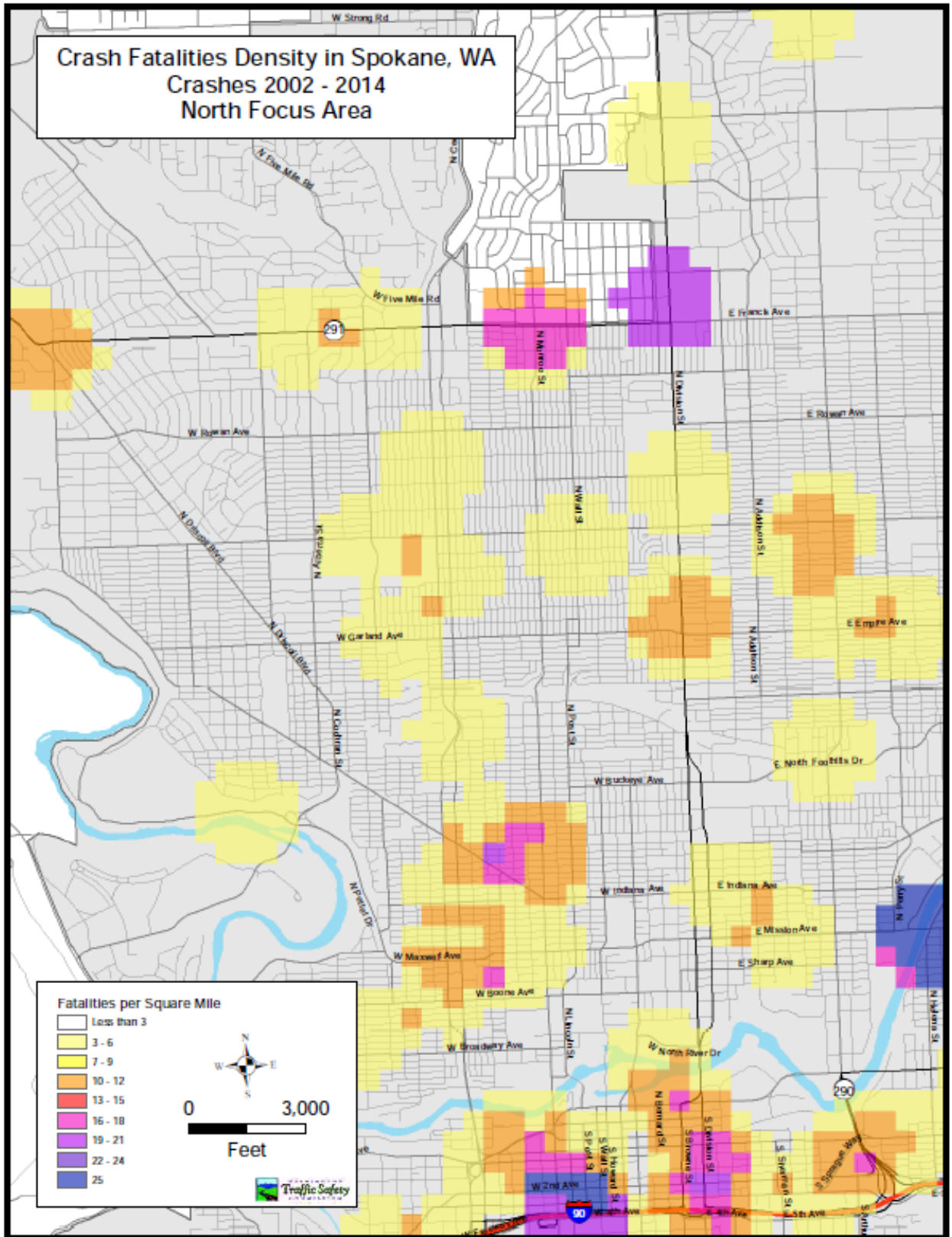


Figure 41 Minor and Serious Injury Crash Density, Crashes 2010-2015 Q1 Overview, Washington Traffic Safety Commission

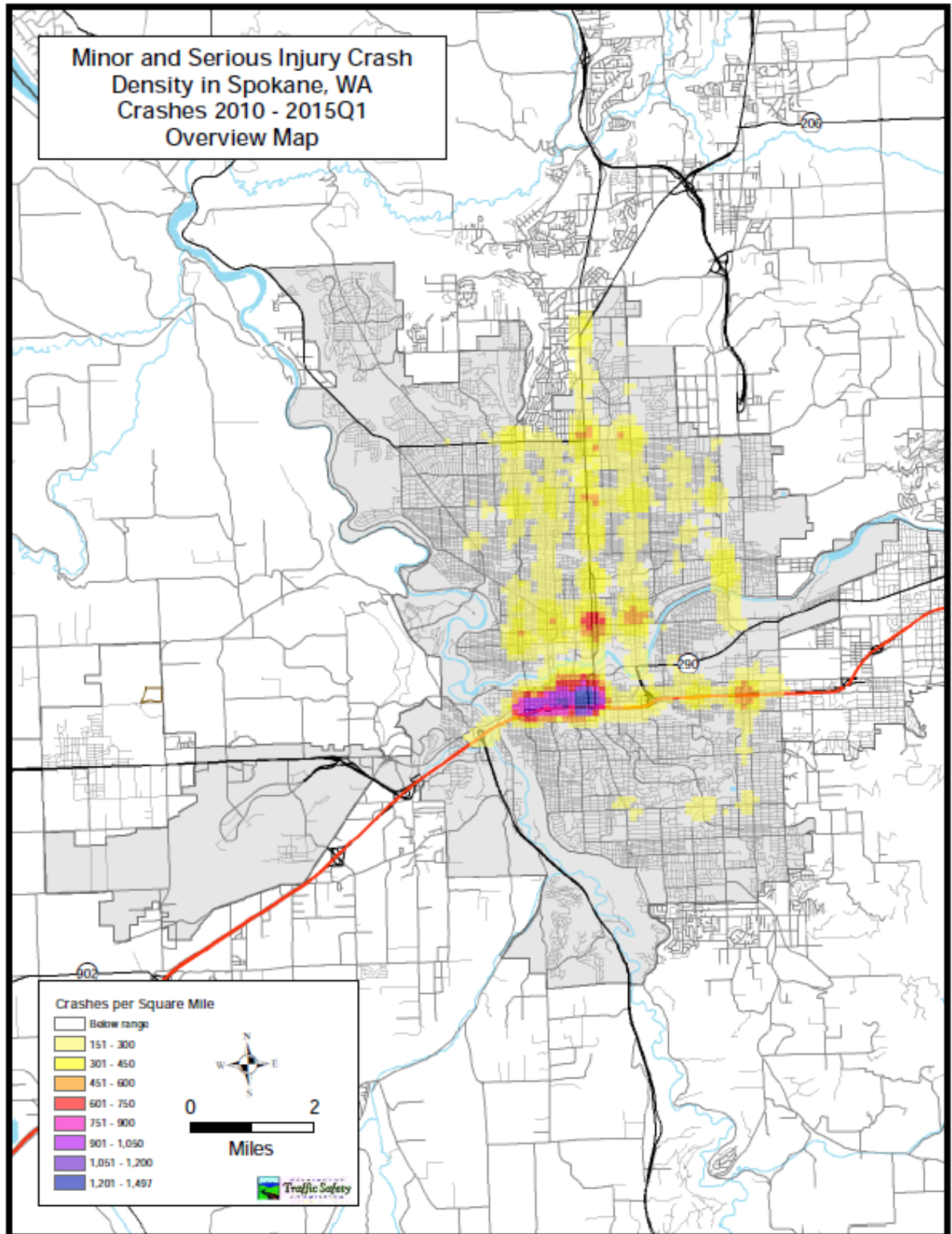




Figure 42 Minor and Serious Injury Crash Density, Crashes 2010-2015 Q1 East Focus Area, Washington Traffic Safety Commission

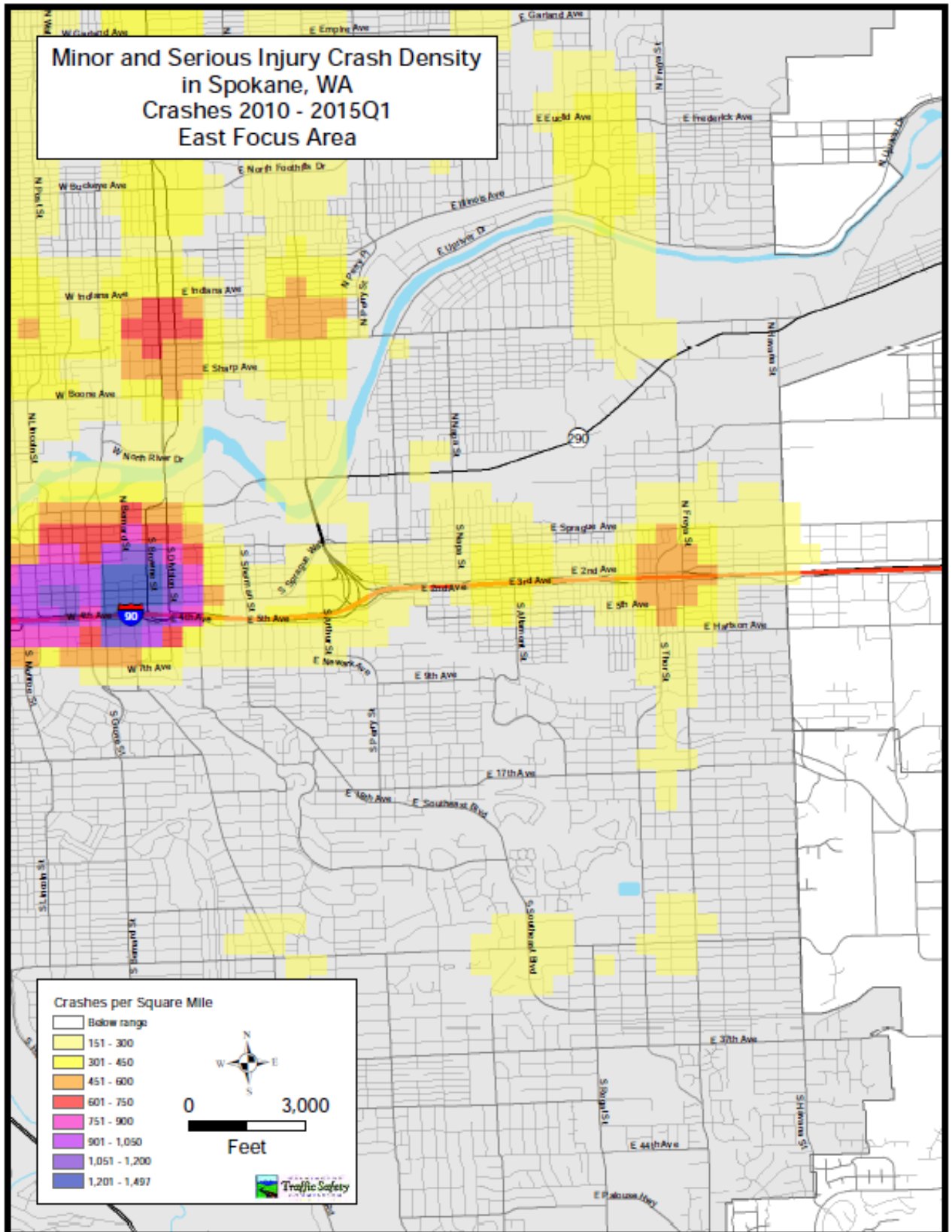


Figure 43 Minor and Serious Injury Crash Density, Crashes 2010-2015 Q1 North Focus Area, Washington Traffic Safety Commission

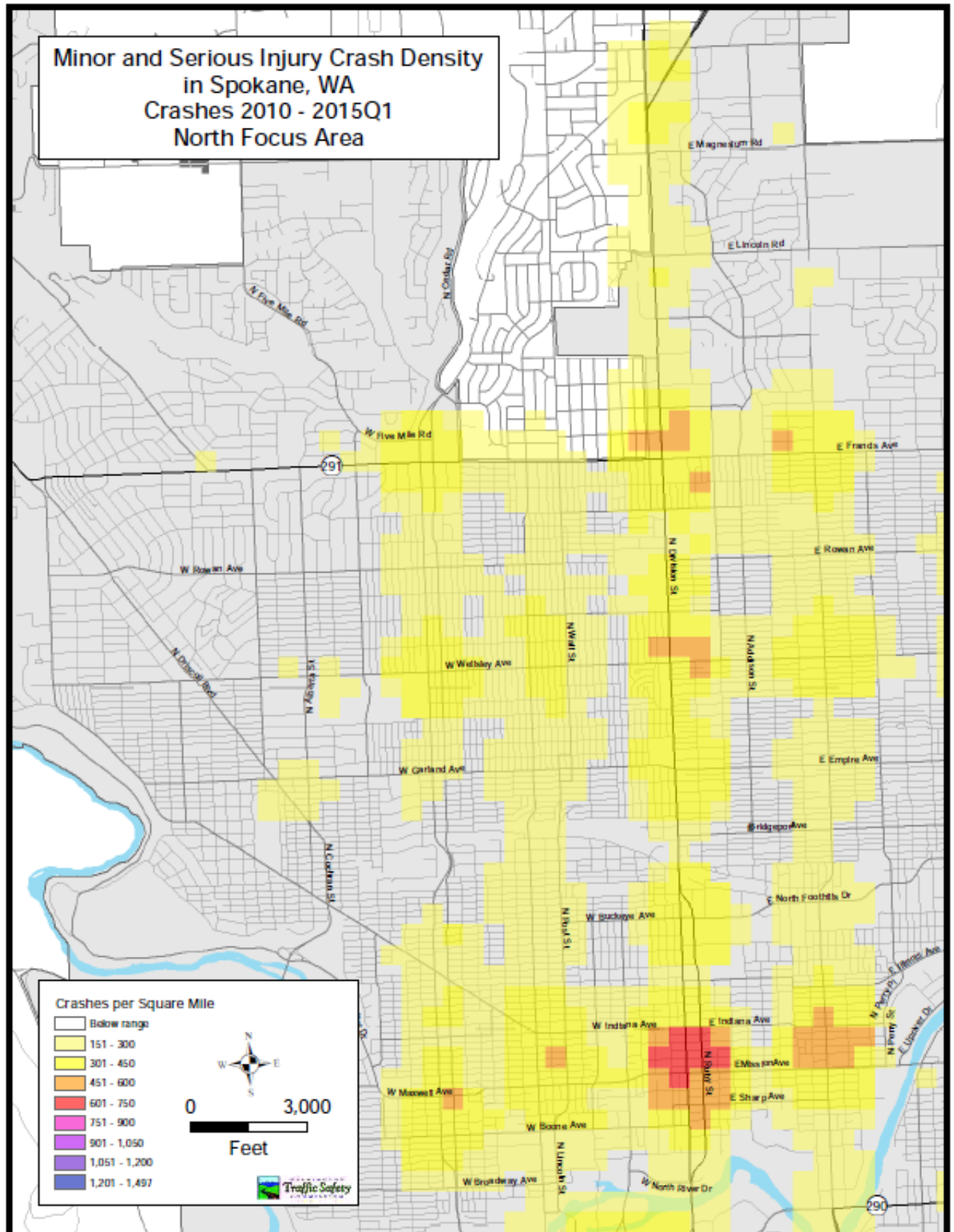




Figure 44 Minor and Serious Injury Crash Density, Crashes 2010-2015 Q1 West Focus Area, Washington Traffic Safety Commission

