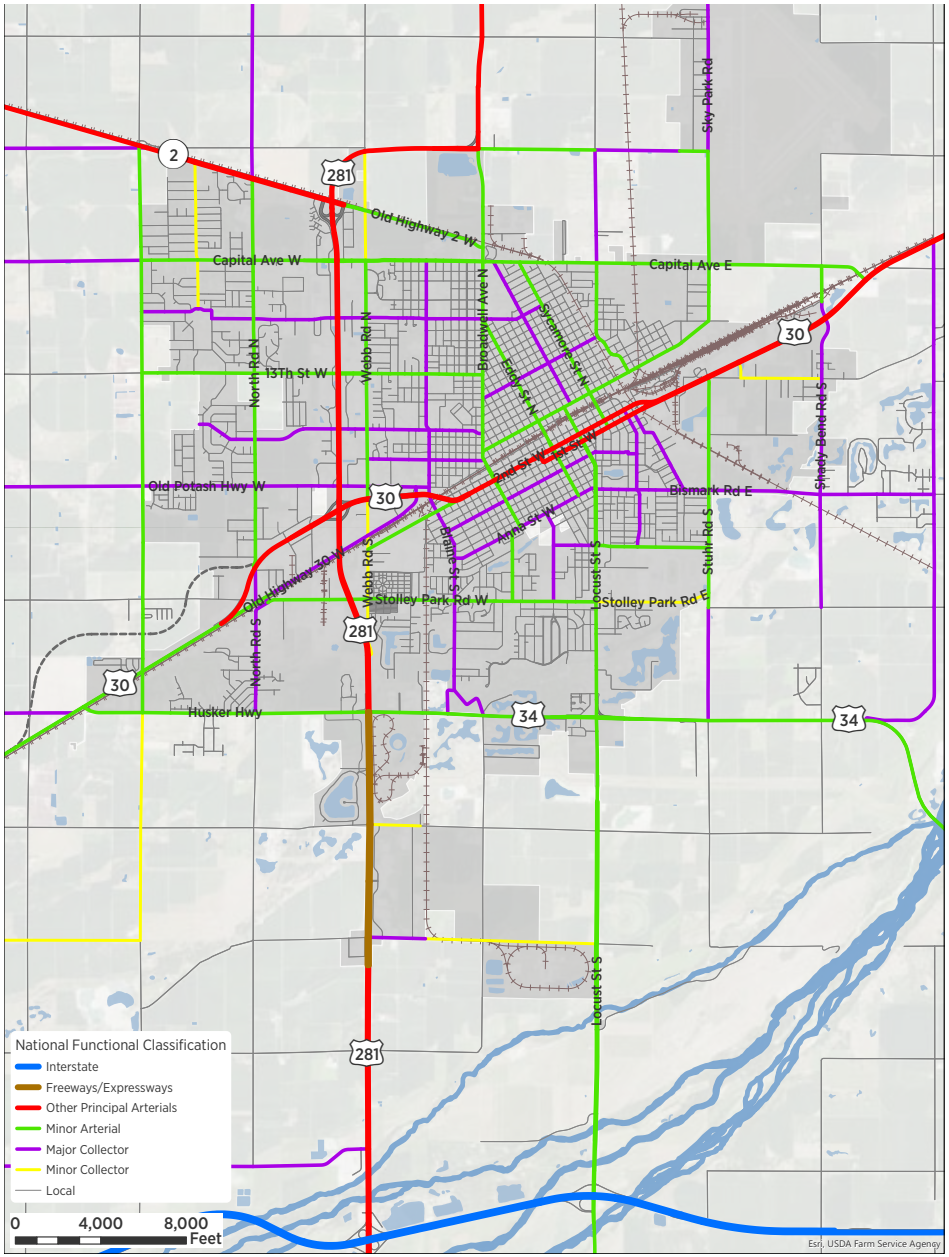


Source: GIAMPO

Functional Classifications and Existing Facilities

Grand Island's major street network is the framework of the region's transportation system and provides primary access to many of the city's key destinations. However, many of the city's major streets – expressways, principal arterials, minor arterials, and even major collectors have traffic volumes that many prospective bicyclists and even pedestrians find uncomfortable or them and their families. These same major streets also present potential barriers, as described more specifically in the Barrier Map – intersections that are difficult to cross, may not have traffic controls on secondary streets, or otherwise deter people from crossing them on foot or bike.

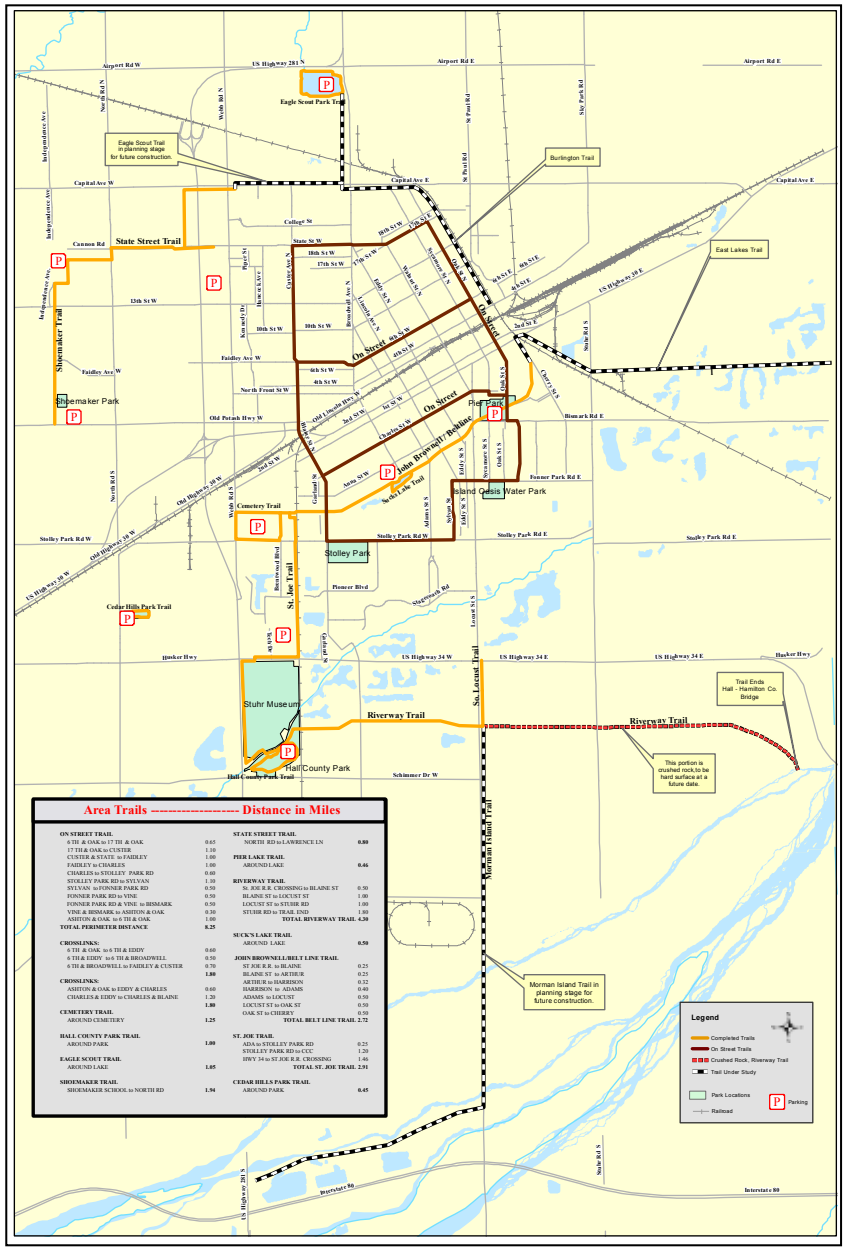
From a trail perspective, Grand Island has assembled the foundation of an excellent trail network, made up of two systems:

The Beltline/Cemetery/St. Joe/Riverway/South Locust Trails link the central and southern parts of the city and serve Pier Park, Suck's Lake, College Park, Stuhr Museum, Hall County Park, the proposed new medical center and mixed use project at Husker Highway and US 281, and the Walmart Su%er on South Locust on its continuous 12-mile path from Cherry and Sutherland to South Locust and US 34. The Riverway Trail continues east from South Locust to the Hall-Hamilton County Bridge. Extensions to this system are planned to connect to Mormon Island State Recreation Area via South Locust and the Platte River; and the East Lakes Trail along the BNSF and Swift Road.

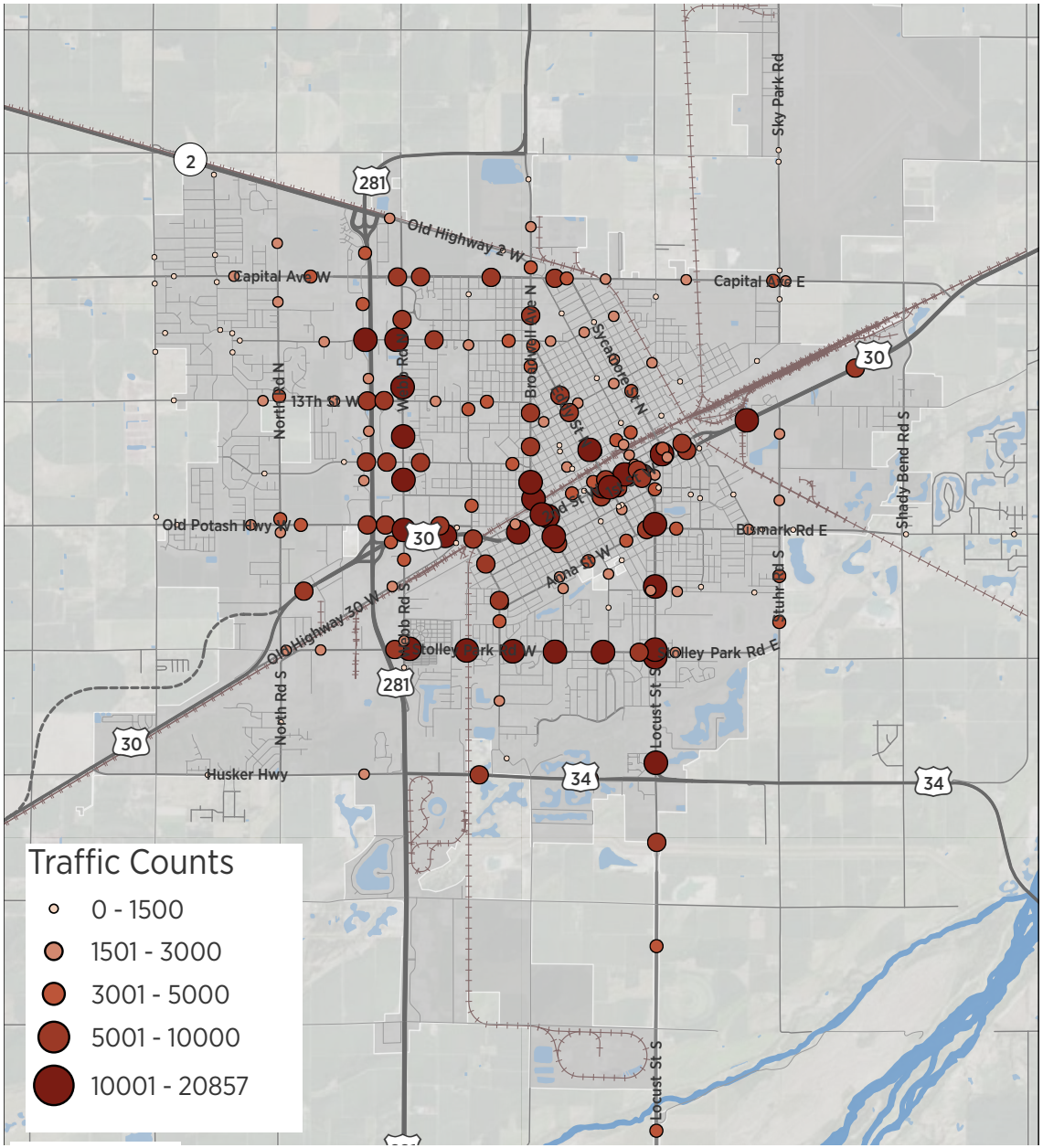
The Westside system made up of the Capital Avenue, Capitol-State Connector, State, and Shoemaker Trails, linking Ahley and Shoemaker Parks, Shoemaker and Engleman Elementary Schools, and Westridge Middle School between Capital and Broadwell and Old Potash Road. Future extensions to this system will connect north along Broadwell to Eagle Scout Park and southeast along Capital and the BNSF elevated mainline to East 4th Street.

While these two trails systems provide both utility and recreation, they are not connected to each other, and linkages to each other and much of central Grand Island depend upon on-street routes. East-west designated “on-street trails” include 17th/State Street, 6th Street, Charles Street, and Stolley Park/Sylvan/Fonner Park, all between Custer/Blaine and Oak/Vine. State is a major collector with average daily traffic (ADT) in the 3,000 to 5,000 vehicles per day (vpd) range, suitable for experienced riders, That volume rises above 10,000 vpd as the street approaches Webb Road. Stolley Park Road is minor arterial with ADT above 10,000 vpd. This is made somewhat more comfortable by the presence of wide shoulders on this two lane facility. Stolley Park will be converted to a three-lane section with “multi-use shoulders” usable by bicyclists in a project scheduled for 2018.

Designated north-south routes include Oak Street/Vine Street from 17th to Fonner Park Road and Custer/Blaine between State and Stolley Park. Oak Street is a low-volume local street with good continuity. The Custer/Blaine route is very important in terms of destinations, but its relatively high ADT, in the 3,000 to 5,000 vpd range along Custer and 5,000 to 10,000 vpd on Blaine are uncomfortable for many cyclists. In addition to serving major destinations, however, this corridor is significant because it includes a grade separated crossing of US 30, a major east-west barrier.



Source: City of Grand Island



Source: Nebraska Department of Transportation and City of Grand Island, 2015-16 traffic counts

Average Daily Traffic

The previous discussion of street classifications and existing facilities discussed traffic volume related to on-street routes designated in the city's Trails Map and bike route system. The map at left illustrates average daily traffic (ADT) throughout the street system and helps to identify opportunities for on-street linkages. Different ranges of traffic also are associated with different types on infrastructure treatments for bicycle and pedestrian facilities: higher levels require a greater degree of separation from motor vehicles for many cyclists and present crossing barriers to pedestrians:

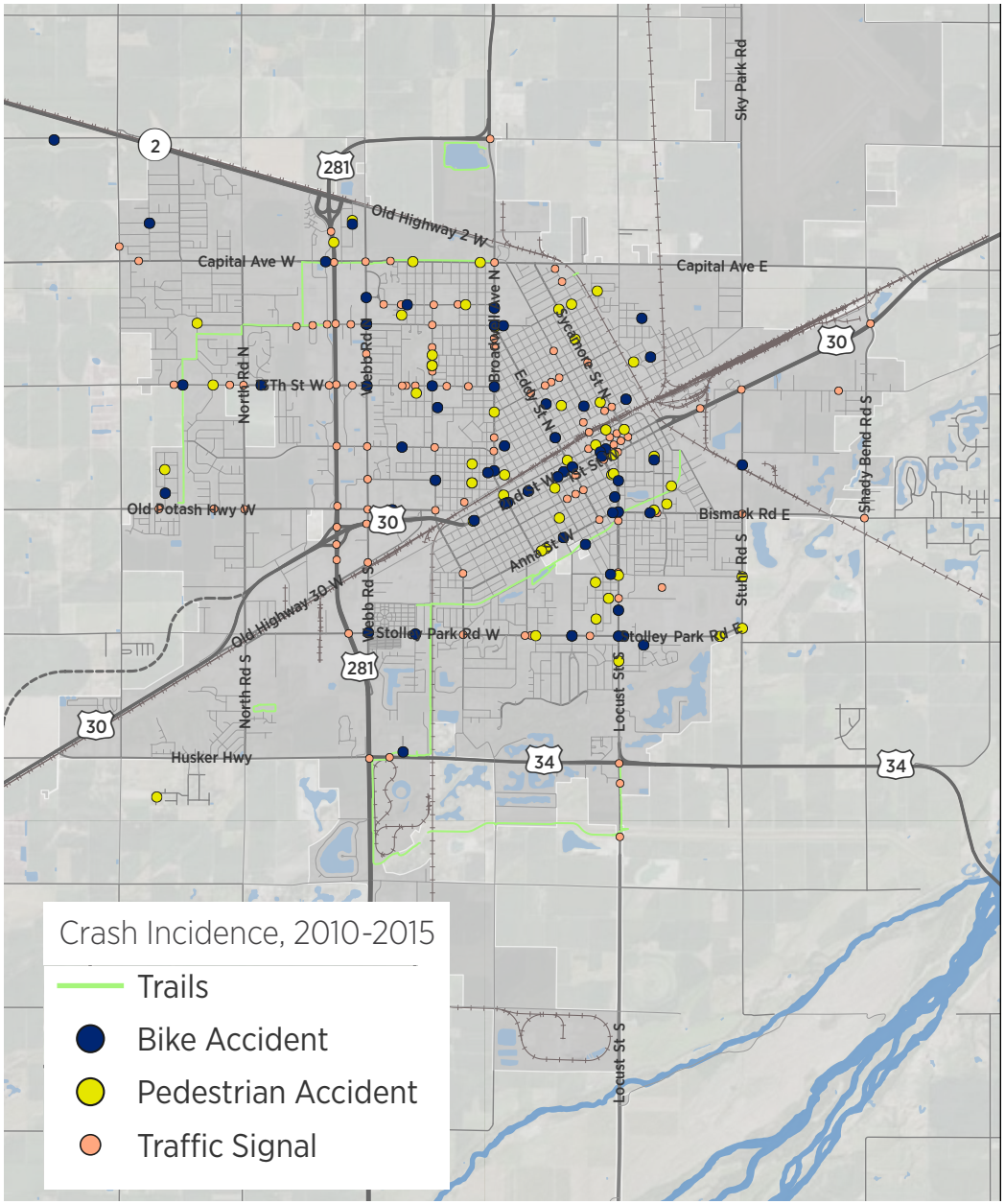
0 to 1,500 vpd: Generally comfortable for most cyclists without extensive infrastructure, relatively comfortable and crossable environment for most pedestrians.

1,500-3,000 vpd: May be uncomfortable for inexperienced cyclists. Shared lane markings and conventional bike lanes as volumes approach 3,000 vpd may be required for greater comfort levels. Pedestrian crosswalks may be required at intersections.

3,000-5,000 vpd: Typical threshold for conventional bike lanes. Require well-defined crosswalks, caution signs, and possible traffic controls at key crossings.

5,000-10,000 vpd: Requires substantial experience and comfort with shared traffic from cyclists. Conventional bike lanes are typically recommended, with protected bike lanes at higher levels. Separation of sidewalks from curbs and well-designed crosswalks with traffic controls and refuge medians at key crossings are highly desirable.

Over 10,000 vpd: Protected bike lanes, enhanced sidepaths or use of alternative routes for cyclists. Sidewalk separation from curb and well-designed crosswalks with traffic controls and refuge medians at key crossings are highly desirable.

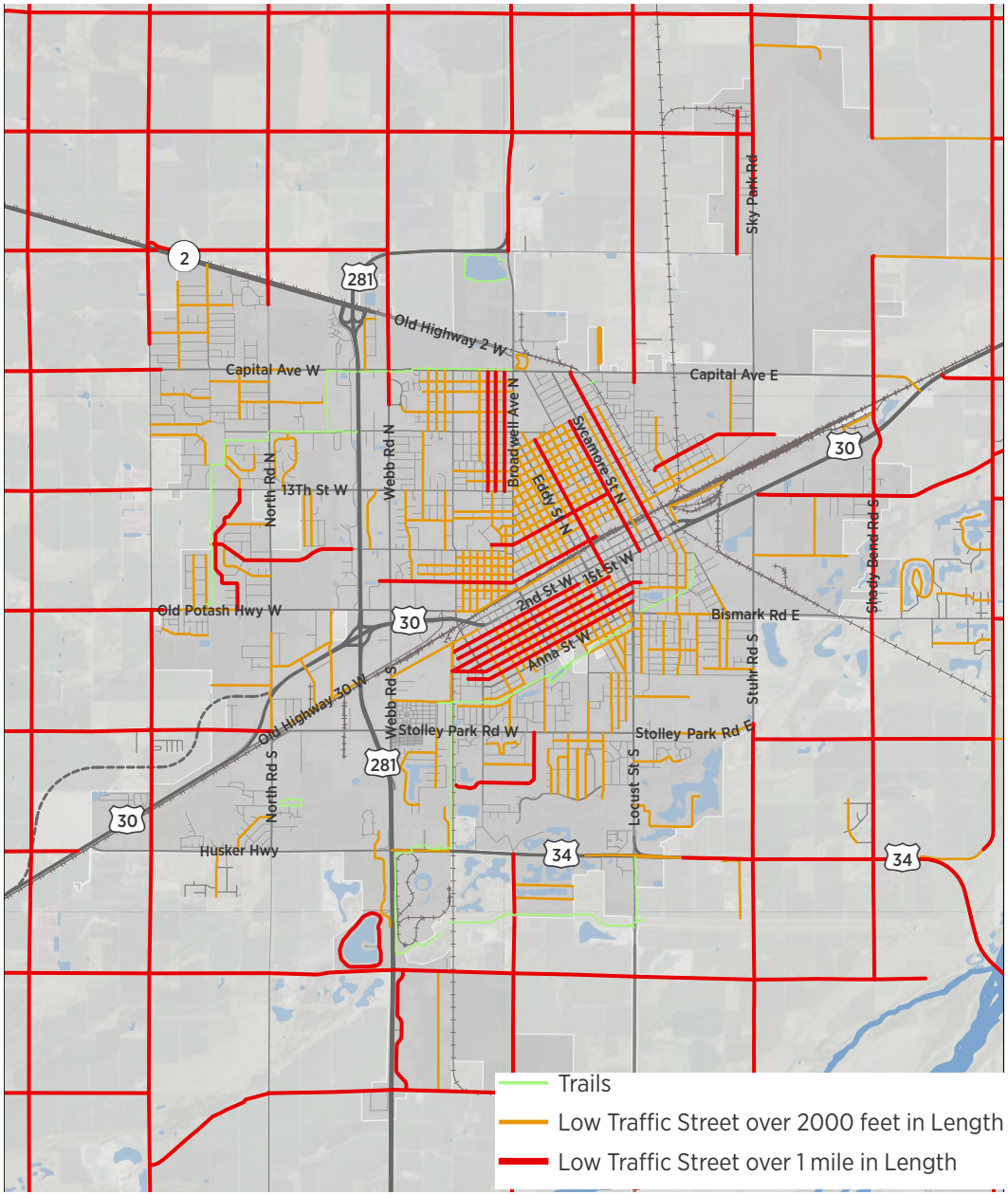


Source: Nebraska Department of Roads, 2010-2015

Crash Incidence

Incidence of pedestrian and bicycle crashes pinpoint specific problems that system planning must strive to address. The map on this page locates crash history between 2010 and 2015, overlaid on the location of traffic signals. Analysis of the map indicates that:

- Most crashes recored in these data occur at intersections without signals.
- Bicycle crashes appear to cluster along certain corridors including: 2nd Street (US 30), clustering in the vicinity of the public library; Broadwell Avenue, with difficult intersections created by the shifting grid; and Locust Street, especially between Downtown and Bismark Road.
- Pedestrian crashes are more distributed around the city, but tend to cluster around Downtown and along the 2nd Street corridor – because these areas have the greatest number of pedestrians.
- Bicycle crashes occurred at some difficult trail crossings (Capital Avenue west of US 281, the Shoemaker Trail at 13th Street, the Beltline Trail at Locust, St. Joe Trail at US 34), but not at others during this period (St. Joe Trail at Stolley Park, Beltline Trail at Blaine).



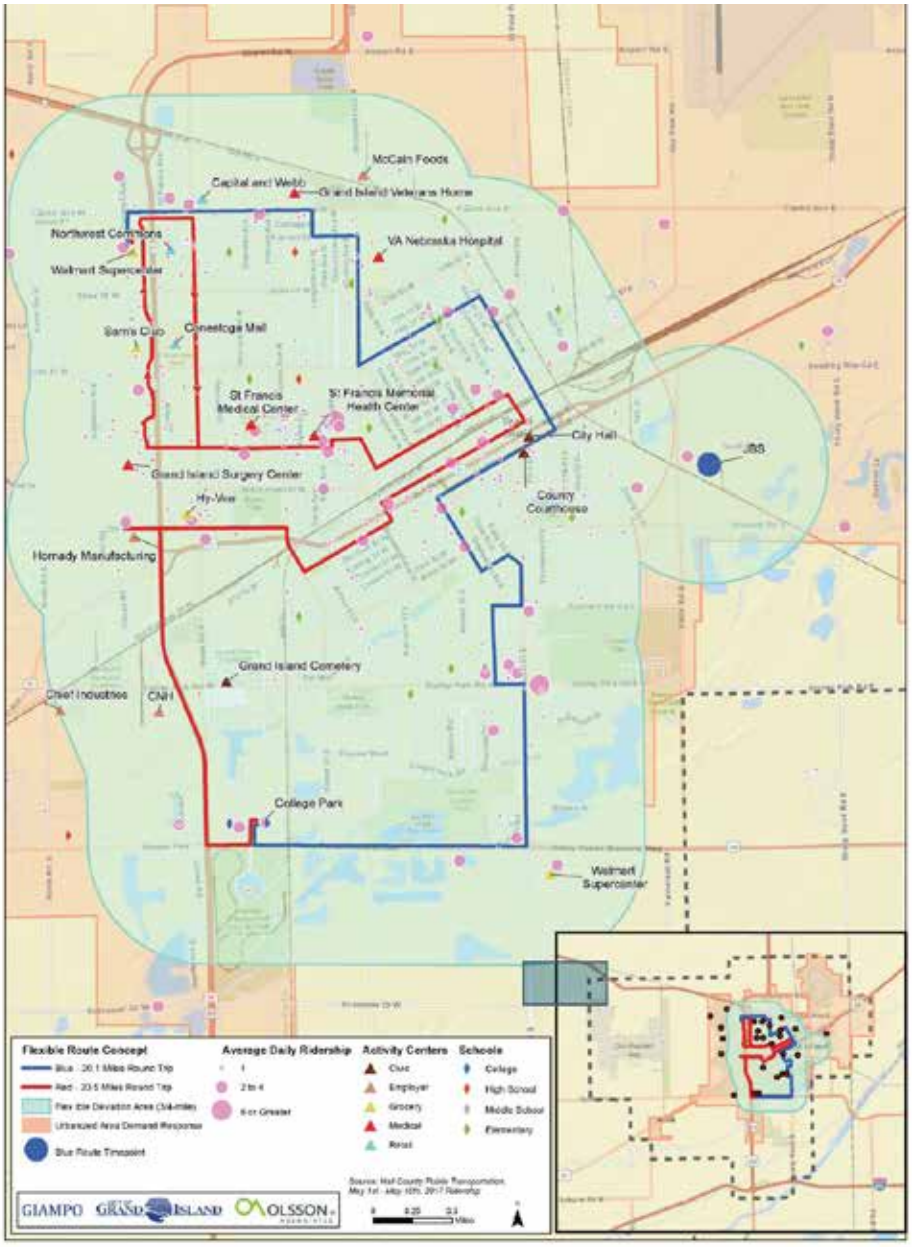
Source: Nebraska Department of Transportation; RDG Planning & Design

Opportunity Streets: Low Traffic Streets with Continuity

One way of achieving separation of bicyclists and, to some degree, pedestrians from high traffic volumes is identifying streets with low traffic that have continuity – continuous lengths of at least 1/2 mile and more significantly one mile. These "opportunity streets" are components of a secondary street system – corridors that can serve important destinations efficiently but are not "major streets" from a classification point of view. These frequently can be incorporated into a neighborhood greenway" or "bicycle boulevard" network, using wayfinding and low-capital traffic calming devices and signage to assemble an effective network.

In Grand Island, these corridors tend to be most prevalent in an east-west direction south of the UP and in a north-south direction north of the UP. In some cases, shorter segments that are offset by short distances can be assembled to create longer crosstown routes.

Another opportunity presented by Grand Island's network is width. Many of the city's local and collector streets are 36 feet wide – a healthy width for low traffic streets. Streets of this width can accommodate bike lanes with one-sided parking or other shared road methods. Sometimes, bike- or pedestrian-friendly improvements can also slow traffic to desirable speeds in residential neighborhoods.

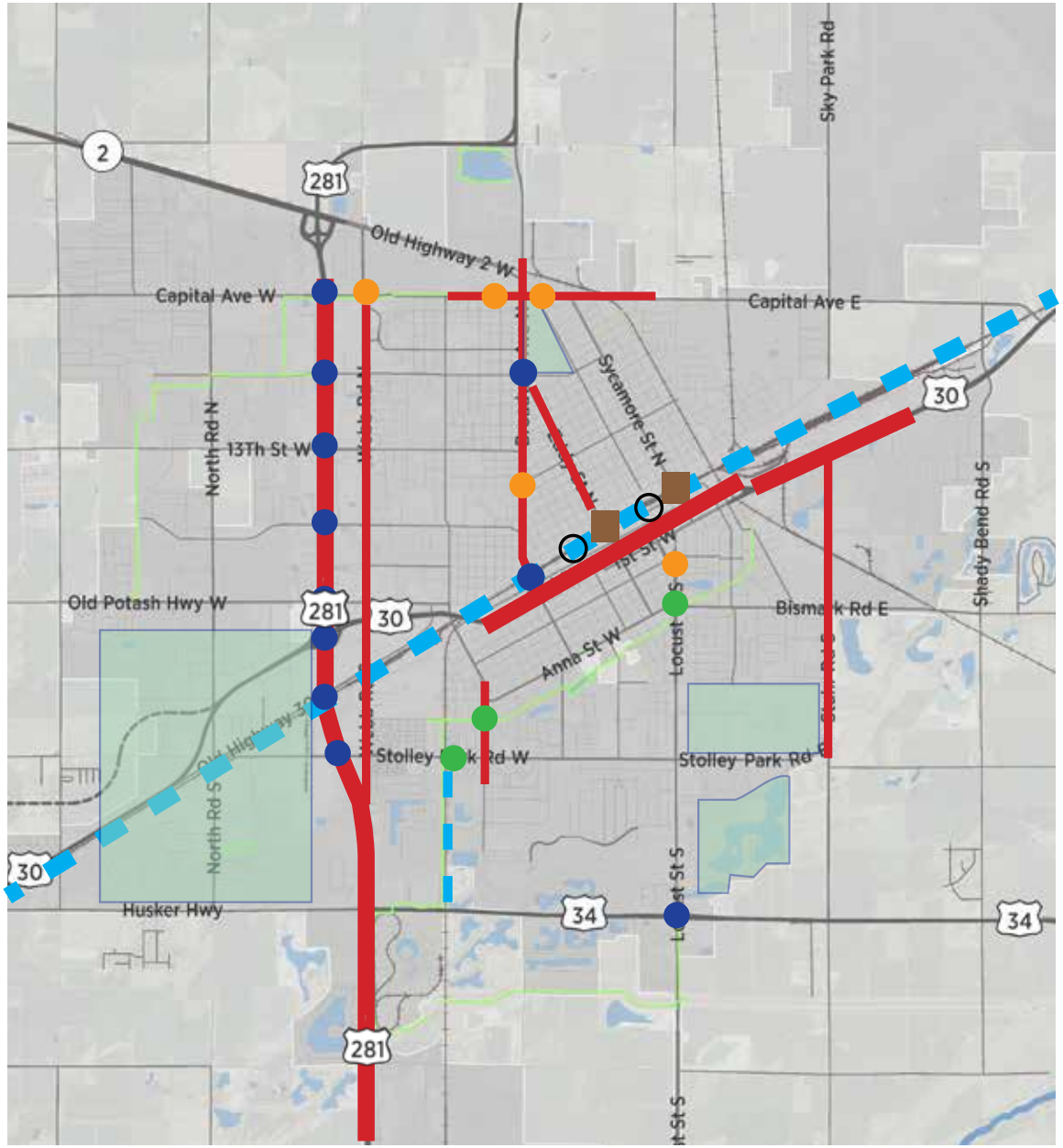


Source: Courtesy of GIAMPO, City of Grand Island, Olsson Associates

Opportunity Streets: Transit

Coordination of possible transit service and other active transportation improvements offers another potential system opportunity. The Grand Island Area MPO approved the Grand Island Transit Needs Assessment and Feasibility Study in December, 2017. This study proposed both a Fiscally Constrained Plan and an Illustrative Plan. The Fiscally Constrained Plan proposes continuation with modifications of the existing Demand Response Service; new vanpool service and a rideshare program; and several policy and planning initiatives, including improved branding and marketing, increased transit contract oversight, and planning a tri-city bus service that includes Hastings and Kearney. This reflects transit operations for the next five years. The Illustrative Plan proposes a Flexible Route Service concept that could be implemented if and when funding becomes available. The concept establishes two routes that can divert within a certain area by passenger request, then returning to the point of diversion to continue its route. Planning for implementation could begin in Year 4 of the transit program process pending the availability of funding.

The map at left displays the possible Flexible Route Concept contained in the Illustrative Plan. While implementation of this program is relatively long-term, it represents a clustering of current service requests, potential destinations, and high demand corridors that assist with identification of active transportation routes.



Source: RDG Planning & Design

Barriers

The presence of physical barriers poses a major challenge to bicycle and pedestrian transportation in the Grand Island area. While topography is not an issue for pedestrian and bicycle travel in the city, barriers in the built environment – railroads, major highways, and arterial streets – pose significant obstacles. The most important issues include:

US 281. This 4-lane divided highway on the west side of the city is viewed as a major divider that discourages east-west active transportation. This dividing character of the highway is exacerbated by its great right-of-way width, with both the road and adjacent drainageways. State and Capital both include multi-use sidepaths that must cross US 281, a significant physical and psychological barrier.

- Major Highway Barrier
- Other Street Crossing Barrier
- Difficult Arterial Crossing
- Difficult Trail Intersection
- Other Difficult Street Crossings
- Railroad Mainline Barrier
- Other Railroad Barrier
- RR Underpasses without bike/ped accommodations
- Possible grade crossing closings
- Areas blocking street continuity

Union Pacific Mainline. The triple-track UP carries over 100 trains daily, and presents a barrier that is both perceptual and physical. Two grade separated underpasses (Sycamore and Eddy) are inaccessible to bicycles and have undesirable accommodations for pedestrians. The grade crossing at Broadwell Avenue has been a chronic traffic bottleneck and may be replaced by a future grade separation at the potential cost of the one or two most accessible grade crossings of the mainline, at Lincoln and/or Walnut. Whole far less busy than the mainline, the UP south branch to the power plant separates some south side neighborhoods from the St. Joe Trail. On the other hand, the elevated east side BNSF mainline is relatively permeable, with four easily accessible crossings between 4th Street and Capital Avenue.

Other arterial streets, including trail crossings. While more easily negotiated than US 281, busy arterial streets present significant challenges. Of special note are Broadwell Avenue, where the joint between the section line and rotated street grids create difficult intersections that break east-west street continuity; and trail crossings that include the John Brownell Trail at Blaine and Locust, and the St. Joe Trail at Stolley Park Road.

Breaks in street continuity. Development and land use patterns or major projects create areas that interrupt the street grid. Examples are Fonner Park and the VA campus; lack of development east of Locust between Stolley Park Road and US 34; and southwest Grand Island.