INTRODUCTION

We spend a large amount of our lives in motion – commuting to work or school, traveling to the destinations that mark our lives in cities, and generally going about our lives. How we move can affect many things, including our own health and that of our communities.

As humans, we have been blessed with the ability to travel effectively under our own power. Many of us can walk or run for great periods of time and cover substantial distances, all the while thinking and taking delight in the things and people around us. We can travel even farther and faster by bicycle, a remarkable vehicle that we can easily lift, travels at half the speed of a contemporary car in city traffic, does not use fossil fuels, produces no emissions, makes almost no noise, can be parked outside the door of our destinations or even inside our homes or offices, and makes us healthier. The introduction of new technologies, like the e-bike with small electric motors that provide pedal assists, can bring bicycling as an efficient form of transportation, within the capability of even more number of people. Our ability and efficiency to transport ourselves is indeed a gift.

It is also a gift that makes economic sense. Infrastructure for people on foot or bike costs much less per mile than for motor vehicles. People traveling on-foot or by bike put very little stress on sidewalks, streets, and trails. And human-powered transportation is inherently enjoyable, encouraging us to see each other as people and the gardens, houses, streets, yards, schools, and centers of our cities as a delight.

So now let's consider Grand Island, Nebraska's fourth largest city with a population of about 52,000 people and the state's newest designated metropolitan area. The city has very little topography and a generally well connected street grid. Travel distances to most community destinations are relatively short and many key features have reasonably good trail access. Its major trails, including the Beltline, St. Joe, Shoemaker, and Riverway are very popular with recreational users. These factors create a very friendly environment for active transportation – travel by foot and bike. The average cyclist can cover three miles in only 15 to 20 minutes.

Grand Island as a community understands these possibilities and has acted on this understanding by:

- Developing and maintaining the foundation of a strong trail system, such as the trail wayfinding signs developed cooperatively by the Central District Health Department, Central Community College, and the City of Grand Island.
- Establishing the Walk & Bike Grand Island program and creating a Bicycle and Pedestrian Advisory Committee.
- Publishing and updating a trails map that identifies both on- and off-street routes that serve major community features.
- Integrating physical wayfinding signage independantly and in collaboration with local health organizations to promote active lifestyles.
- Including bicycle and pedestrian facilities in the planning of new community parks and open spaces, including Eagle Scout and Veterans Legacy Parks.

Walking and biking are very much parts of life in Grand Island, evidenced by routine observations, such as the large number of elementary school students who walk or bike to school along the city's trails. The Grand Island area's characteristics provide the opportunity to integrate enjoyable, healthy, active transportation into the everyday lives of its citizens. This *Pedestrian and Bicycle Master Plan* is dedicated to encouraging its citizens to make healthy, low-impact, and intrinsically pleasant transportation a greater part of their routine lives. While we know that most trips will continue to be made by car, the region's transportation system should offer choices, including the option to feel safe and comfortable using the healthy, sustainable, and socially satisfying means of mobility that the bicycle and walking offer.

WHY ACTIVE TRANSPORTATION?

Goals of this Plan

This plan is designed to help the Grand Island metropolitan area achieve the following goals:

Goal One: Increase the number of people who use walking and biking for transportation as well as recreation. Grand Island's existing multi-use trails are well utilized and have a significant transportation function, such as providing access to important destinations like College Park. However, the overwhelming majority of users are recreational cyclists and pedestrians. A measurement of the success of this plan will be significantly increasing the percentage of trips for a variety of purposes. Chapter Two includes estimates of current and future utilization of a bikeway system.

Goal Two: Improve bicycle and pedestrian access to key community destinations. An active transportation network should get people comfortably and safely to where they want to go. Therefore, Grand Island's system should be destination-based, providing clear and direct connections to key community features.

Goal Three: Removing or improving barriers that discourage people from walking or biking for transportation and recreation. Grand Island's basically flat topography brings walking or biking within the physical capabilities of most of the city's population. But other important barriers can be much more discouraging. These include two railroad main lines, major regional highways like US 281 and US 30, and busy urban streets. Grand Island's street pattern, where an ordinal and railroad-oriented street grid interact, also creates unusual offset intersections and offsets that people find difficult to cross safely. Creating more comfortable barrier crossings is an important objective of this plan.

Goal Four: Improve access to the city's trail system by providing connecting links from neighborhoods to trails. Grand Island's trails are the main lines of its bikeway system, and will continue to serve many of its bicycle and pedestrian trips. Good connections to these trails, and implementing cost-effective extensions that improve service to major destinations and employment centers can create major benefits and help direct new development.

Goal Five: Use walking and bicycling as part of an effort to make the Grand Island area healthier for the community, and for the individual. Trips made by bicycle promote health at two levels:

- Community health. Reducing emissions also helps ensure that Grand Island will maintain its status as a healthy environment for its citizens. On a social level, bicycling builds community by enhancing the quality of civic life, helping us interact with each other as people. Places that lead in bicycle transportation also tend to attract people because of their community quality.
- Individual health. This is a very important objective which promotes community health through better individual health. Incorporating physical activity into the normal routine of daily life for everyone from kids to seniors makes all of us healthier, reduces overweight and obesity rates, improves wellness, and lowers overall health care costs.

Goal Six: Increase safety on the road for motorists, bicyclists, and pedestrians. Improved safety is a critical goal for any transportation improvement, and is fundamental to efforts to increase the number of people who walk and bike in the region. Physical safety improvements must also be supported by education, enforcement, and encouragement programs, and its effectiveness measured by evaluation.

Goal Seven: Capitalize on the development benefits of a destination-based bicycle transportation system. Better active transportation facilities can have a significant and desirable effect on urban design and development patterns. Walkable and bikeable neighborhoods and projects are highly valued by a new generation of homeowners and investors. The developers of Grand Island's proposed new hospital and mixed use project are including trails as an important part of their development plan, and new city neighborhoods are enhanced by the Shoemaker Trail and connectivity that it provides.

This plan serves as the trail master plan for the Grand Island region. It is a blueprint to guilde the City of Grand Island's investment in trails and support facilities.

MEASURES OF SUCCESS:

Guiding Criteria for an Effective Transportation Network

The design of bicycle and pedestrian transportation systems should be guided by criteria that can be used to evaluate individual components and the effectiveness of the entire network. We elaborate on these criteria in Chapter Three, which are based on the work of the Netherlands' Centre for Research and Contract Standardization in Civil and Traffic Engineering (C.R.O.W.), one of the world's leading authorities in the design of bicycle-friendly infrastructure. These same criteria also apply to pedestrian networks. Drawing on C.R.O.W.'s work in its excellent design manual, ***Sign Up for the Bike,*** the Grand Island bicycle and pedestrian network should be guided by six basic guiding principles:

- Integrity (or, in C.R.O.W.'s term, Coherence): The network should, at all points in its evolution, form a coherent system that links starting points with destinations. The network should be understandable to its users and fulfill a responsibility to convey them continuously on their paths.
- Directness: The active network should offer cyclists as direct a route as possible, with minimum detours or misdirections.
- Safety: The bikeway network should maximize the safety of using the bicycle for transportation, minimize or improve hazardous conditions and barriers, and in the process improve safety for pedestrians and motorists.
- Comfort: Most bicyclists should view the network as being within their capabilities and not imposing unusual mental or physical stress. As the system grows, more types of users will find that it meets their needs comfortably.

- Experience: The active network should offer its users a pleasant and positive experience that capitalizes on the region's built and natural environments.
- Feasibility: The active network should provide a high ratio of benefits to costs and should be viewed as a wise investment of resources. It is capable of being developed in phases and growing over time.

An overriding principle of an active transportation network is avoidance of hazards or have unnecessary negative impacts on the overall transportation network.

PLAN METHODOLOGY AND STAKEHOLDER INVOLVEMENT

It was extremely important to structure a planning process that maximized both public involvement and our understanding of the physical structure and community character of the Grand Island area. The Grand Island Area Metropolitan Planning Organization's (GIAMPO) Bicycle and Pedestrian Advisory Committee , representing city and GIAMPO staff, bicycle and walking community members, health interests, the private sector, and other community interests met throughout the planning process, with an initial meeting in August, 2017.

Major public involvement events included:

- Field reconnaissance and stakeholder groups. These visits included initial field work on bicycle and interest/stakeholder group discussions, helping us become familiar with issues and the overall structure of Grand Island neighborhoods and street system. During this process, we rode most of the city's candidate streets and compiled an extensive photographic inventory
- Bicycle and Pedestrian Survey. This survey, explored the characteristics of Grand Island residents interested in bicycling and measured their level of comfort with different types of facilities. The survey, available in English and Spanish, attracted 352 responses and produced information to help frame the direction of this plan.
- Area Workshops. These local sector were a major part of the planning process. The city was divided into three sections: north, south, and west. Each workshop included extensive field work on bicycle during the days, and public meetings in the evening to discuss results and concepts.
- Community Workshop. The community workshop was held at the Grand Island Public Library in September 2017 to solicit input from stakeholders on the emerging bicycle network and facility concepts. Participants learned about the project, contributed their ideas, and were invited to review the proposed network and infrastructure types on the project website.
- Public Comment Period and Public Open House. A public comment period was held from May 24, 2018 to June 11, 2018 to solicit public input on the Draft Bicycle and Pedestrian Master Plan. The draft plan was available on the project website, and hard copies were available at the Grand Island

Public Works Deparment and the Grand Island Public Library. During the public comment period, a public meeting was held at the Grand Island Public Library on May 29, 2018 to invite residents the opportunity to review the recommendations outlined in the draft plan.

- Bicycle and Pedestrian Advisory Commitee (BPAC) and GIAMPO Technical Advisory Committee (TAC). The BPAC was a client group that met at regular intervals during the course of plan development. Key milestone presentations were made to the TAC, which also assisted with setting priorities through a ballot process that rated the importance and priority of various network segments. We also held periodic meetings with city staff, including Planning, Public Works, and Parks Departments.

ORGANIZATION OF THE PLAN

The GIAMPO Bicycle and Pedestrian Master Plan presents its analysis and recommendations in the following chapters:

1. **Chapter One: Active Transportation Environment.** Chapter One examines existing conditions in the city pertinent to walking and bicycling, including determinants of a future bikeway system such as destinations, existing facilities, and opportunities. It includes an atlas of key determinants of the area's active transportation network.
2. **Chapter Two: The Market for Active Transportation.** Chapter Two estimates current pedestrian and bicycle demand and the potential future market. It also reviews the Grand Island Area Bicycle and Pedestrian Survey, which provides extensive information about people interested in urban bicycling and walking in Grand Island and their needs, concerns, and preferences.
3. **Chapter Three: The Active Transportation Network: Principles and Structure.** Chapter Three uses the analysis of Chapters One and Two to establish over-all principles that guide the proposed Grand Island area network. It also elaborates on the measurement criteria previously presented to help guide the system's components. Finally, it presents a complete conceptual system of pedestrian and bicycle facilities.
4. **Chapter Four: Support Facilities.** Chapter Four investigates needs and establishes concepts and locations for support facilities, including trailheads, open space nodes, linkages to new park facilities, and wayfinding.
5. **Chapter Five. Crossing Barriers.** Chapter Five locates and classifies various types of physical barriers to active transportation in the city and identifies different types of solutions that can be adapted to these contexts.
6. **Chapter Six: On Foot in Grand Island.** Chapter Six analyzes pedestrian considerations in Grand Island and proposes a strategic program for improving the pedestrian environment, focusing specifically on the areas around high-density destinations such as schools.
7. **Chapter Seven: Route Details and Sequencing.** Chapter Six includes a detailed, route-by-route facility program, showing proposed conceptual design solutions for each segment of the system. It discusses criteria for determining the sequence of development and presents a phased implementation program, along with probable costs for different infrastructure types. Finally, it proposes an initial pilot network, based on serving all parts of the city and early feasibility.
8. **Chapter Eight: Support Programs.** The League of American Bicyclists describes six "E's" as components of a bicycle-friendly community (BFC) program and judges BFC applications accordingly. These program categories are Engineering, Education, Encouragement, Enforcement, Evaluation and Equity. Chapters One through Eight largely address the Engineering component; Chapter Seven recommends initiatives that support these infrastructure investments to achieve bicycle transportation's full potential as part of Grand Island's access environment.