Report of the Master Plan Task Force on
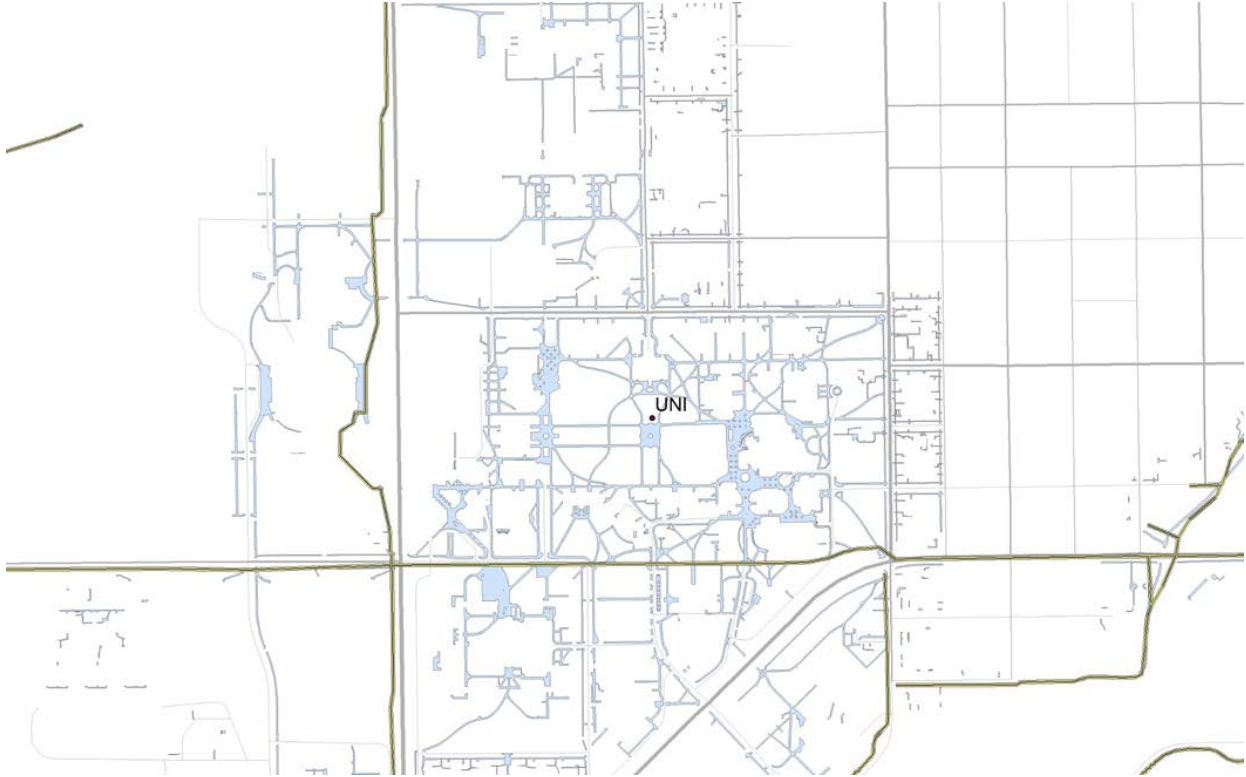# Transportation

Figure 1 - Roads, Trails, and Walkways On and Around Campus

Introduction:

The Task Force: Objectives and Membership

The Task Force on Transportation was formed to address transportation issues associated with the University of Northern Iowa (UNI) campus. It was asked to consider such questions as:

- What types of transportation will be needed to support students, faculty, and staff in the next 5, 10, and 20 years?
- How can UNI best utilize its limited physical and financial resources?
- What are the important transportation considerations necessary to continue providing timely access to education facilities?
- How can transportation facilities and services be provided that ease circulation and access?
- How can transportation services help UNI achieve its sustainability goals?
- What types of partnerships can be forged with regard to transportation to better serve the students, faculty, and staff as well as the community of Cedar Falls and the citizens of Iowa?

Task force members were drawn from a wide variety of perspectives and stakeholders, with representatives from UNI faculty, UNI Public Safety, UNI Facilities Planning, Northern Iowa Student Government, the Cedar Falls community, and professional planners from local and regional agencies. Members include Tim Strauss (Geography; chair of the Transportation Task Force), Augustina Naami (Social Work), Milissa Wright (Public Safety), David Sturch (Cedar Falls), Mark Little (MET Transit), Kathleen Green (UNI emeritus administrator), David Coltrain (Northern Iowa Student Government), Kyle Durant (Iowa Northland Regional Council of Governments), Glenn Swanson, Brooke Gabbert, and Philip Simpson (Facilities Planning). The task force met biweekly during the academic year from December through mid-April. This report summarizes the activities of the task force in considering the above questions. The aim of this plan is to establish the goals to be addressed by UNI's transportation system, summarize the current state of the system, explore the potential implications of future trends and technologies, and develop recommendations regarding possible strategies and future activities.

Scope of Analysis

A transportation system, at its most basic level, involves the movement of individuals and materials from origins to destinations over a network of route segments. For this plan, UNI's transportation system was defined to encompass all activity related to the UNI campus, including activities with external origins and destinations (e.g., commuting, special events), as well as internal movements on campus. In addition, several aspects of improving transportation were considered, including physical facilities, policies, and services. Several dimensions of transportation systems were also considered including safety, sustainability, accessibility, transportation/land-use interactions, and modes of transport.

Related Planning Efforts

Transportation involves a variety of stakeholders with varying perspectives. This evaluation of UNI's transportation system was done with an awareness of the activities and plans of both internal and external partners.

At the university level, existing related activities include the efforts of the other task forces of the Facilities Planning Master Plan (e.g., sustainability, community partnerships). UNI also has transportation-related planning activities regarding sidewalk connections, the development of campus west of Hudson Road, the concerns of individuals with disabilities, and sustainability. Student government and other student groups are also involved in transportation.

At the city level, Cedar Falls has both a Comprehensive Plan and a bicycle plan, and it has adopted "Complete Streets" design concepts to incorporate integrated transportation options for all types of users (including automobiles, bicycles and pedestrians) and elements for improved intersections (e.g., roundabouts), bike lanes, transit routes, crosswalks, and landscaping. The city also has active neighborhood associations.

At the regional level, the Iowa Northland Regional Council of Governments (INRCOG) has recently developed a Long-Range Transportation Plan with material relevant to transportation at UNI, including information on major improvements and a chapter on non-motorized transportation. INRCOG also has a pedestrian plan in preparation.

Goals of UNI's Transportation System

The transportation system of UNI should address several fundamental goals.

First, UNI's transportation system should facilitate mobility and accessibility. That is, individuals should be able to reach their desired destinations (e.g., classrooms, offices, residences, off-campus employment, shopping, and recreation), and do so readily without undue difficulty. Mobility implies efficient movement from origins to destinations, with a minimum of constraints, while accessibility implies the ability to reach the destinations themselves and the opportunities they provide. Accessibility also focuses on the objective of ensuring viable transportation options to all, regardless of physical or cognitive disabilities, or economic disadvantage, and on the removal of physical barriers that limit transportation options, such as pedestrians and individuals with disabilities. Moreover, this concept includes temporal accessibility, i.e., access to options when they are needed. It also includes accessibility for public transportation, freight movements, and emergency vehicles.

In addition, the UNI transportation system should be safe. This includes the objectives of reducing accidents and incidents across modes (e.g., motor vehicle crashes, motor vehicle/bike-pedestrian crashes, bike-pedestrian-only incidents), as well as reducing risks to personal safety while traveling on or around campus.

Figure 2 - Pedestrian and Bike Crashes (2010 to 2014)

Finally, the UNI transportation system should be sustainable. This includes environmental sustainability, addressing objectives related to air quality, energy use, land use, resource use, etc., so that future generations are not adversely affected. Sustainability also includes financial sustainability; that is, the transportation system should have procedures to ensure sufficient financial resources to address system goals.

A key challenge arises from potentially conflicting goals and objectives. For instance, an increase in mobility and convenience, e.g., through higher roadway speeds, may result in decreased safety. Trade-offs may be necessary. Conversely, in some cases goals may be mutually reinforcing. For instance, improved transit accessibility may address sustainability goals.

Overview of the Current UNI Transportation System

    1.   **Origins, Destinations, and Infrastructure**

The University of Northern Iowa is a major activity center and commuting destination within the Waterloo-Cedar Falls metropolitan area, with about 12,000 students, many living off-campus, and around 2,000 full-time employees. In addition to commuting, members of the broader community also travel to UNI for cultural events and educational activities. Moreover, UNI also generates trips from campus to major activity centers in the community, including downtown Cedar Falls, College Square Mall (e.g., Hy-Vee), commercial developments south of campus (e.g., Wal-Mart), and Waterloo.

Travel between UNI and off-campus locations is facilitated by the road network, with immediate access to campus provided by Hudson Road, University Avenue, College Street, and 23rd Street, with other major roads (including Highway 20, Highway 58, and Greenhill Road) feeding into these. In addition, the Cedar Valley has an extensive system of bike trails that serve as recreational amenities but can also facilitate home-, work-, and shopping-based trips. Closer to campus, UNI is accessed from surrounding residential areas by pedestrians and other non-motorized modes using city sidewalks.

On campus, UNI's transportation facilities include 9,257 parking spaces divided among A lots (faculty/staff), B lots (students), C lots (students in residence halls), metered parking for visitors, and others. Major locations include the Gilchrist lot, the UNI Dome lot, the ITC lot, the Art South lot, and the multimodal facility parking ramp. Individuals move from parking facilities to on-campus destinations, and between campus destinations, using a network of walkways.

    2.   **Transportation Services**

Several transportation services are provided to facilitate movement between origins and destinations. Notably, MET Transit provides fixed-route service between UNI and major activity centers, including Wal-Mart and Hawkeye Community College. There are partnerships with Hawkeye to provide the service, and a new partnership is developing with Allen College. A 30-day pass is $45, with multiple transportation entities deciding the transit fare, and 26% of MET Transit riders are students. One route, Route 9, was previously free to ride for students, but now students are charged for their rides on this route.

In addition, MET Transit provides paratransit services for persons with disabilities (certified as such by MET Transit) who are unable to access the fixed route system. It operates from 5:45am to 6:45pm on weekdays, and from 6:30am to 5:45pm on Saturdays. Rides must be requested the day before the scheduled trip or earlier. This service is more expensive than fixed route service to provide, so federal certification guidelines for its use are stringent.

Closer to campus, the Panther Shuttle is funded by the Northern Iowa Student Government (NISG) budget, with a bus running a 35-minute loop around campus and serving nearby locations. The service hours and route are provided at the direction of NISG; the service involves a mandatory fee for all students and requires a UNI ID to ride. Most of the ridership involves nearby apartment complexes. In addition, a UNI weekend Safe Ride program provides free trips between campus locations and downtown Cedar Falls during the academic year on Friday and Saturday nights.
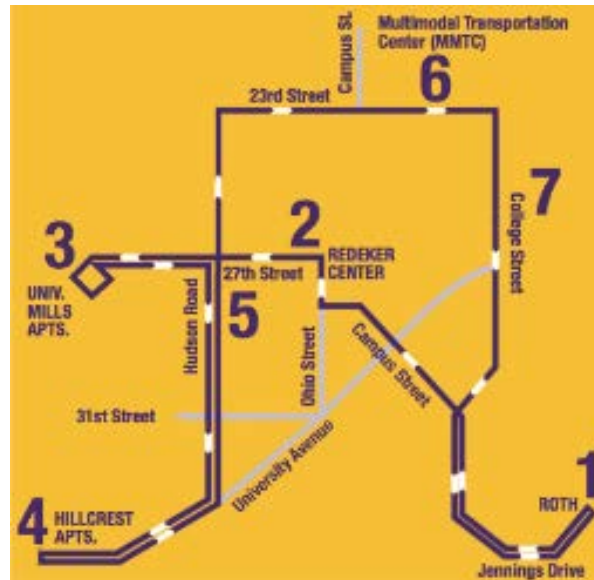
Figure 3 - Panther Shuttle Route

Issues related to personal safety on campus are managed by the UNI Department of Public Safety, which provides policing services, as well as safety escorts via its Student Patrol; there is also a system of emergency phones located throughout campus. UNI also has a full-time sustainability coordinator to address issues related to environmental sustainability, including transportation. Issues of financial sustainability are managed by several administrative entities on campus, notably the Division of Administration and Financial Services.

Future Scenarios

The task force was charged to envision what UNI's transportation system could and should look like, with a 20-year planning horizon. There are several categories of possible future influences on UNI's transportation system, with varying degrees of uncertainty regarding their potential impact. Some aspects of future influences may be more readily predicted and planned for, and be more amenable to proactive planning and guidance. Others may be less predictable, or less directly controllable, and strategies must focus on responding effectively to this externally-driven change.

1. **Future Local Land Use Patterns**

There is a strong relationship between land use and transportation. In Cedar Falls, the growth area west of Hudson Road is the largest amount of land available for expansion within the city limits. A variety of single family, multi-family, mixed use, recreational and commercial areas is identified in this area. The area along and south of Greenhill Road is also being developed with a variety of residential and mixed land uses.

This pattern of growth is, to some extent, controllable through land-use planning. The Cedar Falls Land Use Plan establishes a development vision to identify areas of future growth, maintain and enhance the quality of the existing developments, and provide a sound basis for public and private decisions. The Plan has identified several Comprehensive Planning Principles, including transportation diversity, walkable neighborhoods, mixed land uses, housing diversity, sustainable design, natural resource and agricultural protection, full and efficient use of urban services, community character, occupational diversity, and collaboration.

Land use development in and around Cedar Falls shows expansion south and west, including mixed commercial and residential space. A new Cedar Falls High School has been proposed west of the university. This would require approval by city voters and the passage of a bond referendum; the relocation of the high school could have a potentially large impact on activity patterns, including congestion and crashes along Hudson Road and West 27th Street.

2. Future Local Transportation Infrastructure

Specific changes to the area's transportation system are likewise guided by several area transportation planning activities, including the INRCOG transportation program and long-range plan, and the Cedar Falls Bike Plan. Major changes include the expansion of Greenhill Road from Hudson Road to West 27th Street, and the possible creation of a trail through UNI to developments west of Hudson Road.
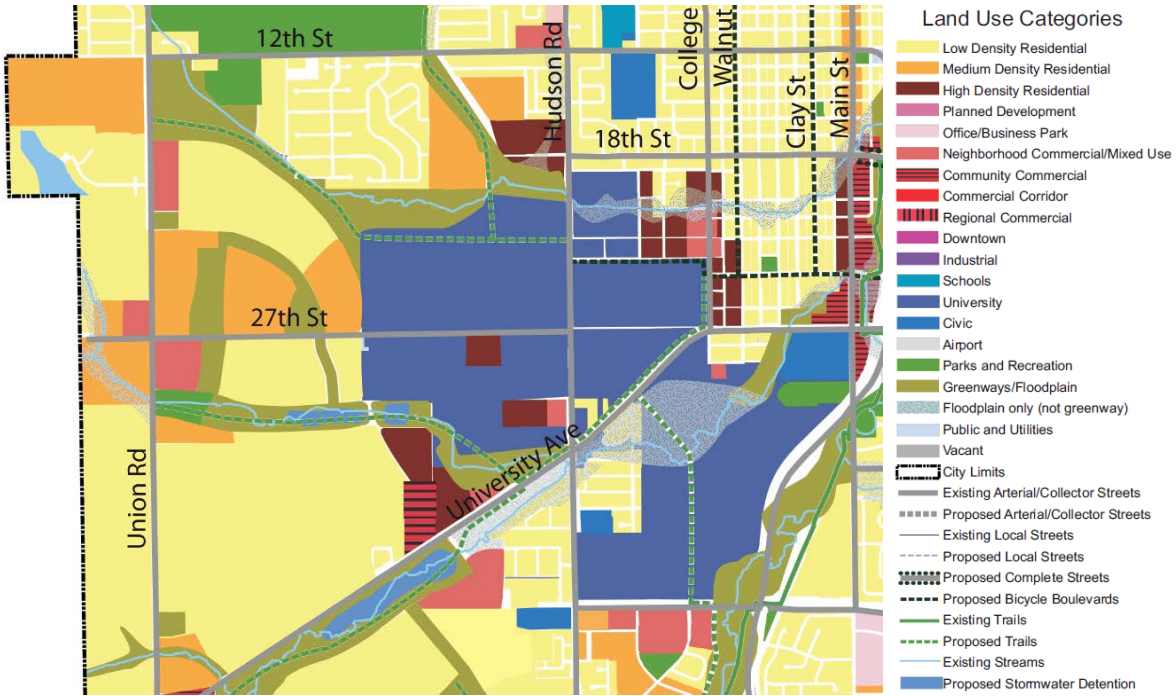

Figure 4 - Land Use and Proposed Trails

3. Future UNI Enrollments

Future transportation characteristics and needs around UNI will be greatly influenced by student enrollments. Enrollments, in turn, will be affected by a variety of factors, including population estimates (affected both by birth rates and net migration rates), and the competitiveness of UNI in attracting students.
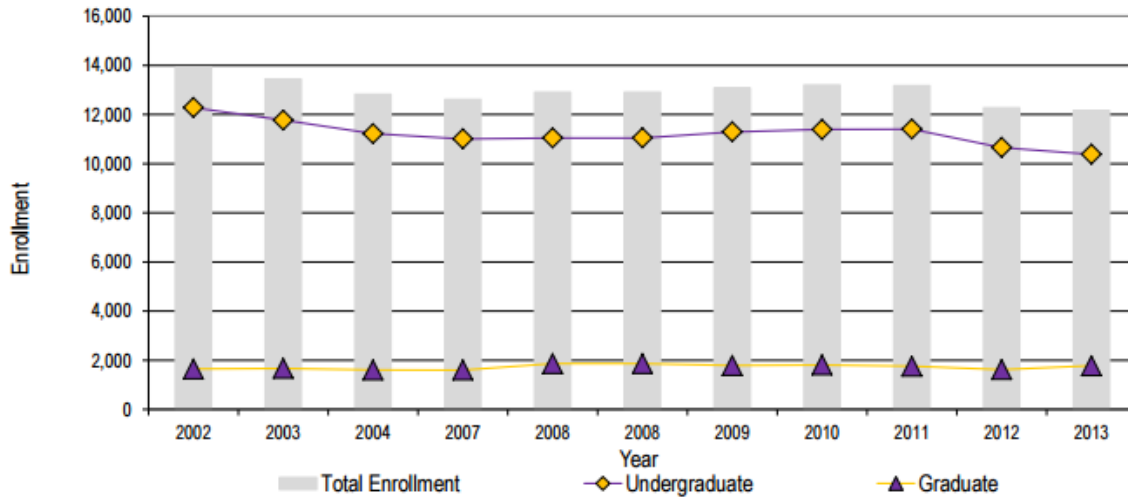
Figure 5 - Headcount Enrollment Trends (2002-2013)

4. Changes in Technology

It would have been difficult to predict, from the standpoint of 1995, the effects of developments in telecommunications and other technologies that we now see. Notably, the use of cellphones has blossomed in the scale and scope of their use. The growth of Internet technology, and its integration into smartphones, has resulted in thousands of mobile applications for financial transactions, GPS/route finding, shopping, social media, teleconferencing, and other purposes. These technologies have had significant impacts on travel behavior, the retail sector, advertising, the loss of jobs that can be replaced by direct access by customers via websites, and interpersonal communication through social media. Looking specifically at travel behavior, the recent development of technologies has provided opportunities for teleconferencing and telecommuting to replace motor vehicle and other transportation, created potential safety issues because of drivers distracted by mobile and other in-vehicle technologies, and provided direct access for consumers to travel reservations and the tracking of packages. Few, if any, of these implications were well anticipated 20 years ago.

Looking forward, it is likewise difficult to predict with precision the implications of recent or future technologies on UNI's transportation system over the next 20 years, but some categories of technologies and their possible effects can be identified.

First, some technologies relate specifically to transportation vehicles, the energy sources that power them, and the infrastructure they use. Alternatives are available to reduce the use of fossil fuels, including, in varying degrees of development and use, hybrid vehicles, electric vehicles, natural gas vehicles, and hydrogen fuel-cell vehicles. Self-driving cars are also in development, with the potential to improve safety, reduce congestion, increase personal time, and reduce the need for parking space. Researchers are also developing technologies to embed solar panels in roadways to generate electricity for traffic lights and perhaps electric cars.

Other technologies focus on helping the transportation system to function more efficiently, under the general title "intelligent transportation systems." This includes methods to make the transportation system function more efficiently and promote smoother transportation flows through traffic signal coordination and the monitoring of traffic flows, pavement surface conditions, and weather. Some systems convey information to the traveler, perhaps the most common example being variable message signs. More recently, smartphone applications can inform travelers of open parking spaces in urban areas identified through a system of sensors, which can reduce time and fuel use associated with looking for a parking spot. Uber and Lyft are ventures that use smartphone applications to connect drivers and riders and, thus, facilitate car sharing. Other companies, such as Zipcar, are marketed to universities as a means to reduce the need for having a car on campus by providing short-term, affordable car rental,

again facilitated by mobile information technologies. On the transit side, GPS information systems are being used to provide information to riders regarding current bus locations and arrival times at bus stops.

Rather than facilitating more efficient transportation, other technologies have the potential to reduce the demand for transportation through the use of communication technologies. Notably, videoconferencing, ranging from two-person meetings to larger webinars, can reduce the need for in-person meetings or conferences. Similarly, telecommuting can reduce the need for work-based commute trips. In a workplace or university setting, the acceptance and growth of communication technologies as a substitute for transportation will depend on the degree to which face-to-face interaction is necessary.

Finally, many of these technologies, especially communications, may have implications on educational systems and how they develop over the next several decades. The definition of what a university is, and how its physical infrastructure may be used, may be quite different. The emergence of distance learning, the development of massive online open courses (MOOCs), and the increased availability of alternative means of disseminating course materials may result in a university with different physical requirements, including those related to transportation.

Although we cannot predict every new technology and its implications, we can have in place processes to anticipate and identify them, to respond to them, and to take advantage of them effectively as they develop.

Recommendations to Address Transportation System Goals and Objectives

The Task Force on Transportation identified system goals for the transportation system at UNI to address, reviewed the current status and characteristics of this transportation system, and discussed implications of future trends and technologies. Differences between the current condition and the desired future condition were identified, and this information was used to identify potential strategies to improve the system in order to address its goals and objectives. Some recommendations relate to physical facilities or infrastructure, and others to the potential provision of services or programs. Still others relate to policies and procedures regarding the planning and management of the transportation system. In addition, some recommendations relate to goals and strategies that could be implemented in the short term, e.g., within 3-5 years. Other recommendations relate to longer-term activities, as the transportation system develops. Still other recommendations are to evaluate the potential for specific strategies; however, more information and analysis would be needed to recommend them, and they are presented as items to consider.

1. **Data Collection and Information Gathering for Analysis and Monitoring**

A key need identified by the task force is to develop a process for regularly collecting data and gathering information related to transportation issues on campus. Several useful sources of information were used in the generation of this report, including Iowa Department of Transportation geo-referenced roadway centerline, traffic volume, and crash data, UNI Department of Public Safety data on parking, information from MET transit, and information from the planning efforts of Cedar Falls and INRCOG. However, there is the need to bring together disparate data and information sources related to transportation at UNI in one place, in a structured way, for ongoing use and analysis. Moreover, several ideas generated by the task force require additional information to fully evaluate and possibly consider implementing.

As noted in this report, transportation issues are fundamentally a matter of origins and destinations and travel between them. About 10 years ago, a database was developed, in a geographic information system, with geo-referenced data on the locations of residences of UNI employees and students. This was used to support efforts in a classroom context (e.g., mapping and evaluating distributions of people who commute to campus, investigating possible transit routes) and thesis research. This work could be updated and applied to analyze the current transportation system and evaluate alternatives. For instance, this information could be used to identify the spatial distribution of the origins of commutes to UNI, to evaluate possibilities to develop improved transit service to suitable locations, ridesharing, and other strategies. Done on a regular basis (e.g., every year or two), this effort could provide data for analysis and monitoring over time. The original effort also included a survey, conducted through MyUNIverse, to gather data on mode choice related to the locations of respondents (to the nearest

intersection), commute times, destinations on campus, and suggestions for transportation policies and services at UNI. This effort could be updated through the development of a regularly administered survey of employees and students about commuting and other travel behavior, mode choice, and perceptions of issues to address. Transportation agencies regularly conduct such surveys to evaluate the performance of their systems, evaluate options for improvement, and to generate feedback. At UNI, this could be done in a process similar to, or as a part of, data collection and monitoring efforts aimed at improving sustainability on campus. This could also be done as a systematic review of transportation issues done in addition to, or as a part of, efforts to review safety, parking plans and policies, and information technology. There are also possibilities for collaborative data gathering and sharing with MET Transit and Northern Iowa Student Government regarding, e.g., the Panther Shuttle.

2. Implement Efforts to Improve Accessibility

The task force spent much time discussing methods to improve accessibility, especially by removing barriers to travel. In particular, individuals with disabilities face several obstacles in using the transit system and traveling on campus. Many bus stops are inaccessible as they are on unpaved surfaces and have no curb-cuts or ramps to enable wheelchair and scooter users to get to the bus stops and embark/disembark. Inclement weather and icy/snowy surfaces create additional problems. Thus, it is difficult for persons with disabilities to travel using the fixed-route buses, and the paratransit service is crucial for those who cannot used fixed-route service. Gaps or difficult segments in the sidewalk system near campus create additional challenges to individuals with disabilities. Inaccessible building entrances, and rooms within buildings, can also present difficulties.

Gaps in the sidewalk system near campus also encourage would-be pedestrians to drive a short distance to a nearby parking space or lot rather than walk. Examples of potentially problematic areas include west of Hudson Road along University Avenue, the intersection of Hudson Road and 27th Street, and along Seerley Boulevard. Snow and ice during the winter can create additional sidewalk accessibility issues for all individuals. Pedestrian-actuated signal buttons may also be inaccessible, especially during winter conditions. Bicyclists can also encounter accessibility issues because of incomplete pathways, snow, ice, and other obstacles.

A separate but related issue addressed by the task force is temporal accessibility, or the availability of services at times when they are needed. Transit services, including fixed-route, paratransit, and Panther Shuttle service, typically end by 5:00-7:00pm, precluding their use by those who wish or need to attend evening activities or classes on campus.

Finally, the task force discussed the issue of accessibility for emergency, service, transit, and freight vehicles, to ensure that they can use the necessary routes to reach their destinations without issues related to, e.g., turning radius and visibility.

The overall strategy highlighted in task force discussions focused on identifying and addressing barriers to accessibility related both to travel from off campus and travel on campus. The task force recommends building on previous efforts when feasible. The Report and Recommendations of the Disability Advisory and Advocacy Committee (DAAC) (2011-2012) and its Addendum #1 of May 2014 outline a series of recommendations to address accessibility issues facing individuals with disabilities on campus, including issues related to transportation. The task force on transportation recommends the continued implementation of the recommendations outlined in the DAAC reports. These recommendations include inspections of walkways to identify problem areas, snow and ice mitigation guidelines, and measures to ensure emergency evacuation.

The task force also endorses the recommendations of the DAAC with regard to wayfinding and other methods to disseminate information with respect to campus directions to buildings, detours, construction, and accessible paths/entrances. The development of a comprehensive campus accessibility map with information on accessible routes, parking, entrances, and rooms could also be developed to assist incoming students and employees as well as visitors. UNI could collaborate with the College Hill Partnership and the City of Cedar Falls to extend this information beyond immediate campus boundaries into the surrounding residential and business districts, and throughout the city, for all users and modes.

The task force recommends that similar measures be continued and developed off campus, with external partners including the City of Cedar Falls and MET Transit, with regard to sidewalk connectivity and bus stop accessibility. Resulting improvements could involve intersection curb cuts, road crossings, and changes to road shoulders near bus stops.

The task force encourages the consideration of accommodations for UNI students, staff and faculty with disabilities who may need or want to participate in activities on campus that extend beyond the daily transit service hours. This could be done through expanded hours of operation, or through a separate shuttle service for on-campus academic and cultural events. The concern was also expressed in task force discussions that transit services be slightly more flexible with regard to departure times related to campus events. Mobile applications could be considered for their potential to improve information flow between transit vehicles and scheduled riders for paratransit services.

The task force similarly recommends a review of network facilities to ensure that transit and freight vehicles are able to negotiate their routes, and that emergency and service vehicles can readily reach all possible destinations where they might be needed.

The task force believes it is important to stress that issues of accessibility extend far beyond those with permanent or long-standing physical disabilities. Many individuals have temporary disabilities because of injuries, surgeries, or medical treatments. Moreover, measures to encourage increased transit, pedestrian, and bicycle activity, by removing barriers to such activity, also address sustainability goals.

3.   **Improve Safety for Individuals Using UNI's Transportation System**

Major automobile crash locations, based on Iowa DOT data, are located along Highway 58, especially near its intersections with Ridgeway Avenue, Viking Road, and Greenhill Road, and along University Avenue near Highway 58 and College Square Mall. Closer to campus, there are clusters of crashes along Hudson Road, especially near University Avenue, 31st Street, and 27th Street. There are also crash locations on 23rd Street near Bartlett Hall, and along College Street, especially near 22nd Street. Looking specifically at motor vehicle crashes involving pedestrians or bicycles, several are located along University Avenue near Main Street and Highway 58. Closer to campus, there are a few such crashes on and around the perimeter of the main campus area.

Figure 6 - High crash locations (2010 to 2014)

Campus transportation safety also includes issues of personal safety while traveling along walkways on campus, particularly at night. The task force also discussed problems with slips and falls, especially during winter weather conditions.

Several options are available to address locations with pedestrian/bicycle crashes. Strategies discussed by the task force included traffic calming to reduce automobile speeds and the use of painted intersections or crossings to indicate conflict zones (although winter weather might be a problem in maintenance). Gated road segments could be considered, to reduce or eliminate automobile traffic, but traffic circulation issues would need to be evaluated, especially near major parking facilities.

Other possible strategies to consider include separating types of travel on walkways (e.g., pedestrian, wheelchairs, scooters) to address any issues with combined traffic, and designating and promoting "rules of the road" along these walkways. In addition, policies for new or renovated facilities could be revised to increase standard sidewalk width to accommodate a variety of users. UNI policy regarding transportation modes like skateboarding and longboards could also be reevaluated to encourage their proper use. Policies regarding weather-related cancellations and snow/ice clearance could be evaluated.

An evaluation of personal safety issues would include an identification and evaluation of potentially problematic locations and include an assessment of lighting, visibility, and noise. Existing safety escort services should be continued, and a nighttime shuttle service to residential areas (mentioned in the next section of this report) could be considered.

4.   Consider the Provision of Improved and Expanded Transit Services

Students are among the population segments most amenable to using public transportation, and the travel behavior learned in college can last a lifetime. Thus, universities are key markets for transit agencies. Within the Cedar

Valley, transit systems serving UNI make efficient use of the resources provided. However, they face similar challenges presented to any transit agency operating in a medium-sized city. In many cases, there is not sufficient density of off-campus origins and destinations to ensure high ridership, and riders are typically those who must use the service rather than those who choose to. With many students bringing a car to campus, it is much easier for them to drive rather than take transit, often citing insufficient transit service. A chicken-and-egg problem can emerge, whereby students (and employees) rely on automobiles to reach off-campus locations because of the cost and low frequency of transit services, and transit services are not offered because of insufficient demand.

Transit services that serve the UNI campus include MET Transit's fixed-route and paratransit services, the Panther Shuttle, and the SafeRide service. In its consideration of transit services, the task force focused its discussions on possibilities for partnerships to improve and expand these services. One possibility focused on the potential for an all-system pass, sometimes called "Unlimited Access," for students funded out of an automatic student fee, similar to the U-PASS at the University of Washington. In such a system, students can go anywhere, during hours of operation, using their student IDs. A fee is automatically charged to the students' accounts at the beginning of the term, although one option is to allow students to apply for a refund if they choose not to use the service. Such a program could increase ridership, increase revenue to transit providers, possibly improve service through greater frequencies, provide an option for students who choose not to bring cars on campus, and reduce the demand for parking; on the other hand, students might not see sufficient value in the program to support a mandatory fee; it could also reduce revenue to the University from parking permit income, and raise parking fees for individuals who continue to use parking facilities.

The task force considers this idea to be worthy of consideration; however, not enough information is currently available to make a recommendation. Conversations would be needed among all affected parties, including UNI, Northern Iowa Student Government, MET Transit, Cedar Falls, Waterloo, and surrounding businesses and apartment complexes. Funds could be requested of off-campus entities, such as apartment complexes, that benefit from the service; however it is not possible to exclude entities from transit service if they do not contribute since transit services are part of a public system.

Another option to improve transit service is an expanded Panther Shuttle, one with increased frequency and/or one that extends farther beyond the immediate perimeter of the University into other areas with high densities of students and employees commuting to campus. Such a service could be extended into the evening hours for off-campus students, living within a mile or so of campus, who are attending evening classes, studying on campus or attending cultural events and want a safe and easy way home rather than walking or having to park a car on campus. Such service areas could be identified through the data/information collection and analysis procedures. Additional information could be generated by student surveys on the Panther Shuttle. A possible survey, done by MET Transit and Northern Iowa Student Government, may be developed. The idea of expanding the Panther Shuttle is worthy of consideration but, like the Unlimited Access idea, would require data-gathering, cost estimates, and discussions among all stakeholders.

Efforts could be made, as part of a partnership with local transit and planning officials, to geo-locate employees of other major employers in the Cedar Valley to evaluate possibilities for revised or special transportation services system-wide.

Another possibility to consider is the NEXT BUS system, which is currently used by CyRide at Iowa State University. The system uses information on bus locations to convey information to potential riders, via smartphone and text messaging, when the next bus is expected at their stop. This is intended to increase convenience and decrease uncertainty for riders, thus potentially increasing ridership. More evaluation of this system, its benefits, and its costs, would be needed.

5. **Provide Additional Commuting and Transportation Alternatives to the Single Occupancy Vehicle**

In addition to transit services, there are other options for providing alternatives to driving to, or parking on, campus. Many students and employees may feel that there are limited options for getting to campus, and that the default option is driving to work alone and parking in a campus lot or on the street. Many students also cite

employment off-campus as the reason for needing a car on campus. Most buses do not accommodate getting to businesses where students work. As a result, many students in the residence halls have a car on campus. Other students rely on friends for rides, especially to their hometowns during the weekend or at the end of the semester. Alternatives are needed so students have the option of not having a car on campus, and so both employees and students have a variety of options for commutes.

The task force highlighted the importance of bike trails in the Cedar Valley. The Cedar Falls Bicycle Plan identifies specific routes as bike lanes, marked shared lanes, and bike trails, and outlines a process for continued improvements. The task force focused its discussions on potential improvements to the bike trail system to enhance its use for non-recreational travel (work-based, shopping-based, etc.) related to UNI. Possible improvements include adding a section north from Greenhill Road to link up with Panther Lane in the residential neighborhood south of the university. This should include a safe crossing accommodation for pedestrians and bicyclists at Algonquin or Ashworth Drive and Greenhill Road. This would provide linkage for non-motorized transportation to the university from residential and commercial developments along Greenhill Road and would provide bicycle access from UNI to the Viking Road shopping area. Other task force discussions focused on the continuity of the trail system along Hudson Road and possible extensions westward.

The task force also discussed a variety of options for sharing transportation vehicles and decreasing the need for single occupancy vehicle travel or parking on campus. UNI could facilitate several types of services, including carpool/vanpool for morning and evening commutes, rideshare/car share for the short term (e.g., hourly) rental of cars for shopping and similar trips, and bike share. University involvement could include identifying individuals with similar origins and destinations for commute trips (e.g., through a data-gathering effort), providing facilities and administrative support for car share or bike share efforts, and providing incentives, such as prioritized parking, for carpools and vanpools. The use of bicycles can be further encouraged by on-campus bike lockers to protect the bicycles from theft and inclement weather.

The task force also suggests the reconsideration of a parking policy that parking permits are registered to individuals only. This prohibits the sharing or transfer of permits among individuals, even spouses, and limits more flexible arrangements whereby a group of carpoolers may vary the vehicle used, the driver, and the individuals who will commute to campus on a given day. Altering the policy could lower the number of permits issued relative to the spaces available, and reduce the possibility that permit holders cannot find a space and be forced to look for alternate parking arrangements.

To assist students traveling to their hometowns during the weekends or at the end of the semester, UNI could likewise facilitate shared rides for such trips, and possibly reduce the need to have a car on campus. The development of increased intercity bus service from campus to other communities is another option, but the expected demand for such service is a serious constraint.

In addition, more employees could be permitted to work from home under certain circumstances, through an expanded telecommuting policy to reduce commute trips. Similarly, the further development of online options for course delivery, review sessions, and other activities, would reduce the need for students and employees to come to campus.

The use of videoconferencing and video capture technologies should be further developed, both for classroom use and to substitute, when appropriate, for travel to meetings off-campus and in other cities.

6. **Promote Environmental Sustainability**

Several items outlined above address environmental sustainability goals, including those that improve accessibility, improve transit options, and improve non-motorized transportation options. This section focuses on other strategies to address environmental concerns such as decreasing emissions, vehicle miles traveled, and travel time.

The Office of Sustainability has developed information on UNI's sustainability efforts as part of its participation in the STARS program, which is documented online on the UNI website. One section, focusing on transportation,

outlines such items as: the university's use of vehicles using alternative fuels; estimated data on mode split and other travel behavior; carpool and car share programs; transit use; policies regarding condensed work weeks, videoconferencing and telecommuting; policies regarding the idling of university vehicles; and greenhouse gas emissions related to transportation. Many of these options were discussed by the transportation task force and are covered in this report. The task force recommends further consideration of the items discussed in the Office of Sustainability report and by the task force on sustainability, including the items not directly addressed above such as alternatively-fueled vehicles.

Other items with sustainability implications were discussed. For instance, the task force encourages the further consideration of residential patterns and their relationship to transportation behavior. For instance, mixed-use development may bring residential and other land uses together (e.g., shopping, employment) in appropriate ways to reduce trip lengths and automobile use. These concepts are highlighted in the Comprehensive Plan of Cedar Falls. More broadly, "clusters" of development may be more effectively served by transit since they can consolidate trips from one node to another node in the system rather than serving lower-density distributions. UNI can work with external partners, such as Cedar Falls, MET Transit, and the College Hill Partnership, to evaluate the transportation, sustainability, and other implications of alternative residential density patterns.

Motor vehicle use, e.g., vehicle miles traveled, and emissions can increase with wasted or unnecessary travel. In this context, the task force discussed the flow of freight vehicles related to campus activities and recommends further evaluation of possible strategies to reduce their environmental impact.

A related concern, albeit in a different context, involves the excess travel sometimes required to find parking. A common complaint is the inability to find a parking space, particularly near campus. Statistics from parking counts done by UNI Public Safety indicate that B and CP lots often have a lower percentage of open stalls, as do parking locations near campus. This can result in frustration (since a parking permit only allows a user to park but not necessarily find an open space), as well as wasted time, fuel and emissions searching for a parking space elsewhere on campus. Strategies are needed to reduce this activity, such as reducing demand for parking lots, as discussed above.

In addition, one idea discussed among task force members concerned the possible use of flexible parking regimes in response to changing conditions. For instance, in the multimodal facility the metered stalls are often underutilized while the B stalls are full and students must go hunting for alternate parking. On other occasions, many of the metered stalls are used. A procedure could be developed to allow students with B permits to use a portion of the metered stalls when they are expected to be underutilized, for instance, when no large visitor groups are expected. This information could then be conveyed via a variable message sign or even a smartphone app. The task force recommends that this option be considered, but not enough information is available at this time to recommend its implementation.

The task force also recommends continued collaboration with external partners, such as the College Hill Partnership and Community Main Street, on parking-related efforts, e.g., parking surveys and policies.

Transportation and campus officials should also stay aware of developments in information technology and mobile applications related to parking that may facilitate information dissemination, financial transactions, and strategies such as flexible pricing, that are being implemented in other transportation contexts.

7. Address Financial Sustainability Concerns

Financial sustainability implies sufficient financial resources to address system goals. Several recommendations were made above to consider the efficiency and effectiveness of allocating resources to specific infrastructure, service, and policy changes. To implement these potential changes, if they are deemed beneficial, sufficient revenues and their sources must be identified. Fundamentally, financial sustainability becomes an issue of who pays for what. Several possible sources of revenue can be identified, including system users, university funds, external grant sources, and external partners.

One item discussed by the task force concerned legislative structural changes for transportation, for instance to allow money from the Iowa DOT to UNI to be used for something other than roads (or bikeways attached to roads). This would permit more flexible use of state funds to address UNI's transportation system goals, and the leveraging of funds for project development.

Transportation construction, maintenance, operations, and services should be effective in addressing transportation system goals, and also be efficient in their use of resources to do so. Transportation facilities, policies, and services should also promote reliability and convenience to foster public use and acceptance, and they should be scalable to facilitate continued effectiveness and efficiency with growth over time.

Finally, transportation and financial sustainability goals may be addressed by promoting financial literacy with respect to automobile ownership and use. UNI's programs on financial literacy, for instance, could highlight the long-term implications of high car ownership costs, in particular how money saved by not having a car in college can compound dramatically over time. This information could be provided to new students at orientation.

Recommendations

1. Create a process for systematic data collection and information gathering for analysis and monitoring

   o Bring together disparate data and information sources related to transportation at UNI in one place, in a structured way, for ongoing use:
      - identification of external and internal data/information resources
      - mapping of students and employees
      - surveys on travel behavior, mode choice, and issues/perspectives

2. Implement efforts to improve mobility/accessibility
   o Identify and address barriers to accessibility
      - ensure viable transportation options to all, regardless of disabilities or economic disadvantage
         • travel from off-campus; travel on-campus
      - develop an internal and external wayfinding and signage program
   o Remove physical barriers to travel
      - with city and transit partners, evaluate and address sidewalk connectivity and bus stop accessibility
      - explore an alternative to the Hudson Road/27th Street at-grade crossing
   o Address temporal accessibility issues
      - evaluate hours of service, e.g., for paratransit
   o Review/implement recommendations of the Disability Advisory and Advocacy Committee
   o Evaluate accessibility for vehicles, e.g., public transit, freight, service, and emergency vehicles

3. Improve safety for individuals using UNI's transportation system
   o Identify high-crash locations and areas, and evaluate appropriate countermeasures
   o Consider traffic calming, painted intersections, and crossing signage to improve bicyclist/pedestrian safety
   o Evaluate safety issues related to travel along walkways on and around campus
   o Evaluate strategies to improve personal safety, including those that identify potential problem locations and address issues related to lighting, visibility, and noise

4. Consider the provision of improved and expanded transit services
   o Evaluate an "Unlimited Access" (system-wide transit pass) service with internal/external partners
   o Consider an expanded Panther Shuttle and/or evening off-campus shuttle
   o Consider the additional use of information technology in public transit, e.g., the NEXT BUS system for conveying bus location information to riders via mobile devices

5. Provide additional commuting alternatives and other transportation alternatives to the single occupancy vehicle

- o Address the perceived need to have a car on campus
- o Enhance bike trails and on-street bike accommodations as a commuting option
- o Improve bicycle/pedestrian trails from campus to the West Campus recreational fields
- o Continue investment in bike lockers and bike racks, and the addition of sheltered bike areas
- o Consider the development of carpool/vanpool, ride share, and bike share programs
- o Evaluate parking policies regarding the use of permits
- o Evaluate policies regarding telecommuting and teleconferencing

6. Promote environmental sustainability
   - o Review and implement transportation components of campus sustainability efforts
   - o Work with external partners regarding mixed land use, residential density patterns, parking regimes, and applications of information technology
   - o Evaluate possible methods to reduce wasted or unnecessary travel related to, e.g., freight movements, searches for parking
   - o Collaborate with external partners regarding parking surveys and policies
   - o Stay aware of developments in information technologies and mobile applications with potential sustainability benefits

7. Address financial sustainability concerns
   - o Identify and evaluate revenue sources for specific improvements, and explore collaboration with external partners
     - ▪ system users, university funds, external grant sources, external partners
   - o Ensure responsible use of funds
     - ▪ ensure that construction, maintenance, operations, and services are effective in addressing system goals
     - ▪ promote efficient use of resources
     - ▪ promote reliability and convenience to encourage public use and acceptance
     - ▪ ensure scalability to facilitate continued effectiveness and efficiency with growth over time
   - o Promote financial literacy with respect to car ownership and use