University of Southern Maine (USM) Portland Campus
Transportation Demand Management (TDM) Plan

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November 11, 2020
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Introduction

This Transportation Demand Management (TDM) plan provides a cohesive strategy for establishing and implementing a successful TDM program for the University of Southern Maine (USM) Portland campus. This plan seeks to enhance multimodal accessibility, ensure the use of non-vehicular modes, and discourage the use of driving through parking management, to achieve and build upon the parking demand reduction goals for the campus.

The TDM Plan expresses a TDM program of strategies and timeframe for when USM intends to implement the various strategies. The strategies aim at promoting walking and bicycling, improving transit service to promote ridership, promoting carpooling, changing time-of-day travel demands to eliminate or reduce vehicle trips, and managing parking demand via changes to USM’s pricing and permit policies.

USM Portland

The University of Southern Maine (USM) Portland campus encompasses approximately 30 acres, with 27 buildings comprising 1,190,929 assignable square feet (ASF). Located less than one mile from the heart of downtown Portland, the Portland campus provides excellent access to social, cultural and internship opportunities. Linked to the Gorham campus ten miles to the west and the Portland city center via frequent bus service (METRO’s Husky Line),
the Portland campus also has convenient access and visibility from Interstate Highway 295, with Forest Avenue serving as the primary roadway arrival point. A second important arrival point onto the campus is at the intersection of Deering Avenue, Brighton Avenue, and Falmouth Streets, soon to be transformed into a roundabout. Bedford Street bisects the campus providing access to most of the parking lots and garage for the campus.

The campus is in a completely developed urban neighborhood. The adjacent land consists of Interstate Highway 295 on the east, commercial uses on the north (along Forest Avenue), and residential uses on the west and south. The largest adjacent land use is the Oakhurst Dairy distribution center between the campus and Forest Avenue. The adjacent residential areas provide housing for some of USM’s students but are generally a set of very solid and cohesive neighborhoods. Currently, no students reside on the Portland campus.

In 2017 and 2018, the University of Southern Maine undertook a process that resulted in a final Facilities Master Plan approval by the Board of Trustees in January 2019. The process included information gathering via tours of all three campuses, extensive internal and external stakeholder interviews, and public input. The plan incorporates the visions, goals, facilities assessments, and the campus space needs assessments into a set of campus physical development recommendations. USM is now embarking in implementing specific capital projects identified in the plan.

Commitment to TDM

USM has a history of promoting Transportation Demand Management (TDM) strategies on its campuses. For starters, TDM clearly falls within two guiding principles of the University’s Facilities Master Plan through its attempt to increase non-private vehicular transportation and reduce related transportation emissions:

- **Mobility**—the plan supports robust pedestrian, bicycle, shuttle bus, ride share and metropolitan and regional public transit systems that look beyond private vehicular parking to meet the transportation needs of the campus community.

- **Sustainability**—the plan supports all existing sustainability policies of the University.

TDM also indirectly relates to several other guiding principles as a result of potential outcomes from a TDM program:

- **Student Experience**—the process, plan and implementation focuses upon improving the students’ academic, co-curricular and living experience on each of the campuses.

- **Public Safety**—the plan and subsequent implementation seeks to provide the safest campus environment possible through physical, programmatic and operational improvements, including those in response to public health threats like Covid-19.

- **Neighbors**—the plan seeks to establish campuses and campus communities that are positive members of the neighborhoods, mitigating negative impact and providing a beautiful and inviting campus landscape for all neighborhood members to enjoy.

1 For more details, please visit usm.maine.edu/president/master-plan.
Aesthetics—the visual quality of the campus facilities is important to creating an environment that meets the mission and goals of the University.

The implementation of TDM measures provides USM with the ability to make access to the campus more enjoyable and safer for affiliates (because of reduced traffic), improved relations with neighbors (because of decreased traffic and parking concerns), and decreased campus space dedicated to parking.

As a result, the University introduced TDM for the first time within its 2017 Sustainability Plan. The sustainability plan set a quantitative goal for sustainability efforts related to transportation and established a baseline of strategies to achieve that goal. Per the sustainability plan, the goal related to transportation was to reduce greenhouse gas emissions from transportation by 20 percent from a Fiscal Year (FY) 2006 baseline. TDM-related strategies suggested by the Sustainability Plan are presented in Chapter 3; one recommendation was to develop a TDM plan.

To further understand how TDM will play a role as the campus continues to transform, USM hired VHB to develop a comprehensive TDM Plan that will allow the University to meet their sustainability goals while responsibly meeting user parking demands (and limiting the additional parking supply requirements). To develop a strategic approach for USM transportation that leverages current realities in developing future outcomes, VHB and USM hosted a series of stakeholder meetings and interviews. These conversations helped inform the proposed strategies presented in this TDM plan.

Development Proposal: Facilities Master Plan Program Elements

Consistent with the USM Facilities Master Plan approved January 27, 2019, USM has several development program aspirations that have triggered the need to complete this TDM Plan. In the short-term, in the next three years, the University plans on embarking on building the new campus “heart”, consisting of the following capital projects:

- **Career and Student Success Center**—This building will replace the dining and cocurricular activity space currently in the Woodbury Campus Center. In addition, the vision for this building is to provide a common place for programs and functions that support both the academic success and long-term professional success of the USM student. The building is anticipated to be approximately 41,000 square feet.

- **Student Housing**—This approximately 216,000 square-feet building will house upwards of 580 beds to accommodate upper class undergraduate students and graduate students.

- **“Quad”**—A key component of the transformation of the Portland Campus is a second campus open space, located adjacent to the residence halls and the Career and Student Success Center.

To accommodate parking needs for these uses, the master plan proposes increasing parking supply. (Actual proposed parking supply is based on a separate study produced in March of 2020 that shows the University will be short on parking supply at the opening of the new buildings even in a 0% enrollment increase scenario.)
The development noted above may be followed by additional capital projects on USM’s Portland campus, including a Graduate Center for Professional Studies, housing The University of Maine School of Law, a University of Maine MBA Program, and the Muskie School of Public Service, and Center for the Arts serving as the new home for the USM School of Music.
2 Mobility Context

Understanding the transportation context that is available for students, faculty, staff, and visitors at USM Portland is important to be able to recommend targeted TDM program elements. This section discusses in detail all the different ways that one can access the USM campus as well as opportunities and challenges related to those options.

Walking and the Pedestrian Environment

USM’s Portland campus is located on the edge of the Portland peninsula adjacent to the Oakdale residential neighborhood. Oakdale maintains a grid of streets, a majority with sidewalks, and low-volume, low-speed streets that make it generally comfortable and conducive for walking. The University is also adjacent to Forest Avenue, which offers local retail (including a grocery shop) within a short walk of the University. Walkscore.com, a real-estate site that evaluates walkability and transportation when choosing where to live, scores
USM a 78 out of 100 and considers it to be a “Very Walkable” location where most errands can be accomplished on foot.

Some built and natural barriers limit accessibility to areas on the south side because of the I-295 highway, to the west and southwest because of a below-grade railroad, and to the northeast because of the Back Cove. Although there is a comfortable shared use path under the interstate, I-295 can pose as a psychological barrier to some people for walking trips to downtown. Figure 1 shows the walkshed in quarter-mile increments out to a mile from the USM Portland campus.

Figure 1: 1-Mile Walkshed from USM Portland Campus

On campus, there is a robust network of pedestrian paths that connect all campus buildings (Figure 2). There are also information kiosks and wayfinding to assist pedestrians in their orientation around campus.
In summary, walking is easy in and around USM; however, natural or human-made barriers may provide some real barriers and some psychological barriers. For example, the primary walk route to downtown from campus is on Forest Ave, which is a wide, fast street with large intersections and long wait times, despite the fact that there is a safe and comfortable shared used pathway crossing the on and off ramps of 295.

TDM strategies within this plan will seek to better connect the University despite these perceived or real barriers.

**Bicycling Environment and Infrastructure**

The Walkscore.com website lists USM at a Bikescore of 93 out of 100, the equivalent of a "Biker’s Paradise." In fact, USM is located at the convergence of several key bike routes in the region that ultimately connect to the Portland Peninsula. Bike lanes around USM can be found along Brighton Avenue, Deering Avenue, Bedford Street, and Forest Avenue.

Some work is needed to teach the University community how to overcome certain psychological barriers. The best example, arose in stakeholder input sessions, was the perception that traveling on Forest Avenue to downtown is difficult. The root of the perception may be from the fact that there are six intersections, on ramps, or off ramps on each side of the road for a 1,200 foot-long stretch. See the aerial image in Figure 3 below:
The City has worked hard to increase the safety and comfort of this area by building and maintaining a shared used path on each side of Forest Avenue.
There is also a shared use path that runs parallel along the Back Cove. In addition to providing beautiful vistas of the downtown skyline, this path provides comfortable and safe bike/ped access to numerous Portland neighborhoods including the Back Cove, Woodfords, East Deering, and Bayside. Even the East End and the Old Port can be accessed this way, via the Eastern Prom Trail connected to the Back Cove path. Through the various shared use paths near the University, the entire Portland peninsula can be accessed within 2 miles of USM.

Within 5 Miles, one can also reach South Portland to the south, Westbrook to the west, and the border of Falmouth to the north. For the bike-to-transit trips, METRO buses serving the University are equipped with bike racks. The Husky line buses have slots for three bikes, and the other METRO buses serving the Portland campus have slots for two.
On-campus, there are 16 locations with bicycle racks and a bicycle repair stand adjacent to the Woodbury Campus Center. The locations of most of these racks are readily visible within the campus map (Figure 2) posted on kiosks throughout the campus and online. The majority of the racks are easily visible when on foot, except for the covered racks under Masterton’s awning and in Abromson parking garage. The condition of the on-campus bicycle racks is fair; however, the Bike Fix-it Station needs repair: its tools have rusted and are bent and unusable. Shower access for campus affiliates is available at the Sullivan Gym. In order to gain access, they must show their campus ID.

In comparison to most places in the United States, the biking network in and around Portland and USM Portland campus is robust. On-campus, commuters have a place to store these bikes. TDM strategies related to biking should focus on marketing this commute option to overcome any fears about perceived barriers and thereby expand the potential pool of people that can bike. The University should also collaborate with the City as they seek to expand and improve the bicycle network.

**Public Transit**

USM affiliates are granted unlimited free METRO transit access as part of their enrollment and employment at USM. Transit access is paid by way of the student transportation fee and
the employee parking permit fee. When boarding a METRO bus, USM affiliates must show their ID to the bus driver.

Four METRO bus routes serve the USM Portland campus: Route 4 and Husky Line serve the campus directly with a stop on Bedford Street, and within a quarter-mile, the Route 2 (via Forest Avenue) and Route 8 (at Hannaford Plaza). In addition to METRO service, the Lakes Region Explorer Bus ($2 one-way) is also nearby. Among the four, only the Husky Line has limited stop service all the way between the Portland and Gorham campuses.

On Bedford Street, at the heart of campus, there are shelters for Route 4 (Westbrook–Portland Pulse) and the Husky Line (USM Gorham via Westbrook–Portland Pulse). Route 2 (Forest Avenue) and Route 8 (Peninsula Loop) can be accessed at nearby Hannaford Plaza roughly a quarter-mile from campus. The Lakes Region Explorer (Windham Route), run by RTP, stops at the corner of Forest Avenue and Bedford Street.

Transit “accessibility” was determined by travel time, including time required to walk to the stop, wait for a transfer when applicable, ride the bus, and walk to the final destination. This differs from accessibility for walk and bike sheds where distance from campus generally determines accessibility. Expected transit travel time to the campus using the existing Portland transit network was mapped out in 5-minute increments (Figure 6). These increments include up to a maximum of a 15-minute walk for the total trip (to account for walk-access to transit).
Transit is not only a function of having a service route present nearby; other important pieces to consider are its span of service (i.e., is the service available at the times of day when needed) and service frequency (i.e., does the service operate at frequent intervals). Scheduled headways and service hours for direct services are included in Table 1 below.

### Table 1: Direct Transit Route Headways

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<th>Route</th>
<th>Headways (minutes)</th>
<th>Span</th>
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<tbody>
<tr>
<td></td>
<td>Weekday</td>
<td>Saturday</td>
</tr>
<tr>
<td></td>
<td>Day</td>
<td>Evening</td>
</tr>
<tr>
<td>Husky</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Route 4</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Route 2</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Lakes Region Explorer</td>
<td>180</td>
<td>180</td>
</tr>
<tr>
<td>Route 8</td>
<td>30</td>
<td>-</td>
</tr>
<tr>
<td>Zoom Turnpike Express</td>
<td>30</td>
<td>-</td>
</tr>
</tbody>
</table>

While all transit services adjacent to USM operate during the schedule of a normal business day and into the evening, the frequency can pose challenges to some of USM’s population. As one can see above, the most frequent transit service (Route 2) runs every 20 minutes while the Husky Line, Route 4, and Route 8 run on 30-minute intervals. For many, these frequencies are satisfactory, especially given that the Husky Line is a limited stop service, cutting down on travel time. But, the frequencies don’t yet meet the threshold for “transit
“Transit freedom”, per the definition by Jarrett Walker in *Human Transit*, is a frequency of at least 15 minutes all day². People who are able to plan are facilitated by helpful resources like the Transit Tracker app and soon-to-be-installed transit screens at certain stops.

### Other Mobility

In addition to walking, biking, and riding transit buses, USM affiliates can use ride-hailing services Uber, Lyft, or taxis, which are readily available in and around the peninsula. No carshare vehicles are located within a half-mile of USM. Also, no dedicated carpool parking spaces are designated on campus. Carshare and carpool are opportunities that the TDM Plan can leverage to reduce the number of people parking on campus.

### Parking Facilities and Policy

Campus affiliates and visitors can park at 11 distinct parking lots (including one garage) across campus hosting a total of 1,701 spaces (Figure 7). By far, the largest parking facility on campus is the University Garage, which has a total of 1,155 parking spaces. Lots are designated by permit type and only users with that permit can park in that lot. Figure 7 identifies the location of these lots, permitted users, and the total number of spaces. The campus also has dedicated spaces for handicap, service vehicles, and an electric charging station.

² Source: humantransit.org/2011/12/how-frequent-is-freedom.html
Figure 7: Parking Spaces at USM Portland

Note: Although the 1,155-space Abromson Garage is primarily for student and visitor parking, faculty and staff may use the facility. The garage is access-controlled by a revenue control system.

All vehicles in University of Southern Maine (USM) parking lots on the Portland campus must display a valid USM parking permit, which comes in the form of a hang tag that must be hung from a vehicle's rear-view mirror. Permits may be obtained from the parking office or online through the University's parking web portal.

USM Portland has the following permit types:

- Student (Commuter, Gorham Residential) – All students are given the same parking privileges on the Portland Campus

- Employee (Faculty, Staff)

On the Portland campus, students may park at three different lots during the day (designated by a green sign) and at a fourth lot only after 4:30 PM. All students pay a transportation fee if registered for on-campus courses. The fee varies based on the number of credits for which they are registered: between $55 and $110 per semester. These payments are mandatory as part of enrollment and are made each semester: fall, spring, and summer.
On the Portland campus, employees are allowed to park in eight different lots on campus (designated by a blue sign). They pay $25 annually for their parking permit, which needs to be renewed each calendar year.

Short-term visitors to the campus may park in the parking garage for $2 an hour between the hours of 7 AM and 5 PM, Monday–Friday. Outside of these hours, visitor parking is free. There is a charge for overnight parking, except during snow bans. Prospective students and their families, campus guests, visitors, and volunteers receive free validation by the office or department they are visiting. To pay for parking, visitors must pay at the Parking Garage Office or use the pay-on-foot stations located by the doors to the parking garage on the first and second floors of Abromson Center and the ground floor of the parking garage by the vehicle exit.

A violation of parking guidelines may result in any number of consequences, including a parking ticket fine, towing of a vehicle (and responsibility of the owner/operator for payment of related towing and storage fees), or suspension of campus parking privileges. Parking tickets range from $25 to $200 depending on the infraction. Students and faculty must pay outstanding tickets before picking up a new permit.

Parking at USM is relatively unconstrained. Typical parking activity is accommodated with the present supply. Although on-street parking is also an option, many of the streets adjacent or near the campus are metered or have 1- or 2-hour parking limits during daytime hours. Recent observations conducted by VHB for USM found approximately one third of the on-street parking spaces available during peak parking periods.

Remote lots have been considered, but a large portion of USM students have one or more off-campus jobs, which require them to have ready access to their vehicles. To be more effective at discouraging parking on-campus, the University plans to make the transactional cost of parking more apparent for students.

The University reviewed parking rates around the City and around the New England market in general to see if there was room to use increased rates as a leverage point. This influenced the University to go from charging $0 for public parking to $2 per hour, which is still on the low to medium end of the market. The University is considering raising prices again to possibly $3-$4 per hour. However, the current plan is to keep it free for the early evening hours (5-11 pm), and to help out the neighborhood by allowing them to park for free during for snow bans from the hours of 5 pm to 8 am the following morning.

**Regional TDM Program**

At USM’s disposal are several regional, state, and national-level TDM programs and services that are intended to support programs such as the one being reviewed by USM. Among these potential programs/services that could support USM include:

**GO MAINE:** Run by the Maine Turnpike Authority, this state-wide program serves as a rideshare matching service as well as a platform to log any kind of non-single occupancy trips, including non-motorized trips. The range of services include the following:
- **Emergency Ride Home**- This program essentially serves as "insurance" to provide people an option to get home from work in case of an emergency. The rides are provided using a taxi or Enterprise rent-a-car. It is available to commuters who carpool, vanpool, take transit, bike or walk at least three days a week. The benefit may be used up to eight times per calendar year.

- **Way 2 Go Maine**- *Way 2 Go Maine* is an annual commuter challenge in October that encourages employees of local businesses to use alternative transportation options through an inter-company competition. The competition recognizes companies for their successful participation and distributes prizes such as gift cards and swag to encourage participation.

- **Vanpool Matching**- Vanpooling is a common, long-distance commute option for employees headed to the same general area consisting of between 5 to 15 commuters. GO MAINE assists to form these vanpools.

- **Rewards Program**- GO MAINE has a rewards program for individuals who take greener trips, which include walking, biking, telecommuting, carpooling, vanpooling, or taking public transportation. Participants must sign-up and log their commutes daily. Rewards include gift cards and discounts to various local businesses.

Portland Slow Ride: To get people comfortable with biking, the Bicycle Coalition of Maine offers the “Portland First Friday Slow Ride”. These rides are typically done at a relaxed pace and coincide with Portland’s “First Friday” art walk event.

Smart Cycling Traffic Skills 101 and Educational Courses: Traffic Skills 101 is hosted by the Bicycle Coalition of Maine and is a course that teaches new and experienced cyclists how to ride in traffic. An individual or employer can specifically request a safety workshop.

Discounted Helmets: The Bicycle Coalition of Maine runs a helmet purchase discount program: when purchased in bulk (8-30 helmets) the cost is $7 per helmet.

Bicycle Benefit: As part of this national program, local businesses offer rewards to patrons who arrive at their establishments by bicycle.

Cycling Savvy: Is a program of the American Bicycling Education Association aimed at helping communities become more livable and sustainable by promoting a civil and cooperative environment on roads through complementary education and infrastructure design.

Best Employers for Commuters: This membership program provides qualified employers with national recognition and an elite designation for offering outstanding commuter benefits.

**TDM at USM**

TDM related to increasing multimodal transportation is not a new concept for USM. In 2017, the Office of Sustainability worked with various campus stakeholders to develop an eight-year sustainability plan that set a quantitative goal for sustainability efforts related to transportation and established a baseline of strategies to achieve that goal. Per the
sustainability plan, the goal related to transportation was to reduce greenhouse gas emissions from transportation by 20 percent from a FY 2006 baseline.

Table 2 below identifies the original strategies pursued by the sustainability plan as well as current strategies that came as a result of this original proposal:

**Table 2: Suggested TDM Tactics from Sustainability Plan**

<table>
<thead>
<tr>
<th>Category</th>
<th>Original TDM Strategy</th>
<th>Present Day (Fall 2019) Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shuttle</td>
<td>Extend shuttle routes and improve shuttle footprint</td>
<td>USM has partnered with the Greater Portland bus system, METRO, allowing students, staff and faculty to ride anywhere in the METRO system for free and vastly expanding the reach of University affiliates.</td>
</tr>
<tr>
<td>Carsharing</td>
<td>Explore option of starting a carshare program on campus</td>
<td>USM has explored options with one company and discussed ways it could fit into the vehicle fleet.</td>
</tr>
<tr>
<td>Comprehensive</td>
<td>Create a Comprehensive Transportation Demand Management (TDM) strategy</td>
<td>This document is a product of the development of a comprehensive TDM Plan.</td>
</tr>
<tr>
<td>TDM Strategy</td>
<td></td>
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</tr>
<tr>
<td>Bicycle Infrastructure</td>
<td>Create adequate bicycle infrastructure &amp; education on campus to support people who would consider biking including a bikeshare program.</td>
<td>To accommodate bicycles, USM provides bicycle racks around the campus (16 racks &amp; 250 spaces total). The Portland campus also has a fix-it work stand which is the first of its kind in Portland and allows riders to make simple bike repairs on campus. The University transportation website also highlights the benefits of biking from a health and environmental perspective.</td>
</tr>
<tr>
<td>Carpooling</td>
<td>Create adequate carpooling infrastructure &amp; education on campus to support people who would consider carpooling</td>
<td>USM researched different carpool apps and began interviewing stakeholders to create a plan.</td>
</tr>
<tr>
<td>Hybrid &amp; EV Vehicle</td>
<td>Create modest incentives for hybrid or electric vehicles</td>
<td>An EV charging station is provided at the parking garage and is free to use. Additional charging stations are being considered for the garage, Wishcamper, and locations in Gorham.</td>
</tr>
<tr>
<td>Discounts</td>
<td></td>
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<tr>
<td>Incentive Program</td>
<td>Explore a partnership with Rise-Up to award incentives for alternative transportation commuting</td>
<td>The Office of Sustainability has held brainstorming sessions with the Wellness Committee to determine what types of incentives would qualify for the health credit. The Wellness Committee has agreed to work on implementation.</td>
</tr>
<tr>
<td>Carbon On-Setting Project</td>
<td>Explore possibility of creating a carbon on-setting project with local low-income households</td>
<td>No transportation related actions were identified. The Office of Sustainability chose a home weatherization project instead.</td>
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The responsibilities for implementing these strategies have largely fallen on the Parking and Sustainability Offices. According to USM, approximately 0.1 FTE is spent currently implementing TDM strategies, not counting parking enforcement which exceed 1 FTE by itself.

The Plan found that it would be useful to conduct a Transportation Survey of campus affiliates to understand transportation patterns, needs and barriers. USM most recently conducted a transportation survey effort in Spring 2019, yielding over 1,000 responses related to current commute patterns, inter-campus travel, and receptiveness of possible TDM strategies.

Not listed within the Sustainability Plan, but nevertheless worth mentioning as TDM measures that have been pursued by the University include:

- Establishing a new USM transportation website to communicate the availability of alternative modes of transportation.
- Charging USM employees, students, and visitors for parking.
- Having a University System-wide telecommuting policy, which allows for telecommuting in certain cases. In response to the global pandemic, this policy has been broadened to incorporate more people for longer periods of time. Post pandemic, the University could more heavily promote its pre-pandemic telecommuting policy.
- Having a larger portion of online classes in response to the global pandemic. Post pandemic, it is not yet known whether the University will continue offering such a high rate of online classes, as it will depend on long-term safety considerations and demand from students.
Existing Transportation Patterns

By exploring how USM students, faculty, and staff are currently traveling to campus we can identify which alternative modes may have the greatest potential to reduce drive alone commutes, and save on trips, parking and carbon emissions. This investigation allows for the development of targeted TDM strategies that offer a greater degree of changing commute behavior.

VHB has reviewed USM affiliates’ travel patterns using two data sources: a transportation survey and registered permit data. These data help identify how people are commuting to campus, what modes of transportation may interest commuters, and finally, what types of strategies would be most beneficial towards encouraging alternative commute modes.

Transportation Survey: Mode Shares and Travel Behavior

The Transportation survey conducted in Spring 2019 was done as part of the University’s sustainability effort to chart emissions related to transportation. The online survey asked about current travel patterns between home and USM and about travel between the USM campuses. The survey also included questions about one’s receptiveness to certain TDM strategies. About 1,000 USM affiliates participated.
Some key findings related to the survey (pulled from the “Final Survey Summary” prepared by USM) include:

- 78 percent of the USM population reported driving alone at least once a week to campus from home. About 72 percent of the population drives 2+ times per week to campus.
- 94 percent of USM employees park on campus; 81 percent of students park on campus.
- 25 percent of commuter students ride the METRO bus
- Dedicated, preferential carpool spots were the highest ranked activity to encourage students to use an alternative mode of transportation
- Per the survey, a new bike would be the best buyout reward for a parking cashout program, which may be a function of it being the highest value option ($500) compared to less valuable options of $100 cash, $200 discount on carshare/bikeshare, $200 discount on carshare/scootershare, $150 gift certificate to bookstore, and $150 gift certificate to dining services.

Additional conclusions from the survey data for the USM population who indicated making a trip to the Portland Campus include:

- 72 percent of USM Portland population reported having driven alone at least once a week to campus, 66 percent of the population drive 2+ times per week alone.
- 14 percent of the USM Portland population reported have taken transit at least once a week, 11.5 percent have taken transit at least twice per week.
- Considering only USM Portland commute trips (of employees and students), the Portland campus mode split is as follows: Drive Alone: 73 percent; Transit: 6 percent; Walk/Bike: 11 percent; Carpool: 8 percent; Motorcycle: 2 percent\(^3\)
- USM’s Walk/Bike mode split of 11% exceeds the typical average of 3% among Universities across the country, including those who have implemented TDM programs, according to VHB
- Average One-Way Commute Distance: 13.8 miles.
- 56 percent of the USM Portland population travels to other campuses
- For trips taken between the Portland and Gorham Campus, 40 percent take transit, 37 percent drive alone, 20 percent carpool, 3 percent bike, 1 percent use a motorcycle

**Commute Trip Origins Based on Parking Permit Data**

USM provided VHB with anonymized home address data for all their parking permit holders, which allows for an investigation of opportunities for providing incentives for reducing drive-alone trips to the campus. The following figures shows the distribution of commute trip origins based on the permit data. Major clusters of population are centered around the City of Portland, Westbrook, Gorham, Lewiston-Auburn, Brunswick, and Sanford (Figure 8). Figure

\(^3\) It is important to note that this survey was taken before the Covid-19 pandemic. The next survey may show considerably different percentages for transit and carpooling.
9 shows a zoomed-in version of the same data, showing that major residential areas include: Portland, South Portland, Westbrook, Gorham, Biddeford, Scarborough, and Yarmouth.

Using the parking permit data, VHB calculated drive time for faculty and staff. About 50 percent live less than a 20-minute drive from the Portland campus and 94 percent live within a 60-minute drive of the campus.
Figure 8: Distribution of Home (Commute Trip Origins) – Southern Maine Area
Figure 9: Distribution of Home (Commute Trip Origins) – Greater Portland Area
Alternative Mode Potential: Opportunities for TDM

To gauge the modal potential for walking, biking, and transit to USM, the geographic distribution of parking permit trip origin data was compared to the walking, bicycling, and transit travel market sheds. To get an understanding of current travel behavior versus potential travel choices, the 2019 transportation survey results are overlaid against this geographic distribution. The difference between the total number of people matched to a particular mode and the mode choice results from the survey form an “opportunity” zone for a potential increase in the use of a travel mode. People are represented here as FTE (Full-time equivalent) rather than headcount because FTE fits greenhouse gas reporting protocol and the University believes it is a better representation of how trip proportion impacts campus.

Walk Potential

Within a mile walking distance from campus, approximately 5 percent (an estimated 251 full-time equivalent individuals) of USM Portland students/employees reported using non-auto transportation to the USM Portland campus whereas per the permit data 6 percent of parking permit holders were geographically matched to reside a mile from USM (Figure 10). The delta between the two data points increases significantly as distance from campus increases. At 2 miles, only 9 percent of students/employees use non-auto travel modes (per the survey), whereas a total of 16 percent live within 2 miles of campus (per the permit data).

Figure 10: Walk Potential
Bicycling Potential

Biking distance for parking permit holders was compared to non-motorized users based on survey results (Figure 11). Based on the geocoded parking permit data, up to 35 percent of all USM employees and commuter students (an estimated 1,759 full-time equivalent individuals) live within 5 miles of campus, considered the upper limit for a reasonable biking distance for a commute. Per the transportation survey, however, only about 12 percent of commuters who live within 5 miles of campus use a non-motorized form of transportation.

According to Figure 11, below, after 2½ miles, most people at USM stop using non-SOV\(^4\) modes of transportation, which may be an indication of the cultural and environmental limits of biking in Maine. Although there is potential beyond 2½ miles, that potential should be tempered by barriers of safety, comfort, and weather.

Figure 11: Bike Potential

\(^4\) SOV – single-occupancy vehicle (this mode is also referred to as drive alone)
**Transit Potential**

Transit-access time was compared to the percent of commuters from the survey who reported using transit (Figure 12). Up to 10 percent (or 503 FTE individuals) of USM affiliates live within walking distance of a direct transit route to USM Portland (based on the parking permit data). A further 14 percent (summing to 24 percent) can take a transit option that would take less than an hour to access USM Portland. This is 10 percent more than the existing number of University affiliates who indicated taking transit to USM (as reported in the transportation survey).

**Figure 12: Transit Potential**

![Graph showing transit potential and percent of permit holders vs. survey respondents within transit access.]

Some University affiliates take more than a one seat ride to get to USM. There are opportunities to increase the number of University Affiliates that take transit.

Given the higher number of USM affiliates who noted taking transit than the number of affiliates within direct transit routes indicates that either a percentage of affiliates may be connecting on transit service or otherwise driving to a stop first (example driving to Gorham campus and then hopping on the Husky Line). Of all transit routes with direct access to the USM Portland campus, the Husky Line\(^5\) has the highest number of permit holders who live within walking distance (459), followed by Route 4 (451), Route 2 (352), and Route 8 (270). Of all transit routes, the Route 9A and Route 9B serve the most affiliates within walking distance of stops (611), but these routes require a transfer to a transit bus line with direct service to the Portland campus.

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\(^5\) This analysis does not account for the fact that the Husky Line is a direct service route with few stops, whereas the other lines are more traditional services; however, the comparison serves to highlight what would be possible if the Husky Line or a route like it were to offer more stops in certain neighborhoods.
TDM Coordinator (TC)

TDM program management responsibilities will be designated to a single representative associated with the University.

USM will appoint Aaron Witham, Assistant Director of Facilities Management for Sustainability, as TDM Coordinator for USM; the Director of Auxiliary Services will play a supporting role.

The Assistant Director of Facilities Management for Sustainability can be reached via:

- email at aaron.z.witham@maine.edu
- phone at 207-780-5947.

The responsibilities of the Assistant Director of Facilities Management for Sustainability will include the following:

- Promote non-SOV transportation choices primarily to faculty, staff, students and residents
- Champion the implementation of new TDM strategies to reduce parking demand and increase the use of non-SOV transportation modes
- Conduct new student/new employee orientation to educate incoming affiliates regarding their transportation options to and from the campus.
• Coordinate the implementation of TDM strategies with Campus Scheduling, Human Resources, Parking, and any other departments.
• Work with the City of Portland, METRO, GoMaine, a private carpool app and other potential partners to improve non-SOV transportation access to the campus and to gain support for program implementation.
• Recruit and engage participants for any outreach events or campaigns associated with the TDM program over time.
• Review potential new alternative transportation technology or SOV reduction technology and coordinate implementation efforts associated with them.
• Coordinate all monitoring and evaluation activities necessary to measure the effectiveness of the TDM program in achieving the targets.
• Develop a TDM Report, which will provide an assessment of strategies implemented to date and outline the activities to be implemented in the upcoming year.

The responsibilities of the Director of Auxiliary Services will include the following:
• Provide consultation on TDM strategies that impact parking supply, services, and technology.
• Provide up-to-date data on parking volumes and patterns from the parking garage.
• Provide support for conducting additional parking assessments and measurements annually.
• Co-develop and implement financial parking incentives or disincentives as identified by the TDM plan.
• Maintain existing parking infrastructure and technology, with the support of Facilities Management and Capital Planning.
• Maintain parking services, including payments, campus notifications, and website updates.
• Carry-out parking enforcement.
Transportation Demand Reduction Goals

USM expects the TDM program to reduce the number of single-occupancy vehicle trips, thus reducing overall trips, demand for parking and greenhouse gas emissions.

**Trip Reduction Goal:** USM aims to reduce University-generated peak hour vehicle trips between 3-6% (17-35 trips) for the AM peak hour and by 3-6% (12-23 trips) for the PM peak hour by 2025. This goal is relative to a baseline of 581 and 381 trips, respectively, in the year 2023, at the opening of Portland Commons, the Career & Student Success Center, and a new parking garage (as determined by the Traffic Movement Permit analysis conducted in March of 2020). The peak hours are based on total traffic in the area, inclusive, but not limited to USM’s contribution. They are noted to be between 7:30 am- 8:30 am and between 4:30-5:30 pm. Given that the morning hour is a higher peak overall, that hour will be the primary focus of the goal.

**Parking Demand Reduction Goal:** USM aims to reduce parking demand by 10-14% (159-222 vehicles) by 2025 during the hour of peak demand on campus\(^6\). The peak parking hour and baseline volume (1,587 vehicles) was established from 12:30-1:30 pm, Monday-Wednesday, inventoried in the Fall of 2018. As strategies are implemented to achieve this

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\(^6\) The peak hour for trips is related to the peak hour for parking, but they are not the same. For example, the first peak hour for trips occurs early in the morning when the maximum volume of people are on the road traveling. The peak parking hour occurs later, reflecting cumulative impact as a result of multiple hours of trips coming to campus. This is why the trip reduction goal is smaller than the parking reduction goal.
goal, the peak demand hour may change, so the goal will stand in reference to the volume, not the time, of parking demand measured at the original baseline peak hour in Fall of 2018.

**Mode Split Reduction Goal:** USM aims to decrease the percentage of SOV (single occupancy vehicle) trips to 70% and increase the percentage of non-SOV trips to 30% by 2030. The SOV category includes personal automobile trips without passengers and motorcycles, while the non-SOV category includes carpools, riding the bus, biking, and walking. The most recent data set of 2019 shows that USM is currently at approximately 75% SOV and 25% non-SOV. Given that measuring this goal relies on self-reported survey data and only includes a sample of the larger population, the University primarily wants to use this goal for internal planning purposes and for estimating greenhouse gas emissions. However, the University will provide the current estimate annually in its reports to the City.

**Greenhouse Gas Reduction Goal:** USM aims to reduce greenhouse gas emissions from commuting by 20% (or .4 MT of CO2e per capita) by the year 2025, in line with its goal to reduce all scope one emissions at the University by 20%\(^7\). The 2006 baseline greenhouse gas emissions from commuting on an annual, per capita basis is approximately 2 MT of CO2e. This goal is tied to a larger University pledge called the President’s Carbon Commitment, a national commitment among hundreds of colleges and universities to reach carbon neutrality. USM signed the pledge in 2007, and set 2006 as the baseline with a goal of 2040 for carbon neutrality. Since FY 2006, per capita emissions from commuting at the University have fallen by an estimated 5%, according to the last carbon inventory conducted in 2017\(^8\).

The remaining 15% is expected to be surpassed by a combination of the trip and parking goals stated above, promotion and enabling of more electric vehicles relative to gasoline-powered vehicles on campus, and the anticipated increase in fuel economy standards of traditional gasoline-powered vehicles. According to the United States’ EPA\(^9\), the SAFE\(^10\) rule announced by the Trump Administration this year will require an increase in MPG by 1.5% every year from 2021 until 2026.

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\(^7\) There are three categories of emissions in GHG accounting. Under Second Nature, scope three is comprised of commuting, business travel, study abroad, downstream waste emissions, and transmission and distribution loss from electricity, as well as occasionally other sectors.

\(^8\) The FY 2019 carbon inventory is on track to be completed by Spring of 2021, as it was unfortunately delayed due to pandemic resource constraints.


\(^10\) SAFE stands for Safer Affordable Fuel Efficient Vehicles Rule
Trip, Parking, Mode Split & GHG Reduction Strategies

The USM Portland TDM Plan establishes an aspirational vision and set of goals for transportation, mobility, and sustainability. The Plan builds off USM’s multimodal strengths but pushes forward-thinking and multifaceted solutions.

Ultimately, USM will achieve success if one keeps in mind the following key concepts:

There is no “silver bullet” in TDM. The recommendations represent a package of reforms; implementing only one or two items will not solve USM’s parking challenges.

Behavior change is difficult, but critical if USM would like to realize its vision. Future growth at the University will present critical challenges with parking. USM will need to depart from the status quo and rethink parking and transportation in order to grow sustainably.

The Plan is a “living” document. Key to the success of this plan is to implement, measure, learn, and adjust. Over time as the transportation context, technology, institutional culture, and user preferences change, so may the types of strategies that are pursued. This is true now, more than ever, given the current global pandemic, and the need to remain adaptable.

What is presented here is the University’s current plan for Transportation Demand Management (TDM). It is subject to change as the global pandemic unfolds, as financial
constraints dictate, and as annual survey data and parking counts inform what is working and what is not working among USM’s unique population.

Therefore, the University is not committing to launch every one of these initiatives necessarily or committing to keeping every initiative in place permanently if they prove to not be feasible. Rather, the University is aiming to achieve trip, parking, and greenhouse gas emissions reduction targets using the most effective suite of technologies and policies available and achievable for a particular year. That said, it is the desire of the University to launch most of these initiatives in order to provide a multi-modal suite of options to students, staff and faculty, not all of which have the privilege of owning a personal vehicle. Moreover, the University has identified certain initiatives as “core” initiatives that it is committed to implementing. These are indicated with an asterisk in Table 3.

The matrix below introduces a snapshot of the initiatives that USM hopes to implement. Following the matrix is a section outlining descriptions of the initiatives. To the extent possible, strategies are grouped by categories reflected in the City of Portland’s Technical Manual. For each strategy, an anticipated launch date is provided.

Table 3: Overview of TDM Initiatives for USM

<table>
<thead>
<tr>
<th>STRATEGY</th>
<th>LAUNCH DATE</th>
<th>INFRASTRUCTURE</th>
<th>INCENTIVES</th>
<th>EDUCATION</th>
</tr>
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<tbody>
<tr>
<td>Walking</td>
<td></td>
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<tr>
<td>Create Walk Spot Maps</td>
<td>Fall 2023</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Publicize the “Complete City Project”</td>
<td>Fall 2021</td>
<td></td>
<td>X</td>
<td></td>
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<tr>
<td>Hold Fitness Challenges</td>
<td>Spring 2022</td>
<td></td>
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</tr>
<tr>
<td>Biking</td>
<td></td>
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<td></td>
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<tr>
<td>*Co-launch City Bikeshare</td>
<td>Spring 2023</td>
<td></td>
<td>X</td>
<td></td>
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<tr>
<td>Build Bicycle Repair Station</td>
<td>Spring 2023</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Promote Local Bike Activities</td>
<td>Spring 2021</td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>Offer Discounted Bike Supplies</td>
<td>Spring 2021</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>*Improve Bike Infrastructure</td>
<td>Spring 2023</td>
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<td>X</td>
<td></td>
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<tr>
<td>Apply for Bike Friendly University Certification</td>
<td>Fall 2022</td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>Transit</td>
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<td>*Continue METRO Pass Program</td>
<td>Ongoing</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>Propose Husky Line Improvements</td>
<td>Fall 2022</td>
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<tr>
<td>Propose Transit Service Expansion Beyond Husky Line</td>
<td>Fall 2022</td>
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<td>X</td>
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<tr>
<td>Install Transit Screen</td>
<td>Spring 2023</td>
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<tr>
<td>*Carpooling, Telecommuting &amp; Time-of-Day</td>
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<tr>
<td>Establish Vanpool Vehicles</td>
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<td>Designate Carpool/Vanpool Spaces</td>
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<tr>
<td>Strategy</td>
<td>Timeframe</td>
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<td>Develop Rideshare Matching Platform</td>
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<tr>
<td>Promote Telework &amp; Flexwork</td>
<td>Ongoing</td>
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<td>Restructure Course Schedule</td>
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<td>Parking Pricing</td>
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<tr>
<td>Establish Commuter Parking Buyout Program</td>
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<tr>
<td>*Establish Residential Parking Buyout Program</td>
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<td>Host Carshare Program to Support Buyouts</td>
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<td>*Unbundle Student Parking Fees</td>
<td>Fall 2021</td>
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<tr>
<td>Build Additional EV Charging Stations</td>
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<tr>
<td>Review Parking Price Levels</td>
<td>Fall 2022</td>
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<td>Communications &amp; Marketing</td>
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<tr>
<td>*Hold New Student &amp; Employee Orientations for Transportation</td>
<td>Spring 2021</td>
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<td>*Revise Transportation Website</td>
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<tr>
<td>*Publish Access Guide</td>
<td>Spring 2021</td>
<td></td>
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<tr>
<td>Offer Guaranteed Ride Home Service</td>
<td>Spring 2023</td>
<td>X</td>
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</tbody>
</table>

*Core strategies that the University is committing to are indicated by *. In the case of the Carpooling, Telecommuting & Time-of-Day category, the category itself is considered core, but the University will maintain flexibility in which of these strategies it implements, depending on future conditions.

### Walking Initiatives

**Create Walk Spot Maps:** Partner with a class and utilize GIS resources to create a semester-long project to build out exciting walking maps that would be made available both online and in print, in high profile locations on campus. The maps would include walkable points of interest, such as bus stops, public restrooms, cafes, breweries, scenic areas, and parks. The online version could be a user interface where you can select your points of interest and create a preferred route around the city. The online version should also include a forum, or a place for individuals to leave comments so they may spread information about the safest and most scenic routes, and also work to create a community of walkers.

This potential initiative program could also be made into a bi-annual “Walking Challenge” where individuals keep track of the various routes and enter that information into a type of raffle or other contest where they win a gift certificate to a sporting goods or shoe store.

**Publicize “The Complete City” project:** Participate in this project through a class or creation of a stakeholder group. The project is being run by the Portland Society for Architecture. They are reaching out to the Greater Portland community to make the area more accessible, more attractive, more just and equitable. This includes creating what they
(and others) describe as “The Complete City,” where within the city, each neighborhood has all it needs within a half mile, incentivizing alternative transportation by intentionally planning communities.

**Hold Fitness Challenges:** Partner with an existing health app or utilize the USM student app to create a fitness challenge for most steps per week. This will be accessible to most students, as most individuals have a smartphone that would be compatible with such an app. Each week, the app could send out a public note of congratulations to the walker with the most steps. The app could also create benchmarks where if a member of the community reaches a certain number of steps in a certain number of days, they receive a percent discount code to a local sporting goods store or shoe store.

**Biking Initiatives**

**Co-Launch City Bikeshare:** Partner with the City of Portland to co-launch a Bikeshare program that will cover, at a minimum, the USM-Portland campus, the back cove, Oakdale, Brighton, Bayside and Parkside. The University will provide financial support for Bikeshare parking spaces on the Portland campus if necessary.

**Build Bicycle Repair Station:** Install a new student-run bike repair station or shop (deemed “the Hub”) in a central part of their campus. Shop will be located in a corner of the Abromson parking garage, a stand-alone shed or some other covered location, where it can be out of the wind and the rain. The University aims to make it a social hub as well, where information about alternative modes of transportation can be offered. If survey data suggests additional need, then we can build a stand-alone self-service fix-it station near the center of campus.

**Promote Local Bicycle Activities:** Promote the participation in (and facilitation of) local bike activities such as the Portland Slow Ride, Smart Cycling Traffic Skills 101, and Cycling Savvy events. At least one opportunity or event will take place each semester.

**Offer Discounted Bike Supplies:** Provide Discount Sales for Bike Supplies (through a partnership with Bicycle Coalition of Maine or another program). Sales will either be ongoing in the bookstore and/or combined with the special events noted above once per semester.

**Improve Bicycle Infrastructure:** Improve bicycle infrastructure on campus, and propose improvements off campus. The University plans to increase bicycle parking spaces to 2.5 times what is currently offered on the Portland campus. Currently there are 250 spaces with another 10 being planned for the Wishcamper lot remodeling. Forty-one of these spaces are covered.

USM plans to add 122 short-term (uncovered spaces) to campus, with a lot of them slated for the new quad and some of them being distributed throughout campus to fill in gaps. USM also plans to add 288 long-term (covered spaces). Forty of these long-term spaces are proposed for a bike room inside the Portland Commons residence hall, and 248 long-term spaces are proposed for another location somewhere near Portland Commons and the Career & Student Success Center (CSSC). Possible sites include the new parking garage if it is located near the other two new buildings, in a stand-alone shelter, or in a secure area of the
Abromson parking garage. In addition to spaces for personal bikes, the current plan is to offer dedicated spaces for the proposed bikeshare bikes. Bikeshare notwithstanding, the total spaces on campus by the Spring of 2023 is planned to be 670.

These volumes of new bike parking meet or exceed several important standards that align with the University’s aggressive plan to increase biking among its students, staff and faculty:

- 5.5 times higher than City of Portland’s Technical Specs, campus-wide\(^{11}\)
- Double the amount suggested by APBP for short-term parking for students & employees\(^{12}\)
- Meets APBP’s recommended long-term space allocation per bed\(^{13}\)
- Exceeds City of Washington D.C.’s requirement by over 50% for long-term spaces per dwelling units in residential apartments\(^{14}\)
- Double City of Cambridge, MA’s requirements for short-term spaces and exceeds their requirements for long-term spaces.\(^ {15}\)

Off campus, the University will collaborate with the City of Portland on identifying improvements to bicycling infrastructure along corridors traveled by USM commuters through the annual transportation survey.

**Apply for Bike Friendly University Certification:** Apply for Bike Friendly University Certification. The application process, completed every four years, will help the University identify areas for improvement, and inform the types of questions that need to be asked in the annual survey of students, faculty and staff.

**Transit Initiatives**

Bus ridership has obviously been impacted by the global pandemic by some customers deciding not to ride the bus and by bus capacity being limited to comply with Federal standards. Despite these challenges, VHB believes that transit ridership demand will fully rebound again within a couple of years, so they do not recommend changes to long-term ridership predictions at this point. However, they note that the ability for ridership to be accommodated depends on supply of seats being available, which could possibly be impacted by future policy decisions coming from the Federal government. For the time being, the University is not adjusting expected transit impact for TDM goals set on a 2023 horizon.

**Continue METRO Pass Program:** In 2018, the University established a program with the Greater Portland METRO to allow students, staff & faculty to ride any METRO route for no

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\(^{11}\) Per City of Portland Code of Ordinances, Section 14-526

\(^{12}\) Per Association of Pedestrian & Bicycle Professionals’ Bicycle Parking Guidelines, 2\(^{nd}\) Edition, assuming that student & faculty vehicle spaces are a reasonable proxy for individuals on campus at one time

\(^{13}\) Per Association of Pedestrian & Bicycle Professionals’ Bicycle Parking Guidelines, 2\(^{nd}\) Edition multi-family housing criteria of .5 spaces per bed

\(^{14}\) Per Table 1: https://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/DDOT%20bike%20parking%20guide_060118_Screen.pdf

cost to the individual, so long as they show a USM ID. The program has been popular for students, as it increased the number of trips offered between Portland and Gorham via the newly established limited stop Husky line. Post pandemic, it has great potential to shift USM commuters out of personal vehicles if they live on or near an existing line. As an initiative, the University endeavors to keep this program in place with METRO for the foreseeable future.

**Propose Husky Line Improvements:** Conduct graduate-level research on how to increase ridership on the METRO using a community-based social marketing model. Then, make a proposal to METRO with goal of increasing the frequency of the Husky Line to 15 minutes to achieve “transit freedom.”

**Propose Transit Service Expansion Beyond Husky Line:** Conduct graduate-level research, using GIS and USM student, staff, and zip code data to analyze route potential. Then, make a proposal to METRO for potential local on-demand bus shuttle connecting downtown Portland to campus and/or increasing the frequency on other non-Husky line routes that serve the Portland campus.

**Install Transit Screen:** Install a real-time transit screen in the new Career & Student Success Center. Potential locations include the first floor lobby or near the elevators on the first or second floor. This effort will supplement METRO’s own effort to install a transit screen in one of the bus shelters on campus.

## Carpooling, Telecommuting & Time of Day Initiatives

The initiatives below, when taken together, are some of the strongest leverage points the University has and some of the most nimble. They are paired together here so that they can be substituted for one another when responding to the risks created by the pandemic. For example, under non-pandemic circumstances, the telework and class schedule initiatives could constitute 50% of the demand management that this category is capable of, while under a pandemic scenario they may need to constitute 100% of the demand management. The aggregate goal for this collection of initiatives is to get 125 vehicles out of parking lots during the peak parking demand hour.

**Establish Vanpool Vehicles:** Establish a program to lease vanpool vehicles and initiative vanpools in high commuter corridors. A candidate for the first potential vanpool is a Lewiston-Auburn Campus to Portland Campus trip.

**Designate Carpool/Vanpool Spaces:** Designate prime parking spaces for carpool or vanpool on the Portland campus, starting with 50.

**Develop Rideshare Matching Platform:** Develop rideshare matching platform or meet n’ greet events to pair potential carpool participants. University will consider using Go Maine if Go Maine can increase safety measures for student ridership. The University has provided Go Maine with feedback on how to improve safety.
**Promote Telework & Flexwork:** Establish teleworking arrangements with more employees. The University would promote its existing voluntary telecommuting policy.

**Restructure Course Schedule:** Conduct course catalog review with the goal of spreading out courses by day, time, and/or location. A first iteration of this initiative was started this Fall semester, but the effects of it are currently invisible due to the high percentage of classes being taught online due to Covid-19.

**Parking Pricing Initiatives**

**Establish Commuter Parking Buyout Program:** Launch a parking buyout program to encourage employee and student commuters to give up their parking pass in exchange for an incentive of upwards of $500 per year. Only individuals who previously purchased a parking pass the semester before may enter the buyout program. Buyouts would be offered on a first come, first serve basis. A max of 50 buyouts would be given out the first year (so that the University can monitor and increase when/if effectiveness is proven). Ten emergency parking passes will be offered each semester, which gives individuals the right to park on campus if they have extenuating circumstances, such as childcare issues or emergent health challenges. Emergency passes could be printed from an online form that records number used per individual).

**Establish Residential Parking Buyout Program:** Launch a parking buyout program to encourage students residents on the Portland campus to give up their parking pass in exchange for a cash incentive, value toward a bikeshare subscription, and value toward a carshare subscription (if available). The value of each of the three incentives is proposed to be $20 per month, totaling $60 in value, for the nine months comprising the Fall, Spring and Winter semesters. The first 40 applicants would get secure, covered parking inside Portland Commons. The second 60 applicants could utilize secure, covered parking in the larger covered parking area in the vicinity. A max of 100 buyouts would be given out the first year (so that the University can monitor and increase when/if effectiveness is proven).

**Host Carshare Program to Support Buyouts:** Establish a carshare program in partnership with the City, that may be utilized as part of the residential student buy-out program (in subsidized form), or by commuter students, staff, faculty and non-USM community members. The University recognizes that the carshare business plan has been challenged by covid due to the financial losses sustained by car rental businesses, so this initiative may not prove reliable. To that end, it is not a critical leverage point within this TDM plan; rather it is supplemental to the buy-out initiative. The hope is that the industry will rebound by 2023.

**Unbundle Student Parking Fees:** Unbundle student transportation fee from their other tuition-related fees, so that the payment for a parking permit must be made separately through a manual opt-in program. This action which will draw attention to the cost of those applying and serve as a disincentive to some.

**Build Additional EV Charging Stations:** Install additional electric vehicle charging stations at select locations. Goal will be to ensure there are enough charging stations available to meet the next year’s expected demand of staff & faculty driving EV vehicles to campus (as
indicated by annual survey), so that spaces to park do not limit potential EV drivers. Stations are likely to be pay-as-you-go. As part of this initiative, the University also endeavors to run conduit to future structured parking facilities, regardless of whether or not it currently has the funds to install EV charging stations at every space.

**Review Parking Price Levels:** Review of staff member parking to determine if there is a pricing model that will reduce transportation demand. Goal will be to achieve greater parity between employee and student parking pricing.

### Communications & Marketing Initiatives

**Communications & Marketing:** Hold new student & employee orientations for alternative transportation modes, infrastructure, resources and incentives. This initiative may build upon current student and employee orientation programs to maximize participation.

**Revise Transportation Website:** Build upon current website (launched in May of 2019) by adding new & expanded alternative transportation options and benefits, and performing ongoing maintenance and updates.

**Publish Access Guide:** Develop a "slick sheet" access guide summarizing ways to travel to campus and nearby destinations.

**Offer Guaranteed Ride Home Service:** Promote a guaranteed ride home program from Go Maine or a private carpool app to compliment alternative mode use, and provide security to students, staff and faculty.

### Potential Greater Portland Initiatives

The University recognizes that it is only one entity within a much larger complex system of transportation within the greater Portland. Toward that end, VHB researched potential improvements that could be considered by the METRO, the City of Portland, and other supporting entities to support USM’s TDM plan. VHB also estimated the potential impact these initiatives could have on USM’s trip generation and parking goals. The proposed initiatives and their potential impacts are summarized here:

- **Increase frequency of Husky Line to 15 minutes:** Reduction of 39 (2.5%) to 79 (5%) Peak Hour Parking Spaces
- **Increase frequency of METRO Routes 2 & 4 to 15 minutes:** Reduction of 39 (2.5%) to 79 (5%) Peak Hour Parking Spaces
- **Restructure departures and arrivals of all METRO routes serving the Portland campus in order to create 10 minute headways to downtown:** Reduction of 8 (0.5%) to 16 (1%) Peak Hour Parking Spaces, with even greater reductions possible if all routes were routed to serve the same stop on campus
- **Create local on-demand circulator route (shuttle):** Reduction of 56 (3.5%) to 111 (7%) Peak Hour Parking Spaces
- **Improve downtown METRO loop (Route 8) & route it through the USM campus:**
  Reduction of 43 (2.7%) to 86 (5.4%) Peak Hour Parking Spaces
- **In support of the above initiatives, METRO could begin to plan around USM as an anchor node in their network when the new residence hall comes online**
- **Create a better defined & safer bicycle/pedestrian corridor from USM to downtown:** Reduction too difficult to estimate until the goal is more defined

The reduction ranges featured above should be considered for each initiative individually, as opposed to being additive if all initiatives were implemented. In other words, some individual riders may be affected by more than one initiative. To further explore these initiatives, the University recommends that a coalition of METRO, the City, the University and others research what the potential cost per rider would be for implementing these strategies, in order to determine which may warrant further consideration.

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**Monitoring and Reporting Plan**

Program monitoring and evaluation are important components of any successful TDM Program, because they provide a quantitative benchmark of the program’s effectiveness in reducing single occupancy vehicle trips and parking demand. The Transportation Coordinator (TC) can use the information gathered via the monitoring plan to direct the ongoing implementation of the TDM Program, allowing for adjustments and the introduction of new strategies.
Furthermore, via regular periodic reports, USM will provide evidence to the City of the applicant’s diligence in implementing the program.

There are different methods for collecting the data necessary to monitor a TDM Program, including surveys, program participation documentation, vehicle parking counts, and activity logs. USM’s TDM program monitoring will use trip generation counts, vehicle parking counts and person surveys in evaluating the effectiveness of the program. Each of these tools is discussed below.

**Trip Generation Counts**

Trip generation counts refer to estimating the potential contribution of USM students, staff, and faculty to the total volume of vehicles on the roads feeding the Portland campus. The peak trip hours will be used as the boundary for this metric, and the data will originate from recorded vehicles entering and exiting the parking garage structures on campus, as well as observed vehicles entering and exiting the large surface lots on campus (defined as those lots with more than 20 parking spaces). The peak hours will be assumed to be between the hours of 7:30-8:30 am and 4:30-5:30 pm, Monday through Wednesday, in October, unless future analysis shows they should be at a different time.

The Director of Auxiliary Services at USM will provide vehicle count data from the automated garage entry systems. Data for the surface lots will be collected by direct observation from University staff or contractors hired to stand at the entries and exits and tally vehicles. Qualified University staff or a third-party contractor will compile and analyze the data.

**Parking Occupancy Counts**

Parking counts refer to a visual or automated account of occupied and/or empty parking spaces. These data are used to ensure that the amount of parking supply (spaces) on site is appropriate to meet peak hour parking demand (parked vehicles).

Under the direction of the Transportation Coordinator, the university will collect observations of vehicle parking during a representative (typically busy, classes-in-session) 3-day period in October. The TC will report the peak parking demand for the campus parking for those observed days.

Parking occupancy of the campus’s garages will be based on data retrieved for the parking revenue control system, whereas occupancy of the campus’s surface parking lots will require manual field observations. Observations of spaces occupied will be made during each hour in a ten-hour period of 8:00 AM to 6:00 PM.

The reporting of parking transactions and garage use should distinguish, to the extent possible, those users who are USM employees, students, and transient/visitors (hourly, public) users.

A parking occupancy rate relative to total supply of parking on campus will be reported.
Survey of Commuting Patterns, Mode Split & GHG Emissions

The Transportation Coordinator will administer a survey of both employees and students of USM Portland.

Surveys provide a qualitative understanding of how well TDM (and Parking Management) program elements are working. The survey will also be used to estimate greenhouse gas emissions associated with commuting, as well as the current mode split.

The TC will conduct the surveys in either the spring or fall session (e.g., March or October), depending on available resources and labor relative to the resources and labor required to conduct the trip generation and parking analysis. The survey will be completed during a week without any holidays and when classes are in session.

Survey questions will incorporate the following components, in addition to others:

- Type and frequency of modes of transportation used in a typical week
- Destinations traveled to via particular modes
- Reasons why people are driving alone
- Reasons why people are not driving alone
- Level of enthusiasm for incentives that would encourage drive-alone respondents to use an alternative mode
- Ideas for improvements to transportation system, including ideas for incentives
- Routes traveled by foot or bike & associated improvements desired
- Trip generation during time of day (in order to supplement USM-generated contribution to peak traffic generation)
- Ownership of electric vehicles
- Questions required for Bike Friendly University application
- Questions about health concerns (e.g. Covid-19) with different modes and how that is impacting behavior and expected to impact behavior in the future

Status and Monitoring Report

Each year, after data are conducted, the TC will prepare a report summarizing TDM program status and monitoring results. In addition to reporting the results of the data collection, the report will detail (1) what/when strategies were implemented, (2) an estimate of how many individuals participated in certain programs, (3) the lessons learned regarding the most effective TDM strategies, including barriers to not driving alone from the survey.

A core summary table of the goals will be provided in the report that includes baseline numbers, progress to date, goal numbers, and dates by which the University is striving to reach the goals. Goals included will be trip generation, parking counts, mode split, and greenhouse gases. The University will work with the City every year to ensure it is meeting expectations of the City regarding format of the report.

The TC will submit the report to the City of Portland’s TDM Program Manager (a position currently staffed in the Planning and Transportation Division of the Planning and Urban Development Department). A report should be issued within 3 months following the last of
the three data collection activities (e.g., if the survey is done in March, then a report should be issued no later than June of that same year). The TC will meet with the City of Portland Planning Department and discuss suggestions for changes to the TDM Program, and will make adjustments before the start of the Fall semester.

Monitoring Schedule

Monitoring (survey, parking, and traffic data collection) should begin within the year following the opening of the planned residence hall. Monitoring will occur according to the schedule detailed below, until the year 2030, the horizon year of the Facilities Master Plan. Updates to the Sustainability Strategic Plan and/or Facilities Master Plan may conclude that further monitoring is warranted.

Annually, the University will:

- Conduct analysis of trip generation (as described above)
- Conduct parking occupancy observations (as described above)
- Conduct a travel survey (as described above)
- Prepare a TDM monitoring report (as described above)