Transportation Demand Management Plan



Acknowledgments

Stakeholder Advisory Committee

Josh Anderson, Central Financial Services Emily Boring, Logistics Management Skai Dancey, Facilities Rachael Dresbeck, Research Michael Harrison, Public Relations Kathryn Heath, Human Resources Hollie Hemenway, Human Resources Patrick Holmes, Communications Debbie Lamberger, Ambulatory Care Nicole Lockart, School of Medicine Tara Mather, Campus Planning Olu Majekobaje, Patient Experience Brian Newman, Campus Planning Stephanie O'Brien, Ambulatory Planning Stephanie Ryan, Casey Eye Institute Maya Severson, Graduate Medical Education Sue Simmons, School of Medicine Marie Steelman, Information Technology Group Jennifer Teeples, Knight Cancer Susan Yoder, Patient Advocacy

Goal-Setting Workshop Participants

Dan Forbes, Human Resources Joe Ness, Professional & Support Services Scott Page, Campus Services Maulin Patel, Financial Planning & Treasury David Robinson, Executive Vice Provost Sara Vonde Veld, Campus Planning and Real Estate

Neighborhood Associations

Homestead South Portland

OHSU Staff

Brett Dodson Jenny Cadigan Christine Basnett Christine Giatti Michelle Gaylord John Landolfe Ryan Malzahn

Nelson\Nygaard Consulting Associates

Phil Olmstead, Project Manager Brie Becker Tom Brennan Maggie Derk Joshua Karlin-Resnick Paul Leitman Drew Meisel Meg Merritt Layne Wyse

Nunes-Ueno Consulting

Paulo Nunes-Ueno

Transportation Demand Management Plan (TDM)

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Since 1995 OHSU has experienced 150% growth in both employees and patients.

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What is the TDM Plan?

OHSU prides itself as a national leader in health and science innovation.

OHSU's current work and long-term vision prioritizes further innovation and transformation of not only the health care sector, but for also the Portland community in which it resides. In addition to providing industry-leading health care services, OHSU is one of the region's biggest employers with roughly 16,000 employees and 2,900 students.

Since 1995, OHSU has experienced 150% growth in both employees and patients, as well as construction of a new campus on the South Waterfront and new development on Marquam Hill. OHSU will continue to grow and evolve in the next ten years. New and planned development on the South Waterfront and ongoing improvements at Marquam Hill will result in substantial expansion of OHSU's physical footprint, population size, and patient services.

Anyone who travels to OHSU experiences its unique transportation issues. Steep terrain, constrained roadways, and major barriers like the Willamette River and I-5 present significant mobility challenges for patients and employees. Furthermore, OHSU must operate within a regulatory environment that restricts how much it grows, where it can grow, and to what degree it can build additional parking.

Confronted with these challenges, OHSU has built a renowned transportation program. As of 2017, only 38% of employees drive alone to the Marquam Hill and South Waterfront campuses, a remarkable achievement. Still, as OHSU's growth continues, it is simply not enough. OHSU's ability to achieve its vision will be determined by many factors, but the degree to which it can provide accessible, convenient, and affordable travel options will be central to its success.

What is Transportation Demand Management?

Transportation demand management refers to policies, programs, or projects that incentivize changes in travel behavior.

The goal of TDM is to reduce singleoccupancy vehicle (SOV) trips and make it easier to walk, bike, share rides, use transit, or telecommute.

TDM may also include efforts to shift trips to off-peak periods or eliminate some trips altogether.

A Mobility Roadmap

The Transportation Demand Management (TDM) Plan is OHSU's mobility roadmap for the next decade. It comes at a pivotal moment for OHSU. OHSU initiated this comprehensive study to address its current and future transportation and parking challenges head-on, knowing that it must innovate if it wants to continue to grow, provide highquality medical care, attract and retain the best talent, and ensure a positive and rewarding work environment for its valued employees.

Using a data-driven approach, informed by input from a diverse group of OHSU leaders, employees, and stakeholders, this Plan provides a strategic, flexible, and actionable framework that will help OHSU:

- Support campus development and allow OHSU to meet the growing demands.
- Manage a complex transportation system with tools that are dynamic, user-friendly, and cost-effective.
- Satisfy the unique needs of employees, students, patients, visitors, and nearby neighborhoods.
- Exceed mobility expectations of employees, students, patients, and visitors.
- Offer a convenient suite of travel options for employees throughout the region.
- Support the organization's values transparency, diversity, quality, and service excellence and bottom line.

This Plan also recognizes that the time for action is now. The Plan provides recommended strategies and includes actionable next steps that sets OHSU up for immediate progress and long-term success.

Overview of the Plan

Chapter 2 summarizes the **project approach**, including an overview of the project process and timeline, project advisory committee, and stakeholder outreach program.

Chapter 3 summarizes the **problem statement** and key findings from the existing conditions analysis. It also documents a timeline of key events that have driven development of this Plan and its proposed implementation.

Chapter 4 describes the OHSU **vision for mobility** and summarizes the goals, objectives, and performance metrics that will guide its implementation.

Chapter 5 summarizes the five key initiatives, or "Playbook," and the **34 specific strategies** which will allow OHSU to achieve its mobility vision and goals. The strategies are organized into seven categories, or "Plays."

Chapter 6 documents the **implementation program**, including a summary of the TDM scenarios, trip impact assessment, and financial analysis.

The complementary **Strategy Dashboard** provides documentation for each strategy, including a description and summary of evaluation and costing.



What was the study area for this Plan?

The study area for this Plan primarily focuses on employee commutes at the Marquam Hill and South Waterfront campuses. However, the analysis and strategy development carefully considered all OHSU facilities and users. Its implementation will offer benefits to all employees, students, patients, and visitors.



The Bigger Picture

The OHSU TDM plan builds on the 2018–2020 OHSU Strategic Plan to reinforce and enhance the vision, values, and culture of the institution. Recommendations in the TDM Plan align with the overall OHSU vision statement:

National leadership in health and science innovation for the purpose of improving the health and well-being of Oregonians and beyond.

To support this vision, the TDM Plan will improve access for employees, students, patients, and visitors. The TDM Plan also reflects and upholds the institution's core values.

Transparency: The TDM Plan encourages accountability and builds credibility with a commitment to reducing the employee drive-alone rate to 30% by the end of 2027.

Diversity: Recommendations of the TDM Plan address the transportation needs of a diverse range of users.

Quality: The TDM Plan establishes a set of mobility goals, objectives, and performance measures that will hold OHSU to high standard.

Service Excellence: The implementation of the TDM Plan will improve patient access to OHSU, enhance the patient experience, and support OHSU's commitment to service excellence.

The TDM Plan itself sets ambitious, yet realistic mode split targets that will require all OHSU affiliates to work together. Leveraging the OHSU culture—the power of one—will allow the institution to have a long-standing positive impact on local and regional mobility.

Between 2017 and 2027 mode share will change

What is the TDM plan?

The Transportation Demand Management (TDM) Plan is OHSU's mobility roadmap for the next decade. It comes at a pivotal moment for OHSU. OHSU simply cannot grow as planned with a parking-only approach.

OHSU must continue to innovate with a comprehensive package of transportation solutions for employees, students, patients, and visitors. This Plan provides a strategic, flexible, and actionable framework that will support the organization's values and bottom line.

As of 2017, 38% of OHSU employees at Marquam Hill and South Waterfront are singleoccupancy vehicle (SOV) commuters. The Plan establishes an ambitious, yet realistic 30% employee SOV target by 2028.

What will it do?

By 2028, more than 13,800 employees would be walking, biking, taking transit, sharing rides, or telecommuting; a 62% increase from 2017.

+ 1 TELECOMM 550 EMPL	50% UTING OYEES	?	1%	3%
DR 440 EMPL	+0% opoff .oyees	∳ ₽⊳	2%	2%
H RIDESH 720 EMPL	• 6 3 % ARING .OYEES	%	2%	3%
+ CA 1,270 EMPL	• 4 4 % RPOOL OYEES		4%	6%
H WA 1,490 EMPL	13% Iking Oyees	×	6%	7%
4,010 EMPL	+7% BIKING OYEES	A-6	17%	18%
tr 6,920 Empl	+5% ANSIT OYEES	· ·	30%	32%
DRIVE 6,590 EMPL	- 21% Alone .oyees		38%	30%

Employee population and parking supply/demand (thousands)

The Plan implements a suite of recommendations that also allow OHSU to manage its parking cost-effectively. Targeted investment in new parking supply, coupled with forward-thinking management practices and TDM programs, will ensure parking is consistently available for those that need it.



Employee/Student Permit Parking Ratio

Approximately 5,200 permitted parking spaces are available to employees and students—a ratio of one space for every 3 employees/ students. The demand per stall is expected to continue to greatly exceed supply, indicating a need for parking management and TDM programs.



PO.2

ACTIVE WORKPLACE CULTURE AND TRAINING

PO.4

TELECOMMUTING

T.1 TRANSIT SERVICE IMPROVEMENTS

PN.1

PEDESTRIAN ACCESS IMPROVEMENTS

B.1

BIKE ACCESS IMPROVEMENTS

B.2

BIKE PARKING IMPROVEMENTS

SM.1

EMPLOYEE AND PATIENT LYFT PROGRAM

SM.2

INTERNAL AND DYNAMIC CARPOOLING PROGRAM

P.1 PERMITS AND DAILY PRICING

PC.2

MOBILITY COMMUNICATIONS

PC.4

EMPLOYEE COMMUTE PLATFORM

High Impact + High Priority Strategies

The TDM Plan includes 34 strategies within seven categories – Policy (P), Transit (T), Pedestrian (PN), Bike (B), Shared Mobility (SM), Parking (P), and Programs + Communications (PC). Eleven of these strategies have been identified for priority implementation as they can quickly reduce parking demand and improve the commute experience.

The Strategy Dashboard document summarizes all of the strategies. These include:

- 11 High-Impact + High-Priority
- 19 Support
- 4 Long-term + Regional



Stakeholder feedback was essential for the project team to understand the major issues.

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How was the Plan Developed?

The OHSU TDM Plan was informed by a robust and inclusive outreach program.

Stakeholder feedback was essential for the project team to understand the major issues and challenges from a variety of user groups. In addition, the outreach efforts allowed the project team to test and shape the potential strategies and recommendations.

Input from employees, students, patients and visitors, neighborhood associations, transportation and parking staff, and staff from other OHSU departments was included in the Plan. The major components of the outreach plan included:

Stakeholder Advisory Committee					
Goal setting workshop					
Employee focus groups					
Neighborhood focus groups					
Employee travel survey					
Patient/visitor travel survey					
TDM Roadshow: Presentations to OHSU groups, committees, and executive leadership					

2017 OHSU Census Survey (ECO survey) as well as previous years dating back to 2007





Stakeholder Advisory Committee

The Stakeholder Advisory Committee (SAC) provided input and guidance throughout the development of the OHSU TDM Plan. The SAC was comprised of a diverse group of campus affiliates across multiple OHSU departments. Members included:

Josh Anderson CENTRAL FINANCIAL SERVICES

Emily Boring LOGISTICS MANAGEMENT

Skai Dancey

Rachael Dresbeck

Michael Harrison PUBLIC RELATIONS

Kathryn Heath

Hollie Hemenway

Patrick Holmes

Debbie Lamberger AMBULATORY CARE

Nicole Lockart school of medicine Tara Mather CAMPUS PLANNING

Olu Majekobaje PATIENT EXPERIENCE

Brian Newman CAMPUS PLANNING

Stephanie O'Brien AMBULATORY PLANNING

Stephanie Ryan CASEY EYE INSTITUTE

Maya Severson graduate medical education

Sue Simmons SCHOOL OF MEDICINE

Marie Steelman INFORMATION TECHNOLOGY GROUP

Jennifer Teeples KNIGHT CANCER

Susan Yoder PATIENT ADVOCACY





At the Goal Setting Workshop, OHSU staff brainstormed key issues and opportunities. A core set of values was also identified by the group.

Outreach Highlights

Outreach from community and campus stakeholders played a vital role throughout the planning process. In April, the project team held a **Goal Setting Workshop** to identify guiding values, priorities, and outcomes for the project and OHSU's overall approach to transportation and mobility. Fourteen OHSU stakeholders from a wide range of departments participated in the workshop.

A series of three **Employee Focus Groups** were held in May. The groups were organized by commute mode – transit riders, bicyclists and pedestrians, and drivers/passengers (drive-alone, drop-offs, or carpools). To achieve a cross-section of feedback, each focus group had a mix of employees based on their primary work location, job classification, work shift, tenure, gender, and age.

A total of 31 employees participated in the focus groups. These focus groups helped provide the project team with a more nuanced understanding of perceptions of the existing commute program, parking issues, and programs that could help employees change their travel behavior.

Two **Neighborhood Focus Groups** took place in August and September: one with the South Portland Neighborhood Association and another with the Homestead Neighborhood Association. The focus groups provided a forum for nearby Portland residents to identify transportation related issues and opportunities for the OHSU campus, as well as in their neighborhood.



Employee survey respondents live throughout the region.

"Probably my number one desire would be the option to only pay for parking on days I use it." An **Employee Travel Survey** in mid-September solicited further information on employee commuting patterns and preferences for commuter transportation programs at OHSU. A total of 1,405 employees responded to the survey. The survey focused on a series of strategy categories including parking, transit, bicycling, walking, ridesharing/ carpooling, telecommuting, and policies and programs. Detailed employee survey findings are available in Appendix.

A **Patient/Visitor Travel Survey** was also made available in September in parking facilities on campus. A total of 725 survey responses were collected. The survey asked patients and visitors about their priorities for improving the OHSU parking system, and potential strategies that would be of interest as an alternative to driving. Detailed patient/ visitor survey findings are available in Appendix.



What are the Issues and Opportunities?

OHSU's past and ongoing investments in transit, biking, walking, and major infrastructure improvements have been vital in allowing OHSU to grow and thrive to this point.

With a low drive-alone rate, OHSU is the envy of many of its national peers. However, OHSU must continue to innovate and push the status quo if it is to grow, diversify, and provide high-quality health care services and employment opportunities.

A detailed existing conditions analysis informed the development of the TDM Plan, including a review of OHSU planning documents and local and regional policies and plans. Parking data and multimodal programs were also analyzed to identify key trends and opportunities for improvement. Stakeholder workshops and employee surveys provided another layer of input, allowing the team to go beyond the data and fully understand the employee and patient experience.

This chapter summarizes the key findings, primary issues, and opportunities for improvement that ultimately shaped the development of the TDM Plan and its recommendations. In the end, there is no single or simple problem statement for OHSU to fix. OHSU's transportation and mobility challenges are multifaceted, nuanced, and driven by not just OHSU itself, but also regional and societal trends. Nevertheless, there are many areas where OHSU can improve, while leveraging its ability to innovate in response to seemingly intractable challenges.



OHSU has experienced significant growth since 1995. The campus is expected to continue to grow with more employees, students, patients, and visitors.



Between 1995 and 2016.

population increased by

the overall OHSU employee

142%, the patient population

increased by 159%, and the

student population grew by

62%.





Physical expansion of the campus will continue, especially on the South Waterfront. Approximately 1 million square feet of new facilities will be built on the South Waterfront by 2019. Ongoing facility expansions and improvements are also planned for Marquam Hill.

The rate of employees driving alone to campus is trending down. Walking and biking mode shares have grown substantially.



Driving alone is the primary commute mode — 38% for Marquam Hill and South Waterfront employees.

OHSU outperforms the City of Portland as a whole, which has a 58% SOV rate.



Drive alone rates are higher for those that live farther from campus and to the east and west of Portland. The Portland Transportation System Plan calls for 70% of commuters to walk, bike, take transit, carpool, or telecommute by the year 2035.



Between 2007 and 2017, the SOV rate at the Marquam Hill campus has decreased, while walk and bike share have gone up. Bike mode share has almost tripled in the last decade. By contrast, the carpool and transit mode shares have decreased. Many parking facilities at OHSU are often at or near capacity today. New parking is planned, but estimated growth will outpace new supply with "status quo" driving rates.



OHSU cannot simply build its way out of its parking problem.



City regulations and area plans restrict the amount of parking that OHSU is allowed to build on both the Marquam Hill and South Waterfront campuses.



Land and topography constraints, especially on Marquam Hill, also reduce the feasibility of new parking construction.





Parking is very expensive to build and maintain. The current construction cost per space at OHSU is approximately \$70,000, resulting in annual costs per space of about \$5,900. Average annual revenue per space is roughly \$1,900.



What We Heard

"The congestion getting off campus at 5 p.m. is unacceptable. I have to stay late to avoid sitting on the bus for an extra 40 minutes."

"We need a better way to get from South Waterfront to westbound US-26. The gridlock through downtown in the late afternoon has me on a 5 a.m. to 2 p.m. schedule."

Congestion is a current challenge and a long-term threat to OHSU.



Peak congestion on and off Marquam Hill impacts motorists and transit riders in a significant way. Certain corridors and key intersections, such as Sam Jackson Park Road and Terwilliger Road, create massive bottlenecks.



It is now common practice for bus drivers to let passengers off during the evening peak so that they can walk down the hill.



In the Portland region, hours of congestion and daily vehicle hours of delay have grown by more than 13% and 22%, respectively, since 2013.

What We Heard

"I cannot afford any of the housing that is close enough to OHSU."

"As housing costs close in soar, employees are going to be commuting from farther and farther away."



As regional housing costs increase, transportation and access is a growing factor in employee attraction and retention.





For many, driving and parking remains the most convenient choice.

Many employees continue to drive because it is still faster than other modes. The number one reason OHSU employees indicated they drove to work was to "save time." Based on ECO survey respondent data, the average daily commute for employee drive alone trips was 48 minutes, compared with 69 minutes for light rail or 86 minutes for bus.



For many employees, local and regional transit does not provide enough direct or frequent service, especially for employees that commute during off-peak hours.



Data Sources: OHSU, Metro RLIS

Many employees value the flexibility of having their own car at work in case of emergency, errands, or childcare.

What We Heard

"Some people still have a parking permit but don't use it. They don't want to give it up because there's a 10+ year wait list to get it back again."

"I've waited for a 2D permit for 10 years. I am trying not to change my job just for the permit."

"When I got hired, everyone told me to sign up for every permit. I did, even though I rarely drive."

"The permit wait time is ridiculous and the fact that non-clinical and provider staff get 'priority' makes me feel undervalued as a nurse."

"Monthly permit holders with the highest wages pay less to park than the lowest wage workers who pay a much higher daily parking rate." Annual Parking Permit Holder Rate vs. Non-permit Daily Rate



Annual permits incentivize driving and create employee frustration.



Annual parking permits offer a steep discount when compared with daily "market" rates. For example, holders of a 1D permit on Marquam Hill pay the equivalent of \$8.38 less per day than the current daily rate.



Annual permits represent a "sunk" cost for employees. Once an employee pays for it, they want to get their money's worth.





Due to the long parking wait lists, employees are encouraged to sign up for a parking permit. Once they have one, they are discouraged from giving them up, even if they no longer drive. On average, employees on the parking waitlist are signed up for four different permits. Many believe the current system is inequitable.



What We Heard

- "I would be willing to bike 12 miles round trip to work if there were better bike lanes from my house in northeast to the tram."
- "Some of the bike routes to OHSU are on a busy road or they run through areas that do not feel safe in parts. If there were better and more designated routes from my home, I would bike to work every day."
- "I would gladly ride to work if I had a place to shower for free near my workspace."
- "If telecommuting were more accepted I would not be looking outside OHSU for a different job right now."

Many employees would like to walk or bike, but do not feel comfortable, safe, or well-served by existing facilities. Many employees want to telecommute, yet policies are inconsistent.



More than one-third of employees indicated that they would like to bike or walk over their current mode.



Accessing Marquam Hill via bike can be challenging for many people due to the topography and higherspeed corridors.





A number of key corridors and intersections in proximity to, or directly serving OHSU have a greater share of collisions. S.W. Campus Dr. and S.W. Terwilliger Blvd. had the highest number of collisions on roadways near campus; 2004 – 2013.

Telecommuting at OHSU remains very limited at less than 1% of commutes, compared to almost 8% in the City of Portland.



4.

What is the OHSU Vision?

Over the past two decades, OHSU developed and implemented a multimodal transportation program, allowing the institution to grow and provide access for its employees, students, patients, and visitors.

The current program evolved organically, as OHSU tested various policies and strategies to meet its growth and affiliate needs. While OHSU has achieved a low drive-alone rate for employees, more work is needed.

In order to push its employee drive-alone rate even lower, and provide a first-class mobility experience for all users, OHSU needs a comprehensive and well-defined vision and goals framework to guide its future work. This framework provides:

- A strategic plan for leadership, demonstrating how OHSU's investments in transportation support and reflect its core values.
- A reference point for the broader OHSU community, ensuring that transportation and mobility are fully integrated into the campus culture as well as other planning efforts and campus initiatives.
- A guidebook for transportation and parking staff, allowing them to operationalize the TDM Plan, engage OHSU affiliates, measure progress, adjust programs and policies, inspire change in travel behaviors, and demonstrate the benefits of investments in TDM.

The TDM Plan included a robust process with the Stakeholder Advisory Committee and OHSU staff to define a vision statement and set of goals, objectives, and performance measures. Other campus plans were reviewed to ensure alignment with OHSU's overall values — Transparency, Diversity, Quality, and Service Excellence — as well as local and regional transportation plans.

The vision, goals, objectives, and performance measures answer the following questions:

- Vision: What is the guiding statement for OHSU's ongoing approach to transportation, mobility, and access?
- Goals: What values guide this work? What are the desired outcomes?
- **Objectives:** What specific actions will allow OHSU to achieve the goals?
- **Performance Measures:** How will OHSU measure success and demonstrate the effectiveness of its transportation investments? What are the key indicators and supportive metrics that will measure performance?

Vision Statement

As a leader in health and innovation, OHSU will provide a flexible transportation program that allows employees, students, patients, and visitors to choose safe and convenient travel options to, from, and within campus. To facilitate campus growth, the transportation system will reduce reliance on single-occupancy vehicle trips through the promotion of cost-effective, sustainable, and multimodal mobility solutions.

Goals, Objectives and Performance Measures

GOAL	OBJECTIVE	PERFORMANCE MEASURE
Patient-first Prioritize the patient travel experience to ensure that OHSU is a first-choice destination for medical care.	 Inform patients about their parking and travel options early and often. Support both inpatient and outpatient care. Reduce overall employee demand for parking. Reduce employee abuse of patient parking. 	 Key Performance Indicators Patient satisfaction survey. # of annual patient visits. % of late/missed appointments. Additional Metrics % of available parking spaces by facility. # parking "redline" events by facility. # of patient valet drop-offs/retrievals. # of patient complaints.
Employer of Choice Ensure efficient and convenient employee access so that OHSU is a first-choice employer.	 Eliminate transportation as a barrier to employee attraction/retention. Provide affordable, equitable, and active travel choices. Provide parking choice, so that employees only park on the days they need to. Encourage telecommuting for those whose roles allow for it. Reduce travel times to/from/within campus. Make programs easy to use, deliver, and administer. 	 Key Performance Indicators Employee/student satisfaction survey. Additional Metrics Average travel time to campus by mode. # of program participants. # of employee complaints. # of employees who cite commuting as reason for leaving or not taking position.

GOAL	OBJECTIVE	PERFORMANCE MEASURE		
Waltimodal Prioritize multimodal travel choices, such as transit, walking, biking, and rideshare.	 Reduce the share of single- occupancy vehicle (SOV) trips to campus. Expand and improve bicycle/pedestrian/transit infrastructure, services, and programs. Develop a rideshare solution that targets SOV drivers and prioritizes high-occupancy trips. Structure financial incentives to encourage multimodal travel. 	 Key Performance Indicators Mode share to campus by affiliate group. Average vehicle ridership. Additional Metrics Transit ridership by route/stop. Transit service hours and frequency. # of bike parking spaces. # of end-of-trip facilities. % of network complete. #/% of rideshare trips and average vehicle occupancy per rideshare trip. 		
Control Safe and Healthy Prioritize cost-effective and fiscally sustainable investments in the transportation system.	 Improve vehicle, bicycle, and pedestrian safety and security. Reduce vehicle miles traveled (VMT) and transportation-related greenhouse gas emissions (GHG). Proactively link transportation to OHSU's overall health mission by promoting healthy travel options. 	 Key Performance Indicators # of collisions on campus and key travel corridors by mode. # of security incidents. Additional Metrics Mode share of active transportation modes. Estimated VMT and GHG per affiliate. 		

GOAL	OBJECTIVE	PERFORMANCE MEASURE
S S Cost-effective Prioritize cost-effective and fiscally sustainable investments in the transportation system.	 Prioritize mobility investments that offer the greatest cost efficiencies. Maintain long-term financial sustainability. Collect data consistently to inform system investments. Ensure adequate staffing to cost-effectively implement, operate, and manage projects and programs. 	 Key Performance Indicators Annual revenue by mode/ program. Annual expenditures by mode/ program. Additional Metrics Cost per trip/employee by mode. Parking construction cost and annual O&M per space. # of FTEs and contract staff.
Innovative Support investments in innovative policies, programs, and tools to keep OHSU ahead of the curve.	 Pursue a mobile commute platform to increase employee satisfaction and help manage the transportation program. Pursue new technology platforms to support performance-based parking management. Develop a rideshare solution that targets SOV drivers and prioritizes high-occupancy trips. Promote and encourage the use of internal communication to reduce inter-campus travel. Support investments in telemedicine to reduce in- person trips to campus. Engage with local and regional partners to implement visionary transportation technology, infrastructure, policy, and programs. 	 Key Performance Indicators Transportation/parking satisfaction survey. Additional Metrics Use and integration of technology tools and platforms. # of patients treated via telemedicine.



SOV Target

OHSU conducts the annual Transportation Census using a sampling methodology to get a representative cross-section of employees. As of 2017, 38% of OHSU employees at Marquam Hill and South Waterfront are single-occupancy vehicle (SOV) commuters.

Moving forward, the SOV target will be a key performance measure for OHSU to track progress towards its mobility vision, goals, and objectives.

This TDM Plan establishes 30% SOV mode share target by 2027 for Marquam Hill and South Waterfront employees. This target represents an ambitious, yet realistic target for the 10-year planning period.

- With this target, OHSU would need to shift slightly less than 1% of SOV commuters to another mode each year.
- Based on estimated employee growth, achieving a 30% target translates to almost **1,750 fewer SOV commuters** than if OHSU maintains its current 38% SOV rate.
- By 2027, more than **15,300 employees would be walking**, **biking, taking transit, sharing rides, or telecommuting.** That would represent a 71% increase over the number of employees doing so today.
- The **2027 non-SOV mode splits represent a "target"** and one possible, yet achievable, scenario for changes in travel behavior based on the proposed TDM Plan.
- OSHU should refine the future year targets with each annual Transportation Census.



MODE	2017 - EXISTING		2027 - 1	TARGET
Drive Alone	38%	5,522	30%	6,584
Carpool	4%	581	6%	1,262
Bike	17%	2,470	18%	4,005
Walk	6%	872	7%	1,481
Transit	30%	4,359	32%	6,913
Dropped off	2%	291	2%	439
Rideshare	2%	291	3%	713
Telecommute	<1%	145	2%	549

Marquam Hill and South Waterfront employees only



How will OHSU Achieve the Vision?

The OHSU TDM Plan establishes an aspirational vision and set of goals for transportation and mobility.

The short- and long-term approach must be ambitious so that OHSU can grow without gridlock, ensure long-term financial sustainability, and create a first-class travel experience for its current and future employees, students, patients, and visitors.

The TDM Plan builds off OHSU's strong multimodal foundation, but pushes forward-thinking solutions. Solving OHSU's existing and future challenges in the face of rapid growth requires a multifaceted set of solutions. In the end, OHSU will achieve success if it can continually emphasize the following key concepts:

There is no "silver bullet." The recommendations represent a package of necessary reforms. Implementation of one or two items alone will not solve OHSU's mobility and parking challenges.

Change is difficult, but necessary. The Plan offers bold and innovative approaches. OHSU faces significant challenges; solving them will require them to go beyond the status quo.

Communication is vital. Ongoing communication of the Plan's rationale, benefits to the institution and individual, and the practical details will be crucial to increasing program participation, improving the patient and employee experience, and securing stakeholder buy in.

The Plan is a "living" document. The Plan provides a roadmap and framework for moving forward. It is based on detailed analysis and best practices, but no TDM plan gets it all right the first time. OHSU must be flexible and continually evaluate its performance. A "test and learn" approach based on robust data will allow OHSU to respond effectively as local and regional conditions change.

Immediate improvement is needed...and possible. OHSU has challenges today. The upcoming Portland Aerial Tram shutdown in mid-2018 is also a significant milestone to address. Certain strategies should be prioritized to secure tangible progress and build further support for future phases of work.



How do we get there?



The Playbook

The OHSU TDM Plan Playbook includes five primary initiatives or "levers" to reduce singleoccupancy vehicle trips and improve the overall travel experience to, from, and within OHSU.

All of these elements are required to ensure longterm success. Too much emphasis on one, or ignoring some altogether, will reduce the efficiency of OHSU's mobility program and trip reduction efforts.

PLAYBOOK INITIATIVES



CULTURE Adopt consistent policies campus-wide that integrate the six Plan goals into dai

that integrate the six Plan goals into daily life at OHSU.



PRICE

Use parking pricing to achieve desired outcomes and fund multimodal travel.



REWARD

Provide incentives and rewards to make it easier to take non-SOV modes.



COMMUNICATE

Make it easy to find information. Inform about travel behavior. Promote benefits and outcomes.



INFRASTRUCTURE

Invest in new infrastructure that costeffectively supports access to, from and within OHSU.

The Plays

OHSU will implement the Playbook via seven categories, or Plays. All of the Plays and their strategies should work in tandem and mutually support one another. For example, OHSU's ability to price parking effectively is dependent upon not only the price of parking itself and parking technology, but also the larger policy and communication strategies around why OHSU charges for parking and how it benefits campus access and mobility.



	P O	T	P N	B	S M	P	● P C
THE PLAYBOOK				THE PLAYS			
CULTURE	~	~	~	~	~	~	~
PRICE	~				~	~	~
R E W A R D	~	~	~	~	~		~
COMMUNICATE	~	~	~	~	~	~	~
INFRASTRUCTURE		~	~	~	~	~	

The Strategies

The seven Plays and their respective strategies are summarized below. A total of 34 strategies are included in the Plan.

While every strategy is important, not every strategy is "equal." The TDM Plan categorizes each strategy into one of three implementation categories.

- **High-Impact** + **High-Priority:** A strategy that has proven ability to reduce SOV trips and parking demand substantially and/or improve the travel experience in dramatic ways. A strategy that should be implemented in advance of other strategies and/or to address an immediate or short-term challenge, such as the Aerial Tram shutdown.
- **Support:** A strategy that facilitates, enhances, or supports one or more of the other strategies.
- Long-term + Regional: A strategy that requires significant additional evaluation, planning, or analysis. These strategies are long-term efforts that will likely require regional partnerships and funding.

High-Impact + High Priority

PO.2 - Active Workplace Culture and Training

Adopt official policies that support an active and flexible work environment that makes it easy to walk, bike, share rides, or take transit to and from OHSU. Enhance executive and management training to ensure that OHSU leaders fully and consistently integrate mobility programs and policies into their departments.

While seemingly simple, clear and consistent policies can dramatically shift the culture around transportation. Given the upcoming impacts of the tram shutdown, and bold approaches proposed in this Plan, a renewed focus on the culture of mobility at OHSU is a priority.

PO.4 - Telecommuting Policy and Program

Further develop and adopt robust and consistent telecommuting policies and training to increase the share of employees telecommuting one or more days a week.

Less than 1% of OHSU employees telecommute, yet many indicate that they would like to start, or do so more. Consistent policies and well-trained managers would increase the number of employees telecommuting, a cost-effective way to quickly reduce employee parking demand.



Additional direct service to campus could boost employee ridership.



Continued investment in highquality infrastructure will increase pedestrian safety and comfort.

T.1 - Transit Service Improvements

Work with TriMet and C-TRAN to provide more express and frequent bus service to OHSU campuses. Restructure the OHSU shuttle service to increase frequency over time and minimize duplicative services. Explore a new shuttle contract to improve service and vehicle quality.

More direct and frequent service could capture some of the existing OHSU employees who still find driving to be the most convenient commute mode. A new shuttle service and operating plan will be essential during the five-week tram shutdown, yet should include a long-term vision to respond to OHSU growth.

PN.1 - Pedestrian Access Improvements

Work with local and regional partners to complete pedestrian network gaps to, from, and within campus. Continue to invest in a connected street network and roadway improvements that prioritize safety, comfort, and access for all pedestrians.

Priorities should include high-collision corridors and existing walking paths on and off Marquam Hill. Such improvements will greatly improve pedestrian flow and safety on campus, as well as set the stage for increased walking activity, especially during the Tram shutdown.

B.1 - Bike Access Improvements

Work with local and regional agencies and partners to complete gaps in the bicycle network to, from, and within campus. Continue to invest in a connected network of bike facilities that is comfortable and accessible for a range of bike riders.

As feasible, prioritize physically separated facilities on major corridors. Such improvements will greatly improve bicycle safety to and from campus, as well as set the stage for increased biking activity, especially during the Tram shutdown.

B.2 - Bike Parking Improvements

Continue to invest in a diverse and high-quality bike parking program at OHSU. Prioritize expansion of bike parking to meet increasing demand. Plan for and invest in major new facilities, such as expanded bike valet on South Waterfront and a bike station on Marquam Hill. Require high-quality bike parking facilities for all new development.

New facilities should not only provide a safe, secure space for parking, but also incorporate and/or easily connect with showers and locker rooms.

SM.1 - Employee and Patient Lyft Program

Partner with Lyft to implement an employee rideshare solution that partially subsidizes certain trip types. Enhance the patient experience by partnering with Lyft to subsidize a portion of non-emergency medical trips. Streamline rideshare loading on campus by designating and developing pick-up, drop-off, and vehicle staging policies and locations throughout campus. OHSU is currently negotiating with Lyft to launch a pilot program in 2018. The Lyft subsidy and program would be facilitated by implementation of the Luum commute platform (Strategy PC.4).

SM.2 - Internal and Dynamic Carpooling Program

Launch an on-demand/dynamic carpooling service internal to OHSU employees, and provide subsidies for SOV employees who share a ride. Peer-to-peer, on-demand ridesharing matches co-workers and neighbors based on home location, route, predicted traffic, and user feedback.

OHSU is currently negotiating with Scoop to launch a pilot program in 2018. The Scoop carpooling program would be facilitated by implementation of the Luum commute platform (Strategy PC.4).

P.1 - Permits and Daily Pricing

Transition away from monthly parking permits to daily parking permits at all facilities, allowing employees to pay for parking only on the days they drive. Vary pricing charges by location and time of entry to manage demand. Automatically link daily payments to employee account and commute platform to facilitate easy use. Utilize parking restrictions/eligibility requirements as needed to manage employee demand for parking.

Daily parking charges can dramatically affect parking demand. Daily parking charges eliminate the "sunk cost" of a monthly or annual permit, reducing the incentive to drive every day to get "my money's worth." A daily pricing structure also offers flexibility for employees depending on their daily needs and does not lock them into any one mode.

PC.2 - Daily Financial Incentives

Develop and implement a daily financial incentive program to reduce SOV mode share and promote biking and walking to campus.

A daily financial incentive program would complement daily parking pricing (Strategy P.1) and an employee commute platform (Strategy PC.4), offering a strong "carrot" to incentivize non-SOV travel.

PC.4 - Employee Commute Platform

Unify all mobility related information and services in an online and mobile commute platform, including a dashboard with modal information, commute calendar, trip stats, incentives, and payment/ incentive integration. Integrate with real-time data and other 3rd-party mobility platforms.

OHSU is currently negotiating and planning with Luum to launch a commute platform in April of 2018 in anticipation of the Tram shutdown. Commute Calendar My Dashboard My Badges



Annual permits represent a sunk cost and incentivize driving. An employee commute platform, such as Luum, allows employees to pay only on the days they need to drive.

How were the OHSU TDM Plays and Strategies developed?

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The Plays and Strategies were developed as part of a collaborative process with the project team and key stakeholders. Informed by the existing conditions analysis, identification of issues and opportunities, and industry best practices, the project team held an interactive charrette to brainstorm a set of strategies across all parts of the OSHU mobility and travel experience. A list of 87 ideas were developed during the initial brainstorm.

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This large set of concepts were then grouped by category, refined, and screened against the previously defined project goals (see Chapter 4). In addition, criteria related to number of employees impacted and implementation timeline were included for the screening task. Each strategy was given a qualitative score, with higher weights applied to criteria related to multimodal access, costeffectiveness, and level of impact.

Strategies were then presented to the Stakeholder Advisory Committee (SAC) for feedback and input. These strategies were tested in the employee survey, asking respondents to prioritize which investments would help their commute the most. The screening process, SAC feedback, and employee survey results allowed the project team to eliminate and combine individual concepts into the package of 34 strategies.

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			HIGH- IMPACT				TIMELINE	E (YEARS)	
					LONG-TERM				
THE PLAYS	STRATEGIES	DESCRIPTION	HIGH- PRIORITY	SUPPORT	+ REGIONAL	IMMEDIATE (0 - 1)	SHORT-TERM (1 - 3)	MID-TERM (3 – 6)	LONG-TERM (6 - 10)
	Goals, Performance Measures, and Monitoring	implementation of the TDM Plan, as well as future mobility investments.		~		Full Launch	Monitor + Adjust	Monitor + Adjust	Monitor + Adjust
	PO.2 Active Workplace Culture and Training	Adopt official policies that support an active and flexible work environment. Enhance executive and management training to ensure that OHSU leaders fully and consistently integrate mobility programs and policies into their departments.	~			Full Launch	Monitor + Adjust	Monitor + Adjust	Monitor + Adjust
١c	PO.3 Staffing Support	Attract and hire staff to fulfill existing and future staffing needs. Reassess vendor and contract agreements on a consistent basis.		~		Monitor + Adjust	Monitor + Adjust	Monitor + Adjust	Monitor + Adjust
POL	PO.4 Telecommuting Policy and Program	Further develop and adopt robust policies and consistent training to increase the share of employees telecommuting one or more days a week.	✓			Planning+ Testing	Full Launch	Monitor + Adjust	Monitor + Adjust
	PO.5 Employee Housing Assistance	Work with local and regional partners to support the development of more housing at or near OHSU campuses. Evaluate an OHSU housing subsidy and/or assistance program as part of employee recruitment and retention.			~		Planning+ Testing	Soft Launch	Monitor + Adjust
	PO.6 Daily Services on Campus	Support the development and provision of on-campus daily services and amenities to reduce non-commute vehicle trips and improve affiliate satisfaction.			1		Planning+ Testing	Soft Launch	Monitor + Adjust
	T.1 Transit Service Improvements	Continue to work with regional partners to expand transit service to OHSU. Key priorities include additional express service that increase the convenience of transit for OHSU's dispersed employee and patient population.	~			Planning+ Testing	Full Launch	Monitor + Adjust	Monitor + Adjust
NSIT	T.2 Access to Transit Improvements	Continue to invest in infrastructure improvements that enhance connections to key transit corridors and stops.		~		Planning+ Testing	Full Launch	Monitor + Adjust	Monitor + Adjust
TRAI	T.3 Regional Water Taxi Service	As a long-term strategy, support a regional feasibility study of water taxi service that would connect OHSU's South Waterfront campus to major destinations along the Willamette River.			~		Planning+ Testing	Planning + Testing	Soft Launch
	T.4 Downtown Tram/Gondola Connection	As a long-term strategy, support a regional feasibility study of a second tram or gondola that would provide a direct connection to downtown.			~		Planning+ Testing	Planning+ Testing	Soft Launch
7	PN.1Pedestrian Access Improvements	Work with local and regional partners to complete pedestrian network gaps to, from, and within campus. Continue to invest in a connected street network and roadway improvements.	✓			Planning+ Testing	Full Launch	Monitor + Adjust	Monitor + Adjust
EDESTRIA	PN.2 Pedestrian Safety Program	Implement pedestrian-focused safety programs that decrease the risk of collisions and increase pedestrian comfort and safety.		1		Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust
đ	PN.3 Pedestrian Rewards Program	Create a pedestrian rewards program that incentivizes and encourages walking trips through giveaways and friendly competition.		1		Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust

			HIGH- IMPACT		LONG-		TIMELINE	(YEARS)	
THE PLAYS	STRATEGIES	DESCRIPTION	+ HIGH- PRIORITY	SUPPORT	TERM + REGIONAL	IMMEDIATE (0 - 1)	SHORT-TERM (1 - 3)	MID-TERM (3 - 6)	LONG-TERM (6 - 10)
ΎΕ	B.1 Bike Access Improvements	Work with local and regional partners to complete gaps in the bicycle network to, from, and within campus. Continue to invest in a connected bike network. As feasible, prioritize physically separated facilities on key corridors.	~			Planning + Testing	Full Launch	Monitor + Adjust	Monitor + Adjust
	B.2 Bike Parking Improvements	Continue to invest in a diverse and high- quality bike parking program. Prioritize expansion of bike parking to meet increasing demand. Plan for and invest in major new parking facilities.	~			Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust
BI	B.3 Bike Share Program	Simplify, expand, and subsidize access to bike share for employees, students, patients, and visitors.		~		Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust
	B.4 Bike Rewards Program	Create a rewards program to encourage more employee bike trips, promote safe riding, and incentivize ongoing bicycle commuting.		~		Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust
ורודץ	SM.1 Employee and Patient Lyft Program	Partner with Lyft to implement an employee ride hail solution that partially subsidizes certain trip types to encourage a reduction in parking demand and congestion. Enhance the patient experience by partnering with Lyft to provide non-emergency medical trips.	~			Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust
RED MOB	SM.2 Internal and Dynamic Carpooling Program	Launch a dynamic carpooling service internal to OHSU employees. Provide subsidies for employees who share a ride.	✓			Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust
SHARED	SM.3 Enhanced Car Share Program	Subsidize car share trips and increase the number of car share services and vehicles on campus to allow non-driving employees the flexibility to better manage midday or unplanned trips.		~		Planning + Testing	Full Launch	Monitor + Adjust	Monitor + Adjust
	P.1 Permits and Daily Pricing	Transition away from annual parking permits to daily parking at all employee facilities, allowing employees to pay for parking only on the days they drive.	~			Planning + Testing	Soft Launch	Full Launch	Monitor + Adjust
	P.2 Employee Parking Operations	Revise key employee parking policies to improve and support parking management.		1		Full Launch	Monitor + Adjust	Monitor + Adjust	Monitor + Adjust
PARKING	P.3 Patient Parking Experience	Continue to invest in a high-quality and convenient parking experience for patients and their visitors. Prioritize consistent availability and a seamless experience linked to appointment scheduling.		~		Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust
	P.4 Valet Parking Services	Expand valet parking services for employees, patients, and visitors. Require electronic valet at all facilities. Evaluate a universal valet service.		1		Full Launch	Monitor + Adjust	Monitor + Adjust	Monitor + Adjust
	P.5 Parking Safety and Security	Improve safety and security at parking facilities, especially more remote parking facilities.		~		Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust

			HIGH-				TIMELINE	E (YEARS)	
тне			ІМРАСТ + НІСН-		LONG-TERM +				
PLAYS	STRATEGIES	DESCRIPTION	PRIORITY	SUPPORT	REGIONAL	(0 - 1)	(1 - 3)	(3 - 6)	(6 - 10)
	P.6 Carpool Parking Program	Support and incentivize carpooling by offering free or more deeply discounted carpool parking. Designate carpool-only spaces at key facilities.		~		Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust
DNI	P.7 Expand Parking Supply	Strategically invest in new and/or replacement parking facilities to support short- and long-term growth. Explore additional opportunities for remote parking.		~		Full Launch	Monitor + Adjust	Monitor + Adjust	Monitor + Adjust
PAR	P.8 Facility Access Control and Enforcement	Continue to upgrade access control at all parking facilities to support enforcement and parking management.		~		Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust
	P.9 Data Collection/ Reporting	Enhance parking data collection and reporting to facilitate management and transparency of the system.		~		Full Launch	Monitor + Adjust	Monitor + Adjust	Monitor + Adjust
N S	PC.1 Mobility Comms	Create a unified and comprehensive communications program that provides information on mobility policies, programs, and services toaffiliates and the community at large.		~		Full Launch	Monitor + Adjust	Monitor + Adjust	Monitor + Adjust
INICATIO	PC.2 Daily Financial Incentives	Develop and implement a daily financial incentive program to reduce SOV mode share and promote biking and walking to campus.	~			Planning + Testing	Soft Launch	Monitor + Adjust	Monitor + Adjust
+ COMML	PC.3 Commute Challenges	Host commuter challenges via the Luum commute platform to encourage the use of non-SOV modes and promote friendly competition within and between departments.		~		Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust
OGRAMS	PC.4 Employee Commute Platform	Unify all mobility services in a mobile commute platform, including a dashboard with modal information, commuter trip stats, and payment/incentive integration with OHSU HR and Payroll departments. Integrate real-time data feeds and other 3rd-party mobility apps into the platform.	~			Full Launch	Monitor + Adjust	Monitor + Adjust	Monitor + Adjust
РК	PC.5 Wayfinding Improvements	Improve wayfinding for users of all modes to improve navigation to, from, and within campus. Prioritize the wayfinding recommendations included in the OHSU Night Access Plan.		~		Soft Launch	Full Launch	Monitor + Adjust	Monitor + Adjust

Ultimately, the model should be viewed as a useful tool to arrive at the preferred path forward.

What are the Estimated Impacts?

The OHSU TDM Plan proposes a comprehensive package of strategies to reduce drive-alone rates and parking demand, increase multimodal access, and improve the overall travel experience to, from, and within OHSU.

In order to understand the potential trip reduction and financial implications of these investments, as well as refine the strategies themselves, a model was developed that illustrates the financial impact, mode split, and parking demand for different levels of investment in TDM and parking.

This exercise provided a planning-level estimate of the costs and trip reduction benefits of the TDM Plan. While based on industry standards, the latest empirical research, and best practices, it includes several assumptions about how OHSU will grow and change, and how OHSU affiliates will modify their travel behavior in response to the TDM strategies. There are dozens of possible iterations of the model, and modifying the assumptions and changing the scenarios would result in different outputs.

This chapter provides a high-level summary of the modeling effort and its results. The results represent the best estimate of potential outcomes. Ultimately, the model should be viewed as a useful and ongoing tool to evaluate the "goal posts" and tradeoffs inherent in the TDM Plan to arrive at the preferred path forward. As discussed in Chapter 5, the TDM Plan is "living" document, ready for ongoing revision and recalibration over time.

Core Assumptions

As with any modeling exercise where information is imperfect, a number of assumptions were made. In general, a best estimate was based on existing programs and revenues, experience with other institutions, and professional judgment. This model used the following basic assumptions:

- Increases in campus population by user group:
 - » Employees: 3% baseline annual average, with anticipated growth spikes in 2018 (opening of Knight Cancer Research Building), 2019 (opening of Center for Health & Healing 2 and Rood Family Pavilion), and 2023 (opening of Hospital Tower).
 - » Students: 1% annual average.
 - » Patients: 4.1% annual average.
- Price elasticity of demand for parking was assumed to be -0.3 (i.e. a 10% increase in parking price reduces parking demand by approximately 3%).
- 3% annual inflation rate.
- Parking costs:
 - » Construction: \$70,000-\$82,000 per space.
 - » Operations and Maintenance: \$400 per space per year (lot) and \$650 per space per year (garage).
 - » 30-year loan at 4.3% rate.

Methodology

The basic modeling steps included:

- 1. Review current campus population and parking supply/demand by user group (employees, students, patients, and visitors). Parking demand is based on observed occupancy data.
- 2. Estimate future population of each user group, based on OHSU assumed growth rates.
- 3. Project parking supply changes based on loss or addition of parking facilities. Develop three parking supply scenarios Planned, Moderate, and Maximum.
- 4. Develop list of parking and TDM strategies. Differentiate strategy investments into three scenarios Baseline TDM, Moderate TDM, Maximum TDM.
- 5. Estimate trip reduction impacts for each strategy and for each TDM scenario. Elasticities developed by the California Air Pollution Control Officers Association (CAPCOA) were applied for selected measures, representing the best existing research on trip and parking generation. A range of trip demand elasticities by scenario estimated via CAPCOA is shown in Figure 1.
- 6. Estimate implementation costs and timeline for each strategy and scenario. Costs and phasing are based on a combination of existing OHSU programs costs, industry standards, and assumptions.
- 7. Estimate future parking demand for each user group based on existing parking demand ratios and anticipated TDM impacts.
- 8. Measure the revenue and expenditure impacts of both new TDM strategies and the effects of those measures on revenues/expenditures.

Scenarios

The model analyzed a series of scenarios calibrated around two major inputs: 1) level of TDM investment, and 2) amount of new parking construction. Figure 1 below summarizes the TDM investment scenarios and their estimated trip reduction impact. The Strategy Dashboard provides a more detailed description of the strategies by level of investment. Figure 2 summarizes the assumed parking additions and subtractions by scenario.

Figure 1.	Summary	of TDM	Scenarios	(2018 -	2027)
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TDM SCENARIO								
BASELINE		MODE	RATE	MAXIMUM				
Status quo parking management and TDM programs/policies		 Baseline Scena Phased impler TDM strategie Daily parking \$2 per day datincentive Shuttle Service Transit Access Pedestrian Access/P Rewards (+) Shared Mobili 	rio, plus: mentation of 34 es (\$) ily bike/walk ce (+) s (+) ccess (+) Parking (+) ty (+)	 Moderate Scenario, plus: Accelerated implementation of 34 TDM strategies Daily parking (\$\$\$) \$5 per day daily bike/walk incentive Shuttle Service (++) Transit Access (++) Pedestrian Access (++) Bike Access/Parking (++) Rewards (++) Shared Mobility (++) 				
ESTIMATED ADDITIONAL TRIP REDUCTION (BY END OF 2027)								
	В	SASELINE	MODERATE		MAXIMUM			
Patients/Visitors	No additional impact		5 - 7%		9 - 10%			

14 - 17%

No additional impact

Employees/Students

19 - 21%

	PARKING SCENARIOS						
	PLANNED		MODERATE		MAXIMUM		
FACILITY	YEAR	SPACES	YEAR	SPACES	YEAR	SPACES	
Knight Cancer Research Building	2018	74	2018	74	2018	74	
Rood Family Pavilion	2019	607	2019	607	2019	607	
Block 33 Lot	2020	-191	2020	-191	2020	-191	
DOT Marquam (Lease)	2020	150	2020	150	2020	150	
Schnitzer Lot					2021	-526	
Schnitzer Garage					2022	1,200	
Block 33 Garage					2023	900	
Hospital Tower			2023	305	2023	305	
Garage C Existing	2023	-382	2023	-382	2023	-382	
Garage C Replacement/ Lot 10 Garage	2024	382	2024	382	2024	382	
TOTAL NET NEW SPACES		640		945		2,519	

Key Findings

Figure 3 summarizes the overall results of the TDM model by scenario. Figure 4, Figure 5, and Figure 6 show parking supply/demand and financial projections by year from 2018 to 2027 for three of the nine modeled scenarios: 1) Baseline TDM + Planned Parking, 2) Baseline TDM + Maximum Parking, and 3) Moderate TDM + Moderate Parking (Recommended Scenario). Scenarios 1 and 2 are highlighted because they represent two potential "extremes" for how OHSU could approach its parking and TDM investments. Scenario 3 is highlighted because it was identified as the recommended option. The results of all nine scenarios are shown in Figure 3.

Key findings include:

- **Doing nothing is not an option.** If OHSU continues with a status quo TDM program and only the "planned" level of parking construction, there is an estimated deficit of almost 2,300 spaces by the end of 2027.
- **Building only parking is not an option.** Even if OHSU built the maximum amount of parking, it would still have a parking deficit by the end of 2027 given projected growth and no additional SOV reduction. In addition, OHSU would likely not be able to financially sustain this level of investment in parking construction and operations.
- More TDM investment is needed. No matter the parking scenario, OHSU will likely have a deficit by the of 2027 if it does not work to reduce SOV trips and parking demand through additional TDM investment.
- The recommended scenario is "Moderate TDM + Moderate Parking." This scenario appears to present the most cost-effective mix of TDM and parking investment, while ensuring that OHSU's parking facilities are efficiently utilized to provide a "buffer" that can accommodate fluctuations in demand.
- Maximum TDM investment is likely not cost-effective at this time. A "maximum" level of TDM investment would potentially eliminate parking deficits, but result in cost overruns that are more substantial, while potentially resulting in inefficient use of parking facilities.
- All scenarios run a 10-year deficit. TDM programs and parking construction are very expensive. Given the anticipated costs, it is unlikely that revenue from parking and other existing funding sources can fully cover costs. To address the deficit, OHSU could increase the cost of parking (which would likely reduce demand and affect revenue) and identify additional new sources of revenue for the mobility program.
- The model does not capture all of the benefits of TDM investment. Anticipated impacts do not include wider benefits for employees, students, patients, visitors, and the community. These wider benefits include employee satisfaction and retention, overall ease of access for patients, community support for OHSU, and the opportunity costs of OHSU's land.

While the recommended scenario runs a deficit, it also allows OHSU to potentially build new patient/research facilities instead of parking, which could more than pay for the costs of the TDM program.

Figure 3. Summary of Parking and TDM Scenarios

	SCENARIO									
	TDM - BASELINE			TDM - MODERATE			TDM - MAXIMUM			
IMPACT AREA	PARKING - PLANNED	PARKING - MODERATE	PARKING - MAXIMUM	PARKING- PLANNED	PARKING - MODERATE	PARKING - MAXIMUM	PARKING- PLANNED	PARKING - MODERATE	PARKING - MAXIMUM	
Peak Parking Demand (2027)	9,809	9,809	9,809	7,345	7,345	7,345	6,719	6,719	6,719	
Parking Supply (2027)	7,536	7,845	9,419	7,536	7,845	9,419	7,536	7,845	9,419	
Demand/ Supply Ratio (2027)	130%	125%	104%	97%	94%	78%	89%	86%	71%	
Average Annual TDM Costs (2018-28)	\$(7.4m)	\$(7.4m)	\$(7.4m)	\$(12.3m)	\$(12.3m)	\$(12.3m)	\$(15.8m)	\$(15.8m)	\$(15.8m)	
Average Annual Parking Costs (2018-28)	\$(14.6m)	\$(15.5m)	\$(22.9m)	\$(14.6)	\$(15.5m)	\$(22.9m)	\$(14.6m)	\$(15.5m)	\$(22.9m)	
Average Annual Revenue (2018-28)	\$19.3m	\$19.6m	\$21.1m	\$24.0m	\$24.0m	\$24.0m	\$24.4m	\$24.4m	\$24.4m	
Average Annual Revenues Minus Costs	\$(2.7m)	\$(3.3m)	\$(9.1m)	\$(2.8m)	\$(3.7m)	\$(11.1m)	\$(6.0m)	\$(7.0m)	\$(14.3m)	











Figure 6. Moderate TDM + Moderate Parking (Recommended Scenario)

What is Next for OHSU?

The TDM Plan serves as OHSU's mobility roadmap for the next decade. It provides a general framework for action and helps staff define the specific implementation steps. The path forward for OHSU will not linear, but flexible and fluid. The TDM Plan serves as a living document that will continue to adapt to the ever changing needs of OHSU affiliates.

This TDM Plan provides an overview of the planning process, issues and opportunities, and packages of recommendations. The complementary Strategy Dashboard provides a detailed description of each strategy, including a scoring summary, cost estimates, and supporting information.

To help prioritize the work ahead, 11 "High Impact + High Priority" strategies have been identified. By the end of 2017, OHSU is already working to implement many of these priority efforts:

- Adopt robust policies and consistent training to increase telecommuting (Strategy PO.4): OHSU has created a telecommuting Toolbox for departments and managers, conducted a telecommuting pilot, and has plans to further the telecommuting effort with the support of executive leadership.
- Work with regional partners to expand transit service to OHSU (Strategy T.1): Leveraging data from the Night Access Plan Project, OHSU worked with TriMet to get extended service hours on the list of proposed September 2018 service enhancements. This proposal includes both earlier and later on Routes 61, 64, 66, 68.
- Implement targeted rideshare subsidy programs for employees and patients (Strategy SM.1): OHSU has established a partnership with Lyft for an employee ride-hailing program and for nonemergency medical patient trips. This program will be fully operational in early 2018.
- Implement dynamic, OHSU-specific carpool service (Strategy SM.2): OHSU is finalizing a partnership with Scoop to offer dynamic ridesharing for OHSU employees. This program is expected to launch in 2018.
- **Implement an Employee Commute Platform (Strategy PC.4)**: OHSU has partnered with Luum to provide OHSU employees with a commute platform. The platform is planning to go live in spring of 2018.
- Planning for a pilot of Daily Parking (Strategy P.1) and a Daily Financial Incentive (Strategy PC.2): OHSU staff are currently engaged in development of pilot programs for both daily pricing and a daily financial incentive. It is anticipated that a daily incentive would be made available during the Tram shutdown, while daily pricing would be tested with the opening of the Knight Cancer Research Building in 2018.

This quick and decisive set of actions demonstrate OHSU's commitment to reducing the drive alone rate, addressing transportation and access challenges, and implementing the TDM Plan.

OHSU is already working to implement many of these priority efforts. This quick and decisive set of actions demonstrate OHSU's commitment to implementing the TDM Plan.

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Transportation and Parking

3181 S.W. Sam Jackson Park Road Portland, OR 97239-3098



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