The Ohio State University
Comprehensive Transportation and
Parking Plan 3

Final Report

November 2020

Presented to The Ohio State University by Stantec Consulting.

The consultant project team would like to thank The Ohio State University and CampusParc for their partnership in this study. Special thanks to the working group members, including: Aaron Moore (A&P), Matt Burgdorf (CampusParc), Sarah Blouch (CampusParc), Tom Komlanc (FOD), Glenn Yoder (FOD), Leslie Weibush (OAA), Kim Moss (PARE), Carolyn Verga (PARE), Steve Volkmann (PARE), Tom Holman (TTM), Balaji Ponnu (TTM), Beth Snoke (TTM)

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GLOSSARY

FOD	Facilities Operation and Development
OAA	Office of Academic Affairs
A & P	Administration and Planning
TNC	Transportation Network Company such as Uber or Lyft
TTM	OSU Transportation and Traffic Management Department
TDM	Transportation Demand Management
COTA	Central Ohio Transportation Authority
BRT	Bus Rapid Transit
North Knot	State Route 315 Highway Interchange at Kinnear Road and 12th Avenue
Northwest Corridor	Generally State Route 315, paralleling Olentangy River Road and providing commuter connections from northwest communities to Downtown
Micro-mobility	Collective term including a range of small, lightweight vehicles such as bicycles, ebikes, electric scooters, electric skateboards, shared bicycles

Concession Agreement

The parking concession is a 50-year term Lease Agreement where CampusParc paid the university $483M up front in exchange for the exclusive right to operate and collect all future revenue from the parking system for the term of the Agreement. While not a barrier to change, it is a consideration that must be taken into account when considering proposals to reduce parking demand.

ES Executive Summary

Before the conclusion of this effort, the COVID-19 pandemic began impacting travel to, from and on campus. However, the goals and recommendations contained in this plan do not change. Strategies in this plan respond to the pandemic as an opportunity to accelerate initiatives, such as creating more efficient use of roadway space for bicycles and micro-mobility and launching joint initiatives to supplement CABS service with COTA buses.

ES 1.1 Why CTPP 3 Now?

Business as usual is no longer a viable approach for transportation at The Ohio State University (Ohio State). In 2012, the university entered into a long-term partnership with CampusParc which shifted the risk associated with future parking demand, maintenance and operation of the parking system to CampusParc. However, as the campus grows and changes, challenges continue to remain forcing these two entities to collaborate more around a shared vision for mobility.

Population is steadily increasing and new buildings are replacing surface parking in the core of campus with substantial expansion planned in the West Campus Innovation District. This poses the following key challenges:

- Unabated demand for parking; and associated costly parking construction.
- Campus growth is concentrated in areas where there is limited parking availability.
- Congestion and safety challenges in the core of campus.
- A growing backlog of deferred maintenance needs such as roadways and signals.
- An immediate need to develop solutions to long-term transportation needs such as the northwest corridor and North Knot.
- Challenges in meeting sustainability goals such as Greenhouse gas emission targets.
- Need for competitiveness with peers that will support continuing recruitment and retention.

The Comprehensive Transportation & Parking Plan (CTPP) 3 is a collaboration between Ohio State and CampusParc (CP) to respond to these near and long term challenges. CTPP 3 builds on prior plans including Framework 2.0 (2017) which lays the foundation for the transformation of Ohio State and the addition of more faculty and staff and new office, research, and lab space. Framework 2.0 identified key transportation needs including: better defining gateways and access from regional roadways, improving connections to and through campus for all modes of transportation and developing an alternative model for funding infrastructure projects.

CTPP 3 seeks to provide more detailed guidance and the roadmap on how to get there including:

- A roadmap that outlines priorities to achieve an efficient and sustainable transportation and parking system.
- Improved “usability” for everyday users and visitors.
- Support for the growth and evolution of the campus.
- Better and more effective leverage of projects and plans outside the campus boundaries to support Ohio State’s goals.

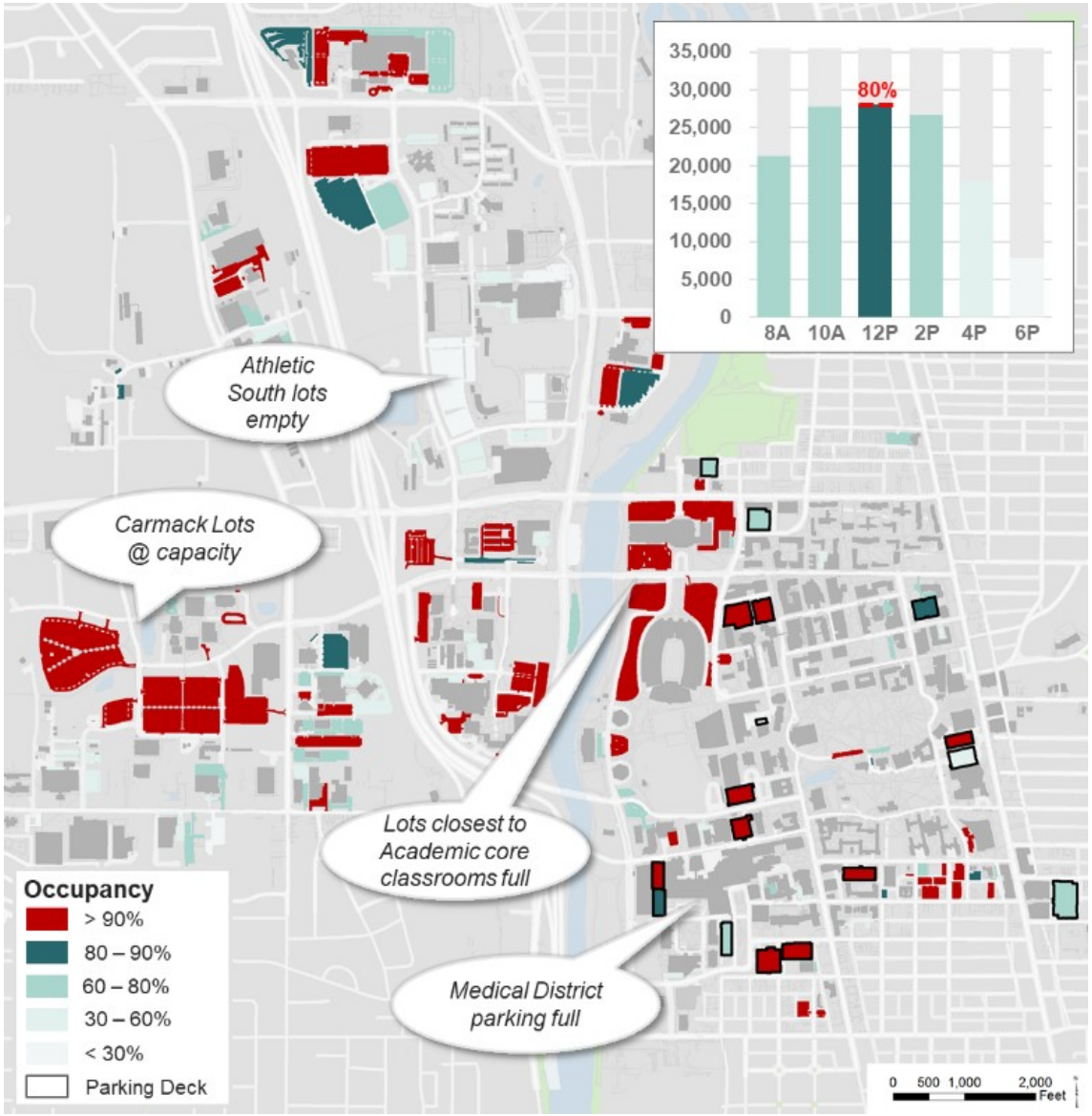

Figure 1: Peak Parking Demand
At the peak, 20% of the parking supply is unused.

Vision

The vision below was developed with the core advisory group, made up of the Working Group members.

"As a leading national flagship public research university,
The Ohio State University will provide a sustainable, efficient, and effective transportation experience that provides excellent customer service, choice, affordability and convenience.

"Programs will embrace technology to integrate parking, transit, ride sharing, electric vehicles and other travel modes in a seamless, user-friendly manner."

Project Goals

Project goals were developed and focus on improving parking, developing transportation demand management (TDM) solutions, improving East-West connectivity, managing traffic safety in the campus core, improving regional access, enhancing CABS and leveraging COTA service, expanding bike/scooter/walk networks and regulating new forms of mobility such as Uber and Lyft. Additional specific focus areas include opportunities to better manage parking at the Wexner Medical Center, create availability for patients and visitors and assessing circulation improvements, as well as providing better access for employees that move between locations throughout the day. Goals specific to West Campus include improving access to and from State Route 315, identifying multi-modal priorities and street network improvements.

Three Initiatives to Achieve the Vision

Three key initiatives are proposed to achieve the goals and vision:

1. A Seamless Campus Transportation and Parking Experience
2. Transit Initiatives
3. Walk/Bike/Shared Mobility Infrastructure Initiatives

ES 1.2 Summary of Key Findings

The project team conducted an extensive analysis of existing traffic and transportation data, meetings with key stakeholders and campus partners, a review of peer institutions and campus transportation preferences through survey data and field visits. Based on the team's review the following is a summary of high-level findings:

- **Need for a unified transportation vision and services platform**: Each of CampusParc, TTM and Facilities Operations and Development run separate service platforms addressing parking, transit, transportation programs and infrastructure. This presents an opportunity to unify services and programs to better reflect today's varied customer needs.
- **Parking supply is congested but there is availability in the system**: At the peak (mid-day) on Tuesdays and Thursdays parking is 80% full. This still leaves 20% of supply available. After 4 pm availability hits 50%. This presents an opportunity to use existing supply more efficiently before building more parking.
- **Parking paired with transit and multi-modal infrastructure is essential to avoid gridlock as the West Campus Innovation District develops**: New parking planned for the district will help accommodate new demand and supply displaced from the core. But must be paired with robust transit, walk, bike, micro-mobility, and last mile solutions to reduce traffic congestion and cater to demand. Projects such as untangling the North Knot and new BRT service on the northwest corridor must become a priority.
- **There is potential for mode shift**: Large numbers of parking permit holders live within a reasonable walk, bike, and bus distance of campus. This presents an opportunity to invest in multi-modal infrastructure, to incent mode shift away from driving, reduce congestion, and reduce pressure to build more parking. Over the past five years, many similar large schools such as the University of Arkansas have seen more than a 15% shift toward transit, walk and bike, and away from driving.
- **While there has been progress, Ohio State lags behind peers in bicycle and micro-mobility infrastructure:** Ohio State has a nation-leading e scooter program and recently attained Silver Level status from the League of American Cyclists. However, there are currently no protected bicycle/micro-mobility lanes connecting to campus.
- **The walking core of campus has expanded**: At many core campus locations there are more people on foot and bicycles than in cars or on buses. This represents an opportunity to expand the walking core of campus by restricting vehicular access and improving walk safety.
- **Limited funding sources**: The lack of a consistent, dependent funding stream for transportation is contributing to several challenges including a backlog of projects, and a limited ability to respond to new needs such as additional buses during the pandemic and transportation infrastructure to support the West Campus Innovation District. In addition, to be able to fund recommendations contained in this report, it will be necessary to explore new funding mechanisms.

For more detail see Key Findings in Chapter 1 and the State of the System in the Supporting Documents.

At Neil and 12th Avenue the number of people on foot overwhelms the intersection and causes delays in CABS service.

ES 1.3 Catalytic Recommendations and Roadmap

Seven catalytic recommendations were developed. Each of these recommendations is described in further detail in Chapter 3.0 Recommendations, including short-term actions, partners, funding, and considerations for mid to long-term.

1. **Create Demand Responsive Zones and Variable Parking Pricing**
   This recommendation introduces the concept of new parking zones across campus that are closely calibrated to reflect demand. The most convenient and high demand zones are priced higher than parking zones located further from key destinations. The goal is to re-balance the parking system to relieve pressure in congested areas and incent parking in areas that are less heavily used. This result is that the parking supply is used more efficiently while also addressing the fact that, today, Wexner Medical Center parking is at capacity.

2. **Designate Funding to Support Transportation Alternatives**
   New funding streams are needed to support alternatives to driving. This is both for programs and for multi-modal infrastructure. The Ohio State University must investigate new funding streams that might include a student transportation fee, development mitigation and/or impact fees and additional net new revenue from parking rate increases. This addresses at least three critical needs: I) Supplemental funding needed for TDM and multi-modal transportation programs; II) Funding is also needed for deferred maintenance of Ohio State transportation infrastructure; and III) To support additional campus growth that will require expansion of the CABS and transportation services.

3. **Leverage COTA Service to Reduce Parking Demand and Congestion**
   The recommendations here seek to build on Ohio State's partnership with COTA and continue to promote bus service as a preferred means of traveling to campus. This means focusing on improving bus services for existing and potential ridership, such as medical center workers, and over the longer-term developing better regional service to campus and providing a viable alternative to commuting by car.

4. **Streamline CABS Service to Reduce Reliance on Cars**

   This recommendation continues to enhance CABS service to ensure it is the preferred means of travel on and around campus. The focus includes immediate adjustments to CABS routes to reduce conflicts with foot traffic in the core of campus, re-alignment of routes to serve new commuter lots in west campus and potential cost-saving measures that replace traditional fixed route services with on-demand services. Longer-term, to cater to West Campus Innovation District growth, an East/West Circulator and connection to the Northwest Corridor transit are recommended providing bi-directional, high frequency service.

5. **Plan for Long-term, Robust Transit Network**

   The overall recommendation focusses on partnering with COTA to pursue strategic, long -term expansion. Specifically, this means supporting current initiatives to develop the Northwest Corridor for premium BRT service and planning for better regional bus services that are competitive with the cost and convenience of driving.

6. **Build Bicycle / Shared Mobility Network for all Ages and Abilities**

   This plan recommends the addition of separated bike and micro-mobility lanes connecting students and employees to campus, first focusing on East-West connections. Conceptual cross-sections are contained in the Supporting Documents. Greater comfort and safety will support an increase in bicycle and e-scooter mode share and help reduce demand for parking permits. A robust in-street bicycle and micro-mobility network will also bring Ohio State in line with leading peers and nationwide benchmarks such as the University of Minnesota and University of California Davis.

7. **Expand Campus Walking Core**

   This recommendation builds on CTPP 2 and recommendations to better manage traffic in the campus core. This means expanding the traditional walking core of the campus to Lane Avenue, High Street, 11th Avenue and west to the river. This requires that 12th Avenue, College Avenue, Woodruff Avenue, and Annie and John Glenn Avenue become managed streets preserving access to service vehicles but prohibiting private vehicles. Expansion of the walking core will require re-configuration of access to parking, such as the Arps and Union North and South garages. To improve service, information, and safety, it is also recommended to create designated pick-up and drop-off zones.

Note that these are not listed in order and will be worked on simultaneously and not in sequence.

See Figure 2 CTPP 3 Roadmap. This provides a high-level summary of actions relating to the seven catalytic recommendations and under each of the three initiatives.

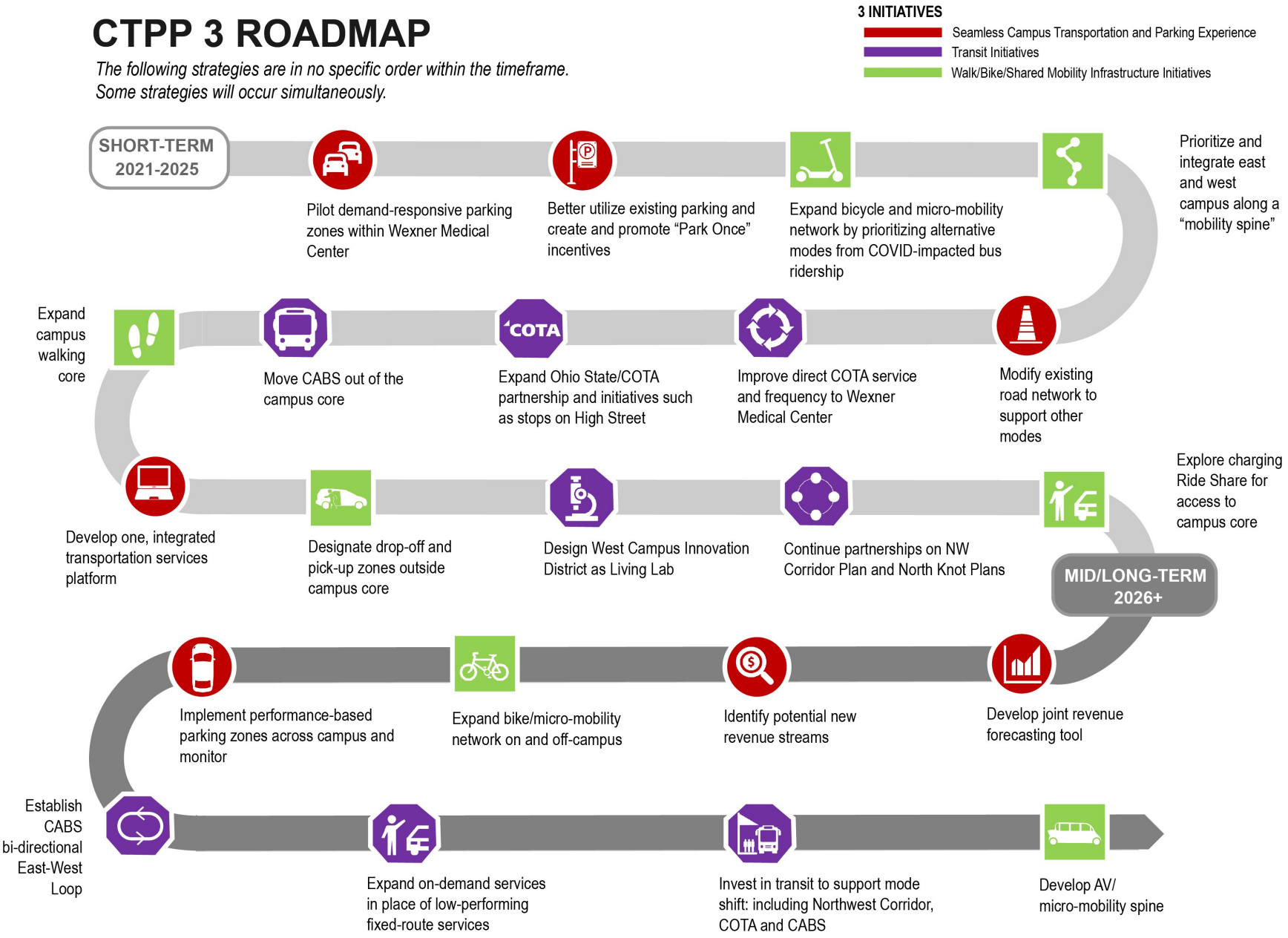

Figure 2: CTPP 3 Roadmap

ES 1.4 Considerations for Future Study

The following are suggestions for future study.

- **Analyze campus-wide origin/destination data**: To better serve customer needs, it is recommended that an origin/destination survey is conducted to help target Ohio State populations based on geographic proximity to transportation services.
- **Gather parking utilization data to monitor changes in demand**: Annual data gathering is recommended to document parking demand in response to adjustments in pricing and management.
- **Develop joint forecast tool**: It is recommended that a joint financial forecast tool is developed by Ohio State and CampusParc to help measure the transportation system's performance under future conditions and scenarios and allow joint financial planning.
- **Explore combined transportation services platform**: Tools such as RideAmigos and LUUM offer customer-friendly transportation services platforms that combine parking and other modes. These are used effectively at peer institutions and help incent use of non-driving modes.
- **Development of bicycle, micro-mobility network priority projects**: Key corridors such as Woody Hayes/Woodruff Avenue should be prioritized for re-design for safer bicycle, and micro-mobility travel. See illustrative cross-sections contained in the Supporting Documents and Catalytic Recommendation 6: Build Bicycle/Micro-Mobility Network for All Ages and Abilities.
- **CABS System Study**: It is recommended that the CABS system is studied to identify potential improvements to make it more user-friendly. This might include approaches such as renaming routes to help make the system more intuitive.

1.0 INTRODUCTION

These are times of transition for Ohio State and transportation. Staff, student, and faculty travel experiences are changing rapidly. Information is delivered real-time to personal phones, Lyft and Uber have filled a gap between traditional regulated taxi services and fixed route transit, carpooling apps make it easier to share rides and parking apps allow advance-planning on where to park. TTM has successfully implemented many innovative programs such as Lyft Ride Smart and has set the bar on proactively partnering with scooter vendors. As parking has been displaced from the campus core, CampusParc and TTM have collaborated to provide convenient, affordable park and ride services.

The pandemic now presents an opportunity to accelerate recommendations contained in this Plan such as shifting class schedules to reduce peak parking pressure, adding bicycle and micro-mobility lanes and expanding partnerships with COTA to address COVID restrictions on CABS bus capacity.

1.1 Structure of this Report

This report is structured as follows. The Executive Summary is intended as a standalone document providing a high-level summary. The main body of the report includes Chapter 1.0 Introduction addressing the vision and goals, plan process and key findings. For more detail on key findings, see the State of the System report and slides contained in the Supporting Documents. Chapter 2.0 contains the catalytic recommendations 1-7 falling under each of the three initiatives: 1. Seamless Campus Transportation and Parking Experience. 2. Transit Initiatives and 3. Walk/Bike/Shared Mobility Infrastructure Initiatives.

1.2 Prior Plans

CTPP 3 builds on the University's Strategic Plan and prior plans including Framework 2.0 (2017) which lays the foundation for the transformation of Ohio State and the addition of more faculty and staff and new office, research, and lab space. Framework 2.0 identified key transportation needs including: better defining gateways and access from regional roadways, improving connections to and through campus for all modes of transportation and developing an alternative model for funding infrastructure projects. The team also consulted:

- Bringing Smart Mobility to Life | Creating a Vision for Smart Mobility at Ohio State University (2020)
- The Ohio State University West Campus Phase 1 Developments Roadway System Needs (2019)

Annie and John Glenn Avenue re-imagined as a curbless, slow speed, street that connects east and west campus prioritizing micro-mobility and autonomous, electric vehicles.

1.3 Visions & Goals

Eleven (11) goals were developed for CTPP 3 based on prior studies, extensive discussions with stakeholders including two days of kick-off meetings and refinements made to a set of draft goals circulated to the core Working Group.

Campus-Wide

- Develop guiding principles for transportation system to meet future growth needs
- Plan a path forward for financial sustainability
- Improve parking experience
- Identify best-in-class TDM solutions
- Enhance east-west connectivity
- Manage academic core traffic and improve safety
- Improve regional access
- Enhance CABs
- Leverage better COTA service to campus
- Expand walk / bike and scooter networks
- Regulate new forms of mobility

The following goals focus on three growing sub-districts:

Wexner Medical Center

- Better manage existing parking facilities
- Create parking availability for patients and visitors
- Refine circulation improvements
- Provide better access solutions for employees that move between locations throughout the day

Arts District

- Peer review proposed plans
- Audit potential visitor needs

West Campus Innovation District

- Recommend street network improvements
- Improve access to / from State Route 315 ramps, the “North Knot”
- Identify and prioritize multi-modal projects

During the preparation of the plan the scope of work was adjusted to reflect a shift in priorities. For example, Northwest Corridor connections and team coordination were accelerated, and Arts District needs were addressed through review and discussion.

1.4 Plan Process

CTPP 3 is the result of a review of prior plans, a deep data dive, extensive stakeholder discussions, the participation of the City and COTA, site visits and Stantec's archive of national best practices and higher education experience.

Stakeholders

CTPP 3 was developed in close coordination with a core advisory group that met on a bi-weekly and weekly basis. Members of the core advisory group included leadership from CampusParc and TTM. Key milestone presentations were made to the Working Group, Ohio State leadership and a broader representation of campus stakeholders and Ohio State partners such as the City of Columbus and COTA.

Data

In addition to stakeholder outreach and input, CTPP 3 recommendations were developed based on a deep data dive including current and future building plans, population, enrollment and employment trends, parking supply utilization and permit sales, base maps and GIS layers, new multi-modal traffic counts (Spring and Fall 2019), CABS routes and ridership data by stop, regional traffic and Stantec's own field observations including Pedestrian Level of Service (PLOS). Travel preferences were also analyzed based on a 2017 campus wide transportation survey.

CTPP 3 Working Group Members

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1.5 Key Findings

The following pages provide a summary of key findings by subject matter and subtopics. For more detail, see the State of the System contained in the Supporting Documents.

Subject	Topic	Finding	Opportunity
OVERALL	Vision	Ohio State lacks a unifying vision that unites all-things transportation. Each of CampusParc, TTM and the Facilities Operation and Development (FOD) run respectively separate service platforms addressing parking, transit, transportation programs and infrastructure.	*Create a new unifying, overarching transportation vision.*
	Parking Supply	Population is steadily increasing. There are structured spaces planned for West Campus Innovation District and no agreed, campus-wide mechanism for construction or traffic mitigation.	*Re-think default model of building parking supply and instead develop demand-side solutions.*
	Mode share	Drive-alone is trending up after a decline in 2012. Use of on-demand services such as Uber, Lyft and e-scooters have increased.	*Reverse trends and reduce demand for parking (most growth in demand appears faculty and staff driven).*
	Peer Comparison	Compared to peers, Ohio State has a higher overall drive-alone mode share at 66% - Texas A & M is at 53% and University of Wisconsin 44%. Mode share in transit, walk and bike is lower.	*Incent greater walk, bike and other non-driving modes to better match peers.*
TTM AND CAMPUSPARC	Communications	Parking information and transit and other transportation information exist on separate websites giving the impression that parking is only option.	*Integrate messaging around Ohio State transportation choices.*
		There are negative perceptions of CampusParc due to unclear signage and regulations, high fines, and an arduous appeals process.	*Improve public perceptions of CampusParc and the customer experience of visiting Ohio State.*
PARKING	Supply	Amongst 10 peers, Ohio State has a high number of parking spaces per student at 0.57[1] (peers range from 0.25 – 0.59/student).	*Suggests that while parking is congested, the solution may not be to focus purely on building more.*
	Utilization	At the peak 12 pm on a Tuesday or Thursday parking is 80% full. There is capacity in the Athletics South lots ("Gray Lots") and the Gateway Garage and some surface lots in the West Campus Innovation District.	*Better use available parking supply.*
	Permit Structure	The permit structure makes no distinction between medical workers/9-5 employees and the rest of the population including students.	*Rethink parking permit structure potentially to create new zones and user-groups.*
	Pricing	Core campus pricing is below market rate when compared to nearby parking facilities.	*Increase parking pricing to manage demand and generate potential revenue for TDM programs.*

[1]Schools included those with medical centers such as the Universities of Iowa, Michigan, Minnesota and Wisconsin

Subject	Topic	Finding	Opportunity
TRANSIT	**CABS common themes**	CABS conflicts with heavy foot traffic in core of campus. One-way service on many routes forces out-of-direction travel. Poor access to Waterman Lab complex. Skeleton weekend service is hard for those with limited car access. The campus loop is frequently overcrowded and lacks seating. Some stops under 1,000 feet apart (North Express) which is inefficient. Fixed routes late night services have low ridership.	*Move CABS off core campus streets to improve service and reduce conflicts with foot traffic.* *Seek bi-directional alignments.* *Serve lower ridership corridors and weekend demand with microtransit service.*
TDM	**Communication**	TTM offers many best-in-class TDM programs, but these are not communicated clearly on the CampusParc website.	*Better integrate CampusParc and TTM options.*
	Walk and Bike Incentives	3,600 employee and 2,600 student parking permit holders live within 3 miles of campus – considered a reasonable biking distance. Even more live near transit and within a reasonable bus ride distance.	*Develop walk, bike, and transit policies for commuters within 2-3 miles of campus.* *Target parking permit holders to switch modes/ hand in permits.*
WALK	**Infrastructure and Safety**	There are more walkers and bikers than cars at key intersections in the core of campus such as Woodruff/College, Neil/12th, Neil/Annie and John Glenn, and Medical Center Drive/9th. High levels of delay on campus edges leads to unsafe behaviors, and motor accidents involving pedestrians – fatal accidents occurred on High Street, Lane Avenue, and near the Wexner Medical Center.	Improve walk safety, especially at the edges of campus. Re-design key on and near-campus intersections to better serve walk demand. Expand the walk network to West Campus Innovation District.

Subject	Topic	Finding	Opportunity
BIKE	**Bike demand and infrastructure**	35% live within biking distance (<5 miles), 42% are interested in bike commuting and 61% want to buy or have a bike. There are gaps in regional bike network, for example connecting to the Olentangy River trail. Heavy bike demand exists today on streets with poor or no bike facilities.	*Fill gaps in regional network.* *Add on-campus separated bike lanes where feasible.*
SMART MOBILITY	**E-Scooters, Uber/Lyft congestion, Smart Campus**	Lack of micro-mobility lanes, despite high levels of scooter usage. TNCs impacting Ohio State roadways/incurring costs to Ohio State - especially students heading to class. High-level of interest in accommodating "Smart Mobility" on-campus, but lack of an overall recommendation.	*Enhance accommodations for bus/bike/scooter shared lanes.* *Reduce congestion generated by Uber/Lyft drop-offs.*
FUNDING	**TTM revenues, West Campus Innovation District transportation mitigation needs**	Static funding for Ohio State transportation does not reflect exponential growth and demand. Lack of transportation mitigation mechanisms for new West Campus Innovation District developments.	*Leverage revenues from potential parking pricing increases to fund infrastructure needs.* *Develop funding approach that integrates parking and TDM needs.*

2.0 RECOMMENDATIONS

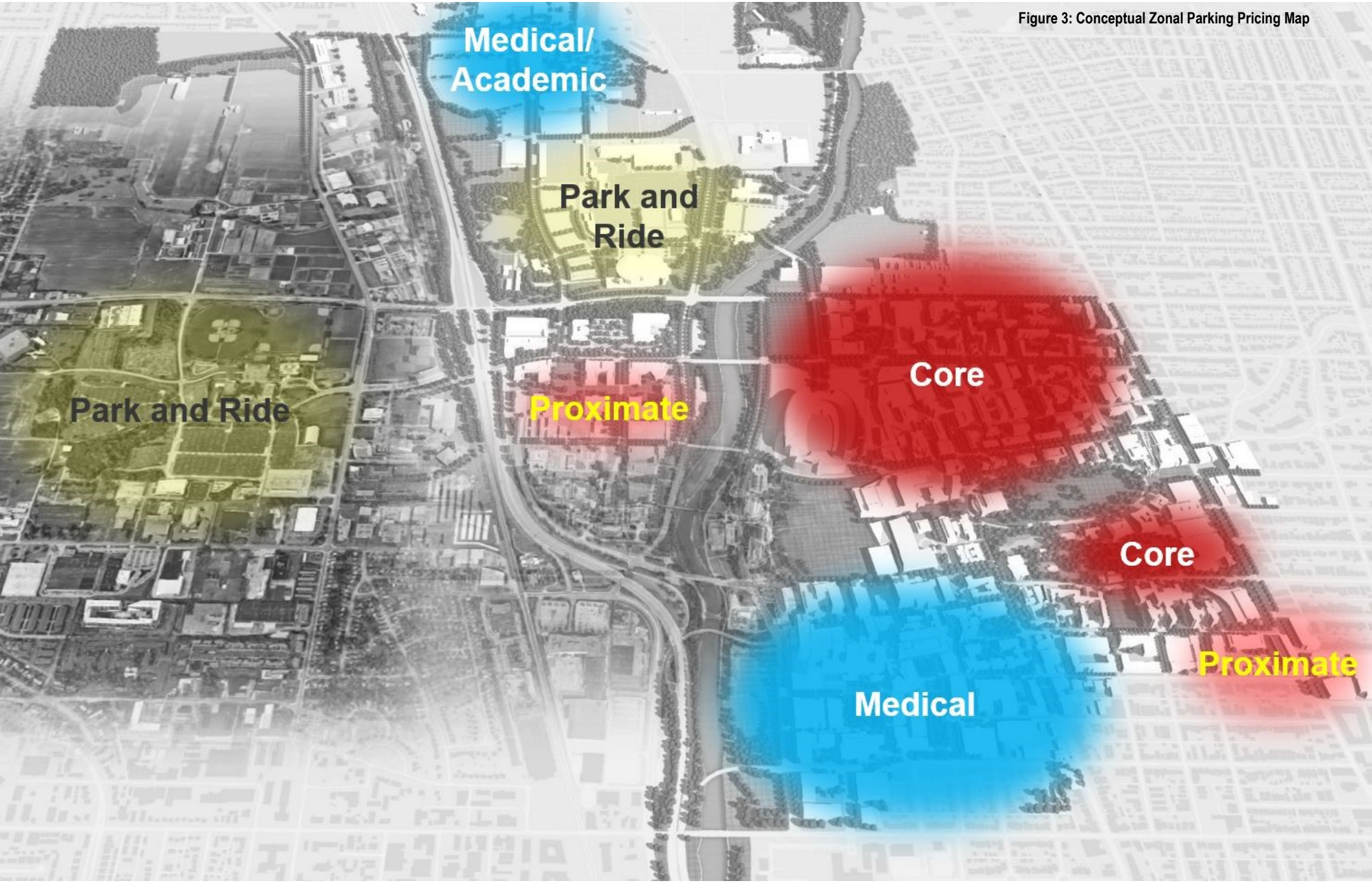


Figure 3: Conceptual Zonal Parking Pricing Map

CATALYTIC RECOMMENDATION 1

CREATE DEMAND-RESPONSIVE, ZONAL PARKING PRICING

Numerous nation-leading, higher-education campuses have aggressively followed a zonal, demand-responsive parking pricing approach. This includes Stanford, MIT, UGA, UCLA and others.

Challenges and Opportunities

During the semester, and particularly on Tuesdays and Thursdays, the university's entire parking system reaches 80% of capacity. However, there are areas where there is less demand – notably in the Athletics District – and areas where parking facilities are at capacity – mostly in the campus core and Wexner Medical Center. This places enormous pressure on the ability to accommodate and prioritize convenient patient and visitor parking versus faculty, staff, and students. It is also missing an opportunity to use available parking supply more efficiently, avoiding the pressure to construct more.

Recommendation

See Figure 3: Conceptual Zonal Parking Pricing Map. This recommendation introduces the concept of new parking zones across campus whose prices are closely calibrated to reflect demand. The most convenient and high demand zones – regardless of being lots or garages – are priced higher than parking zones located farther from key destinations. The goal is to re-balance the parking system to relieve pressure in congested areas and incent parking in areas that are less heavily used. The result is that the parking supply is used more efficiently while also addressing the fact that core parking areas are at capacity. This approach will reduce demand for new parking and help offset the costs to construct, operate and maintain the parking system. By helping to manage demand for new parking this approach also helps to preserve the Ohio State campus for mission-driven uses such as academic and research space instead of parking.

Benefits

- Relieve parking pressure in the Wexner Medical Center and in the Campus Core.
- Prioritize most convenient parking for those that need to be closer to destinations – especially patients and visitors.
- Make better use of the 20-25% of parking supply that remains vacant at peak demand.
- Reveal the cost to provide parking and increase its value.
- Reduce pressure to build more parking by making better use of existing supply.

Short-Term Actions

- **Pilot new parking zone within the Wexner Medical Center:** As an initial step, a new parking zone can be piloted in the Wexner Medical Center where congestion is the greatest. This might include prioritizing parking for essential workers, patients and visitors, while piloting a changed parking rate structure to incentivize behavior change and provide better certainty of available spaces. For example, reducing prices to encourage parking in lots and garages with availability and increasing pricing in the proximate lots and garages which are more heavily congested.
- **Pair with other transportation incentives:** New employee benefits at the Wexner Medical Center such as free bikeshare memberships and subsidized bus passes should be paired with any parking price increases to help reduce parking demand.
- **Provide creative parking options during the COVID-19 pandemic:** Including promoting an occasional daily parking pass and a customized, socially-distanced emergency ride home benefit for those trying to commute more regularly without their car.
- **Better utilize existing parking supply:** Solutions might include opening more underutilized lots to faculty and students at a discounted rate with restrictions on event days.
- **Stagger class/work schedules to avoid congestion**. Shifting class or work schedules toward off-peak times will help reduce traffic congestion and peak parking demand. Already a pandemic recommendation, several schools such as the UMass system have been using this recommendation for years.

Partners:

TTM, CampusParc, Wexner Medical Center leadership , Staff Faculty Senate

Funding:

TTM, CampusParc

Mid- to Long-Term Considerations

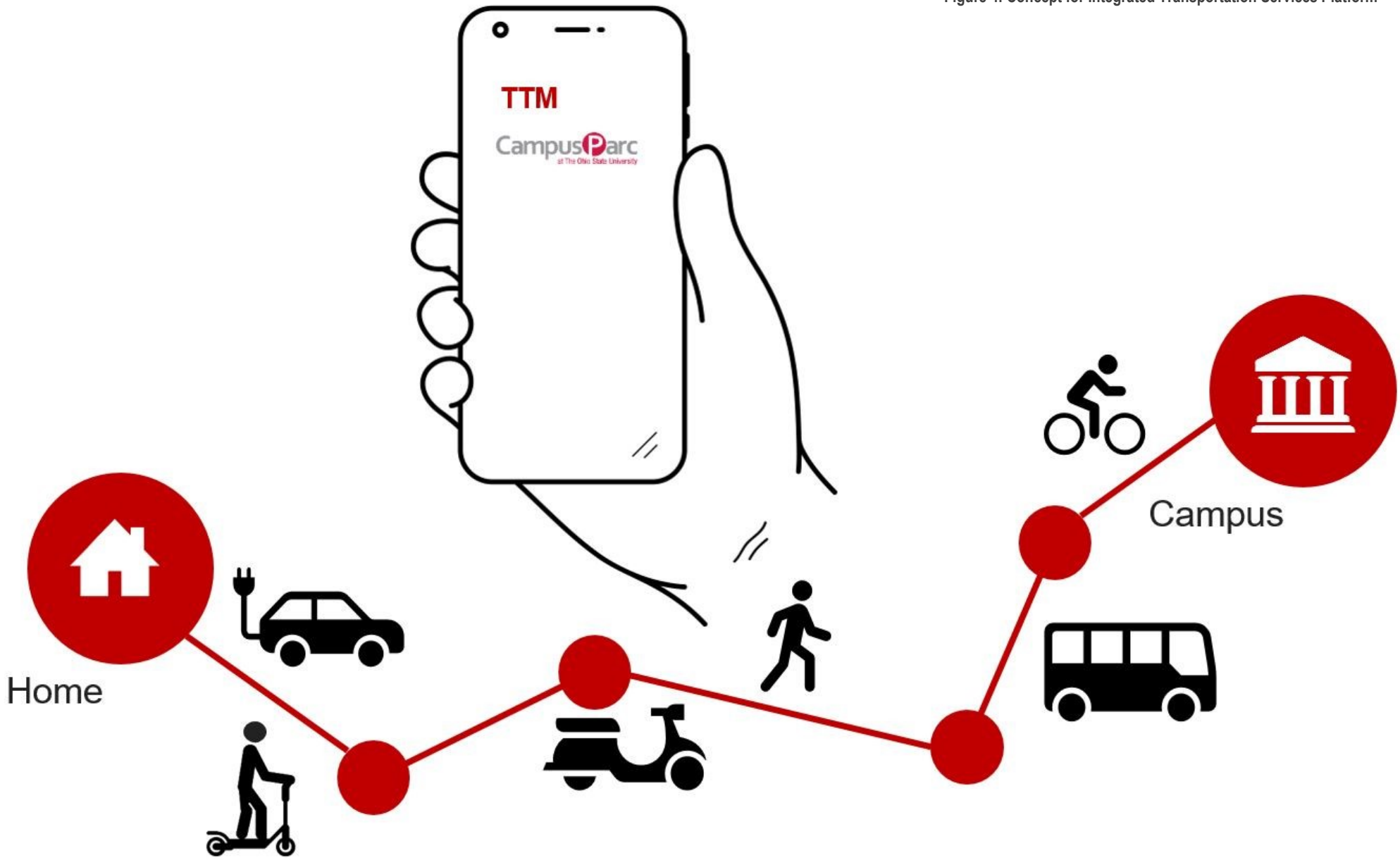
- **Develop Parking Zones** that are demand-responsive yet calibrated to reflect functional sub-areas of campus. See Supporting Documents for suggestions on new zones, which reflect:
  - *Levels of observed congestion; if lots are above 80%-85% utilized, they need to be priced higher.*
  - *Convenience and proximity to campus core/amenities; charge more for high-value parking.*
- **Establish annual data collection protocol.** This is essential for documenting and reporting the performance of the parking system and changes in demand that may result from adjustments to pricing. This needs to include surface parking lots in addition to core parking garages.
- **Develop new pricing baseline.** Today it costs roughly $150-$180 per month to park in the Short North, while an “A permit” costs only $97 per month for permit year 2021. Bringing permits more in line with the marketplace helps motorists understand the real cost of providing parking.
- **Longer-term, introduce daily parking pricing.** CampusParc should aim to evolve all permit types to daily pricing, which enables travelers to try other modes without giving up driving entirely, while generating more overall revenue.

For further reference:

Arizona State University, MIT and a number of medical centers such as Seattle Children’s Hospital have adopted a daily parking pricing model, paired with flexible commuter benefits.


PARKING
9th Ave.
East
Garage
345 W. 9th
Avenue

Figure 4: Concept for Integrated Transportation Services Platform



CATALYTIC RECOMMENDATION 2

DESIGNATE FUNDING TO SUPPORT ALTERNATIVES TO DRIVING

To support more transit, walk, bike, e-scooter and other shared mobility services and to incent mode shift, it is necessary to invest. This means both subsidizing non-driving modes to make them more competitive with the convenience of driving a car as well as investing in quality multi-modal infrastructure.

Challenges and Opportunities

Today, The Ohio State University funds and promotes several robust, best-in-class Transportation Demand Management (TDM) programs, such as Lyft Ride Smart, bikeshare, and a nation-leading e-scooter program. TTM staff also pro-actively promote and manage these programs. However, from a consumer perspective, these services exist separately from CampusParc and are not clearly marketed as an alternative to purchasing a parking permit. This sets Ohio State apart from its peers, most of whom offer clearly-dedicated TDM programs that target parking permit holders that may be willing to leave their cars at home.

Recommendation

New funding streams are needed to support 1) Alternatives to driving as a recommendation to mitigate the need to build additional new parking once the capacity on campus is maximized, and 2) Existing infrastructure and investments in new multi-modal transportation infrastructure. The Ohio State University must investigate new funding streams that might include a transportation fee, development mitigation and/or impact fees. Elements of implementation start with integrating CampusParc and TTM around a shared mobility mission and the vision statement expressed in this plan. It also means offering a combined CampusParc/TTM suite of parking, TDM and multi-modal programs. Similar to peer institutions, this could begin with a new transportation service platform that integrates parking with TDM, transit and other transportation programs. Examples include LUUM or Ride Amigos at schools such as Oregon Health and Science University and Auburn University.

Benefits

- Make the campus experience safer and accommodating for all modes of travel.
- Reduce demand for driving to campus and the Wexner Medical Center, including in the evolving West Campus Innovation District.
- Maintain and grow the existing walking, biking, e-scooter, and COTA-riding community.
- Reduce driving around campus to support sustainability goals and the “Park Once” philosophy.

Short-Term Actions

- **Create an integrated TTM/CampusParc TDM platform:** Working with Ohio State's Chief Information Officer, develop a single on-line platform consolidating all mobility options, placing TDM and non-auto options equal with parking programs.
- **Emphasize multi-modal mobility**: As part of on-going infrastructure projects, Ohio State must plan to retro-fit existing campus streets and create new roadways in the West Campus Innovation District that are safe to travel by walk, bike and e-scooter, including creating dedicated paths and parking for these devices on campus.
- **Expand multi-modal networks beyond campus borders**: See Catalytic Recommendations 5 and 6. To ensure continuous safe trips without a car, Ohio State must designate funding to work with the City to advance needed multi-modal improvements to roads connecting into campus, including transit priority signal treatments, protected bike and scooter lanes, and safer crosswalks.
- **Create and promote incentives to "Park Once"**: To embrace those who chose to park away from congested areas of campus, safe and well-lit, multi-modal "last-mile" infrastructure is needed to make parking only once and riding to class or work a welcoming option.
- **Explore potential new funding streams to support infrastructure**: This might include a transportation mitigation fund dedicated to West Campus improvements, transportation impact fees and advance capital funding.

Partners:

TTM, CampusParc, City of Columbus

Funding:

TTM, CampusParc

Mid- to Long-Term Considerations

- **Develop Medical Center TDM Program:** This should be directly marketed to Medical Campus employees as a viable day-to-day or long-term alternative to driving and paying to park.
- **Integrate TDM incentives directly into daily life:** Coordinating with a standard daily activity such as logging into the Ohio State network, use an online platform to integrate TDM incentives and logging of non-auto credits into daily affiliate life.
- **Identify and target parking permit holders within walk/bike distance of campus:** Working with CampusParc, market TDM programs and multi-modal infrastructure access to students and affiliates within walking/biking/bus distance.

For further reference:

The Oregon Health and Science University (OHSU) worked with stakeholders and Luum to solve their parking concerns using supply and demand data and understood how this is related to the employee and student experience on campus. For more information, see the OHSU: From Meticulous Planning to Bold Action case study from Luum.


Home
Campus

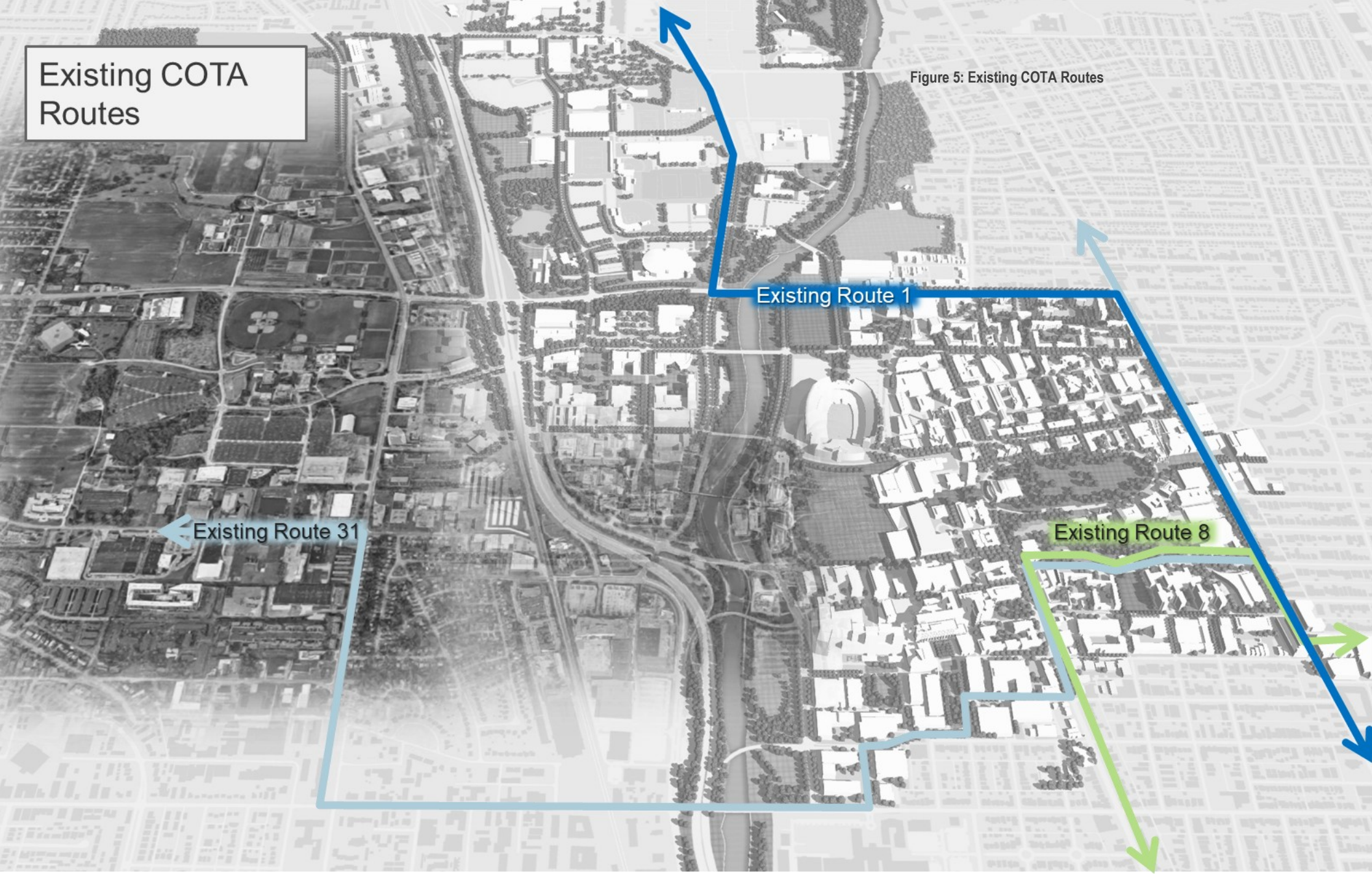


Figure 5: Existing COTA Routes

CATALYTIC RECOMMENDATION 3

LEVERAGE COTA SERVICE TO REDUCE PARKING DEMAND AND CONGESTION

There are 1,800 employees and 1,600 students living within a reasonable walking distance of a COTA route.

Challenges and Opportunities

Based on a 2017 campus-wide transportation survey, well over half those surveyed expressed a degree of interest in commuting by transit. While this was pre-COVID and prior to social-distancing concerns, over the mid to long-term, transit remains the most efficient means of moving large numbers of people. As the campus grows, the challenge is to shift some of the demand from driving to transit, minimizing congestion and greenhouse gas emissions and the costs associated with constructing new parking. The opportunity is to work with COTA to improve bus service and ensure that it continues to be a viable choice of travel to campus.

There are over 1,800 employee and 1,600 student parking permit holders living within a quarter mile (considered a reasonable walking distance) of a COTA route with connections to Ohio State. However, at the same time, 55% of transportation survey respondents were not satisfied with COTA service in the 2017 Ohio State transportation survey. This suggests service improvements might generate more ridership (since the 2017 transportation survey, the COTA Transit System Redesign was launched and changed service patterns).

Recommendation

The actions here seek to build on Ohio State's partnership with COTA and continue to promote bus service as a preferred means of traveling to campus. This means improving bus services for both existing and potential new riders, such as student commuter and Wexner Medical Center workers, while over the longer-term developing new regional services that connect to campus and provide a viable alternative to commuting by car.

Benefits

- Provides relief to current CABS bus capacity restrictions in place in response to COVID.
- Shift driving demand to transit and reduce congestion, greenhouse gas emissions and demand for parking.
- Support projected campus growth, especially at the Wexner Medical Center and West Campus Innovation District.
- Improve transportation choice and equity for those that may not have access to a car.
- Raises the profile of COTA services.
- Reduce conflict between buses and those on foot, bicycles, and scooters by shifting COTA out of the campus core.
- Better leverage the student COTA fee.

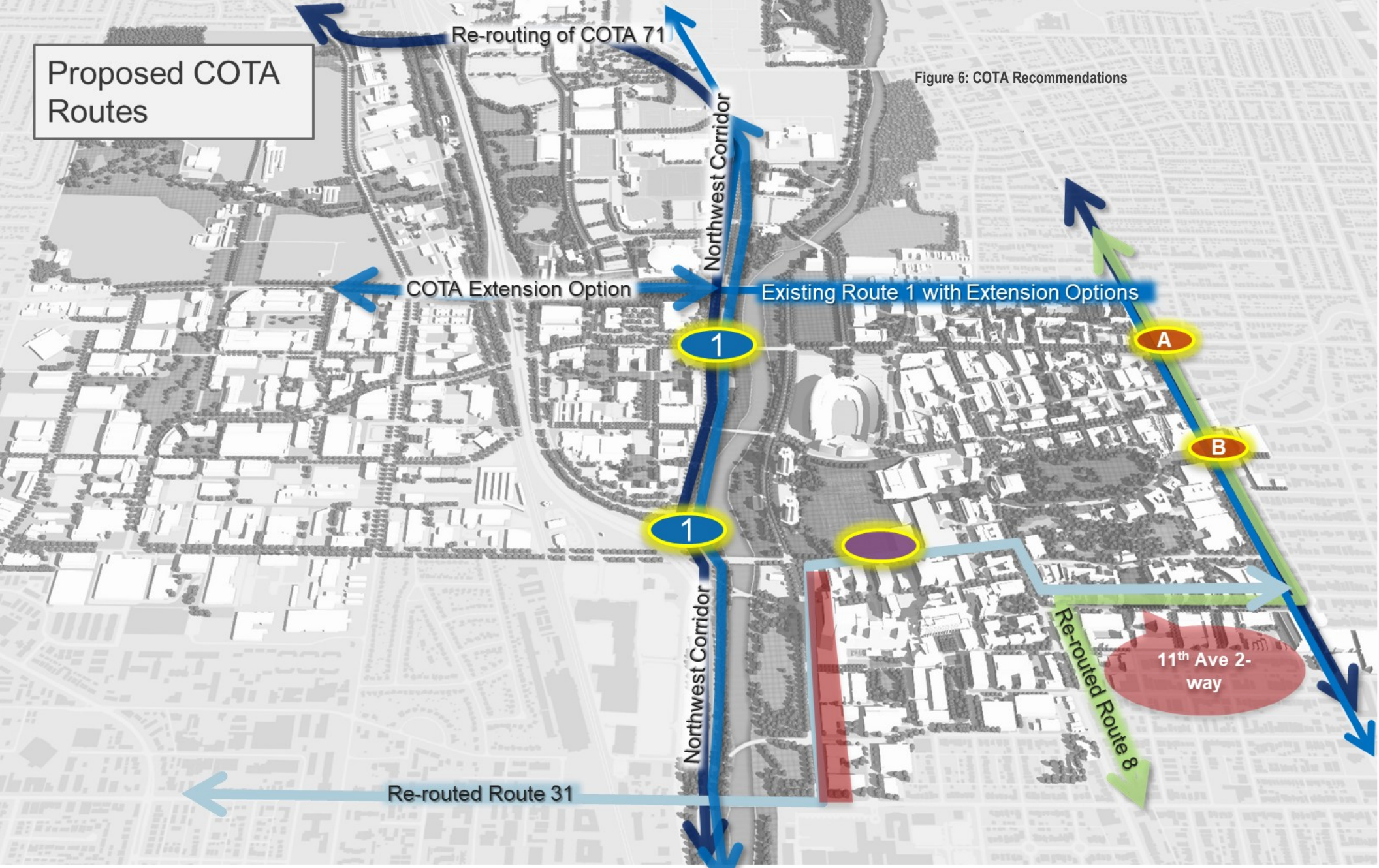


Figure 6: COTA Recommendations

Short-Term Actions

- **Improve direct COTA service and frequency to WMC**. This focuses on improvements to Routes 8 and 31 that serve the Wexner Medical Center employees. Enhancements to service frequencies, trip duration and stop amenities will support both existing and new ridership.
- **Explore shared CABS/COTA stops on High Street**. TTM is actively meeting with COTA to advance joint initiatives, including upgrades to stops and their branding along High Street. This will both help raise the profile of COTA service at the campus front doorstep and serve both CABS and COTA services. In Figure 6, Stop A is a proposed transfer hub between COTA and CABS at High Street and Woodruff Avenue; stop B is a joint stop at High Street and 15th Avenue.
- **Maintain COTA service, but at campus edge**. This plan recommends shifting COTA Routes 8 and 31 from West 12th to West 11th Avenue. This aligns with Recommendation 7, "Expand Campus Walking Core," by shifting bus service away from areas of higher foot traffic. It requires 11th Avenue to become two-way and ideally a traffic signal to be added at High Street.
- **Expand Ohio State/COTA partnership.** COTA plays a critical role in the future success of the campus. This action recommends exploring opportunities to expand partnerships with COTA. This means not only developing shared stops, but also better connecting CABS and COTA services to improve transfers and developing partnerships around longer-term transit solutions serving campus.

Partners:

TTM, COTA, City of Columbus

Funding:

Student COTA fees, potential employee transit payroll benefits such as subsidies, Federal Transit Administration grants

Mid- to Long-Term Considerations

- **Explore new funding sources as need dictates**. For example, potential subsidies to make transit more competitive with driving, offset by deferred parking construction costs.
- **Work with COTA to develop robust regional service**. See Catalytic Recommendation 5: "Plan for Long-Term Robust Transit Network."
- **Explore aggressive TDM programs to incent greater COTA ridership**. This could include working with the Wexner Medical Center to develop a transit subsidy employee benefit (see Catalytic Recommendation 2: "Designate Funding to Support Alternatives to Driving."

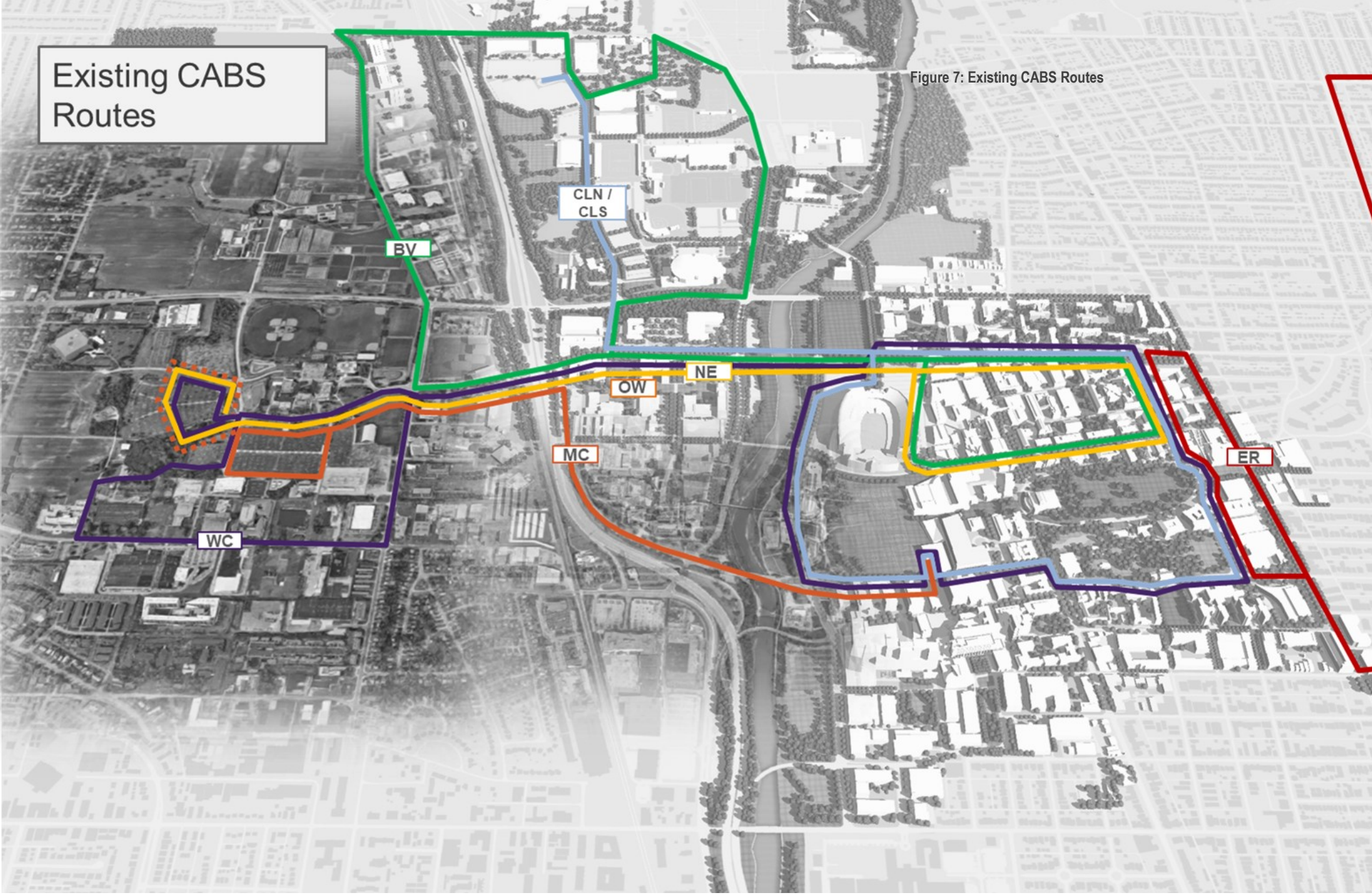


Figure 7: Existing CABS Routes

CATALYTIC RECOMMENDATION 4

STREAMLINE CABS SERVICE TO REDUCE RELIANCE ON CARS

CABS is and will continue to be the foundational element of travel on campus. It will connect East and West Campus, serve commuter parking lots, and connect with current and future COTA services, providing easy transfers to greater Columbus.

Challenges and Opportunities

The Campus Area Bus System (CABS) provides an essential service to over 28,000/day riders every day. TTM also has successfully accommodated heavy peak hour Wexner Medical Center employee demand generated by commuter parking in the West Campus Innovation District. New and planned academic, medical and university housing developments require ongoing reassessment of the CABS network to ensure that the routes are aligned with the campus' emerging travel patterns.

Key existing service challenges include one-way loops that force out-of-direction travel, limited service to the Waterman Lab complex, skeleton weekend service and overcrowding on the campus loop services. In addition, some stops are less than 1,000 feet apart creating inefficiencies, and fixed routes late night services have low ridership. Funding sources are also fixed, restricting the ability to expand services.

Recommendation

Ohio State must continue to enhance CABS service to ensure it is the preferred means of travel on campus. This recommendation focuses on immediate adjustments to CABS routes to reduce conflicts with foot traffic in the core of campus, re-alignment of routes to serve new commuter lots in the West Campus Innovation District, and potential cost-saving measures that replace traditional fixed route services with on-demand services. Longer-term, to cater to both Wexner Medical Center and West Campus Innovation District growth, an East-West Circulator is recommended, providing bi-directional, high frequency service.

Benefits

- Preserve viability of transit as preferred means of travel.
- Improve route efficiencies.
- Better connect CABS and COTA services for seamless transfers.
- Improve experience of remote parking.
- Realize cost savings through replacement of fixed route with on-demand services.

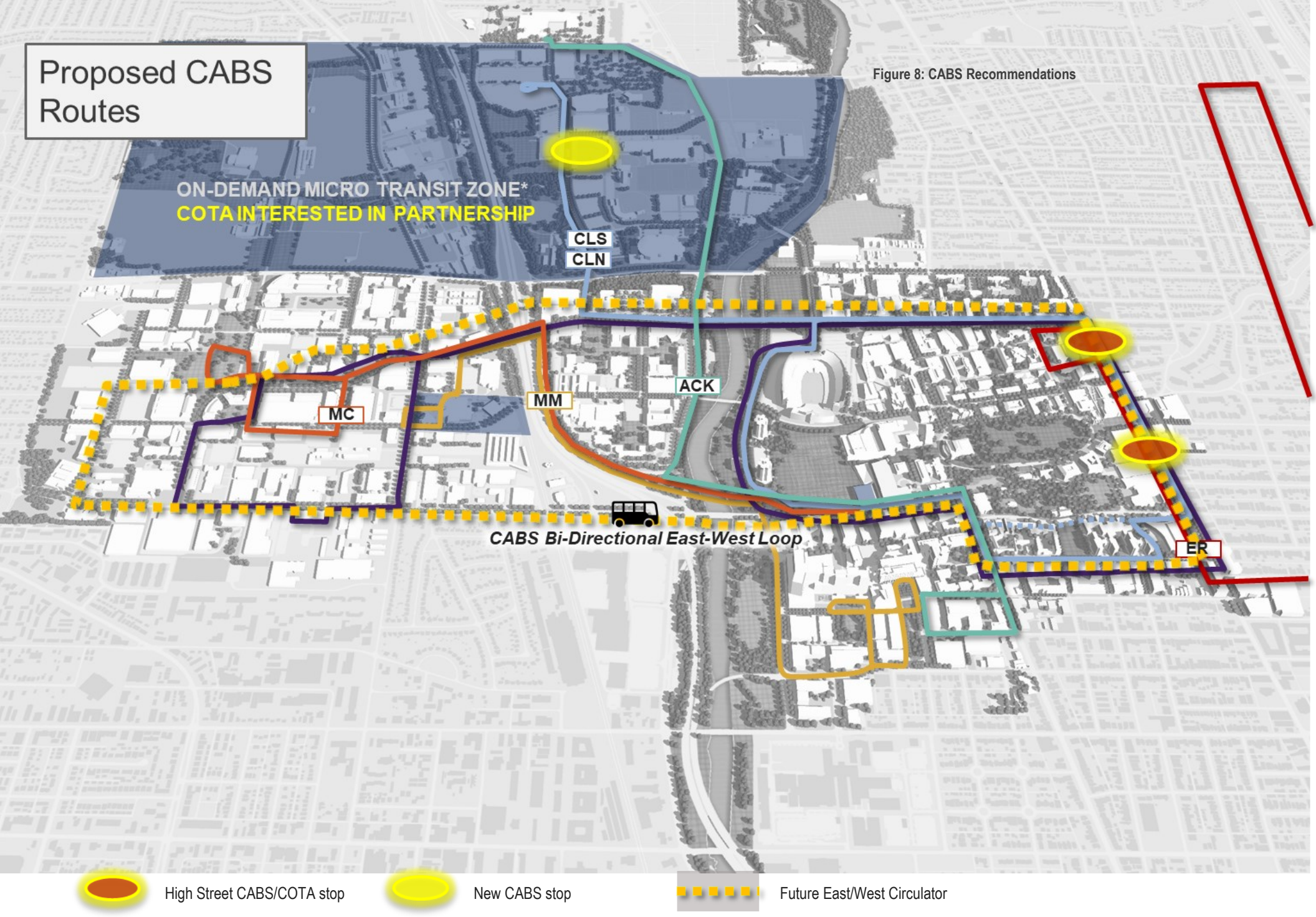


Figure 8: CABS Recommendations

Short-Term Actions

- **Move CABS from core campus roadways**. As seen in Figure 8: CABS Recommendations, it is recommended to move CABS service out of the campus core to reduce conflicts with heavy amounts of foot traffic. This will also facilitate easier transfers between CABS and COTA services. CABS services should also be shifted from Annie and John Glenn Avenue to Woodruff Avenue, out of the campus core.
- **Move CABS from 12th Avenue to 11th Avenue**. This will remove buses from the core campus and better serve the south residential district. Work with the City of Columbus to vacate 11th Avenue and convert it to 2-way traffic.
- **Establish shared CABS/COTA stops on High Street**. Two new stops are recommended on High Street that would serve both CABS and COTA services and provide for transfers. These would be branded and enhanced with new shelters and amenities that benefit riders and promote bus services.
- **Explore on-demand options to serve campus**. TTM has recently replaced traditional fixed route services with on-demand services to areas north of Lane Avenue and the Martha Morehouse Outpatient facility. Other destinations and small equipment will be explored, including coordinating with COTA as a potential partner to provide on-demand service.
- **Add a stop at the Buckeye lots to serve commuter students**. To support the recommendation to open the Gray lots to commuter parking, it is necessary to add a new CABS stop on Fred Taylor Drive .

Partners:

TTM, COTA

Funding:

TTM

Mid- to Long-Term Considerations

- **Re-align East Residential Route**. This recommends re-aligning the East Residential route from College Ave to bi-directional service on High Street with and a loop around the Arps Garage. This supports expansion of the walking campus core and allows easy transfers to West Campus Innovation District and COTA services.
- **Create a Bi-Directional Campus Circulator**. In the long-term, a new bi-directional campus circulator is recommended. This would operate on a loop and provide a high-visibility, user-friendly means of travel across all parts of the entire campus.

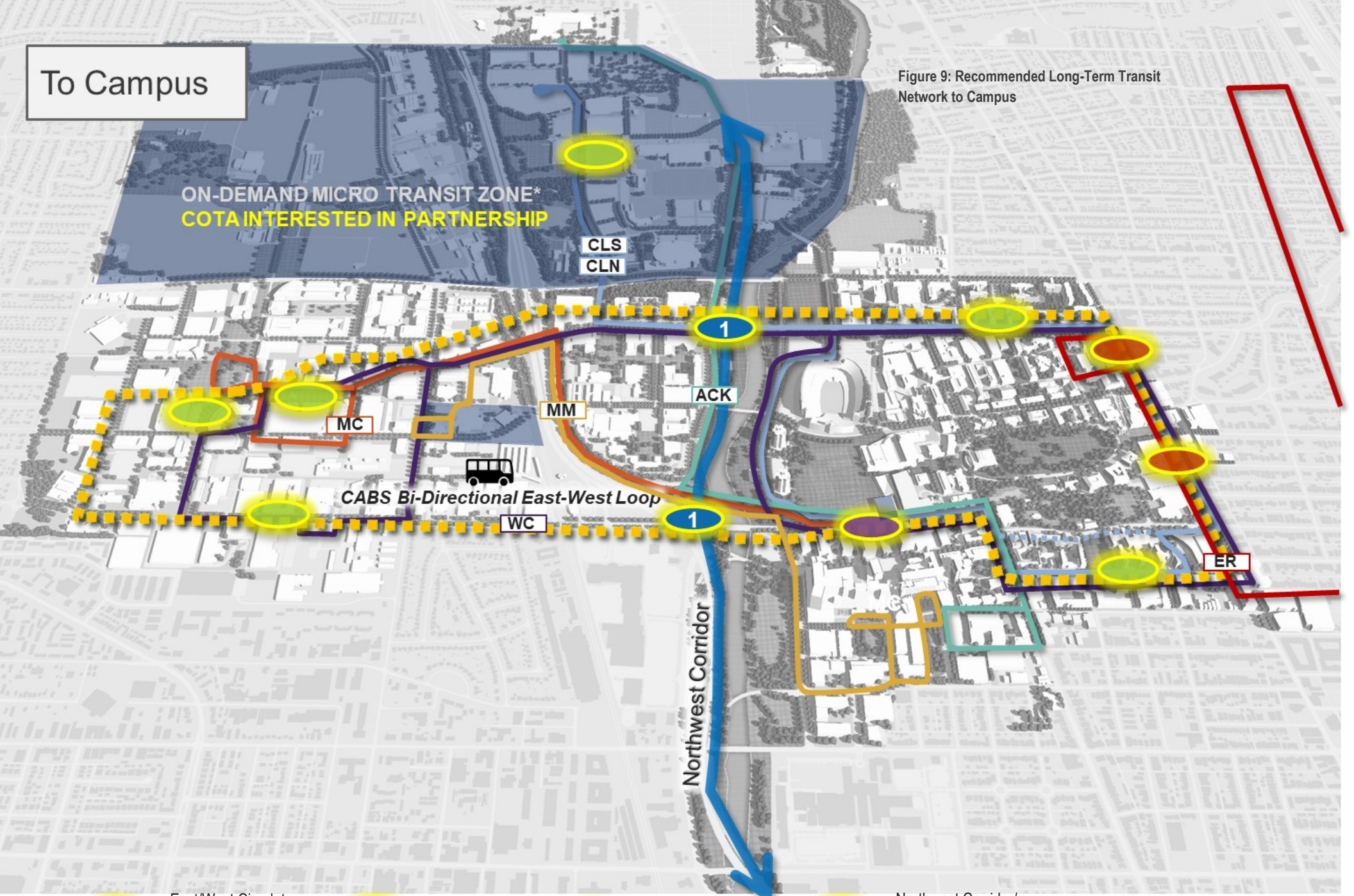


Figure 9: Recommended Long-Term Transit Network to Campus

CATALYTIC RECOMMENDATION 5

PLAN FOR LONG-TERM ROBUST TRANSIT NETWORK

A long-term robust transit network is essential to support at least five million square feet of development proposed in the West Campus Innovation District. This means actively planning now to accommodate station stops on the Northwest Corridor and working with COTA to provide new regional commuter services.

Challenges and Opportunities

Today, most Wexner Medical Center and Ohio State academic staff and faculty commute to campus by car. Without a shift to less driving and greater use of transit, the central campus parking will remain congested and the amount of development in the West Campus Innovation District is likely to produce gridlock. The "North Knot" SR-315 interchange continues to serve as barrier to efficient travel between East and West Campus, and roadway lane assignments – especially in the Mid and West Campuses — favor travel by private vehicles, with buses stuck in mixed traffic.

The opportunity is to plan now for a regional transportation network serving campus that connects seamlessly with campus or with CABS. This means pursuing solutions that "untie" the North Knot and invest in bus priority lanes along key campus corridors. West Campus Innovation District also represents a clean slate, with the opportunity to re-think roadways to better serve buses, as well as walking, biking and micro-mobility. This district can also serve as a "Living Lab" for new transportation technologies.

Recommendation

The overall recommendation focuses on partnering with COTA to pursue strategic, long-term expansion. Specifically, this means supporting current initiatives to develop the Northwest Corridor for premium transit service and planning for better regional bus services that are competitive with the cost and convenience of driving.

Benefits

- The ability to accommodate projected campus growth and mitigate congestion.
- Greater choice, affordability, and convenience in campus transportation choices.
- Reduced pressure to build more parking.
- Alignment with Ohio State's sustainability goals, including reduced greenhouse gas emissions.
- Embracing the Northwest Corridor's premium transit service that aligns with Ohio State's stature as a world-class institution.

Short-Term Actions

- **Prioritize WMC, East Campus and congested areas.** The 2020 pandemic has created an urgency in supplementing CABS services with COTA services due to bus capacity limitations. This is an opportunity to pursue continued enhancements, focusing on services that can reduce parking pressure in the most congested parts of campus.
- **Design West Campus Innovation District as Living Lab**. This is an opportunity to develop the district as the proving ground for transportation technologies. For example, Autonomous Vehicle (AV) deployments, Intelligent Traffic Systems and Smart City/Smart Campus elements can be piloted, even on CABS buses.
- **Continue partnerships resulting from NW Corridor (NWC) Plan and North Knot Plans**. Figure 10: Recommended Long-Term Transit Network recommends exploring two potential NWC interchange stops at Kinnear Road and Woody Hayes Drive. These would provide a transfer point between future COTA services and CABS services. Existing grade separation at Woody Hayes Drive as it passes over Olentangy River Road has potential efficiencies as a premium transfer station and new transit gateway to Ohio State.
- **Improve integration of CABS/COTA services**. Better integrating CABS and COTA services by providing joint bus stops, coordinating bus schedules and planning future joint multi-modal facilities will help increase the attractiveness of transit as an alternative to driving.

Partners:

COTA , MORPC, ODOT

Funding:

COTA , ODOT, FDA

Mid- to Long-Term Considerations

- **Advocate for new regional transit services**. Study and demonstrate the value to COTA of adding express park & ride services from key intercept points, such as the Ohio State Fairgrounds, Columbus International Airport and East Franklinton.
- **Explore single-seat options beyond downtown.** Several routes serving workers and commuter students south of downtown Columbus should be considered for connecting with routes that directly serve Ohio State, providing faster single-seat rides to campus.

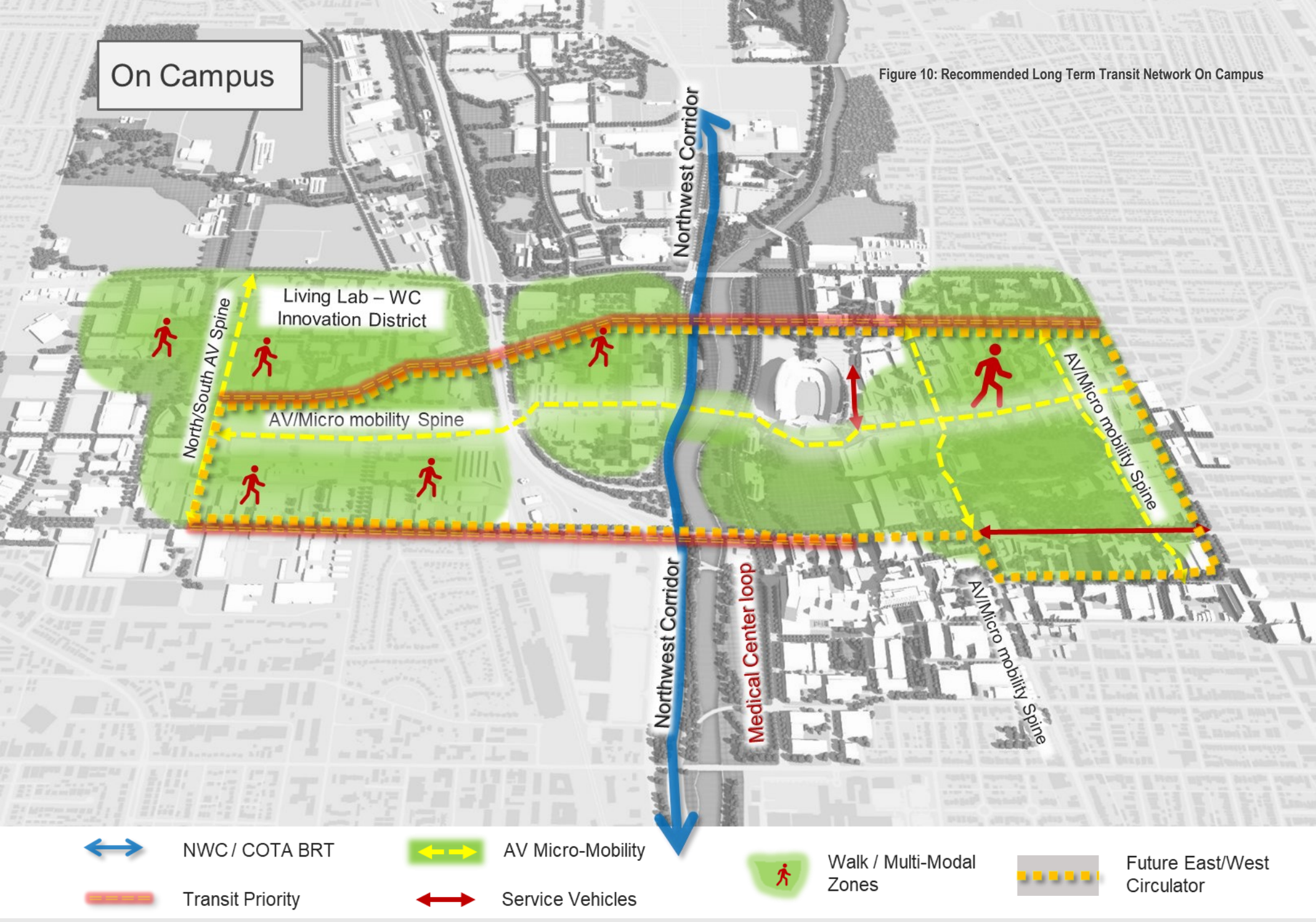


Figure 10: Recommended Long Term Transit Network On Campus

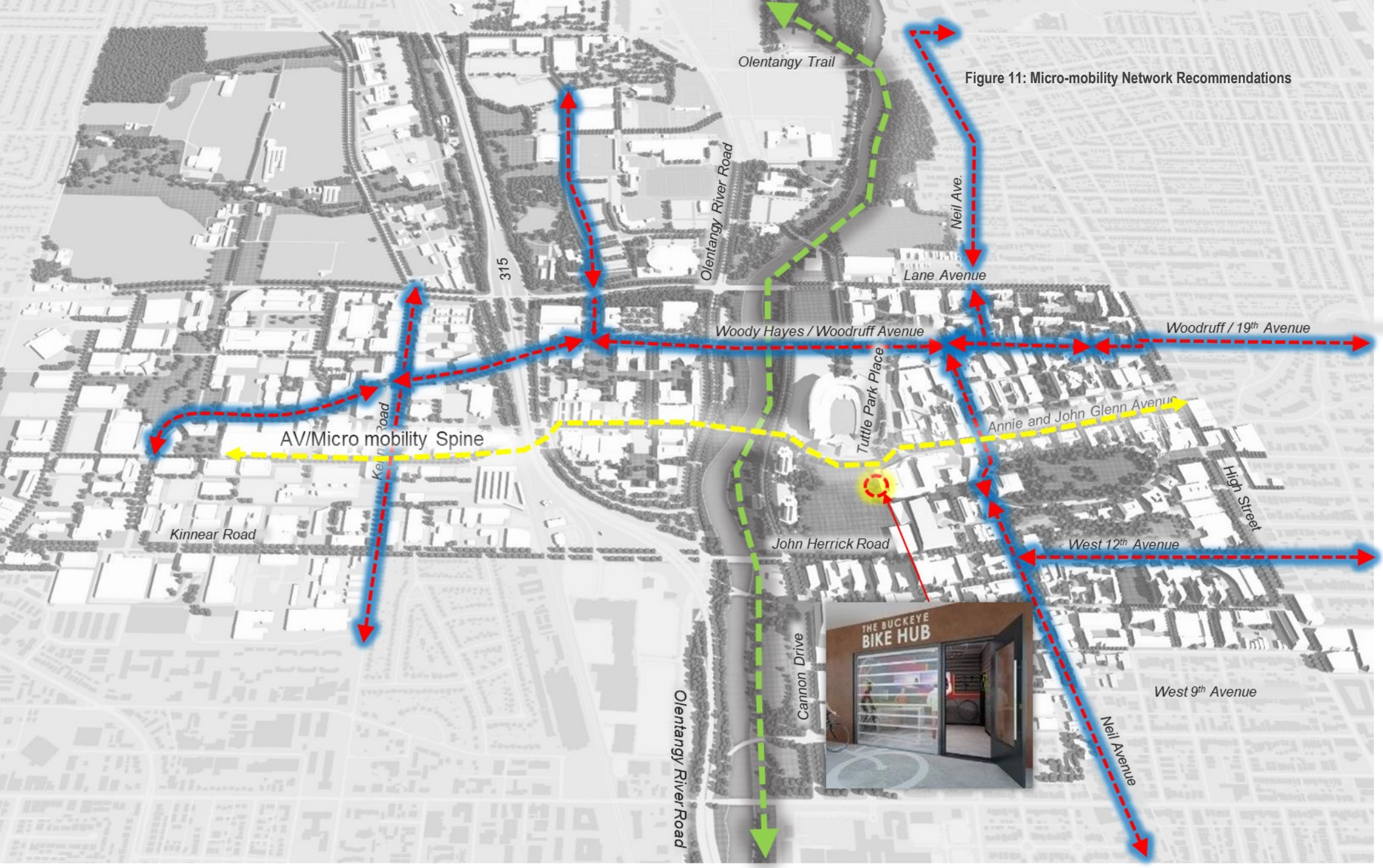


Figure 11: Micro-mobility Network Recommendations

CATALYTIC RECOMMENDATION 6

BUILD BICYCLE/MICRO-MOBILITY NETWORK FOR ALL AGES AND ABILITIES

How we travel is rapidly transforming. For example, in 2018 e-scooters became the most popular form of micro-mobility, overtaking docked bikeshare in popularity (NACTO), while ridesharing doubled two years later to a $100B industry in the US alone (MarketsandMarkets). However, campus transportation infrastructure has not kept apace: there are currently no on-street bike or micro-mobility paths connecting to campus.

Challenges and Opportunities

In the space of little more than a decade, mobility choice has become significantly more diverse, convenient, accessible and affordable. At Ohio State, shared mobility services including subsidized nighttime rideshare services, bikeshare and e-scooters are a few clicks away via apps on personal phones. To be able to make further progress, the next challenge is transforming transportation infrastructure that is geared toward private vehicular travel instead of walking, biking and shared mobility services.

Ohio State has strong multi-modal foundations, recently attaining American League of Bicyclist's Silver Status as a bike friendly university. It has also successfully worked with multiple local vendors to ensure that e-scooters have access to campus and have designated parking areas. On campus, The Ohio State University is a bike-friendly environment with some weather protected bike racks, bike pumps, fix-it stations and lockers. However, once off campus — except for a handful of disconnected separated facilities – there are no direct, protected bike lanes connecting to campus. Meanwhile, major east-west bike corridors such as Woody Hayes have high observed bike counts but only provide shared lane markings.

Recommendation

See Figure 11: Micro-Mobility Network Recommendations, this plan recommends the addition of separated bike and micro-mobility lanes connecting students and employees to campus – first focusing on East-West connections. Conceptual cross-sections are contained in the Supporting Documents. Improved comfort and safety will support greater bicycle and e-scooter mode share and help reduce demand for core area parking permits. A robust in-street bicycle and micro-mobility network extending beyond campus will also bring Ohio State in line with leading peers and nationwide benchmarks such as the University of Minnesota and UC Davis, supporting less driving to campus.

Benefits

- Improved safety for cyclists and e-scooter users on campus.
- Connectivity to the growing local and regional bicycle network.
- Ability to attract less experienced or first-time cyclists and e-scooter riders who are not comfortable travelling in unprotected, mixed traffic.
- Employee and student attraction and retention.
- Safe and direct connections between campus and high concentrations of nearby student housing.
- Driving and parking demand reduction.

Short-Term Actions

- **Prioritize alternative modes to offset reduced bus ridership due to COVID-19.** With students back on campus and reduced capacity enforced on CABS buses, there is an opportunity to install temporary protected bike and micro-mobility lanes, particularly connecting remote parking areas to campus. For example, Fred Taylor Drive, north of Lane Avenue and the entirety of Woody Hayes.
- **Prioritize East-West Connections**. Woodruff Avenue/Woody Hayes, Annie & John Glenn Avenue, and West 12th Avenue are priorities for accommodating protected bike and micro-mobility lanes permanently. These could be piloted using jersey barriers and/or temporary paint and signage. Over time and as funding is available, more permanent infrastructure can be installed.

Partners:

TTM, City of Columbus, On-campus bike advocates

Funding:

TTM, City of Columbus

Mid- to Long-Term Considerations

- **Continued expansion of bike and micro-mobility network.** Recommended connections based on discussions with the local bike community and existing counts are summarized in Figure 6. Neil Avenue is currently a high-demand corridor with substandard bike accommodations that should evolve into a major north-south spine. Similarly, College Road can serve this function. West of the Olentangy River, John Herrick Drive and Kenny Road have ample right-of-way for protected facilities.
- **Ongoing addition of on-campus bike parking**. Ninety-percent of Ohio State bike racks are U-racks, meeting best practices. However, at 0.14, the ratio of racks to students is well behind the best-in-class (the University of Minnesota is at 0.34). Furthermore, more covered and lighted parking is essential for many would-be cyclists.

Annie and John Glenn Avenue is proposed as part of an east-west AV and micro-mobility spine.

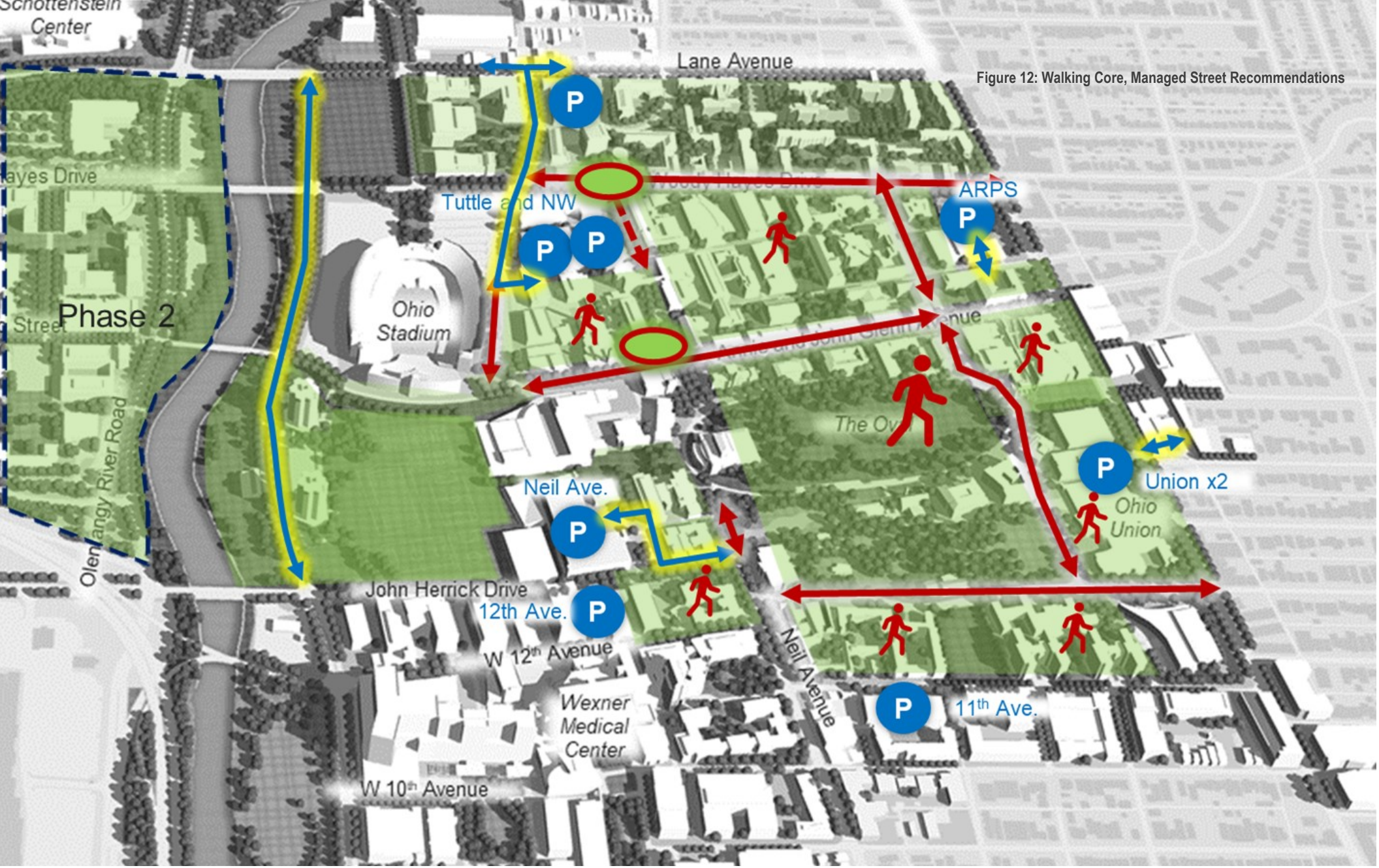


Figure 12: Walking Core, Managed Street Recommendations

CATALYTIC RECOMMENDATION 7

EXPAND CAMPUS WALKING CORE

There are more walkers and bikers than cars at key intersections in the core of campus. For example, in the afternoon peak hour, almost 75% of people at Medical Center Drive and 9th Avenue are on foot or bike.

Challenges and Opportunities

The core of campus is busy with not only foot traffic but also e-scooters, bikes, shared bikes and on-demand services such as Uber and Lyft. The levels of conflict between foot traffic, CABS buses and other pedal-powered and motorized devices pose safety challenges and cause delays to CABS service on streets such as College Road. These growing demands warrant a re-evaluation of how core campus streets are managed. At the edges of campus, there are high crash clusters on High Street, and many intersections experience high levels of pedestrian crossing delays. In addition, there are significant gaps in the sidewalk network on the West Campus Innovation District. See the Supporting Documents, State of the System (Findings) Assessment for the sidewalk assessment.

Key opportunities include improving walk safety in the core of campus, improving CABS service, better accommodating micro-mobility devices and creating clear Uber and Lyft pick-up and drop-off locations. Immediately off-campus, Ohio State can work with the City of Columbus to adjust signal timing to better reflect high levels of walk demand. Meanwhile, plans to reconstruct roadways in the West Campus Innovation District must prioritize safe walking and biking connections to reduce reliance on vehicular trips and minimize driving congestion.

Recommendation

The solutions seen in Figure 12 Walking Core, Managed Streets Recommendations build on CTPP 2 with recommendations to better manage traffic in the campus core. This means expanding the traditional walking core of the campus north to Lane Avenue, east to High Street, south to 11th Avenue and west to the river. This requires that 12th Avenue, College Road, Annie and John Glenn, Woodruff Avenue and Neil Avenue north of Herrick Drive to become managed streets preserving access to service vehicles but relocating transit and prohibiting private vehicles during peak, weekday hours. Expansion of the walking core will require re-configuration of access to parking, such as the Union Garage and ARPS. To improve the service, information and safety of ridesharing, it is also recommended to create designated pick-up and drop-off zones, complete with safe waiting areas.

Benefits

- Incent and support more walking by removing walk barriers.
- Improve walk safety.
- Improve CABS service by reducing conflicts between foot traffic and buses.
- Better match infrastructure to current travel needs.
- Improve safety and access to on-demand rideshare services such as Uber and Lyft.

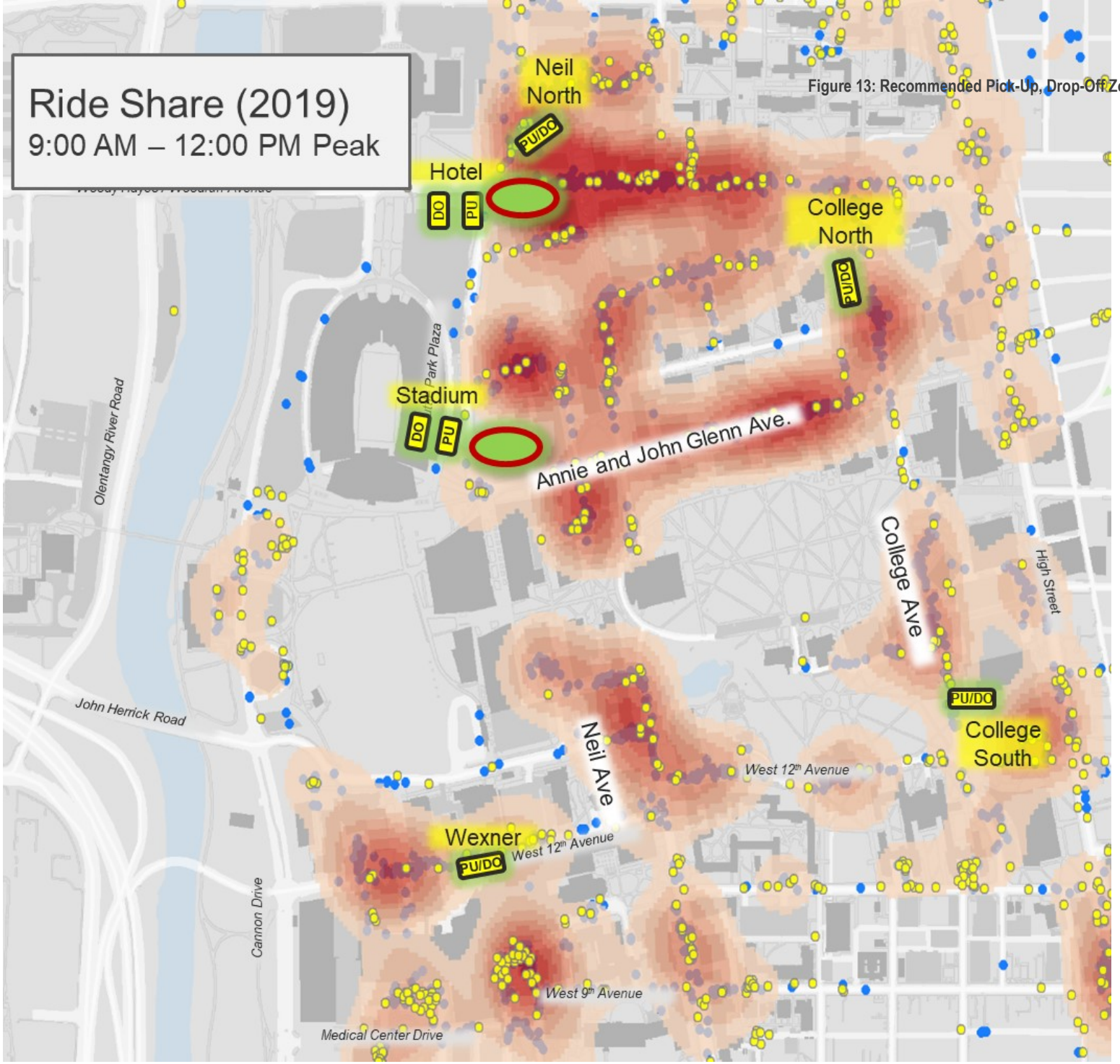


Figure 13: Recommended Pick-Up, Drop-Off Zones

Short-Term Actions

- **Manage traffic on core campus streets.** This recommends that 12th Avenue, College Road, Annie and John Glenn, Woodruff Avenue and Neil Avenue north of Herrick Drive are closed during peak, weekday hours to private vehicles and buses. Access would be maintained for service vehicles and loading.
- **Ban rideshare drop-offs and pick-ups in campus core.** See Figure 13 Recommended Pick-Up and Drop Off Zones. This recommendation consolidates on-demand services to areas with less conflict between foot traffic and peak hour traffic flows, while still maintaining convenient access to the core of campus. Convenient waiting amenities should be added to enhance compliance.
- **Explore charging Rideshare companies for access to campus core.** This is both a roadway demand management measure that will help reduce documented levels of congestion and a means of recouping the costs of maintaining campus streets.
- **Relocate transit away from the walking core.** See Catalytic Recommendation 4: Streamline CABS Service to Reduce Reliance on Cars. It is recommended to shift existing CABS service out of the walking core of campus.

Partners:

TTM, City of Columbus, Franklin County, Uber, Lyft

Funding:

TTM

Mid- to Long-Term Considerations

- **Enhance walking gateways to campus**. Critical crosswalks that connect nearby destinations and student housing to campus require in expensive signal re-timing and improved pedestrian signalization to promote more walking to campus.
- **Create a West Campus Innovation District walking core.** As demonstrated around the world, technology incubators like the West Campus Innovation District must prioritize walk accommodation and safety to attract world-class researchers and industry.

3.0 IMPLEMENTATION

The following section provides a tabular summary of the initiatives, recommendations and short-term actions described in Chapter 2. This includes a summary header corresponding to catalytic recommendations 1 through 7, short-term actions, mid-to long-term considerations, benefits, suggested partners and order of magnitude costs. The table is further explained below:

Short-Term Actions

Short-term actions were identified in close coordination with the Working Group. These are actions that are important to initiate now, are low-hanging fruit, or are already underway.

Mid to Long-Term Considerations

These are recommendations that require more resources, and/or which are of less immediate importance and are relatively more challenging than short-term. They may also require more resources, a longer lead time and commitments from Ohio State partners.

Order of Magnitude Costs

This includes a range from 0-$$$$$. 0 indicates a project that can be implemented in-house with minimal resources—typically just labor. $-$$ might be dollars for a planning study. $$$ might include some capital or ongoing investment such as bus stops and TDM program funding and $$$$-$$$$$ represents a substantial investment in infrastructure.

Initiative	Catalytic Recommendation	Short Term Actions	Mid to Long Term Considerations	Benefits	Partners	Order of Magnitude Cost
1. Seamless Campus Transportation and Parking Experience	 **1. Create Demand-Responsive, Zonal Parking Pricing**	• **Pilot new parking zone within the Wexner Medical Center** • **Pair with other transportation incentives** • **Provide creative parking options during the COVID-19 pandemic** • **Better utilize existing parking supply** • **Stagger class/work schedules to avoid congestion**	• Develop parking zones • Establish annual data collection protocol • Develop new pricing baseline • Longer-term, introduce daily parking pricing	• Relieve pressure in the Wexner Medical Center and in the Campus Core • Prioritize most convenient parking for those that need to be closer to destinations - especially patients and visitors • Make better use of 20-25% of parking supply that remains vacant at peak demand. • Reveal the cost to provide parking and increase its value • Reduce pressure to build more parking by making better use of existing supply	• TTM • CampusParc • Wexner Medical Center leadership • Staff/Faculty Senate	**$** **Short-term**: analysis of O/D data, performance monitoring **$$** **Long-term**: expanded monitoring of parking for example using drones
	 **2. Designate Funding to Support Alternatives to Driving**	• **Create an integrated TTM/CampusParc TDM platform** • **Emphasize multi-modal system** • **Expand multi-modal networks beyond campus borders** • **Create and promote incentives to "Park Once"**	• Develop Wexner Medical Center TDM Program • Integrate TDM incentives directly into daily life • Identify and target parking permit holders within walk/bike distance of campus	• Make the campus experience safer and accommodating for all modes of travel • Reduce demand for driving to campus and the Wexner Medical Center, including the evolving West Campus Innovation District • Maintain and grow the existing walking, biking, e-scooter, and COTA-riding community • Reduce driving around campus to support sustainability goals and the "Park Once" philosophy	• TTM • CampusParc	**$$** **Short-term**: shared TDM website/ platform **$$$** **Long-term**: investment in more substantial TDM programs

Initiative	Catalytic Recommendation	Short Term Actions	Mid to Long Term Considerations	Benefits	Partners	Order of Magnitude Cost
2. Transit Initiatives	**3. Leverage COTA Service to Reduce Parking Demand and Congestion**	• **Improve direct COTA service and frequency to Wexner Medical Center** • **Explore shared CABS/ COTA stops on High Street** • **Continue discussion RE: East Residential service** • **Expand Ohio State/ COTA partnership**	• Explore new funding sources as need dictates • Work with COTA to develop robust regional service • Explore aggressive TDM programs to incent greater COTA ridership	• Provide relief to current CABS bus capacity restrictions in place in response to COVID • Shift driving demand to transit and reduce congestion, greenhouse gas emissions and demand for parking • Support projected campus growth, especially at the Wexner Medical Center and West Campus Innovation District • Improve transportation choice and equity for those that may not have access to a car • Raises the profile of COTA services • Reduces conflicts between buses and those on foot, bicycles, and scooters in the core of campus • Better leverage the student COTA fee	• TTM • CampusParc • City of Columbus	**0** **Short-term**: continue collaboration with COTA to enhance existing services **$$$** **Long-term** with WMC might include financial incentives to expand COTA ridership
	4. Streamline CABS Service to Reduce Reliance on Cars	• **Move CABS from core campus roadways** • **Move CABS from 12th Ave. to 11th Ave** • **Establish shared CABS/COTA stops on High Street** • **Explore on-demand options to serve campus** • **Add a stop at the Buckeye lots to serve commuter students**	• Re-align East Residential Route • Create a Bi-Directional Campus Circulator	• Preserve viability of transit as preferred means of travel • Improve route efficiencies • Better connect CABS and COTA services for seamless transfers • Improve experience of remote parking • Realize cost savings through replacement of fixed route with on-demand services	• TTM • COTA	**$$** **Short-term**: new shared COTA/ CABS stops **$$$** **Long-term** investments to support the bi-directional campus circulator
	5. Plan for Long-Term Robust Transit Network	• **Prioritize Wexner Medical Center, East Campus and congested areas** • **Design West Campus Innovation District as Living Lab** • **Partnerships on NW Corridor Plan and North Knot Plans** • **Improve CABS/COTA integration**	• Advocate for new regional transit services • Explore single-seat options beyond downtown	• The ability to accommodate projected campus growth and mitigate congestion • Greater choice, affordability, and convenience in campus transportation choices • Reduced pressure to build more parking • Alignment with Ohio State's sustainability goals including reduced greenhouse gas emissions • Embracing the Northwest Corridor's premium transit service aligns with Ohio State's stature as a world-class institution.	• TTM • MORPC • ODOT	**$$** **Short-term**: planning studies to support NWC and campus station stops **$$$$$** **Long-term**: infrastructure investments. *(Assumes cost-sharing with partners such as COTA, ODOT and City of Columbus*

Initiative	Catalytic Recommendation	Short Term Actions	Mid to Long Term Considerations	Benefits	Partners	Order of Magnitude Cost
3. Walk/Bike/Shared Mobility Infrastructure Initiatives	 **6. Build Bicycle/Micro-mobility Network for All Ages and Abilities**	• **Prioritize alternative modes to offset reduced bus ridership due to COVID-19** • **Prioritize East-West Connections**	• Continued expansion of bike and micro-mobility network • Ongoing addition of on-campus bike parking	• Improved safety for cyclists and e-scooter users on campus • Connectivity to the growing local and regional bicycle network • Ability to attract less experienced or first-time cyclists and e-scooter riders who are not comfortable travelling in unprotected, mixed traffic • Employee, student attraction and retention • Safe and direct connections between campus and high concentrations of nearby student housing • Driving and parking demand reduction	•TTM •City of Columbus •On-Campus Bicycle Advocates	**$$** **Short-term**: repurposing of existing ROW to add bike/ micro-mobility networks **$$$** **Longer-term**: expansion of bike and micro-mobility network. Assumes cost sharing with partners such as the City of Columbus
	 **7. Expand Campus Walking Core**	• **Manage traffic on 12th, College and Annie & John Glenn Avenues** • **Ban Rideshare drop-offs and pick-ups in campus core** • **Explore charging Rideshare companies for access to campus core** • **Relocate transit away from the walking core**	• Enhance walking gateways to campus • Create a West Campus Innovation District walking core	• Incent and support more walking by removing walk barriers • Improve walk safety • Improve CABS service by reducing conflicts between foot traffic and buses • Better match infrastructure to current travel needs • Improve safety and access to on-demand rideshare services such as Uber and Lyft	•TTM •City of Columbus •Uber •Lyft	**$$** **Short-term**: re-design to create managed streets in campus core **$$$$** **Longer-term**: investment in walk infrastructure in mid campus and West Campus Innovation District. Assumes cost sharing for example, with private sector partners