

INTERMODAL TRANSPORTATION HUBS FOR COLLEGES AND UNIVERSITIES

Final PAC Check-in
February 7, 2023

N NELSON
NYGAARD



North Central Texas
Council of Governments

Agenda

WELCOME AND RECAP	10:30-10:45
FUNDING & IMPLEMENTATION STRATEGIES OVERVIEW	10:45-11:00
<i>FEEDBACK AND QUESTIONS</i>	<i>11:00-11:10</i>
CAMPUS MOBILITY HUB CATALOG &	11:10-11:30
UNT DENTON MOBILITY HUB REPORT CONTENTS	
<i>FEEDBACK AND QUESTIONS</i>	<i>11:30-11:45</i>
NEXT STEPS AND MOVING FORWARD DISCUSSION	11:45-12:00

Check-in Objectives

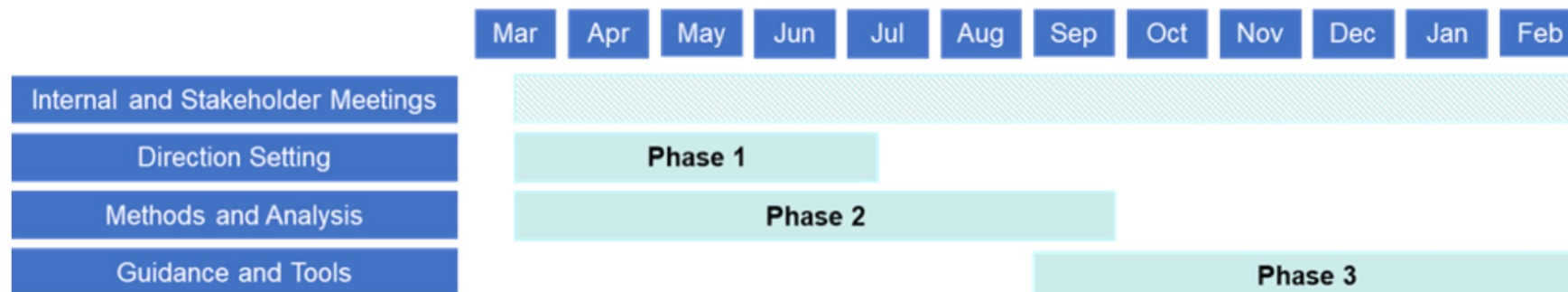
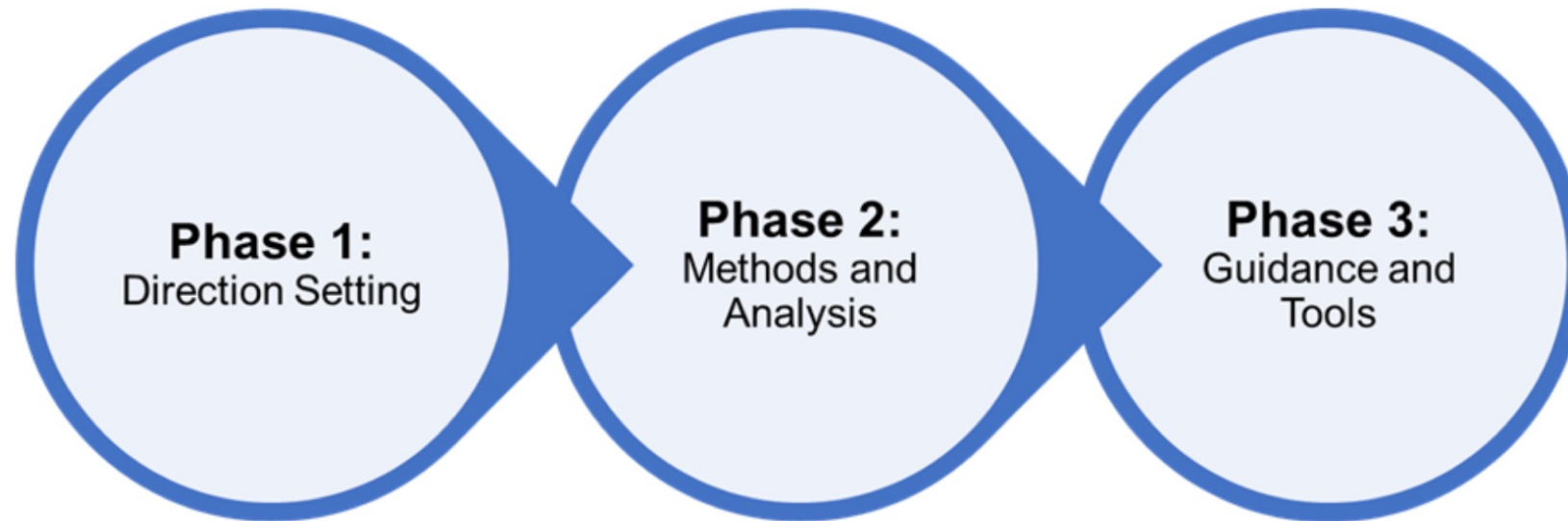
- Review and discuss the elements and potential applications of the Implementation and Funding Strategy Reports
- Review and discuss the Campus Mobility Hub Catalog content and planning/implementation resources
- Get a sneak peek at how the Catalog is applied to UNT Denton
- Discuss what's next after the study is complete



WHAT HAS BEEN COMPLETED TO DATE?



Project Timeline



Progress to Date

- ✓ Directional Workshop
- ✓ Campus Mobility Trends
- ✓ Scenario Evaluation
- ✓ On-Site Engagement
- ✓ Campus Mobility Survey Analysis
- ✓ Funding Strategies Report
- ✓ Implementation Strategies Report

One component every campus mobility hub should have?



Developments from Directional Workshop

Campus Mobility Hub Vision

*Campus mobility hubs are the **physical and digital intersection** of mobility options, transportation information, campus life, and social interactions. Campus mobility hubs are **centralized points both on- and off-campus** where people have **on-demand access** to a range of shared mobility options and mobility storage solutions. They enable campus affiliates to access multiple transportation options and amenities that **support campus access or connections across modes**. Typically built on a **backbone of public transit and campus shuttles**, mobility hubs offer a **safe, comfortable, convenient, and accessible** space to seamlessly transfer across different mobility options.*

Developments from Directional Workshop

Campus Mobility Hubs Should...



be **highly accessible, convenient, sustainable, and safe**, with a **wide array of amenities** to complement the available mobility offerings.



seamlessly tie-in to the fabric of the campus or community where they are located, both in terms of **aesthetics** and the **amenities** offered.



provide more than just a connection between transportation modes – they should be **activated** and **comfortable** enough to spend anywhere from a **short stopover to a long stay**.

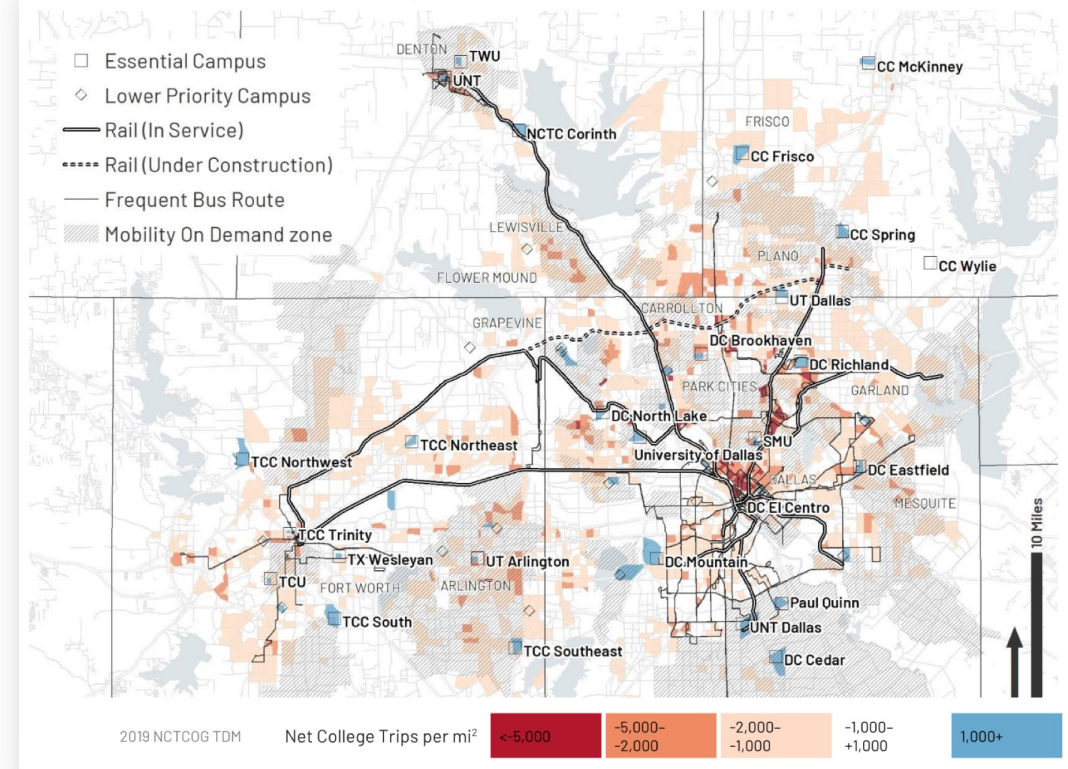


cater to the **diverse mobility needs and abilities** of students, faculty, staff, and visitors.

Progress to Date

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Figure 14: Demand Model - College Net Trip Attractions



Existing Conditions, Comprehensive Needs Assessment, and Propensity Analyses

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Seamless Investment

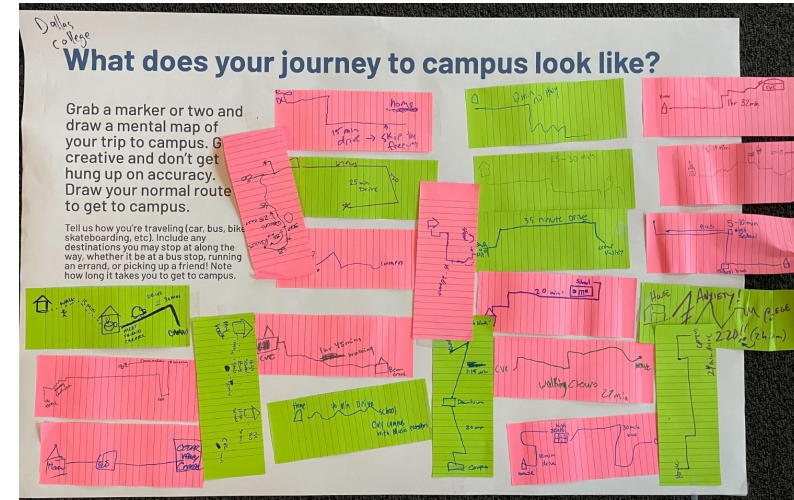
Figure 24 Seamless Investment Evaluation Results

	Amenity Versatility	Shared Mobility Integration	Transit Connectivity	Design Quality	BCA
Urban Core	Low Medium High	Low Medium High	Low Medium High	Low Medium High	Low Medium High
Suburban Commuter	Low Medium High	Low Medium High	Low Medium High	Low Medium High	Low Medium High
First/Last Mile Hub	Low Medium High	Low Medium High	Low Medium High	Low Medium High	Low Medium High
Gateway Hub	Low Medium High	Low Medium High	Low Medium High	Low Medium High	Low Medium High
Park-Once	Low Medium High	Low Medium High	Low Medium High	Low Medium High	Low Medium High
Residential Hub	Low Medium High	Low Medium High	Low Medium High	Low Medium High	Low Medium High

Hub Siting, Typology Framework, and Investment Scenarios

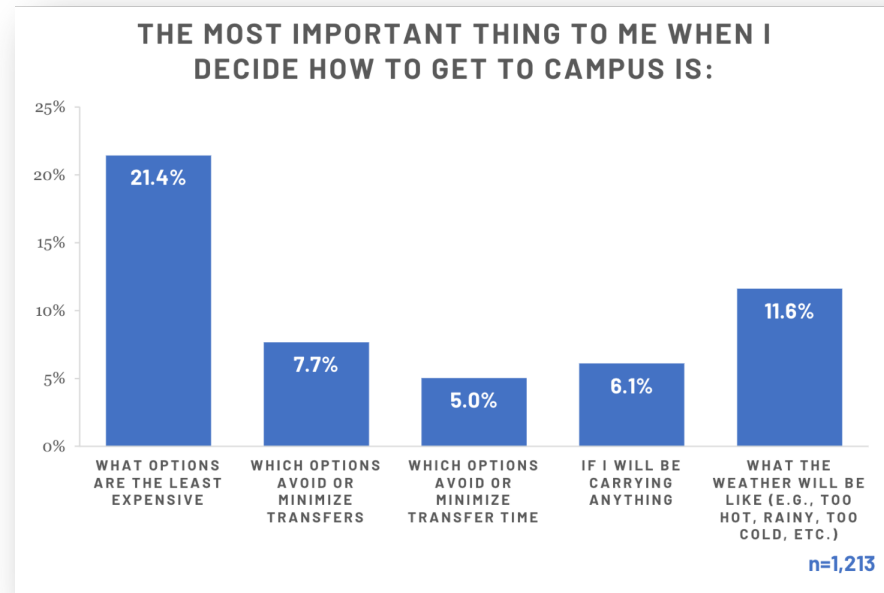
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1,271 responses!

Sometimes the hardest part about college is getting there.

We're here to help.

We need your feedback on campus mobility improvements!

Scan the QR code below to take a short survey. Responses automatically enter you to win one of two \$50 Amazon gift cards!



Take the survey.
surveymonkey.com/fr/CampusMobility



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IMPLEMENTATION STRATEGIES

NCTCOG Intermodal Transportation Hubs for Colleges and Universities Study

Prepared by:
Nelson\Nygaard
Cityfi



FUNDING STRATEGIES REPORT

NCTCOG Intermodal Transportation Hubs for Colleges and Universities Study

Prepared by:
Nelson\Nygaard
Cityfi
Cambridge Systematics

FUNDING STRATEGIES



Funding Mobility Hubs Requires a Strategy

- Funding is complex and piecemeal
- Long-term funding and partnerships planning
- Coordinated funding action across partners

Campus Mobility Hub Funding Principles


Considerations when identifying and securing hub funding:

- Tap into low-cost hub investments
- Embrace incrementalism
- Prioritize equity and affordability
- Be opportunistic
- Lean into town-and-gown coordination

Funding Opportunities

- Federal resources (USDOT, FTA, FHWA, DOE)
- State resources (TxDOT and TCEQ)
- Local/campus resources
- Foundation and sponsor opportunities

Excerpt from
Funding Strategies



Accelerating Innovative Mobility (AIM)

The [Accelerating Innovative Mobility \(AIM\) Program](#) aims to support innovative transit projects with an additional emphasis on strategies that promote equitable access to transit. Transit projects can include transit subsidies, planning, system design, and service. Eligible recipients include public transportation agencies and state and local government DOTs. Universities are eligible to apply through partnerships with transit and government agencies. For on-campus and off-campus mobility hubs, applicable projects could include multimodal trip platforms to integrate campus shuttles with existing transit systems, creating on-demand shuttle systems, integrating software to provide real-time transit information to display in mobility hubs, among others.

Quick Facts

Type: Competitive
University Eligible: Yes, with government partnership
Fund uses: Planning, capital, operations, administrative costs

Funding Matrix

Level	Agency	Opportunity	Eligible Mobility Hub Projects	University Eligible?	Viability
Federal	US DOT	INFRA Grants Program	Highway and freight related projects, e.g., off-campus bicycle and pedestrian infrastructure that intersects with highways, commuter rail line improvements that also host freight operations	No	●○○○○ [very competitive]
Federal	US DOT	SMART Grants Program	Technology and automation projects, e.g., traffic signal improvements, data usage sensors, online mobility dashboards	No	●●●●○ [very competitive]
Federal	US DOT	RAISE Grants Program	Transit projects, intermodal projects, roadway projects, e.g., transit integration, transit improvements, bicycle and pedestrian infrastructure, shared mobility infrastructure	Yes, with government partnership	●●●●○ [very competitive]
Federal	FHWA	CMAQ Program	Air quality improvement and traffic reduction projects, e.g., signal coordination, intersection improvements, park-and-ride facilities, bicycle and pedestrian infrastructure, transit improvements	No	●●●○○ [very competitive]

Methodological Framework



Based on real and CPI-adjusted 2020 dollars

BENEFITS MENU

- Congestion relief
- Increased/affordable mobility
- Environmental sustainability
- Safety benefits
- Health benefits
- State of Good Repair of the Roadway Infrastructure
- Quality/amenity benefits
- Property value increases

RESULTS

A competitive discounted Benefit Cost Ratio of **5.1**

Partnership Opportunities

- Campus Transportation, Parking, and Transit Partnerships
- Innovation Districts
- Research Programs
- Pilots/Demonstrations
- Mobility Consortia
- Transportation Management Association/Organization



Demonstration of Los Angeles' mobility hub "furniture"

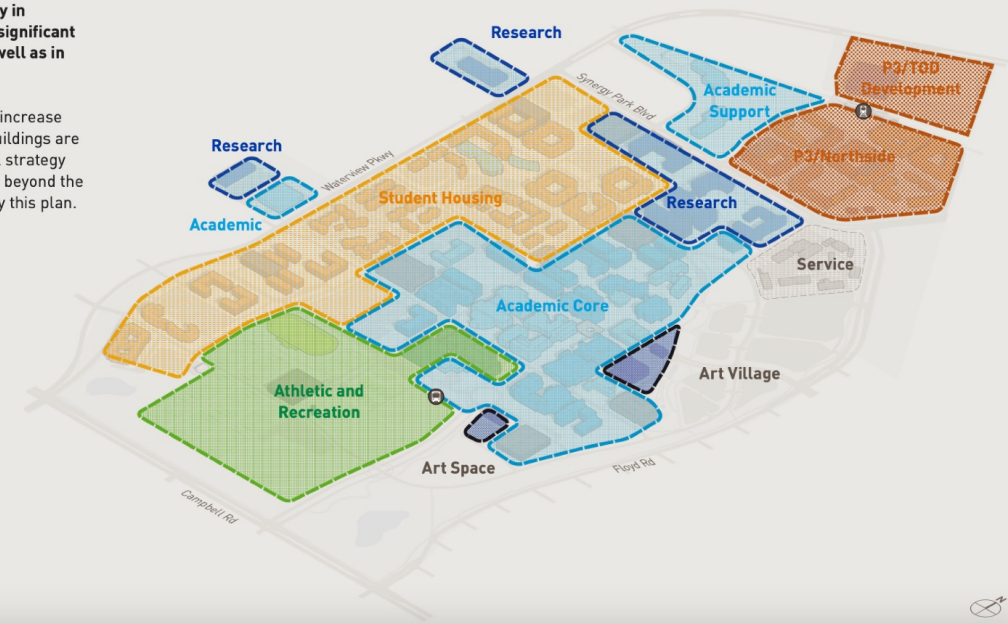
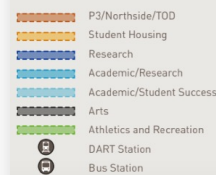
Policy Opportunities

- Integrate into Transportation Plans
- Integrate into Walking and Biking Plans
- Consider Mobility Hub Zoning Overlays
- Align with Transit-Oriented Development
- Build into Transportation Demand Management

Land and Building Use Campus Areas

This master plan update focuses uses generally in coherent and consistent zones, but introduces significant student life spaces into the academic zone, as well as in the student housing zones.

Each land use zone will experience a significant increase in density and associated activity as low scale buildings are replaced with higher density buildings. This infill strategy will preserve significant space for future growth beyond the 30,000 FTE/35,000 head count accommodated by this plan.



Excerpt from the 2018 UT Dallas Campus Plan Update

IMPLEMENTATION STRATEGIES



Key Implementation Factors

- Governance
- Siting frameworks
- Adaptation
- Centering equity
- Branding
- Managing demand
- Managing performance



Key Implementation Factors

Governance

- Campus-Led
- Transit-Agency Led
- City Agency-Led
- Multi-Campus Partnerships
- Private Property Partners

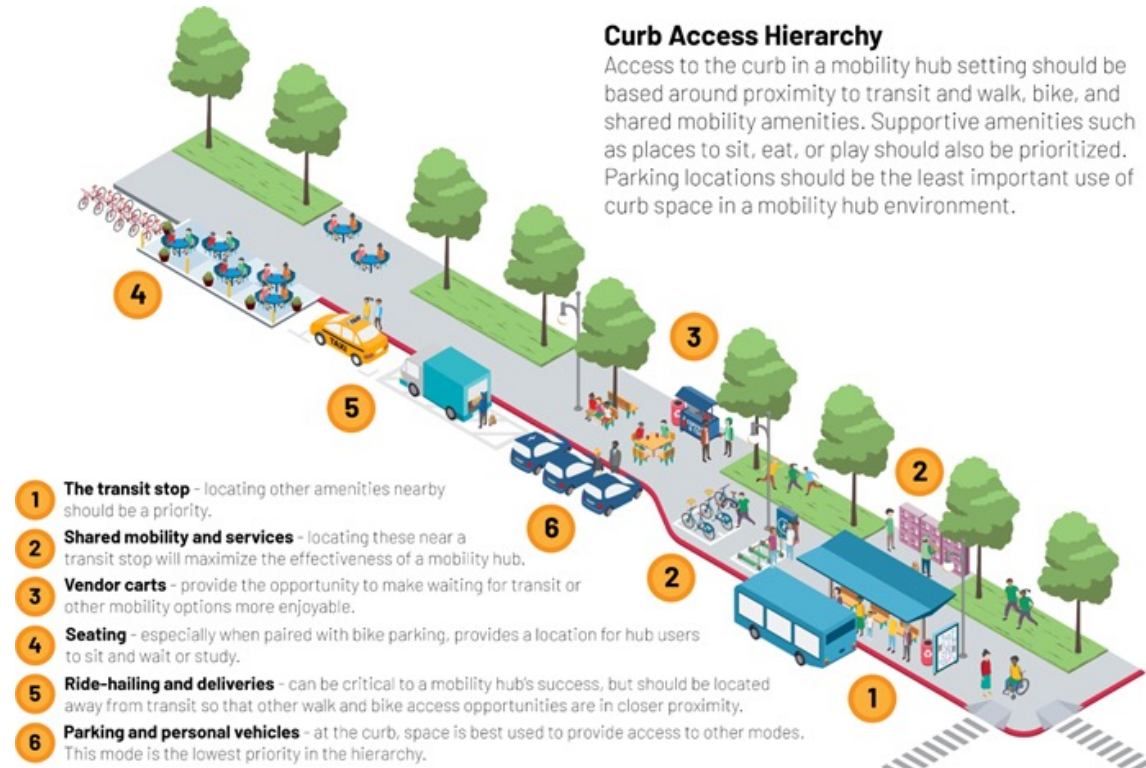


Transit capital projects (above) are ideal moments for hub integration. The future IQ partnerships at UT Dallas (below) would require coordinated implementation, management, and operation by multiple UT Dallas facility managers and the City of Richardson.

Key Implementation Factors

Siting frameworks

Curb Access Hierarchy



Concentrated vs Dispersed Hub Amenities



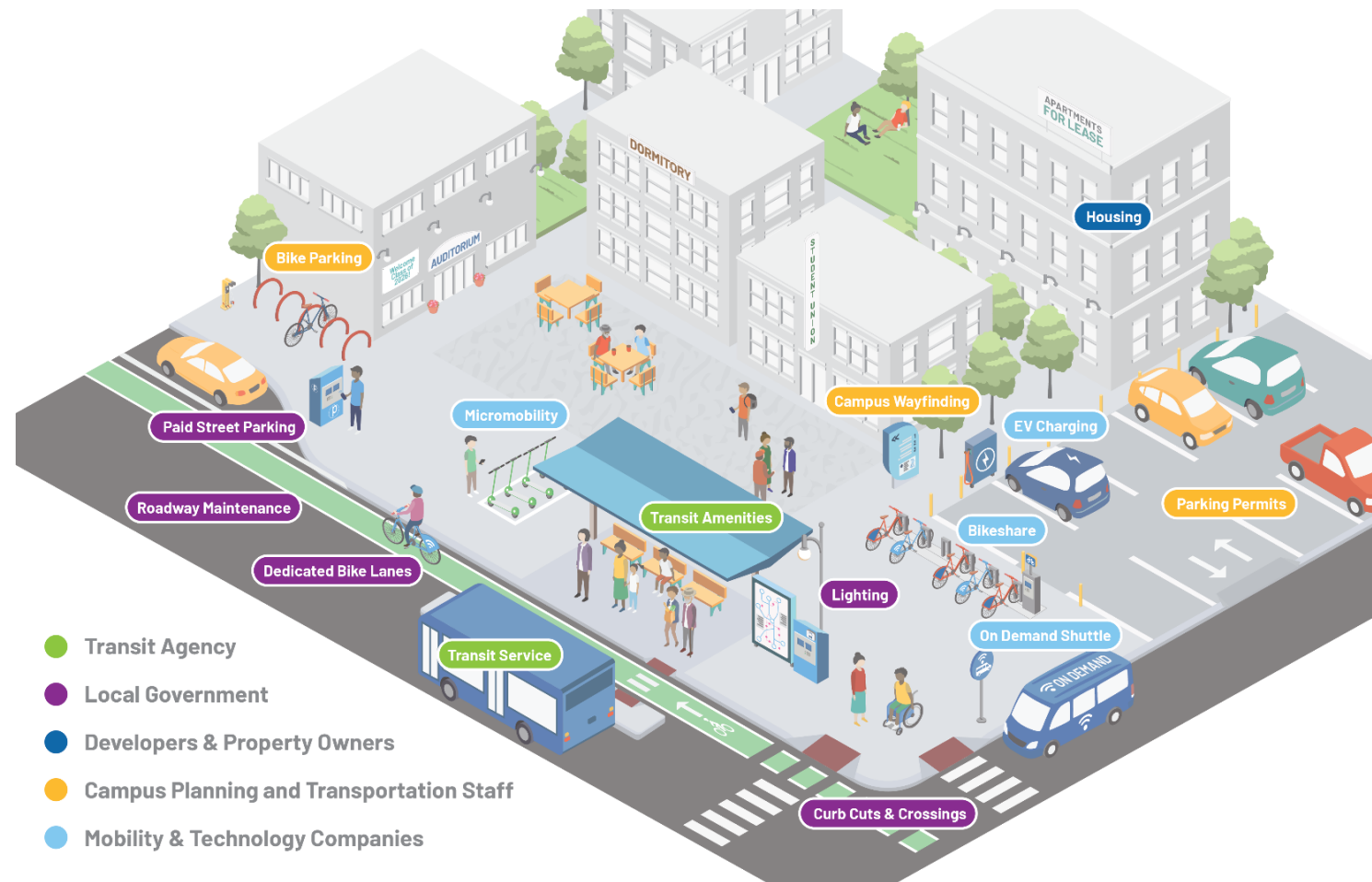
Building your Implementation Team

- Distributed ownership, planning, maintenance, and service
- Range of potential roles for 18 “team members”
- Protocol for coordination

Stakeholders	Implementation Roles												
	Conveners/ Facilitation	Hub Network Managers	Pilot and Project Managers	Planning and Design Leads	Policy Leads	Funders	Implementers	Property Hosts	Hub Site Managers/ Operators	Mobility Providers	Maintenance Leads	Site Programming Leads	Performance Monitoring
FHWA/FTA													
TxDOT													
NCTCOG				Guidance	Guidance		Guidance						
County TOD/ Transportation Planners													
City Planners							Lead/Co-lead						
Public Agency Program Managers							Lead/Co-lead						
Local Transit Agencies							Lead/Co-lead						
Private Mobility Providers												Co-lead	E.g., Via Transportation
University Parking and Transportation Administrators							Lead/Co-lead			Select campuses			

Building your Implementation Team

- Distributed ownership, planning, maintenance, and service
- Range of potential roles for 18 “team members”
- Protocol for coordination



Implementation Pathways

Methods for Campus Integration

- Retrofits and Incremental Layering
- Piloting and Demonstrations
- Project and Development Integration
- Long-Term Programming



University of Utah mobility hub redevelopment (rendering)

Implementation Pathways

Leveraging Tools and Partnership Opportunities

- Town and Gown Partnerships
- Piloting and Demonstrations
- TMA Partnerships
- Shared Mobility Providers
- Campus Art/Design Partnerships
- Campus Research Partnerships

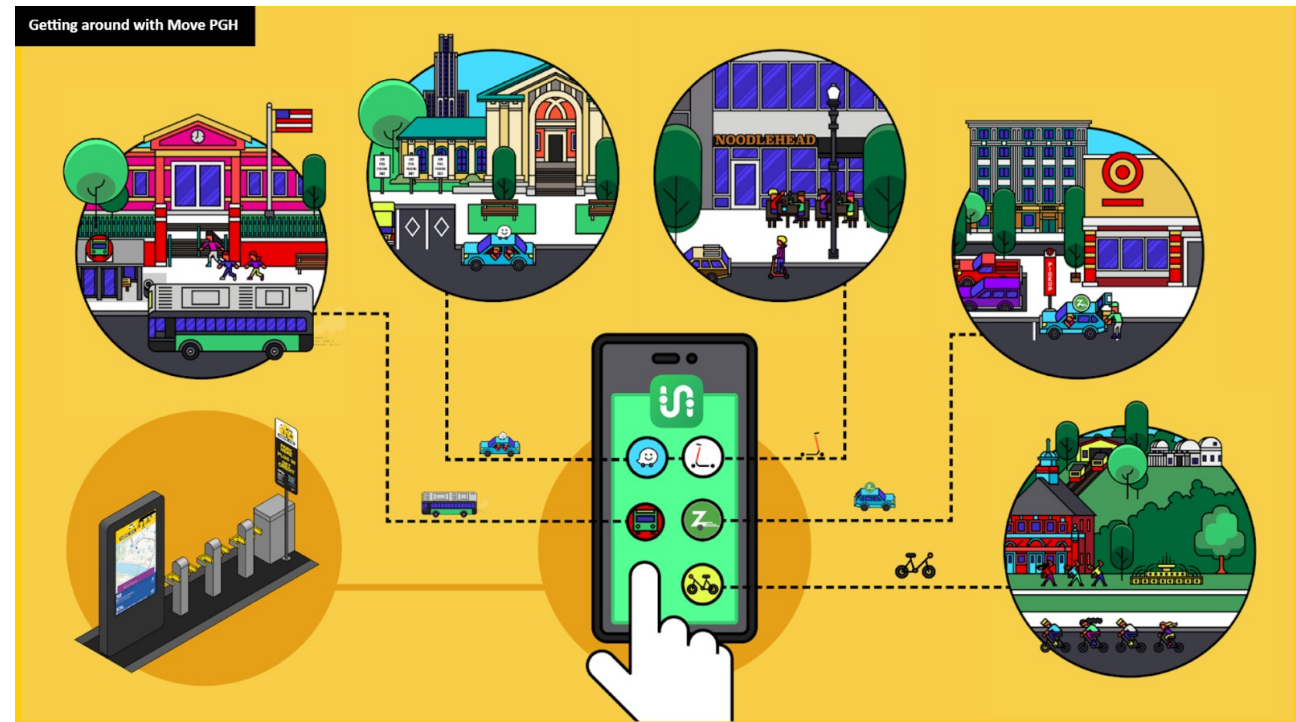


Center for Smart Mobility at Richardson IQ Center

Implementation Pathways

Opportunities for Procurement Innovation

- Mobility Concessions
- Mobility Challenges
- Hub Benches
- Unsolicited Proposals

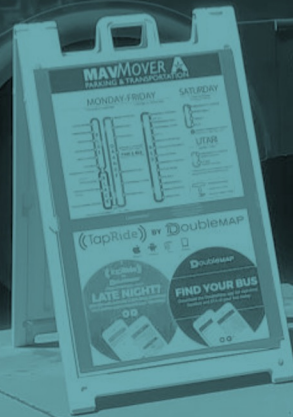


Move PGH in Pittsburgh allows users to access micro hubs, rent shared mobility services, and purchase transit tickets in the same mobile app.

Let's talk about the Funding and Implementation Strategies

MAV MOVER
PARKING & TRANSPORTATION

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Groome Transportation of Texas, LLC
DOT# 2393825



Discussion on Funding & Implementation

- The two strategy docs cover a lot, but is anything missing?
- Are there barriers unique to UNT that could limit implementation?
- Who are the most important entities to partner with, both within and outside the university context?
- What mobility hub outcomes would be the greatest mark of success to decision makers?

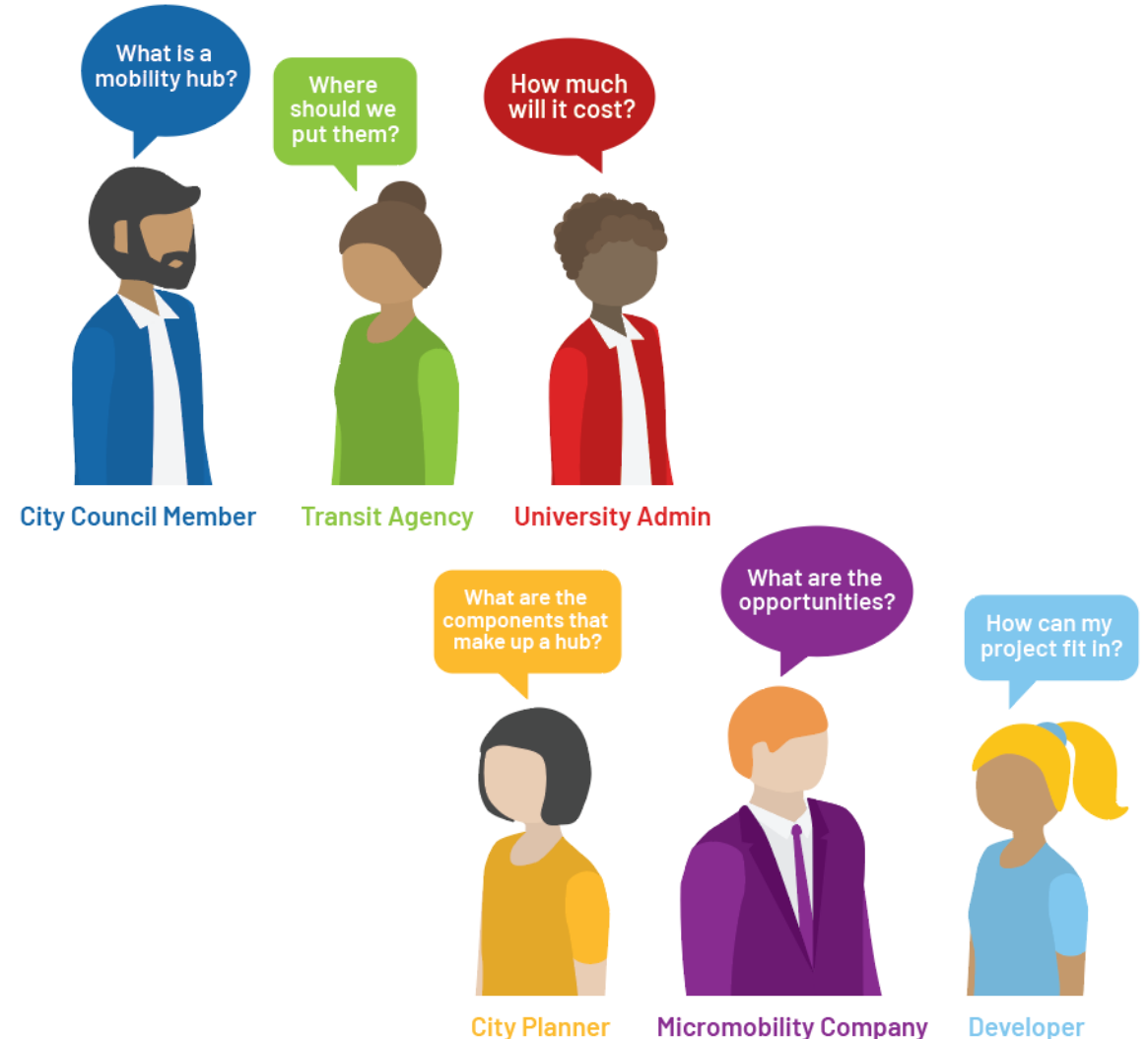
CAMPUS MOBILITY HUB CATALOG



What is the Catalog?

What?

- Designed as a choose your own adventure “How to” resource for hub planning and implementation
- Synthesis of all work to date into a useable resource
- Defines campus mobility hubs and the typology



What is the Catalog?

Who?

- Practitioners, primarily campus, city, and transit agency staff
- Other audience members:
 - Includes the implementation team (funders, vendors, and developers)
 - Primer tool for partners



What is the Catalog?

How is it designed?

- NACTO guidance styling
- Synthesis pointing to detailed resources
- Graphic and image-heavy

Mobility Hub Types


Mobility Hub Types

Urban Core

[Description] Esequerum verum repellat eum repudis et qui vereius. Omnis simus, quas quatectibus dolorae. Itaque optas consequere quae et fugitamentum ut accumquidit

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Examples

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Potential Features/Amenities

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UC SC FL GW PO RE
OFF CAMPUS ON CAMPUS

6

Catalog Contents

What are Campus Mobility Hubs?

- Definition, Vision, and Objectives
- Thinking of hubs as a regional network
- Typology
- Kit of parts

Off-Campus Mobility Hubs



Urban Core



Suburban Commuter



First/Last Mile

On-Campus Mobility Hubs



Gateway



Park Once



Residential



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Off-Campus Mobility Hubs



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Park Once



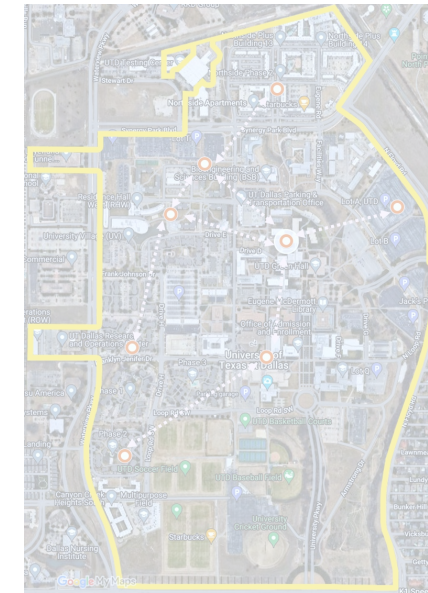
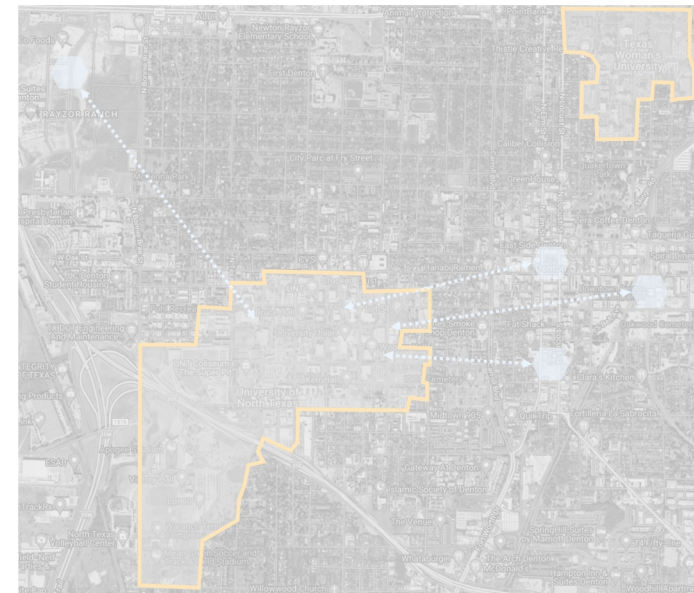
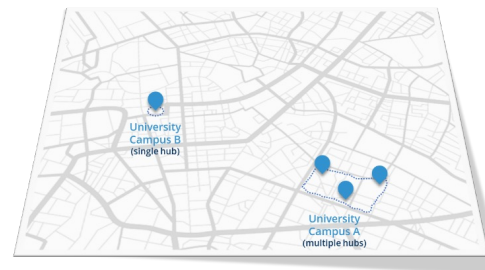
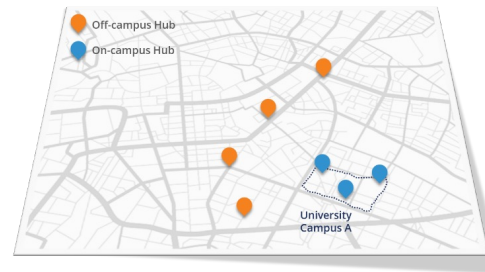
Residential



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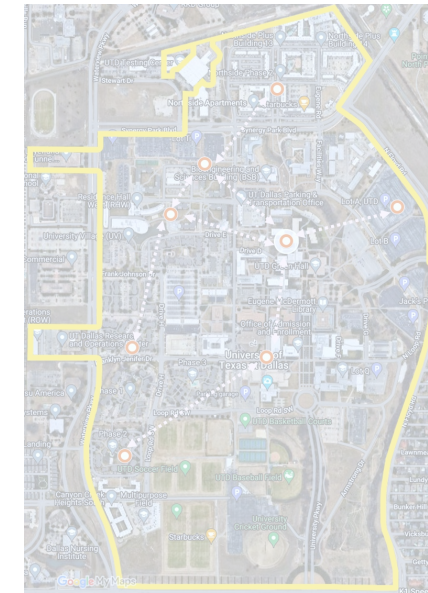
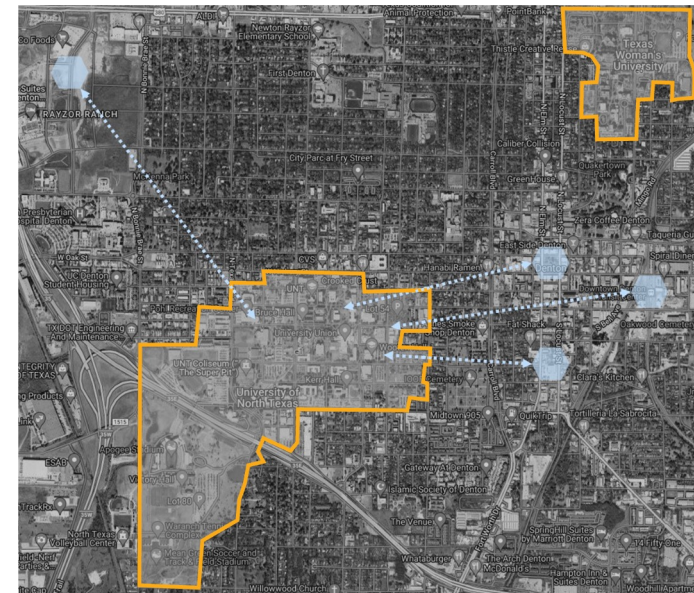
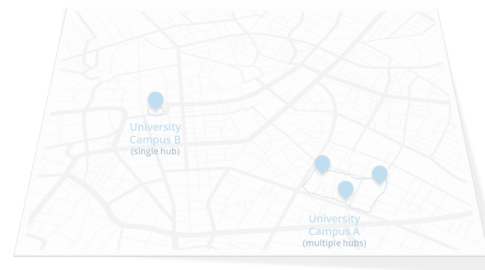
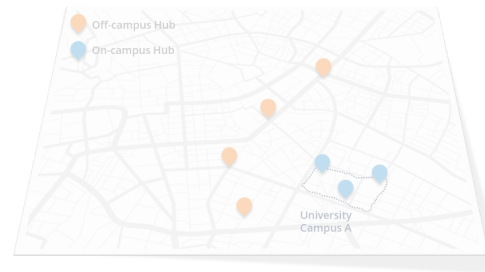
- Siting Tool
- Town-and-gown connections
- Intra-campus hub connections



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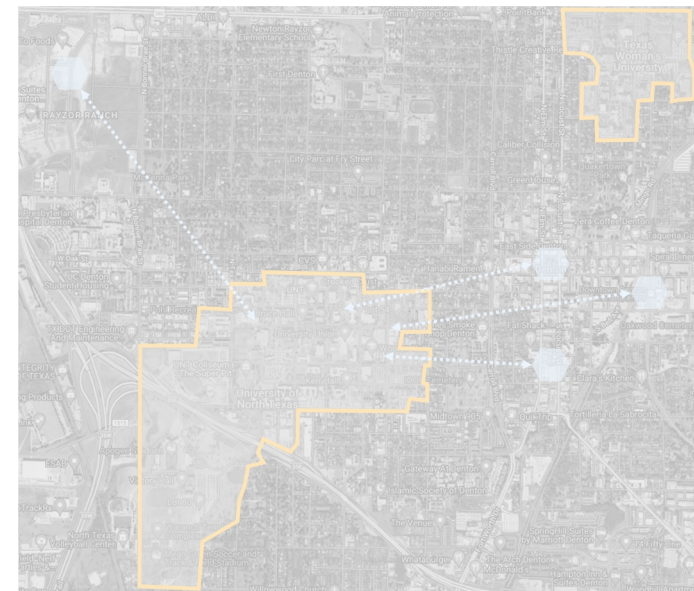
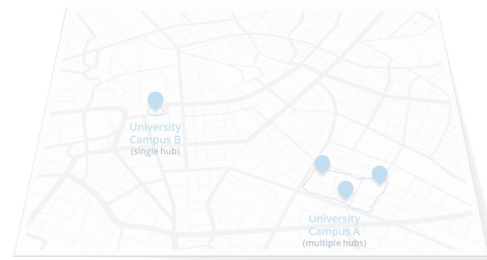
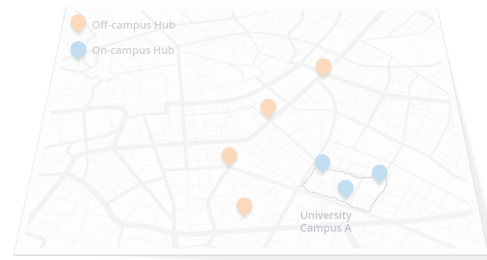
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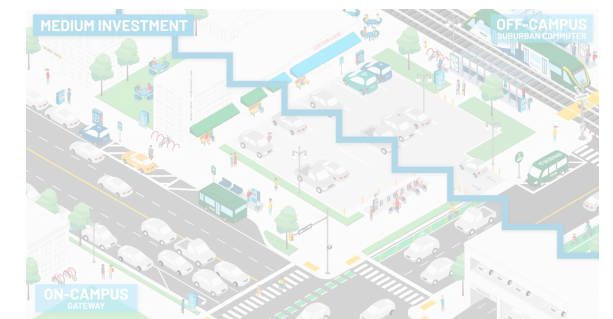
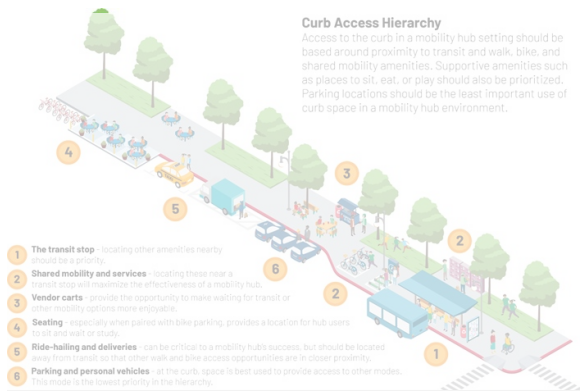
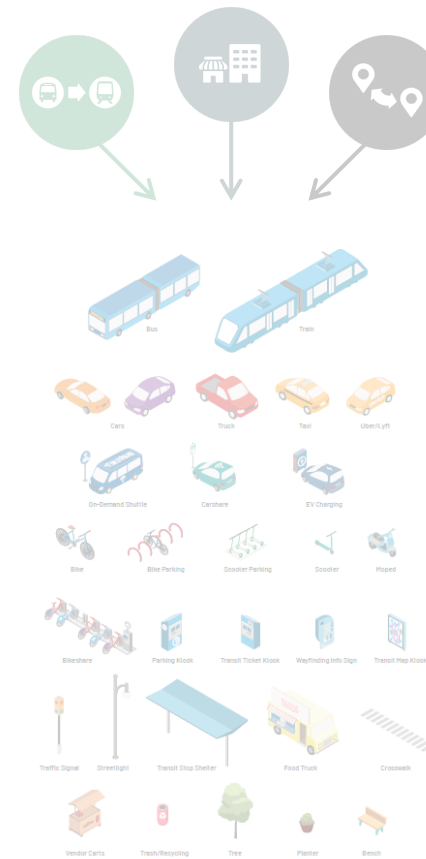
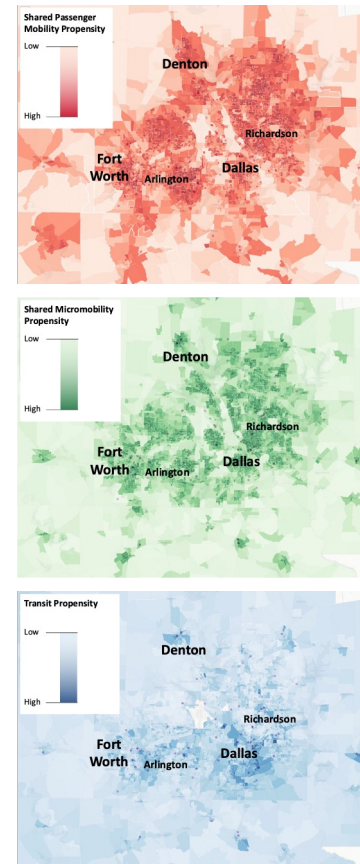
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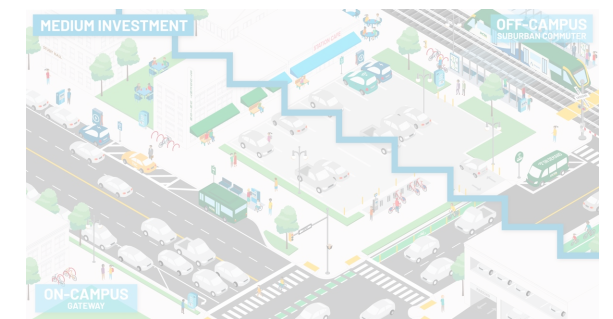
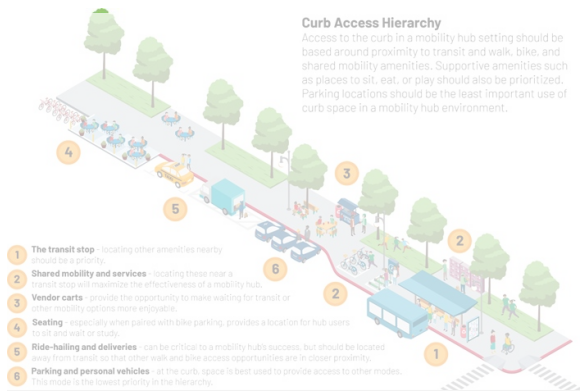
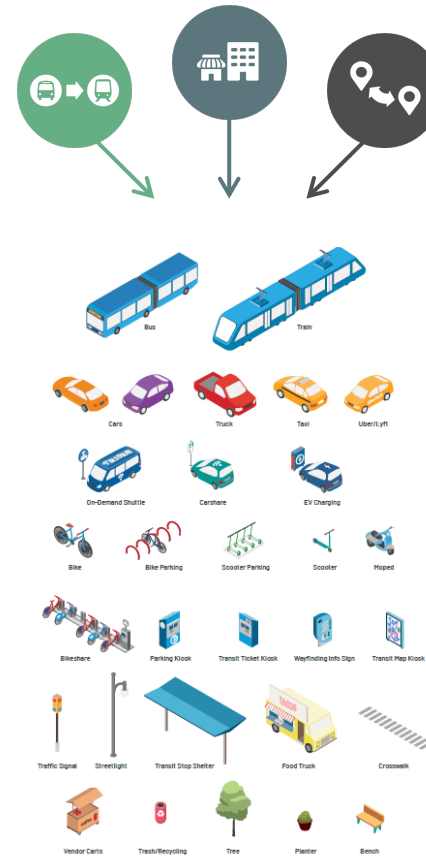
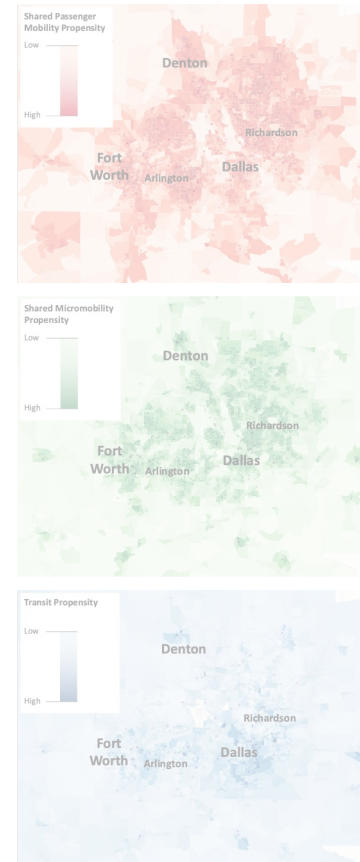
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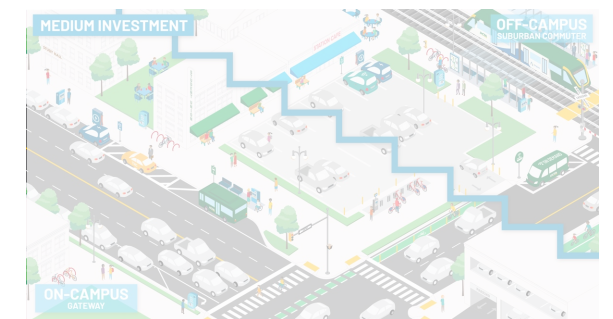
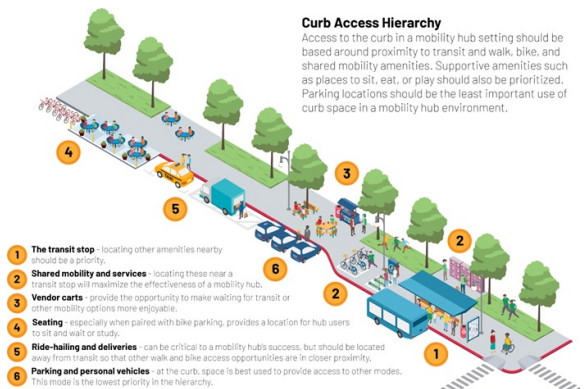
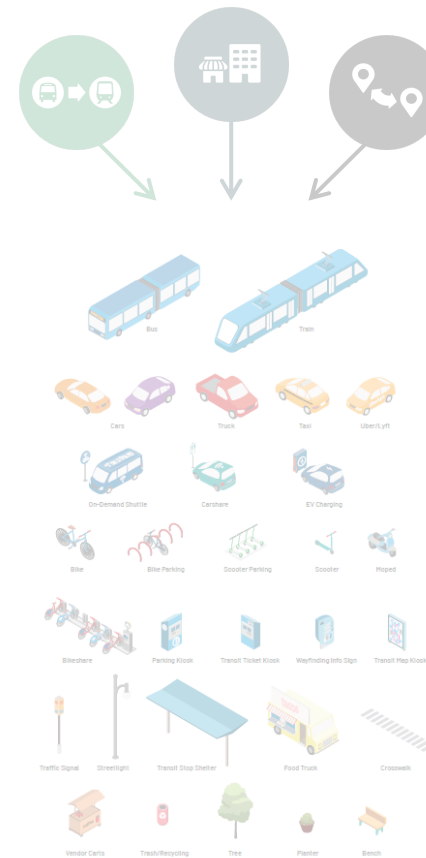
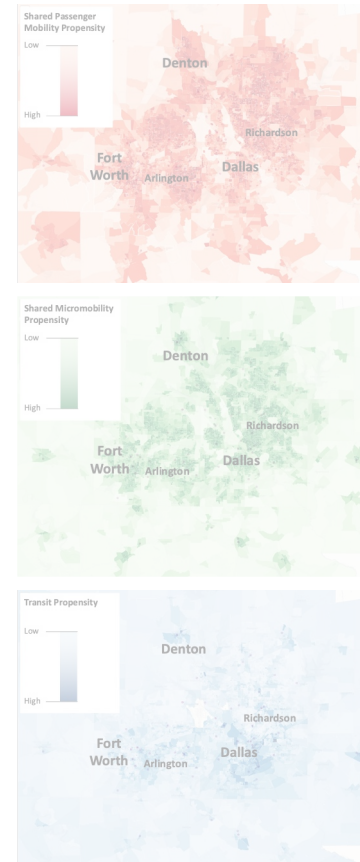
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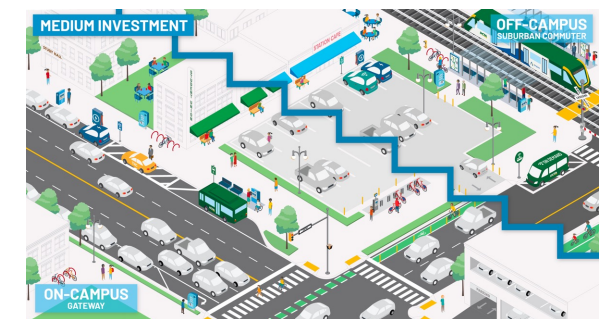
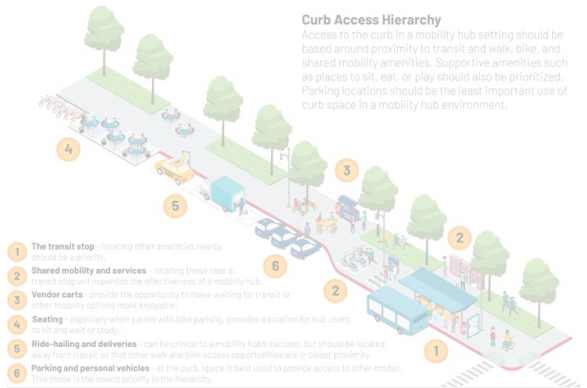
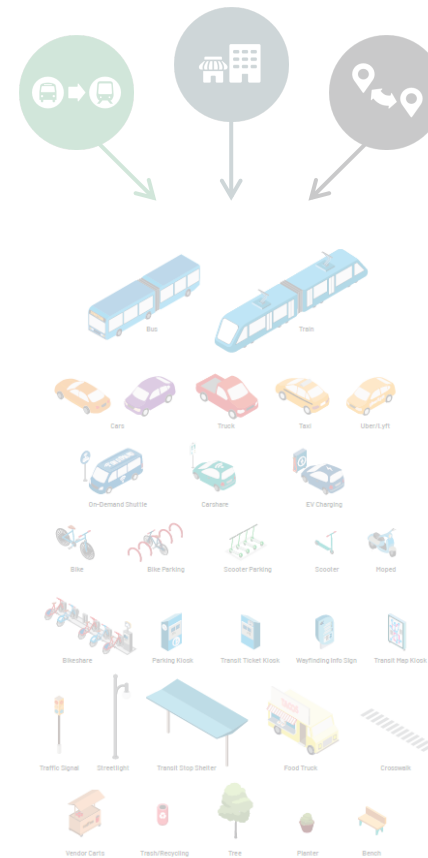
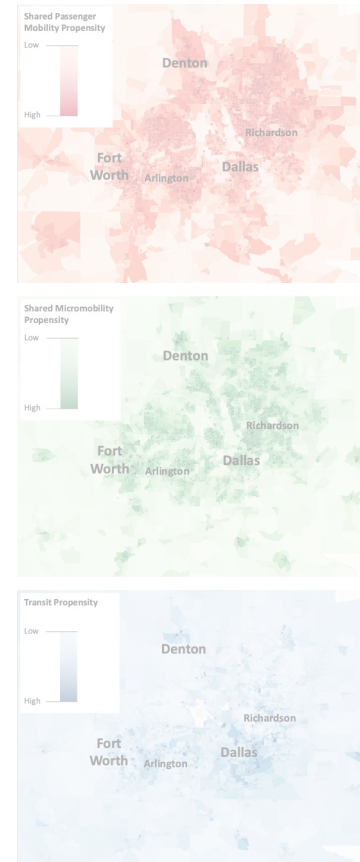
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Catalog Contents

How to Fund Your Mobility Hub(s)

- Federal Funding
- State Funding
- Local Funding
- Foundation Funding
- How to be Competitive



How to Implement Your Mobility Hub(s)

- Key Implementation Factors
- Implementation Pathways
 - Methods for Campus Integration
 - Leveraging Tools and Partnership
 - Policy Implementation
 - Procurement Innovation
- Strategic (and Realistic) Phasing

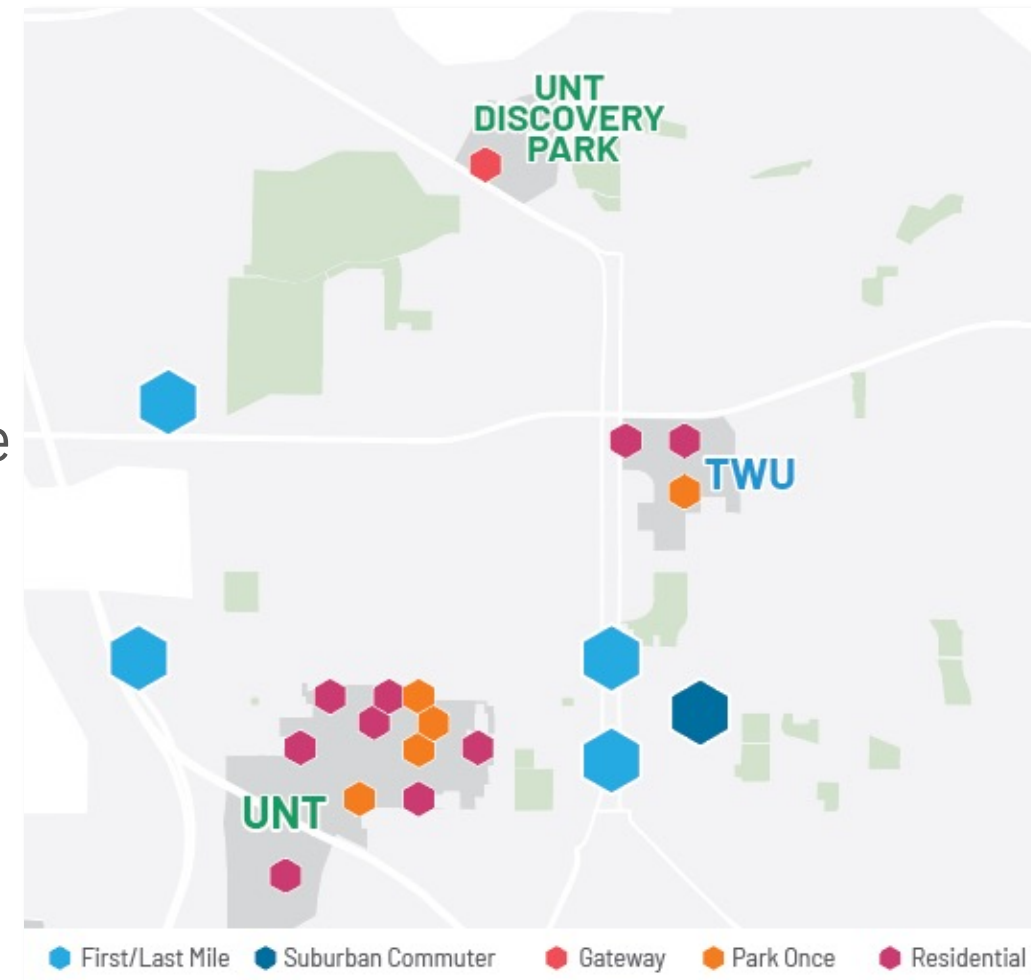
UNT DENTON MOBILITY HUB REPORT



What is the UNT Denton Report (and Why Should You Care)?

What?

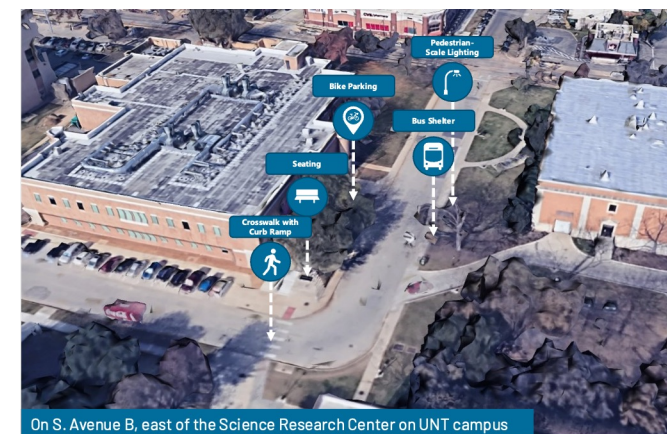
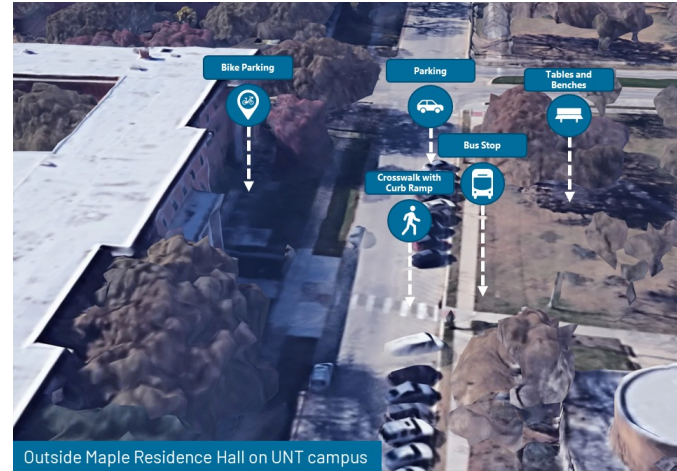
- Template for campus-specific mobility hub plans and implementation strategies
- Documents mobility hub opportunities in the UNT-context
- Sets the stage for a hub network (not just a single hub)



Where are the Candidate Hubs?

Location and Site-Specific Planning

- Specific locations and network effects
- Setting a vision and objectives for success for UNT
- Guidance for campus affiliate engagement



Where are the Candidate Hubs?

Union Circle Concept #1

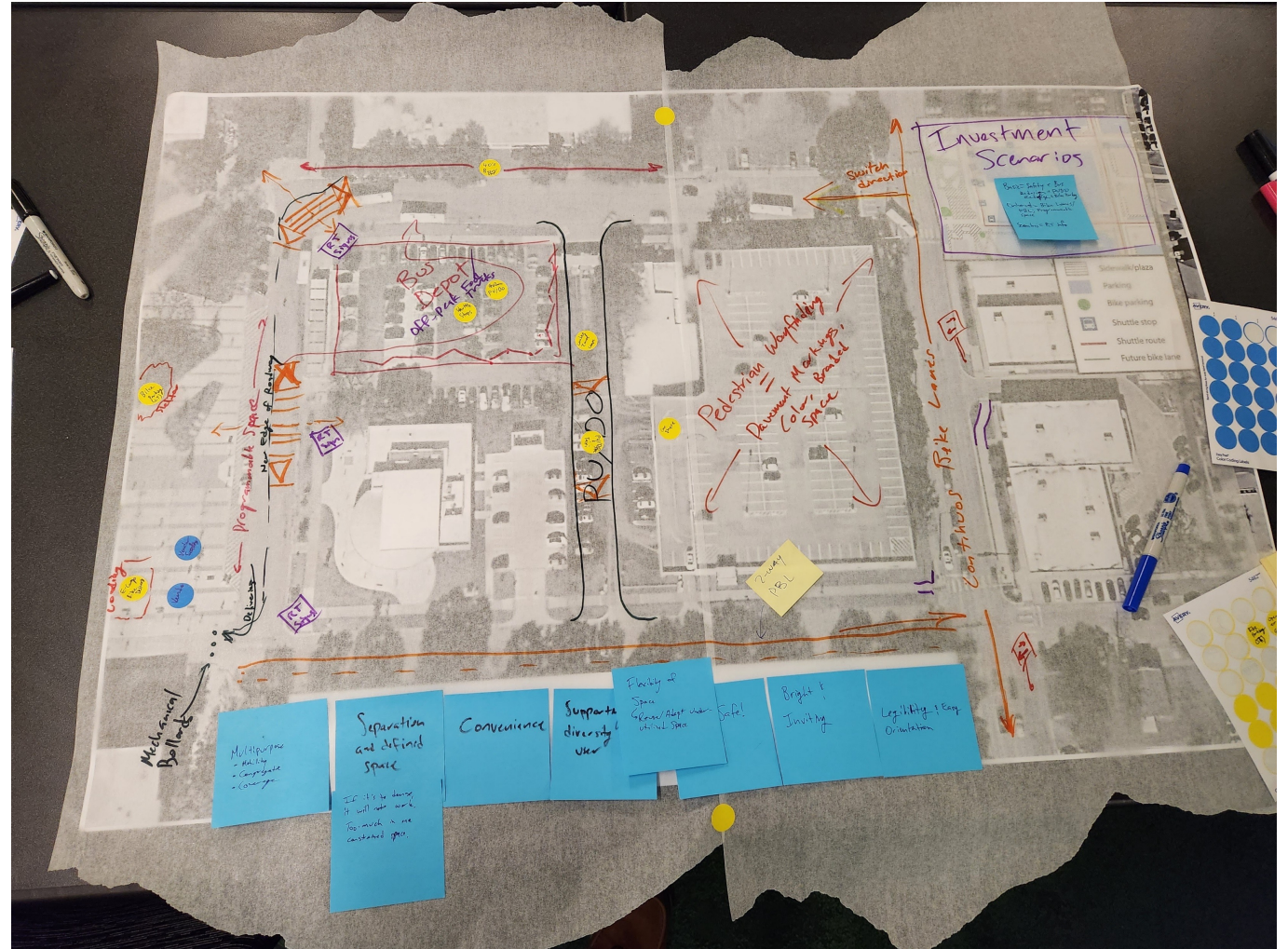
- Increased parking capacity at garage
- Outdoor pavilion with lighting and security
- Bike lane
- Kiss and ride
- Seating area with food trucks
- Event deck
- Abundant lighting and wayfinding



Where are the Candidate Hubs?

Union Circle Concept #2

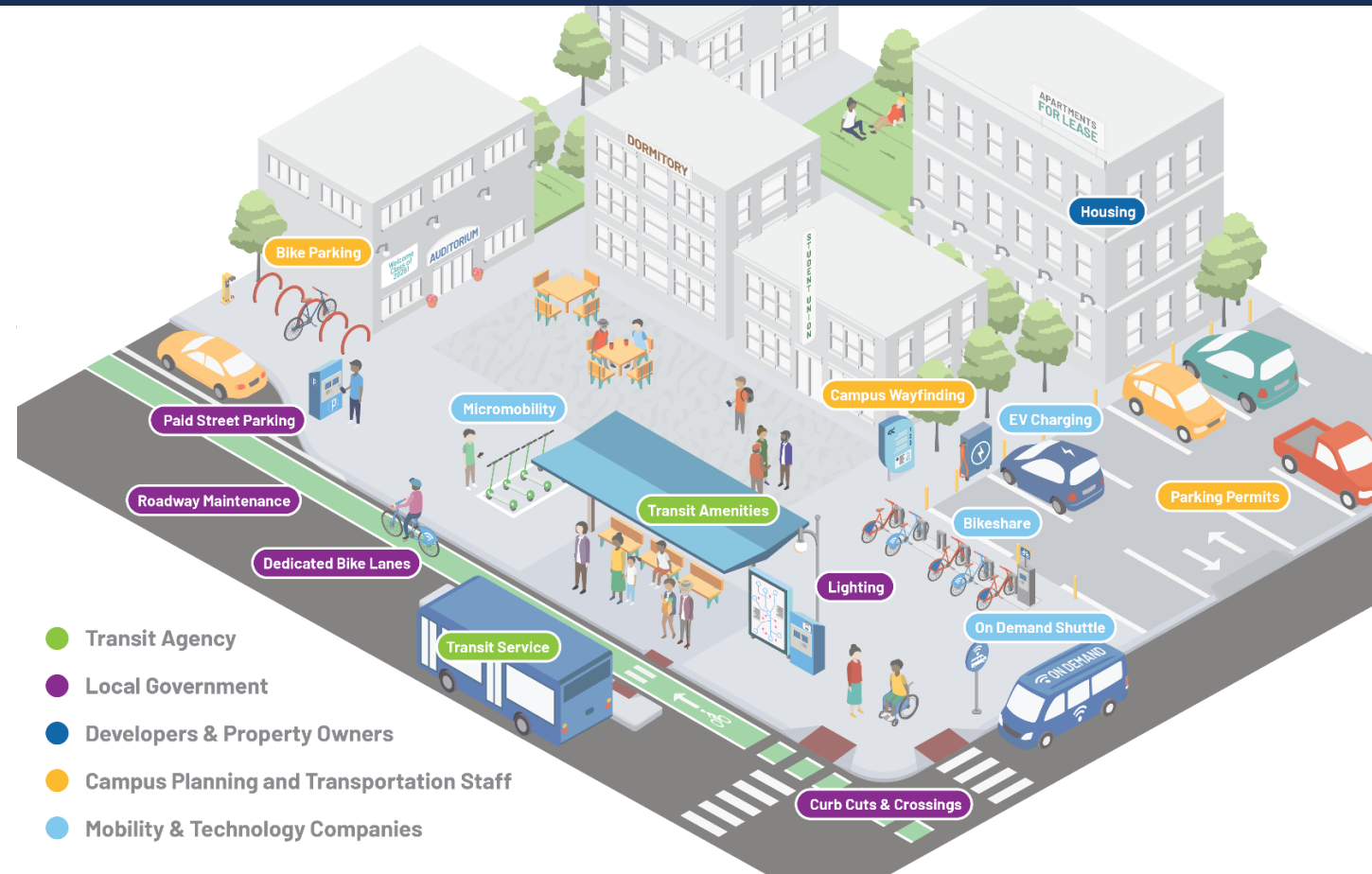
- Color-coded wayfinding throughout garage
- Bike lanes
- Roadway cut-through
- Bus depot with off-peak food trucks
- Shuttle stops
- Bike parking
- E-cargo bikes
- Pickup/dropoff locations



What Can be Found at Each Hub Location?

A Focus on Hub Elements and Design Considerations

- Amenity options and choosing right amenities for your hub
- Hub types at UNT Denton
 - On-campus
 - Off-campus
- Connecting the Denton hub network



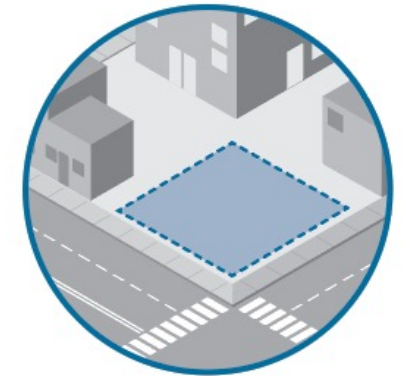
Getting to Implementation at UNT

Implementation Recommendations

- Governance and ownership
- Flexibility and testing
- Equity and inclusion
- Branding considerations
- Demand management
- Performance measurement
- Building out the implementation team
- Viable implementation pathways, from retrofits to procurement
- **Phasing options**



Test and Iterate Now



Bank and Stage



*Integrate Building Blocks
and Opportunities*

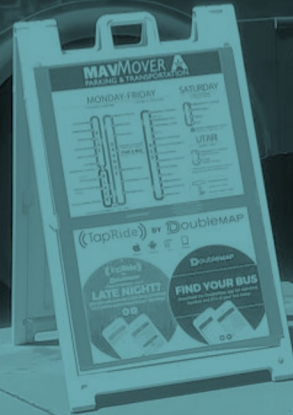


Build at Once

Let's talk about the Catalog and UNT Report

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Discussion on Catalog and UNT Denton Report

- Initial thoughts and questions?
- Is there anything in the Catalog that needs more of a highlight? Is there anything missing?
- The Catalog is technical assistance. Is it enough?
- The UNT Report is a template for other campuses. Is this a good template to follow?

NEXT STEPS & MOVING FORWARD



How do we Move Forward?

Discussion

- How does this group keep the momentum going?
- What would be most helpful from NCTCOG as you conceptualize hub plans and move closer to implementation?
- Are there natural cross-jurisdictional collaborations or research partnerships that should commence now? Gear up for NOFOs? What about national partnerships?
- What are the biggest barriers to moving forward?
- What else are we missing?

Next Steps

- Finish Draft Catalog and UNT Report (based on feedback)
- Produce an Executive Summary with Board-level messaging
- Close out project in March
- Begin developing working groups to pursue funding and create mobility hub strategy
- Survey campus affiliates and develop UNT-focused campus mobility hub vision (and do the same at other universities!)

THANK YOU!



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