



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

Transportation and Parking Systems 5-Year Plan

Monthly ACT Meeting
September 27, 2023

Kimley»Horn



FINAL REPORT

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
Transportation & Parking Five-Year Plan

PREPARED FOR:



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

PREPARED BY:

Kimley»Horn

MAY 2017

AGENDA

- Guiding Principles
- Outreach – Core Themes
- 5-Year Baseline Expenses
- Plan Recommendations
 - Expenses
 - Revenues
- Next Steps
 - Next ACT Meeting October 18th

Plan Recommendation Strategy

- Recommendations developed from public engagement and outreach:
 - Focus Groups
 - ACT Meetings
 - Campus Survey
- Discussion Framework:
 - What we heard
 - Recommendation(s)
 - Details and estimated cost for programmatic changes
 - Cost is presented as a “line item cost”
 - Net new cost over the course of the 5 years

Guiding Principles

- Provide **adequate and safe access** for all who come to campus.
- Develop a **financially and environmentally sustainable, adaptable, and resilient multimodal transportation system**.
- Integrate Transportation and Parking's planning to **align with the Campus Master Plan and other regulatory requirements**.
- The department is receipt supported and must **act with fiscal stewardship for the maintenance and evolution** of the transportation system.
- Develop procedures, policies, and programs that **promote equitable transportation and parking opportunities**.
- Provide **timely, transparent, and open communication** regarding the transportation system and encourage community feedback.

Core Themes Identified

TRANSPORTATION	PARKING	PROGRAMMING/POLICY	COMMUNICATION
Local Transit	Capital Asset Management	Accredited Parking Organization (APO) Designation	Education
Point-to-Point (P2P)	Flexible Parking Options	Allocation Model	Partnership and Collaboration
Regional Transit	Technology	Mobility Processes and Access	
TDM Programming		Pricing Structure	
		Staffing	
		Sustainability	

Transportation

5-Year Baseline Expenses + Revenue

		Year 1 FY24/25	Year 2 FY25/26	Year 3 FY26/27	Year 4 FY27/28	Year 5 FY28/29	Cumulative Five Years
	Operating Expense						
2%	Salaries/Wages	\$ 1,245,290	\$ 1,270,196	\$ 1,295,600	\$ 1,321,512	\$ 1,347,942	\$ 6,480,542
1%	Temporary/Student Wages	\$ 325,579	\$ 328,834	\$ 332,123	\$ 335,444	\$ 338,798	\$ 1,660,778
4%	Fringe & Non-Fringe	\$ 647,476	\$ 673,375	\$ 700,310	\$ 728,322	\$ 757,455	\$ 3,506,938
3%	Materials and Supplies	\$ 126,479	\$ 130,273	\$ 134,181	\$ 138,207	\$ 142,353	\$ 671,493
3%	Utilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3%	Infrastructure/Service/Maint.	\$ 100,044	\$ 103,045	\$ 106,137	\$ 109,321	\$ 112,600	\$ 531,147
3%	Service Agreements	\$ 354,105	\$ 364,728	\$ 375,670	\$ 386,940	\$ 398,548	
1%	All Other Operating Costs	\$ 285,925	\$ 288,784	\$ 291,672	\$ 294,589	\$ 297,535	\$ 1,458,505
3%	Chapel Hill Transit	\$ 10,949,737	\$ 11,278,230	\$ 11,616,576	\$ 11,965,074	\$ 12,324,026	\$ 58,133,643
2%	Regional Transit	\$ 530,600	\$ 541,212	\$ 552,036	\$ 563,077	\$ 574,339	\$ 2,761,264
UNC	Debt Expense						\$ -
Flat	Admin Cost Transfer	\$ 334,856	\$ 334,856	\$ 334,856	\$ 334,856	\$ 334,856	\$ 1,674,280
Flat	Capital Repair Fund						\$ -
	Total Expense	\$ 14,900,091	\$ 15,313,534	\$ 15,739,161	\$ 16,177,341	\$ 16,628,452	\$ 76,878,589
	Baseline Revenue						
2.00%	Departmental Transp Fee	\$ 6,660,600	\$ 6,793,812	\$ 6,929,688	\$ 7,068,282	\$ 7,209,648	\$ 34,662,030
0.50%	Student Transp Fee	\$ 6,130,500	\$ 6,161,153	\$ 6,191,958	\$ 6,222,918	\$ 6,254,033	\$ 30,960,561
Flat	All Other Trust Revenue	\$ 60,970	\$ 60,970	\$ 60,970	\$ 60,970	\$ 60,970	\$ 304,850
Flat	P2P State Funding	\$ 173,000	\$ 173,000	\$ 173,000	\$ 173,000	\$ 173,000	\$ 865,000
		\$ 13,025,070	\$ 13,188,935	\$ 13,355,617	\$ 13,525,170	\$ 13,697,650	\$ 66,792,441

Transportation Recommendations

- What we heard:
 - Increase communication and transparency with transit
 - Expand on alternative modes of transportation on campus
 - Expand bike share opportunities – cost prohibitive for current user rates
 - Micro mobility on campus (scooters, etc)
 - Strengthen the Commuter Alternatives Program

Transportation Recommendations

- **Local Transit**
 - New Tracking System – GMV (incorporated into annual cost; in static)
 - North South Bus Rapid Transit – Increased Operational Cost estimated in 2029
 - Fleet Electrification
- **P2P**
 - Fleet Electrification – Van implement 2027/28
 - New Tracking System – Fixed Route | On-Demand (Allow reservation for ADA On-Demand)
- **Regional Transit**
 - Return to Fares (UNC Fare Free at Boarding – Go Pass)
 - Additional coordination with PART for cohesive regional access to campus
- **Transportation Demand Management (TDM) Expansion**
 - Expand regional transit access to residential students
 - Bikeshare Incentives – Lower membership/ridership cost for user to promote utilization
 - Bike Infrastructure – Amenities for covered storage and additional repair stations
 - Commuter Alternative Program (CAP) Membership Incentives

Local – Chapel Hill Transit

System Enhancement

- New Tracking System

- 2023 implemented new bus tracking system
- CHT Fund Balance - \$1.8M

LINE ITEM COST: \$0

- North South Bus Rapid Transit

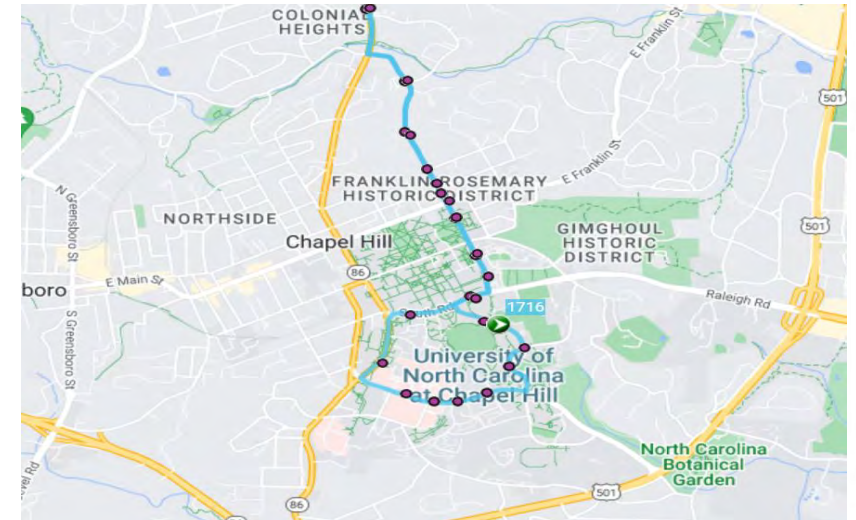
- Federal, State, Local Match, and grant proceeds funding capital planning and construction
- Increased operational Cost estimated in 2028
- Annual Cost: 475K | Plan: \$950K

LINE ITEM COST: \$950K

- Electric Fleet

- 11 Buses & charging infrastructure during FY23
- CHT received grant funding for all electric bus capital
- Charging Infrastructure

LINE ITEM COST: \$0



Point-to-Point

- Fleet Electrification
 - EV Study Years 1-3 of the Plan
 - Bus conversion next Plan
 - Year 4 & 5 (Van conversion)
 - Start conversion with fleet vans for on-demand transport
 - Gradually increase fleet conversion pending success of pilot
 - Van Infrastructure: \$150K one-time cost
 - Vans Convert from gas to electric: \$62,500 annual cost

LINE ITEM COST: \$275,000

- New Tracking System – Fixed Route | On-Demand
 - Reservation capability for ADA On-Demand Transport
 - Annual: \$25K | Plan: \$125K

LINE ITEM COST: \$125,000



Regional Transit

- No anticipated changes to costs for service enhancements
- GoTriangle fares to return in 2024
- Inflationary increase included in baseline estimate

LINE ITEM COST: \$0

TDM Expansion

System Enhancement

- Expand regional transit access to residential students
 - Provide residential students opportunities for car-free living
 - Annual cost: \$60K | Plan: \$300K

LINE ITEM COST: \$300,000

- Bike & Mobility Device Infrastructure
 - Bike racks, lockers, repair stations
 - Solar charging stations for e-bikes, scooters
 - Outdoor storage for e-mobility devices
 - Annual Cost: \$30K | Plan: \$150K

LINE ITEM COST: \$150,000

- Commuter Alternative Program (CAP) Membership Incentives
 - Provide membership give aways through CAP
 - Adding a tiered prize system based on CO2 emissions eliminated
 - Waived ZipCar membership fee for increased car share trips
- Bikeshare Incentives
 - Subsidize unlock fee \$1 per ride
 - Reduce per hour rates to incentivize ridership
- Annual Cost: \$50K | Plan Cost: \$250K

LINE ITEM COST: \$250,000



Transportation

5-Year Baseline Expenses

Plus Service Recommendations

Core Themes	Description	Year 1 FY24/25	Year 2 FY25/26	Year 3 FY26/27	Year 4 FY27/28	Year 5 FY28/29	Cumulative Five Years
System Efficiencies	5-Year Staffing Plan	\$ (37,536)	\$ (38,287)	\$ (39,052)	\$ (39,834)	\$ (40,630)	\$ (195,339)
TDM Improvements	TDM - Regional for Residents 10K students x \$6/yr)	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 300,000
TDM Improvements	TDM - Bike/Micro Amenities \$60K initial outlay then \$10K yr maintenance)	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 150,000
TDM Improvements	TDM - CAP Incentives	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 250,000
Access Improvement	CHT - NSBRT				\$ 475,000	\$ 475,000	\$ 950,000
Access Improvement	P2P - New Tracking System	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 125,000
Sustainability	P2P - Fleet Electrification				\$ 212,500	\$ 62,500	\$ 275,000
	Total Service Enhancements	\$ 127,464	\$ 126,713	\$ 125,948	\$ 812,666	\$ 661,870	\$ 1,854,661
	Baseline	\$ 14,900,091	\$ 15,313,534	\$ 15,739,161	\$ 16,177,341	\$ 16,628,452	\$ 78,758,579
	Baseline Plus Service Enhancements	\$ 15,027,555	\$ 15,440,247	\$ 15,865,109	\$ 16,990,008	\$ 17,290,322	\$ 80,613,240

Transportation

5-Year Baseline Revenue vs Expenses

		Year 1	Year 2	Year 3	Year 4	Year 5	Cumulative
	Baseline Revenue	FY24/25	FY25/26	FY26/27	FY27/28	FY28/29	Five Years
2.00%	Departmental Transp Fee	\$ 6,660,600	\$ 6,793,812	\$ 6,929,688	\$ 7,068,282	\$ 7,209,648	\$ 34,662,030
0.50%	Student Transp Fee	\$ 6,130,500	\$ 6,161,153	\$ 6,191,958	\$ 6,222,918	\$ 6,254,033	\$ 30,960,561
Flat	All Other Trust Revenue	\$ 60,970	\$ 60,970	\$ 60,970	\$ 60,970	\$ 60,970	\$ 304,850
Flat	P2P State Funding	\$ 173,000	\$ 173,000	\$ 173,000	\$ 173,000	\$ 173,000	\$ 865,000
		\$ 13,025,070	\$ 13,188,935	\$ 13,355,617	\$ 13,525,170	\$ 13,697,650	\$ 66,792,441
	Baseline Plus Plan Service Enhancements	\$ 14,952,555	\$ 15,315,847	\$ 15,741,521	\$ 16,179,748	\$ 16,630,907	\$ 80,613,240
	Transportation Revenue Needs	\$ 1,927,485	\$ 2,126,912	\$ 2,385,904	\$ 2,654,578	\$ 2,933,257	\$ 13,820,799

Discussion

Questions & Answers

Core Themes Identified

TRANSPORTATION	PARKING	SYSTEM MANAGEMENT & POLICY	COMMUNICATION
Local Transit	Capital Asset Management	Accredited Parking Organization (APO) Designation	Education
Point-to-Point (P2P)	Flexible Parking Options	Allocation Model	Partnership and Collaboration
Regional Transit	Parking Technology	Mobility Processes and Access	
TDM Programming	Safety	Pricing Structure	
		Staffing	
		Sustainability	

Parking

5-Year Baseline Expenses + Revenue

		Year 1 FY24/25	Year 2 FY25/26	Year 3 FY26/27	Year 4 FY27/28	Year 5 FY28/29	Cumulative Five Years
2%	Salaries/Wages	\$ 3,916,820	\$ 3,995,156	\$ 4,075,059	\$ 4,156,561	\$ 4,239,692	\$ 20,383,288
1%	Temporary/Student Wages	\$ 222,606	\$ 224,832	\$ 227,081	\$ 229,352	\$ 231,645	\$ 1,135,516
4%	Fringe & Non-Fringe	\$ 2,039,960	\$ 2,121,559	\$ 2,206,421	\$ 2,294,678	\$ 2,386,465	\$ 11,049,082
3%	Materials and Supplies	\$ 412,014	\$ 416,134	\$ 420,296	\$ 424,499	\$ 428,744	\$ 2,101,687
3%	Utilities	\$ 650,497	\$ 670,011	\$ 690,112	\$ 710,815	\$ 732,140	\$ 3,453,574
3%	Infrastructure/Service/Maint.	\$ 930,192	\$ 948,796	\$ 967,772	\$ 987,127	\$ 1,006,870	\$ 4,840,757
3%	Service Agreements	\$ 2,417,269	\$ 2,489,787	\$ 2,564,481	\$ 2,641,415	\$ 2,720,657	\$ 12,833,609
1%	All Other Operating Costs	\$ 817,831	\$ 826,010	\$ 834,270	\$ 842,612	\$ 851,039	\$ 4,171,762
3%	Chapel Hill Transit						\$ -
2%	Regional Transit						\$ -
UNC	Debt Expense	\$ 7,332,521	\$ 7,313,485	\$ 6,566,606	\$ 5,368,386	\$ 5,330,573	\$ 31,911,571
Flat	Admin Cost Transfer	\$ 1,087,482	\$ 1,087,482	\$ 1,087,482	\$ 1,087,482	\$ 1,087,482	\$ 5,437,410
Flat	Capital	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 6,000,000
	Total Parking Baseline Expense	\$ 21,027,193	\$ 21,293,253	\$ 20,839,579	\$ 19,942,926	\$ 20,215,306	\$ 103,318,256
		Year 1 FY24/25	Year 2 FY25/26	Year 3 FY26/27	Year 4 FY27/28	Year 5 FY28/29	Cumulative Five Years
%/Yr Incr	Baseline Revenue						
0.01%	Permits-net	\$ 15,280,000	\$ 15,295,280	\$ 15,310,575	\$ 15,325,886	\$ 15,341,212	\$ 76,552,953
Variable	Patient/Visitor Parking	\$ 5,070,582	\$ 5,171,994	\$ 5,275,434	\$ 5,380,942	\$ 5,488,561	\$ 26,387,512
0.50%	Events	\$ 2,180,000	\$ 2,180,000	\$ 2,180,000	\$ 2,180,000	\$ 2,180,000	\$ 10,900,000
0.50%	Departmental Transp Fee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2.00%	Student Transp Fee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0.25%	Student Weeknight Parking	\$ 191,478	\$ 191,956	\$ 192,436	\$ 192,917	\$ 193,399	\$ 962,186
Flat	Debt Supplement	\$ 916,000	\$ 916,000	\$ 916,000	\$ 357,720	\$ 357,720	\$ 3,463,440
Flat	All Other Trust Revenue	\$ 181,580	\$ 181,580	\$ 181,580	\$ 181,580	\$ 181,580	\$ 907,900
Flat	P2P State Funding						\$ -
	Total Funding	\$ 23,819,640	\$ 23,936,810	\$ 24,056,025	\$ 23,619,045	\$ 23,742,472	\$ 119,173,992

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Parking Recommendations

- What we heard:
 - Capital Asset Management
 - Maintaining and operating clean facilities
 - Ensure facilities are in good repair
 - Flexible parking options
 - Reserve parking in advance
 - Expanded hourly, daily, and weekly options
 - Leveraging technology to operate efficiently
 - Space finding software to find parking
 - Simplify parking assignment process for departments
 - Communication of available parking/transit availability
 - Safety
 - Cameras
 - Lighting

Parking Recommendations

Leveraging Technology

- License Plate Recognition (LPR)
 - Increased flexibility among decks/lots
- Parking Guidance Technology
 - Real-Time parking occupancy data
- T&P IT Support
 - Technical assessment of existing system's performance
 - Recommendations for technology improvements
 - IT Team parking and transportation professional development

Parking Recommendations

Capital Asset Management

Maintenance Master Plan

- Professional engineering assessment of parking facilities for repair
- Implement scheduled maintenance and repair plan
- Complete ADA upgrades as repairs occur
- Include parking infrastructure in facilities maintenance software system for record keeping and tracking
- Annual Cost: \$500K | Plan: \$2.5M

LINE ITEM COST: \$2,500,000

Parking Recommendations

Flexible Parking

PARCS – New System

- Departments will have options to provide visitors:
 - Reserved parking in visitor lots
 - Provide permits via email that allow gate access
 - Validate parking for patient/visitors
- PARCS funded through prior 5-Year Plan

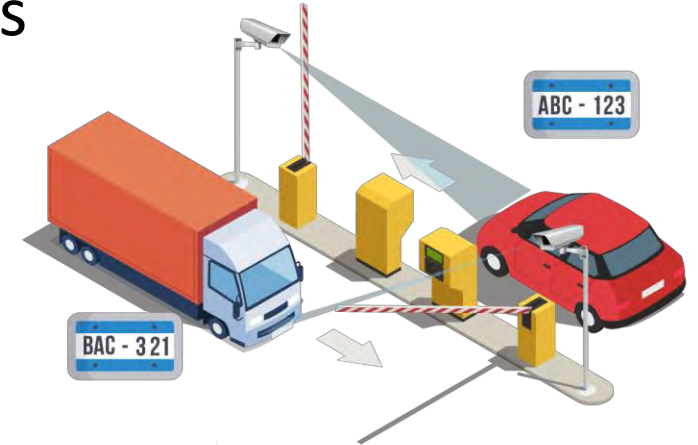
LINE ITEM COST: \$0

Parking Recommendations

License Plate Recognition

- Increases security within garages and lots
- Monitors timeliness entering and exiting facilities
- Read plates to identify unregistered vehicles
- Allow more flexible options for parking
- Reduces need for mobile LPR readers
- Annual Cost: \$200K | Plan Cost: \$1M

LINE ITEM COST: \$1,000,000



Parking Recommendations

Parking Guidance Technology

- Dogwood Parking Deck
- Year 1 of the plan
- Collaboration between UNC Hospitals and T&P
- Technology Required:
 - In ground sensors or cameras
- Success of this implementation can guide future implementation
- Direct feedback and guidance from ACT and Campus Survey



LINE ITEM COST: \$1,000,000

Parking Recommendations

Safety

- Cameras
 - Increased security and awareness
 - Assist with parking guidance and LPR data
 - Vehicle locator – patient/visitor deck
 - Annual investment: \$250K or Plan: \$1.25M
- LED Lighting
 - Sustainable retrofit (reduced utility cost)
 - Higher light quality and visibility in decks/lots
 - Annual Cost: \$150K | Plan: \$750K



LINE ITEM COST: \$2,000,000

Parking

5-Year Baseline Expenses Plus Service Recommendations

		Year 1	Year 2	Year 3	Year 4	Year 5	Cumulative
Core Themes	Description	FY24/25	FY25/26	FY26/27	FY27/28	FY28/29	Five Years
System Effeciencies	5-Year Staffing Plan	\$ (150,142)	\$ (153,145)	\$ (156,208)	\$ (159,332)	\$ (162,519)	\$ (781,345)
System Management	Capital Asset Maintenance Plan	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,500,000
Sustainability/Safety	LED Lighting	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 750,000
System Enhancements	License Plate Recognition (LPR)	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,000,000
System Enhancements	Dogwood Guidance	\$ 1,000,000					\$ 1,000,000
Safety/System Management	Cameras	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 1,250,000
Infrastructure	No Additional Parking Const. Identified	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Total Service Enhancements	\$ 1,949,858	\$ 946,855	\$ 943,792	\$ 940,668	\$ 937,481	\$ 5,718,655
	Baseline	\$ 21,027,193	\$ 21,293,253	\$ 20,839,579	\$ 19,942,926	\$ 20,215,306	\$ 103,318,256
	Baseline Plus Service Enhancements	\$ 22,977,051	\$ 22,240,108	\$ 21,783,371	\$ 20,883,595	\$ 21,152,787	\$ 109,036,911

Parking

5-Year Expenses vs Baseline Revenue

%/Yr Incr	Baseline Revenue	Year 1 FY24/25	Year 2 FY25/26	Year 3 FY26/27	Year 4 FY27/28	Year 5 FY28/29	Cumulative Five Years
0.01%	Permits-net	\$ 15,280,000	\$ 15,295,280	\$ 15,310,575	\$ 15,325,886	\$ 15,341,212	\$ 76,552,953
Variable	Patient/Visitor Parking	\$ 5,070,582	\$ 5,171,994	\$ 5,275,434	\$ 5,380,942	\$ 5,488,561	\$ 26,387,512
0.50%	Events	\$ 2,180,000	\$ 2,180,000	\$ 2,180,000	\$ 2,180,000	\$ 2,180,000	\$ 10,900,000
0.50%	Departmental Transp Fee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2.00%	Student Transp Fee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
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Flat	All Other Trust Revenue	\$ 181,580	\$ 181,580	\$ 181,580	\$ 181,580	\$ 181,580	\$ 907,900
Flat	P2P State Funding						\$ -
	Total Funding	\$ 23,819,640	\$ 23,936,810	\$ 24,056,025	\$ 23,619,045	\$ 23,742,472	\$ 119,173,992
	Baseline Expense Plus Service En	\$ 22,977,051	\$ 22,240,108	\$ 21,783,371	\$ 20,883,595	\$ 21,152,787	\$ 109,036,911
	Parking Revenue Surplus/Need	\$ 842,589	\$ 1,696,702	\$ 2,272,654	\$ 2,735,451	\$ 2,589,685	\$ 10,137,080

Discussion

Questions & Answers

Pricing Structure

- What we've heard:
 - Equity in permit prices between salary scales
 - Narrowing the salary bands
 - Increase event parking prices
 - Student affordability of education
 - Patient/visitor costs
 - Cost value of parking permit types

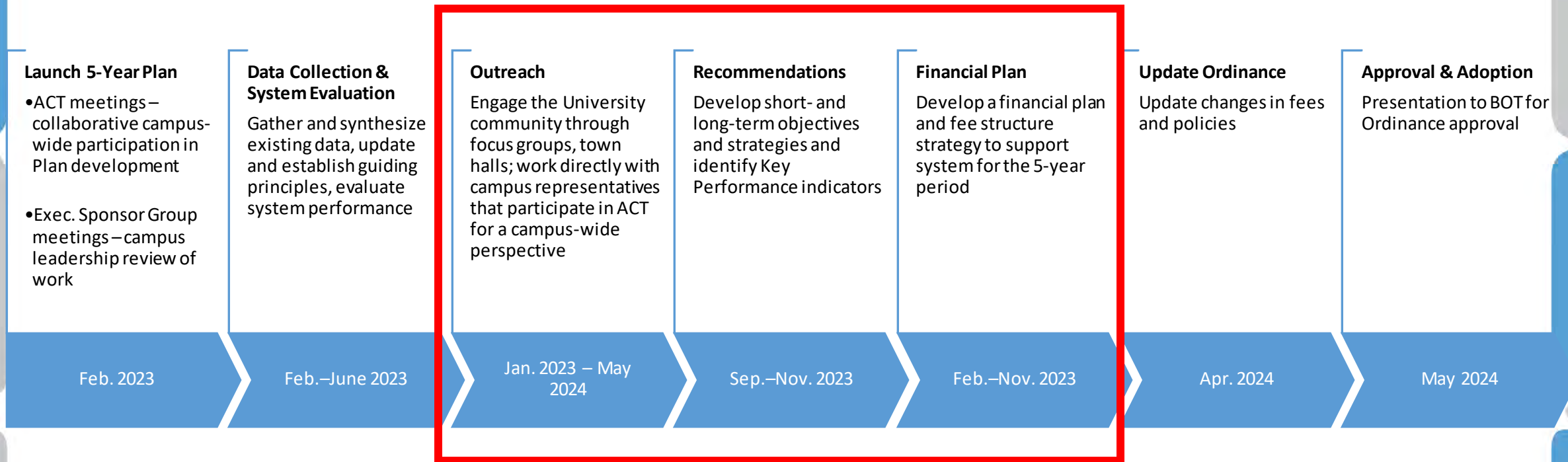
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TDM Programming		Pricing Structure	
		Staffing	
		Sustainability	

Discussion

Questions & Answers

The 5-Year Plan Process Timeline



The 5-Year Plan Process Timeline

- October:
 - Pricing and Staffing
- November:
 - Mobility Access, APO Designation, Sustainability
- January:
 - Allocation
- February:
 - Education

Next Steps

- Financial Modeling for Five-Year Plan Scenarios
- Fall Outreach
- Next ACT Meeting: October 18th Financial Strategies
 - Present & Discuss Rate Strategies
 - Pricing
 - Staffing plan
 - In-Person – **1.5 hour Meeting**