Transportation
Policy Committee

# TPC15: 2003-2018 Transportation Policy Review & Update

University of New Hampshire

*adopted February 2019*

The Transportation Policy Committee (TPC) is chaired by the Vice President for Finance & Administration.

The Committee includes appointed representatives from across the University community as well as the Town of Durham and UNH-Manchester. It meets quarterly during the academic year making recommendations to the President and guiding Transportation Services in implementing policy and practice in coordination with University goals, the Campus Master Plan and institutional climates.

The Transportation Policy Committee website is:
www.unh.edu/transportation/transportation-policy-committee
The website hosts meeting notes, benchmark reports, documents and adopted policies.

**This document was adopted by the TPC in February 2019.**
**It is provided in two parts:**

**Primary Document:** pages *i*-10:
Executive Summary, TDM Report Card,
General Recommendations and 15 Year Data Dictionary *(Appendix A)*

**Additional Detail:** pages 11-18
Detail Recommendations by Mode

**Appendices A-G**
supplemental data as stand-alone document on TPC website

## Executive Summary

### The Process

Spring 2018 marked fifteen years since adoption of a transportation demand management (**TDM**) based approach to transportation and mobility issues on the campus of the University of New Hampshire in Durham. The period has seen significant growth and change in UNH-Durham demographics, housing and transportation patterns as well as two updates of the Campus Master Plan (2004 and 2012). The fundamental principles adopted in 2003 informed those Master Plans, preserved the walking campus, and ensured campus growth in a sustainable, environmentally principled manner. This update catalogs the generally successful impacts of 2003 policies and reaffirms core principles. The policy committee recommends refreshed strategies as the University moves forward into a new decade under new leadership.

The Transportation Policy Committee (**TPC**) facilitated a yearlong thoughtful, data driven, iterative dialog which included cross-campus focus groups. This resulting report tells the UNH **TDM** story in the context of the trends/impacts of the last 15 years and suggests proactive changes. In order to balance readability with detail, the document is divided into two sections: Section 1 concludes with fundamental principles, core strategies and suggested practices and investments and a fifteen year data summary; section 2 includes detailed strategy recommendations followed by additional Appendices.

*The TPC adopted this document at its February 2019 meeting and recommended its forward to President Dean.*

### The Takeaways

The Committee reaffirms the success and essentiality of continued **TDM** strategies, renaming this approach as parking & transportation demand management (**PTDM)**. This change acknowledges the need for more dynamic, 24/7 market-priced management of commuter, visitor and storage parking on campus to protect the essential characteristics of the walking campus and town. The 2003 recommendations were framed with an exclusive focus on *commute-oriented* parking, limited transit availability and anticipated campus growth. Changes in Durham housing and development have caused cross-current transportation trends and demands unforeseen in 2003 including dramatic student in-migration to Durham along with associated growth in pedestrian density, car storage and intra-town vehicle use.

UNH is better connected to Town and region (via bus, rail, shared ride and technology) than ever across an increasingly year-round calendar. It must preserve visitor access and community mobility to thrive. UNH has grown a first-class transit system that must be preserved and adjusted with more in-town efficiencies to further reduce private vehicle demand and strengthen a walking-biking campus and downtown. New technologies and mobility modes, compatible with our principles, are to be embraced, managed and coordinated with campus, Town and climate principles.

*Parking permit price calibration with market and environmental costs remains the single most important unfinished element of the 2003 recommendations*. The Committee unanimously encourages the administration to prioritize comprehensive progress in this area in upcoming labor negotiations. The Committee has encouraged Transportation Services adjustments to permit prices and fees outside of contractual obligations based on comparator/market prices.

The University must complete core infrastructure projects such as South Drive and continue implementation of Master Plan elements which enhance efficient mobility, strengthen the walking campus and demonstrate best practices relating to our energy and climate principles. **PTDM** success suggests collaborative regulatory and development efforts with the Town be expanded. This collaboration should include private partners willing to support the unique UNH-Durham community.

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## Context and History

The 2018-19 academic year marks fifteen years since adoption of current transportation demand management (TDM) policies which have proactively influenced campus development, access and mobility. That 2003 adoption was the culmination of four years (1999-2003) of thoughtful analyses and recommendation to President Hart by a Transportation Policy Committee (TPC) established by the Vice President for Finance.

As on all college campuses, transportation, parking and housing are critically intertwined issues that require local and regional coordination. UNH has a long history of actively and purposefully managing access and mobility at the Durham campus. Campus transportation committees had been in existence for decades prior with only minimal policy impact. The paradigm shift came in 1999 following a Sustainability Institute sponsored leadership trip to the University of Colorado Boulder and discussions with peers at Cornell – both of which were demonstrating leadership in sustainable, holistic efforts at managing transportation systems on their respective campuses.[1] The report resulted in formation of a renewed Committee focused on a *systems-based* action plan and directed by Vice President for Finance (VPFA) leadership. As articulated in its 2000 charter, the goal of the Transportation Policy Committee was:

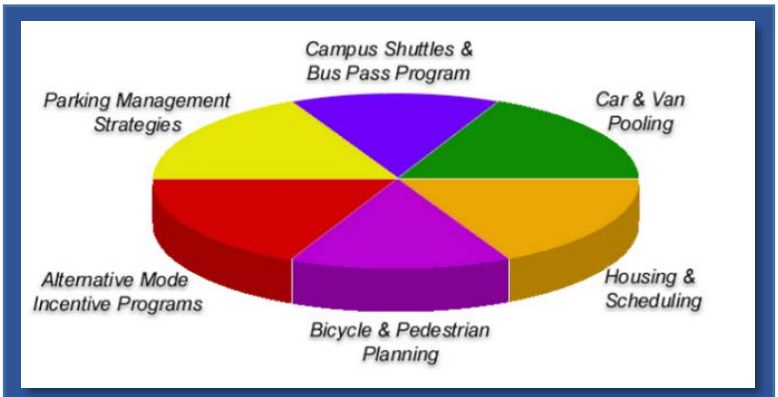



**Figure 1 The Transportation System**

> *"[To] guide the University toward a systemic transportation management plan that emphasizes health and safety, efficiency, cost-effectiveness, and fairness for all University constituents, consistent with priorities set by the Strategic Academic Plan and the Master Plan, and that focuses on both the supply and demand characteristics of transportation."*

*In late 2002, after eighteen months of review and analysis, the Committee issued an extensive report[2] which concluded, "Our collective fundamental belief that the current status of parking and transportation at UNH is structurally irrational and unacceptable and must change. The system produces congestion, frustration, limited accessibility, negative air quality impacts and safety deficiencies."* Recommendations included a series of practices, policy changes and transportation system enhancements designed to support a transportation system which was sustainable and reflected university principles related to land use, energy and emissions:

*Fundamental Principles (2003):*

1. *reduce inefficiencies and personal time lost*
2. *expand transportation options*
3. *enhance campus movement without penalty or inhibition*
4. *enhance visitor and outside community member access and participation*
5. *reduce the negative impacts of our transportation system*
6. *support sustainable campus development patterns to fosters a 'sense of place and identity'*
7. *support and enhance 'the walking campus' and practices which strengthen the integrity of town & campus*

[1] Sept 1999 Sustainable Transportation Trip Report and Recommendations to President and Deans Council
[2] 2003 TPC Final Recommendations and President Hart Approval

The 2003 report established **core strategies and projects** in an overall context of **transportation demand management (TDM)** which were to be implemented moving forward:

1. *significant **increases in the prices of parking permits** in the context of a tiered system that places a higher value on spaces located closer to the core campus while offering reduced cost and infrequent-user alternatives for those who choose not to bring cars to core campus*
2. *a **feasibility study for the construction of a multi-level parking facility** integrated into campus with system wide improvements consistent with TDM principles, providing for current needs and future campus growth*
3. ***development of efficient and effective emergency ride, carpooling, and van pooling***
4. *significant i**nvestment to improve the frequency, dependability, and accessibility of the Campus Connector and Wildcat Transit***
5. ***tightening of parking permit eligibility** focusing on intelligent, equitable and consistent enforcement*
6. ***aggressive efforts to increase the housing supply on or near campus** and to obtain the funding needed to complete the north and south railroad underpasses and an enhanced network of streets and pathways*
7. ***Improvements to Main St. traffic flow** through enhanced signals, intersection design, and, when required, manual control*
8. *ongoing active **engagement in regional and local transportation and land use planning processes***
9. ***adoption of alternative energy and greenhouse gas emissions strategies** which support these initiatives*

These principles and strategies were reinforced as fundamental development policies in subsequent Campus Plans (2004 & 2012) as well as guiding principles employed by University Transportation Services (UTS) and Facilities. The implementation of these principles, incomplete but ongoing, yielded demonstrated reductions in parking demand and increases in transit ridership. These results, in turn, facilitated successful campus development framed around the reinforcement of the walking campus and enhanced academic and residential development of the campus core. Subsequent actions, such as the introduction of a student transportation fee, provided transportation alternatives funding (and free transit) as a pathway towards a 'systems' approach. This blueprint was successful in tamping parking demand, producing a solid decade of transit system growth and reducing overall campus transport emissions[3].

The 2003 recommendations were framed with a focus on *commute-oriented* parking, limited transit availability and anticipated campus growth. Recent dynamic changes in Durham housing and downtown development have resulted in cross-current transportation trends and demands unforeseen in 2003 including dramatic increases in Durham resident students (primarily private housing complexes) and associated growth in pedestrian density, car storage and intra-town vehicle use. Concurrently, technology and lifestyle changes have evolved (smartphones, shared-ride systems, distance-based learning and cloud-based computing) creating new challenges and opportunities for adaptation of UNH transportation policies.

This 15-year mark offered opportunity, to conduct a focused review of transportation at UNH and provide updated recommendations to President Dean. The process has included numerous focus groups, TPC discussions and constituent feedback. This final document, adopted in spring 2019, lays out a blueprint for continued management of an integrated UNH transportation system which reflects institutional goals, climate commitments and best practices.


**Figure 2 - The TPC 15 Update Process 2018-19**

[3] Transportation and Land Use – The Sustainable Learning Community, Aber, Kelly and Mallory, 2009

## Key Dynamics affecting Transportation since 2003

***UNH Campus Changes:***

- *increased year-round campus utilization for events (athletic, conference, regional)*
- *marginal expansion of year-round campus academic sessions*
- *ongoing, planned consolidation of core campus parking while maintaining net space counts*
- *development of significant new and renovated facilities:*
  - *expanded stadium, athletic venue and academic space (Hamel, Wildcat Stadium, Paul College)*
  - ***7% i**ncrease in assignable campus square footage*
  - *closure of New England Center hotel and Conference facilities (freed up F/S access)*

***UNH-Durham housing (bedcount) and demographic (headcount) increase yielded drops in commuter population**:*

- ***dramatic growth of Durham student bedcount increasing undergrad residence est. from 59% to 71%:***
  - *increase of +/- 3,600 (2,500 private/1,100 UNH) student beds representing a 23% student in-migration to Durham from surrounding communities*
- ***moderate growth of UNH overall enrolled and employed headcount**:*
  - *student population growth of **16**% (2,200) or just over 1%/year*
  - *combined staff[4]population growth of **1%** (<100) or less than 0.1%/year*
- ***significant decline in net daily commuters (auto & Wildcat Transit) with increased intra-Durham trips:***
  - *estimated total auto commuter[5] decline of **23%** from peak in 2003*
  - *estimated Wildcat Transit commuter decline of **15%** (down 45% from 2012-13 peak)*
  - *estimated Campus Connector (intra-Durham) ridership increase of **40% (down 18% from peak)***
- ***constrained 15 year parking space addition and moderate improvement in parking ratios:***
  - *addition of **464 auto spaces** (in line with UNH committed parking growth limits)*
  - *reduction of total parking permit : space ratio from 1.44 to 1.17 **(20% improvement**)*
  - *reduction of total permits : total headcount from 0.51 to 0.42 (**18% improvement)***

***New transportation modes and patterns in Durham:***

- *redesign/reconstruction of Main Street and College Road and adjacent walkways*
- *mobile and online education and business technology and flexible work schedules*
- *rideshare (Uber/Lyft) /car share (ZipCar); increased private 'taxi' and app technologies*
- *Amtrak Downeaster passenger daily service success (was Friday-Sunday only originally)*

***Lifestyle, energy changes…***

- *more dynamic student mobility demands for professional/job opportunities across more diverse hours and locations beyond traditional Wildcat Transit service areas*
- *fuel price increase then record lows but private vehicle ownership costs up*

***Expanding UNH Climate and Sustainability commitments***

- *TPC efforts more integrated with Energy Task Force and Sustainability reporting clearly highlighting the emissions impacts of the UNH transportation*6

[4] approximate faculty, staff, adjunct and contracted combined

[5] Combined F/S/Commuter permit tallies

[6] *ETF 2017 Annual Report notes UNH fleet and induced commute transportation represent 25% of our institutional emissions profile. The good news is that our two decades of transportation and clean fleet efforts have resulted in 20% reductions of emissions in these sectors.*

## Fifteen Year Benchmarks, Accomplishments, Works in progress

The Transportation Policy Committee, under VPFA leadership, has met quarterly for twenty years. It has facilitated ongoing communications, data collection, stewardship and policy review which has fine-tuned our implementation practices. The TPC publishes and maintains on its website **annual benchmark reports**[7] and data sets which track parking, transit, land use and community statistics to inform and guide its actions.

The Committee funded community-wide transportation surveys to gauge progress and community attitude.[8] In addition, the 2004 and 2012 Campus Master Plans utilized enhanced transportation and land use data to inform campus development strategies. Subsequently, Campus Planning also developed, in coordination with the Town of Durham, a traffic model[9] which is used to evaluate major development proposals and transportation system changes. That model continues to be updated and used by the Town and University in evaluating the impacts of large-scale development on our transportation network.

## TPC15 Data Dictionary[10]

As part of this review, staff compiled a streamlined data dictionary of key statistics for the benchmark years (2000-2003-2013-2018). The data dictionary is intended to provide the TPC and community with a common reference framework for the period. Selected data represent a broad-based range of system operation. An excerpt is shown at right with the full version in **Appendix A**.

**TPC 15 Data Set**

| | Statistic | Pre TDM fall 2000 or FY 00 | Start TDM fall 2003*/4 or FY 04 | 10 Yr/Pre Housing Boom fall 2013 or FY 14 | Current fall 2018 or FY 18 | 15 Yr % | Trendline |
|---|---|---|---|---|---|---|---|
| 1 | **Parikng Supply** (spaces) | | | | | | |
| *a* | **Total Auto** | **6,424** | **6,617** | **6,804** | **7,081** | *10%* | |
| *b* | Exclusive F/S | 2,101 | 1,950 | 2,033 | 2,159 | *3%* | |
| *c* | **F/S Available** | **4,499** | **4,212** | **4,176** | **4,564** | *1%* | |
| *d* | F/S Available Core | 2,600 | 2,580 | 2,698 | 2,729 | *5%* | |
| *e* | Exclusive Commuter Student | 193 | 256 | 241 | 190 | *-2%* | |
| *f* | **Combined Commuter** (F/S/Mixed/Cmtr) | **5,232** | **4,468** | **4,517** | **4,536** | *-13%* | |

## Annual Benchmark Reporting (2005-2018)

**15 Year Permit Changes (2003-18)**

| | Universal Total | Combined Commuter | F/S | Student Commuter | Res Student |
|---|---|---|---|---|---|
| **2003** | 8,804 | 7,003 | 3,026 | 3,570 | 1,596 |
| **2008** | 8,704 | 6,485 | 3,137 | 2,988 | 1,695 |
| **2013** | 7,972 | 5,908 | 3,143 | 2,434 | 1,557 |
| **2018** | 8,271 | 5,355 | 3,104 | 2,251 | 1,897 |
| **N** | -533 | -1,648 | 78 | -1,319 | 301 |
| **%** | **-6%** | **-24%** | **3%** | **-37%** | **19%** |

Every fall since 2005, Campus Planning has compiled a standardized report of transportation system performance. The report includes data from all modes, documenting parking permit sales, parking inventory and standardized ratios of these data to community headcount. At a macro level parking demand is represented by **permit sales**. Parking supply is represented by annual **parking inventories**. UNH measures 'fit' of parking demand to supply by tracking **key ratios** of permits and spaces to headcount.

*Permits : Space (# permits issued per space)*

| Fall of: | F/S Permits : exclusive F/S spaces | F/S permits: F/S avail spaces.[3] | F/S permits : core F/S spaces [6] | Commuter permits: total avail commtuer.[4] | Resident permits: total avail resident.[4] | Total Auto Permits: Total Auto Spaces.[5] |
|---|---|---|---|---|---|---|
| 2002 | 1.33 | 0.73 | 1.06 | 1.65 | 0.96 | 1.44 |
| 2004 | 1.42 | 0.69 | 1.07 | 1.35 | 0.96 | 1.28 |
| 2009 | 1.54 | 0.73 | 1.14 | 1.18 | 0.94 | 1.29 |
| 2013 | 1.49 | 0.77 | 1.12 | 1.14 | 0.89 | 1.17 |
| 2018 | 1.44 | 0.68 | 1.14 | 0.95 | 0.98 | 1.17 |

[7] TPC Benchmark reports are published in December documenting data from prior academic and fiscal year 2005-2018
[8] UNH Transportation Surveys 2001, 2007, 2011, 2016. UNH Transit Surveys 2012 and 2017
[9] UNH-Durham Traffic model updated spring 2017 by RSG Associates.
[10] Trend lines and bar graphs represent visuals within that category only and are not consistently scaled

We also quantify net ***commuting population* based upon fall headcount** (R+30). This helps us understand trends in commuter populations. From this we note the increasing challenge of *non-permit* commuters and visitors (during off-hours or using metered spaces) which has grown over the period. This growth, in large part, is due to increased Durham housing in the past fifteen years. Much of this is convenience transport given the existence of UNH transit, walking and biking options.

**Commuting Headcount (2003-2008-2013-2018) R+30**

| | Universal Commutest HC | Student HC | F/S HC | Commuter HC w/Auto Permits | Off-Campus Non Commute permit HC | Res Student | *Est % Res Student* | *Est % non permitted commuter Students* | *Est % permitted commuter Student* |
|---|---|---|---|---|---|---|---|---|---|
| 2003 | 7,851 | 13,266 | 4,281 | 3,570 | 2,510 | 7,186 | *54%* | *19%* | *27%* |
| 2008 | 7,018 | 14,204 | 4,030 | 2,988 | 4,030 | 7,186 | *51%* | *28%* | *21%* |
| 2013 | 6,497 | 14,946 | 4,063 | 2,434 | 4,999 | 7,513 | *50%* | *33%* | *16%* |
| 2018 | 6,544 | 15,445 | 4,293 | 2,251 | 5,966 | 7,228 | *47%* | *39%* | *15%* |
| % Change 2003-2018 | -17% | 16% | 0% | -37% | 138% | 1% | -14% | 104% | -46% |
| % Change 2013-2018 | 1% | 3% | 6% | -8% | 19% | -4% | -7% | 15% | -11% |

## Community Transportation Surveys:

***Primary Commute Mode to UNH in a Typical Week***

| *Off-campus students (Web)* | 2001 | 2007 | 2011 | 2016 |
|---|---|---|---|---|
| Drive Alone | 93% | 50% | 48% | 60% |
| Carpool 2+ | 2% | 8% | 11% | 5% |
| Bike/walk | 2% | 15% | 17% | 12% |
| UNH Transit | 1% | 20% | 25% | 21% |
| Other | 2% | 5% | 0% | 1% |

The Committee has benchmarked community transportation use, modalities and attitudes with quality survey instruments developed in collaboration with the UNH Survey Research Center in 2001, 2007, 2011 and 2016[11]. Additionally, UTS has conducted **transit user surveys** on a regular basis.

Analyses of these efforts are important for policy development and for grant funding. These surveys inform our work and track our TDM progress. The survey results show peaks in TDM efforts in 2011 followed by changes as the UNH-*Durham housing dynamic changed.*

The surveys also provide feedback regarding service quality and attitude towards our strategies and services. *The next iteration of this effort should be completed in spring 2021 and might be tied in with the next Campus Master Plan update.*

*How important is it for UNH Transportation system to demonstrate best environmental practices relating to emissions and alternative fuel use? (Aware 11a)*

| Faculty/Staff (phone) | 2007 | 2011 | 2016 | Student (web) | 2007 | 2011 | 2016 |
|---|---|---|---|---|---|---|---|
| Very Important | 73% | 65% | 64% | Very Important | 69% | 59% | 53% |
| Somewhat Important | 22% | 28% | 31% | Somewhat Important | 27% | 31% | 33% |
| **Important (subtotal)** | **95%** | **93%** | **95%** | **Important (subtotal)** | **91%** | **90%** | **86%** |
| Not Very Important | 3% | 5% | 5% | Not Very Important | 4% | 7% | 6% |
| Not Important at All | 2% | 2% | 2% | Not Important at All | | 3% | 2% |

## UNH Collaborative Funding Partnerships:

***One of the biggest successes in transportation at UNH has been our successful pursuit of outside funding partnerships***. Since 1999, UNH-Durham has applied for over fifty state and federal competitive grants receiving 43 awards allocated to 40 discrete projects totaling over $21M. With a local match of just over $4M UNH funds, **this represented an astonishing $17M net federal investment in the UNH-Durham and regional transportation system.** Most of the awards were through the USDOT Federal Highway (FHWA) and Transit Administration (FTA). The University of New Hampshire became an FTA grantee in 2003 and has successfully managed projects with in-house staff.

**Seven of those awards were for primarily for transit fleet (capital replacement) representing over $8.7M.** The balance of funding was for transportation infrastructure including Main Street reconstruction, CNG fueling and garage infrastructure, non-transit alternative fuel fleet, bicycle and pedestrian enhancements, rail station and platform enhancements and NextBus technology implementation. In addition, UNH has received transportation related awards from the US EPA and Department of Energy – primarily assisting our alternative fuel (CNG and B20 efforts).

[11] UNH 2016 TPC Survey Summary Presentation

## Transit Route and Parking Productivity Reporting

UTS actively monitors utilization (productivity) of its transit services and has established metrics and guidelines for route modification. Early productivity studies were completed in 2004 at the start of a decade of rapid transit system growth. Over the course of 2004-2014 UNH transit ridership doubled to a peak of over 1.3 million trips/year making it the largest transit system in the state. During that era UNH had an informal goal of maintaining hourly Wildcat Transit academic weekday service to surrounding communities and establishing frequency standard of between 10-20 minutes on Campus Connector routes. During several years in this period, ridership grew 10%/year.

Since 2014, with the increases in Durham student housing and related student in-migration, transit ridership has fallen by 25-30% from peak. Initially, the declines were isolated to Wildcat Transit but in the past three years the declines have also affected Campus Connector - likely due to service challenges (traffic congestion and driver shortages) and subsequent resident mobility choices. In response to those systemic changes, UTS has conducted detailed route reviews and established a benchmark goal of *14 passengers/run* for Wildcat Routes. Using the automated boarding information provided by the NextBus system, staff is able to monitor overall and locational use information. In the past two years, that information has resulted in community-supported recommendations to reduce Wildcat Transit service frequency by 20% - with Newmarket seeing greater reductions and the end of weekend service during academic months.

It is essential UTS effectively utilize student fee funding for student mobility needs. In that regard, the University must make difficult decisions regarding minimal acceptable service levels, service priorities and commitment of support which will affect meaningful PTDM benefit. Students make transportation choices based on perceived convenience and service reliability. It is imperative that our transit system operate effectively and efficiently, and that parking is managed in a market-based pricing paradigm to enable rational decisions.

## Comparator Parking Pricing[12]

Biennially UNH surveys comparator institutions regarding pricing for parking permits and services. The most recent review was presented to the TPC in September 2018. The survey confirmed UNH remains far behind comparators in average commute permit fees and most car storage fees especially when institutions with zero fee (subsidized) practices were excluded. UNH also surveys *local private parking e*ntities to establish '**Durham market rate**'. UNH falls even further behind the mean in that review. These reviews should lead to continued recommendations for permit price adjustments as permissible outside contractual agreements.


[12] full Comparator pricing from Sept 2018 TPC meeting is **Appendix G**

## 2019 General Recommendation and Policy Updates:

UNH's approach to Parking and Transportation Demand Management (PTDM) must evolve to reflect current trends, challenges, and opportunities while remaining true to campus master plan and climate commitments. PTDM must remain responsive to future shifts in community needs and expectations. Updates to the principles that will guide PTDM policy and decision making in the coming years are presented below. The TPC has identified core strategies and supporting practices that are needed to respond to current challenges the UNH and Durham communities are experiencing. PTDM goals should inform and be informed by Campus Master Plan, UNH Strategic Planning, and Town and Campus collaborative planning.

## Fundamental Principles

The Committee recommends a refresh of our 2003 key principles to maintain our parking & transportation demand management (**PTDM**) commitments. TPC efforts shall be designed to:

1. *enhance policies, practices and infrastructure which support UNH sustainability goals, climate commitments and unique identity as a walking campus and town community*
2. *leverage new technologies and operations which optimize pedestrian, transit and parking conditions*
3. *design revenue systems which ensure proper maintenance of UNH parking and transportation infrastructure, while discouraging single-occupancy car trips when more efficient alternatives exist*
4. *enhance visitor and outside community member access and participation in the University*
5. *ensure system flexibility to respond to future changes in the campus plan, local development, community demographics, accessibility needs, environmental practices, and relevant technologies*
6. *continue data-driven reviews of policy and practice to maintain a transportation system that is responsive to the needs of the community*

## Core Strategies

In order to preserve and enhance the walking campus and to maintain a safe, balanced and effective transportation system at UNH the TPC remains committed to the following revised strategies:

1. ***Parking permit pricing remains the fundamental unaccomplished 2003 goal and core UNH PTDM deficiency.*** Leadership must affect meaningful increases in commuter and vehicle storage permit prices to more closely reflect comparator and local market pricing. There must be ongoing, consistent community education to explain the deficiencies of an underfunded, non-sustainable system in terms of mobility, efficiency and visitor access…and highlight the benefits of a rational, appropriately funded system. Action items should include:
   - priority negotiation in upcoming contract renewals including transparent consideration of *cash-out* or scaled reduction in subsidy of permit prices and removal of this fee from contractual agreements
   - incremental adjustments of permit, fee and fines closer to that of comparators and the local market
2. **Campus Connector and Wildcat Transit** levels of service must be maintained with active review and adjustment - both for our commute population and regional student mobility. The system must be more dynamic than in prior decades. Without quality services student car ownership rates will increase with negative campus impact. Campus Connector efficiency must be enhanced for east-west campus connections and integration.
3. **Management of in-town traffic and vehicle storage:** In collaboration with Durham**,** UNH must implement more comprehensive systems to manage car storage and in-town vehicle use in order to preserve the walking campus, efficient transit, and a safe and effective street network. *Residential parking expansion should not be a priority.*

4. **Visitor Access Enhancement:** UNH has improved visitor access significantly since 2001 but the campus also attracts more visitors at more hours than ever. UNH must continue to implement access enhancements for visitors arriving via car and other modes in order to enhance the visitor experience. Hosts should be proactively informed of access options and preferred messaging for guests which reflect our PTDM principles and respect Durham traffic concerns
5. **Reinforce the Walking (and biking!) Campus and Town**: Pedestrian density requires more active management and infrastructure enhancement to safely maximize pedestrian activity while limiting the impacts of transit and private vehicle flow. The walking campus should expand to fully embrace enhanced and safely integrated bike facilities and consideration of bike share opportunities.
6. **Coordinated Event Management 24/7:** UNH is committed to universal use of Event Management Systems (EMS). Use should be expanded to include parking and mobility management of academic, athletics, admissions and special events by UTS in a seamless, coordinated 24/7 system reflective of PTDM principles. *This transition will take time and affects multiple University entities. UTS, Athletics, EMS and special event coordinators should begin discussions to implement this transition as soon as practicable.*

## Supporting Practices and Investments

1. **South Drive must be completed** to enhance campus mobility and transit system efficiency. It should include full pedestrian and bike integration and fully integrate the southwest quadrant into core campus.
2. **Enhance outreach, promotions and information**: Transportation Services and Communications & Public Affairs (CPA) should invest resources in marketing transportation and mobility options from first touch (Admissions) through special events. UTS promotional staffing and expenditures in this area should match that of other UNH Auxiliary entities (Dining and Housing).
3. **Manage Durham/campus vehicle storage and resulting traffic**: expanded vehicle storage encourages vehicle use resulting in increased traffic congestion. In collaboration with Durham, UNH must implement more comprehensive systems to manage car storage and limit local private vehicle use to prevent a negative feedback loop: decreasingly effective transit leading to increased private vehicle use.
4. **Rename TDM to Parking & Transportation Demand Management (PTDM)** to ensure people understand – it's about parking (management) in coordination with other elements of the system
5. **Educate and inform the community** regarding the full costs of our parking and transportation systems ensuring subsidies are transparent, and in line with our climate commitments and sustainability principles. Staff must present the benefits of investment as well as the reality that underinvestment will result in lost efficiency, reduced convenience and decreased campus mobility and accessibility.
6. **Continue active linkages and coordination with the Energy Task Force (ETF)**, UNH Climate/Sustainability commitments and state and regional planning efforts developing recommendations and policies with full insight into the impacts of these decisions on UNH Emissions reductions commitments.
7. **Pursue expanded pay per use systems,** as technology permits, to replace the unlimited use permit model.
8. **Focus on accessibility, condition and utilization of existing parking <u>not</u> increasing quantity.** Addition of resident parking should *not* be a priority of UNH investment.

## Proactive Strategies for future UNH-Durham Mobility and Accessibility

1. **Smart Campus & Town Demonstration:** UNH and the Town will collaborate and coordinate on technologies and practices which further our shared transportation goals and demonstrate best practices.
2. **EV charging infrastructure:** UNH should begin scaled introduction of EVSE beginning in visitor lots per adopted ETF and TPC policy plans. This effort can follow the Pettee Brook Lot cooperative model.
3. **Flexible Infrastructure for disruptive technologies:** UNH should be a leader in cost effective technology implementation which enhances personal mobility, embraces new modes and responds to lifestyle demands. Staff should also work cooperatively with the Town in these efforts.

## Appendix A – 15 Year Data Dictionary

**Appendix A - TPC 15 Data Set**

| | Statistic | Pre TDM fall 2000 or FY 00 | Start TDM fall 2003/4 or FY 04 | 10 Yr/ Pre Housing Boom fall 2013 or FY 14 | Current fall 2018 or FY 18 | Trendline[x] |
|---|---|---|---|---|---|---|
| **1** | **Parikng Supply** (spaces) | | | | | |
| a | **Total Auto** | 6,424 | 6,617 | 6,804 | 7,081 | |
| b | Exclusive F/S | 2,101 | 1,950 | 2,033 | 2,159 | |
| c | F/S Available | 4,499 | 4,212 | 4,176 | 4,564 | |
| d | F/S Available Core | 2,600 | 2,580 | 2,698 | 2,729 | |
| e | Exclusive Commuter Student | 193 | 256 | 241 | 190 | |
| f | Combined Commuter (F/S/Mixed/Cmtr) | 5,232 | 4,468 | 4,517 | 4,536 | |
| g | Combined Visitor (Meter & Paystation) | 355 | 446 | 521 | 507 | |
| h | Combined Reserved | 887 | 472 | 394 | 515 | |
| i | ADA | 124 | 164 | 168 | 173 | |
| j | Service + Load Zone | 128 | 188 | 275 | 310 | |
| **2** | **Parking Demand** (permits and $) | | | | | |
| a | **Total permits** | 8,213 | 8,804 | 7,972 | 8,271 | |
| b | F/S permits | 2,094 | 2,175 | 2,086 | 2,085 | |
| c | Commuter Student Permits | 3,489 | 3,570 | 2,434 | 2,251 | |
| d | Combined Commute permits (F/S/C) | 5,839 | 7,003 | 5,908 | 5,355 | |
| e | Emeritus Permits | 261 | 272 | 312 | 386 | |
| f | Resident Student Permits | 1,941 | 1,596 | 1,567 | 1,897 | |
| g | F/S/C annual permit Fee | $ 32 | $ 32 | $ 50 | $ 75 | |
| i | Resident Student Annual permit Fee (Range) | $32-$100 | $150-$300 | $200-$350 | $225-$375 | |
| j | *Resident Student Annual permit Fee(core)* | *$ 65* | *$ 225* | *$ 275* | *$ 375* | |
| k | *DHM Mill Plaza downtown Parking (annual)* | *$ 600* | *NA* | *NA* | *$ 1,100* | |
| **3** | Standard Ratios | | | | | |
| a | **Total Permits:Total Spaces** | 1.44 | 1.28 | 1.17 | 1.17 | |
| b | FS Permits:FS Avail Spaces | 0.73 | 0.69 | 0.77 | 0.68 | |
| c | FS Permits:FS Avail Core Spaces | 1.06 | 1.07 | 1.12 | 1.14 | |
| d | Cmmtr Permits:Cmmtr Avail Spaces | 1.65 | 1.35 | 1.14 | 0.95 | |
| e | FS/Permits:FS HC (incl Adjunct) | 0.71 | 0.61 | 0.74 | 0.72 | |
| f | Total Permits: Total UNH HC | 0.56 | 0.51 | 0.41 | 0.42 | |
| *4* | **Parking Compliance/Equity (Fines)** | | | | | |
| a | **total # violations** | | 23,431(FY 05) | 15,400 | 18,890 | |
| b | UTS Fines Issued (end of year)'05/'14/'18 | $ 887,000 | $ 1,111,895 | $ 735,665 | $ 771,305 | |
| c | UTS Parking Permit Revenue | | $ 539,713 | $ 927,912 | $ 1,094,620 | |
| d | UTS Parking Meter/Visitor Revenue | $ 131,800 | $ 186,360 | $ 355,746 | $ 373,616 | |
| e | Est. Total UTS Revenue | $ 1,018,800 | $ 1,837,968 | $ 2,019,323 | $ 2,239,541 | |
| f | % Permit Revenue | <40% | 29% | 46% | 49% | |
| g | % Meter/Paystation Revenue | +-15% | 10% | 18% | 17% | |
| h | % Fine Revenue | >55% | 60% | 36% | 34% | |
| i | Parking Division Est Operating Expense | $ 420,004 | | $ 913,428 | $ 707,260 | |

## Appendix A - TPC 15 Data Set

| | Statistic | Pre TDM fall 2000 or FY 00 | Start TDM fall 2003/4 or FY 04 | 10 Yr/ Pre Housing Boom fall 2013 or FY 14 | Current fall 2018 or FY 18 | Trendline [x] |
|---|---|---|---|---|---|---|
| **5** | **Transit** | | | | | |
| *a* | **Wildcat System Ridership** | 97,010 | **157,949** | **270,855** | **160,111** | |
| *b* | Wildcat service miles | *160,648* | *234,594* | *347,820* | *242,508* | |
| *c* | Campus Connector System Ridership | 518,950 | 601,297 | 968,891 | 942,281 | |
| *d* | Connector Service miles | *NA* | *NA* | *246,807* | *163,038* | |
| *e* | combined system ridership | 615,960 | 759,246 | 1,239,746 | 1,102,392 | |
| *f* | PVMT Estimated | 1,942,545 | 3,044,799 | 4,498,441 | 3,014,532 | |
| *g* | combined system service miles | *160,648* | *234,594* | *594,627* | *405,546* | |
| *h* | combined system annual operational $ | 630,700 | 1,236,000 | 1,294,000 | 2,696,000 | |
| *i* | Wildcat weekday AY ave freq (9am-5pm) goal | 60-120 min | 60 - 90 min | 90 mins | 90 mins + | |
| *j* | Connector West Edge Lot am peak freq | NA | 7 min | 10 min | 12 mins | |
| *k* | Wildcat Transit FY cash sales (% trips) | NA | $20,124 | $37,531 | $26,779 | |
| *l* | Wildcat % CNG transit fleet | 0% | 1% | 33% | 44% | |
| *m* | Annualized Trips/ Total Student HC | 7 | 12 | 18 | 10 | |
| *n* | Annualized Trips/ Resident Student HC | 89 | 95 | 129 | 130 | |
| *o* | Annualized Trips/ Total Staff HC | 186 | 177 | 305 | 257 | |
| **6** | **UNH Campus Headcount and Bedcount** | | | | | |
| *a* | Staff HC (F/S/Adjunct) [Note 1] | 3,320 | 4,281 | 4,063 | 4,293 | |
| *b* | Student HC (Grad+Undergrad Degree) [Note 2] | 13,026 | 13,266 | 15,169 | 15,455 | |
| *c* | est. max UNH Campus wkdy HC | 16,346 | 17,547 | 19,232 | 19,748 | |
| *d* | Residential Student HC (grad+ugrad) | 5,838 | 6,340 | 7,513 | 7,228 | |
| *d1* | private DHM housing complex (exclude Greek) beds (added prior) | | | 250 | 2,192 | |
| *e* | est. combined UNH+Private DHM Student resident pop share [Note 3] | 57% | 59% | 61% | 71% | |
| **6** | **Other Modes/Metrics** | | | | | |
| *a* | ZipCar annual miles DHM fleet | | | 53,314 | 75,000 | |
| *b* | Amtrak Downeaster Annual Ridership (DHM) | | 29,819 | 61,410 | 59,370 | |
| *c* | bike rack capacity on campus | 1,000 | 1,390 | 2,530 | 3,000 | |
| *d* | ADT traffic volume east of roundabout | 14,000 | 11,000 | 9,800 | 10,800 | |
| *e* | ADT traffic volume Main St @ T-Hall | 12,500 | 10,500 | 9,300 | 9,676 | |
| *f* | *peak hour* ped/bike vol Main @ Garrison | | 964 | 1,100 | 1,450 | |
| *g* | *peak hour* veh vol Main @ Garrison | 785 | 857 | 820 | 877 | |
| *h* | Next Bus hits (combined portals) | | | 1.2M | | |
| *i* | registered mopeds (fall) | | | 137 | 403 | |
| *j* | total UTS annual budget | | | $4,590,781 | $5,082,236 | |
| *k* | core campus hourly daytime meter fee | | | $1.25 | $1.50 | |
| *l* | core campus hourly evening meter fee | | | | $1.50 | |
| *m* | Student Transportation Fee (annual $/pers) | | $35 | $109 | $143 | |
| *n* | Total Student Fee Revenue $ | | $ 454,310 | $ 1,458,000 | $ 1,885,000 | |

Note 1 - HR Report Actual Total Unique HC

Note 2- IRR Report fall - Durham Total (HC of undergrad, grad degree and non-degree)

Note 3 - Assumes Greek pop of 750, Complex Population, plus UNH bedcount + assumed 800 Durham non-complex resident student

Note X - trendline represents visual trend across this line of data only - it is not scaled or comparable across data rows

* fall 2003 Census data is missing at this time- used fall 2004

## Detailed Recommendations and Context by Mode:

### General Transportation and Land Use (Campus Development)

*Durham has changed significantly since 2003. In-Town student residential bedcount grew by 23% (just over 3,600 beds) primarily due to private construction (2,200 beds) from 2013-17.* ***This represented a shift of more than 3,500 students from regional towns into Durham – dramatically affecting private vehicle and transit commutes. This seismic change has been the greatest transportation dynamic of the past 15 years.*** *This change has generated several key impacts on the Durham-UNH transportation system: dramatic increases in pedestrian volumes in downtown; significant increases in car storage and intra-town private vehicle use (especially during non-regulated parking hours); significant drops in student Wildcat Transit commute ridership from regional communities. These changes require policies to adapt to these new realities and broaden recommendations away from a 2001-03 commute-based focus. In effect, our new polices must be expanded to a more 24/7 campus-town systemic paradigm which actively manages car storage and considers strategies to reduce demand for in-town private vehicle use. Although the pace of private development has slowed, incremental increases are still on the horizon – bringing more students into Durham.*

Contextually, this housing-transportation-land use change has resulted in *lower student commute VMT but greater storage parking demand and traffic (vehicle and pedestrian) generation in Durham* proper. UNH and the Town of Durham must actively work together to manage these impacts and embrace the benefits of the resulting increase in core town and campus density. There has been a fundamental 'urbanization' of Durham. This requires policies which focus on the impacts and opportunities at hand while protecting the unique character of campus and town.

Conversely, on the faculty/staff commute side, high seacoast housing prices have likely shifted more residential locations further from core campus and frequently to more rural areas not served by UNH transit. UNH attempts to expand transit to the NH 11/Rochester urban area were not successful and it is unlikely that Wildcat expansion, except for targeted modifications of existing core service will prove successful.

Recommended TPC policy adjustments will inform the next Campus Master Plan update process. Although we do not expect the growth in student housing in Durham to continue at recent pace, we do expect town and campus to continue to grow and increase in densities and mixed-use development with resulting increase in mobility needs. Additionally, the University will continue to expand programming at the Durham campus resulting in more academic, visitor and event access needs. The increased vehicle load in Durham also results in increased competition for visitor spaces and likely calls on UNH to expand active lot management practices and operational hours in coordination with the Town and private lot managers. These fundamental principles require coordinated Town-Gown efforts and development choices which reduce private vehicle use and parking storage demand.

1. **Supporting a 'walking Town <u>and</u> Campus':** This primary UNH Campus Master Plan concept must be strengthened and considered across town, campus and public private venture conceptualization. It can be contextualized to include a park once strategy for our community. Intra-campus and town mobility should be based upon the 10-minute walk or Campus Connector trip from a one stop park or transit arrival point. We need to continue to de-emphasize private or fleet vehicles for intra-town and campus trips. Additionally, development resources on core campus and downtown must focus on the accommodation and management of increased pedestrian (primarily) volumes and minimizing conflicts between vehicles and pedestrians either through infrastructure or dynamic controls. Town residential density increases offer new opportunities to expand the Walking campus focus to Town & Campus. UNH and Durham must ensure that future development plans, transit routes and parking plans reinforce the walking Town and Campus.

2. **Improving network capacity and safety:** The university and town must continue to invest in infrastructure enhancements which improve mobility and accessibility across all modes. T*he University must complete the envisioned South Drive* with full vehicular, transit and bike/pedestrian accommodation to provide access to the southwest quadrant and improve east-west capacity. As soon as practically possible Transportation Services should evaluate Campus Connector route modifications which can expedite east-west mobility (and efficient western parking access) using this new roadway. Long-range plans for the North Underpass and structured parking within walking distance of core should be advanced as opportunities and resources permit.
3. **Envisioning the next decade of housing/land use/growth:** As a 2019 Housing Study and next Campus Master Plan are set in motion, the University should ensure that transportation impacts, mobility and land use choices play a paramount role in investment and growth decisions. There should be strong linkage and communication at leadership levels between these efforts and the TPC.
4. **Enhancing our mobility linkage strengths:** UNH has developed a first-class transit infrastructure and is lucky to be one of only a handful of campuses with an Amtrak station on core campus. The University needs to maintain these advantages and promote them more actively for student, visitor and business access. UNH should brand itself (to prospective students, business and community members) as a connected campus (to Boston-Portland and the Seacoast) that offers convenient and efficient access. Our outreach, mapping and communications should highlight those connections and encourage use. Additionally, the university should be cautious about reductions in transit service and infrastructure which might be difficult to restore once lost.
5. **Focus on Visitor Access:** Reliably available, multi-modal visitor access is key to UNH success and growth. UNH needs to actively develop infrastructure which ensures event visitor access, at system sustainable pricing, in its campus development.
6. **Reduce UNH fleet vehicle emissions, internal combustion engine (ICE) use and dependence:** A significant amount of the non-transit vehicle traffic on and around campus is UNH-owned fleet. More active effort should be made to reduce the need for single occupant fleet vehicle use through changes in work practices and procedures. For vehicle use that is operationally essential, UNH should move more aggressively to non-internal combustion engine (ICE) including electric vehicle (EV) and, when appropriate, departmental bikes. Additionally, the build out of EV charging infrastructure proposed in current policy should be marketed and promoted for campus visitors.
7. **Embrace connective technologies and new mobility options:** As a policy, UNH should embrace technologies and regulate emerging transportation options which contribute to campus mobility and support sustainability principles. These should support our goals of safe, low impact mobility enhancement across town and campus. Improving convenient campus access while reducing ICE vehicle use should be parallel goals.

## Parking System Management

**The most significant lack of progress on 2003 TPC goals has been failure to move the UNH commuter parking permit price system closer to sustainable/market-based pricing.** *Although numerous pricing models were proposed over the past 15 years (including cost models for developing parking structures), there has been only marginal increases in permit prices. The only exception to this has been pricing on residential student car storage pricing but this has been outpaced by Durham local market pricing. Throughout all focus group discussions in this process, the consensus opinion was pricing remains the most overriding priority to ensuring stable, sustainable, and environmentally responsible transportation system at UNH. The issue must be put back on the table as a priority in future labor negotiations. Additionally, the TPC goals relating to transportation demand management must be explicitly updated to reference improved parking, intra-town and campus traffic and vehicle storage management.*

**Overall, parking permit sales have declined masking a change in demand profile.** *The macro trend of the past fifteen years has been: flat total permit sales, declining total commute permit sales and increased resident, visitor and car storage demand.* This trend has accelerated with the recent housing changes which have brought non-permit parking increases. In combination with increased use of the campus 24/7 and more event traffic, our focus needs to move beyond traditional commuter parking management. UTS must present the TPC with policy and implementation plans for effectively managing visitor and storage parking while generating revenue and reflecting our PTDM principles.
**Parking Permit Fees:** Leadership must revisit faculty and lecturer parking permit fee caps in upcoming negotiations with bargaining unit(s). This should be considered a high priority element. *The price cap should be removed ('cashed-out') of employment terms or negotiated to a price level in-line with comparators and Durham market price which will generate sustainable revenue to improve system infrastructure – which may include structured parking per Campus Master Plan concepts*. Leadership should be ready to discuss models which offer equity adjustments and applicability of any negotiated permit prices across the board to staff and student commuters understanding that the latter should be most protected from cost increases.

| YEAR | 2003 | 2008 | 2013 | 2018 | TREND | *17-18 Change* | *Five Year Change* | *Ten Year Change* |
|---|---|---|---|---|---|---|---|---|
| Total Permits | 8,804 | 8,704 | 7,972 | 8,271 | | -3% | *4%* | *-5%* |
| Tracked Macro Groupings | | | | | | | | |
| Fac/Staff Combined | 3,026 | 3,137 | 3,143 | 3,104 | | -4% | -1% | -1% |
| Resident Combined [1] | 1,596 | 1,695 | 1,557 | 1,897 | | 5% | 22% | 12% |
| Commuter Student [4] | 3,570 | 2,988 | 2,434 | 2,251 | | -7% | -8% | -25% |
| Combined Commuters: F/S, Commuter, Grad Asst | 7,003 | 6,485 | 5,908 | 5,355 | | -5% | -9% | -17% |

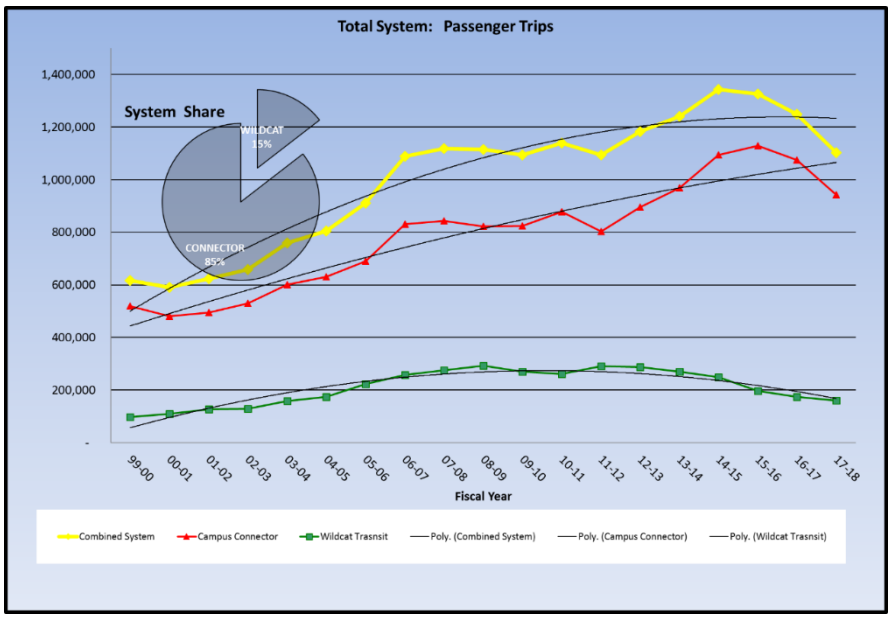
These fundamental principles, policies and strategies must be pursued by leadership and UTS to enhance our PTDM principles and system operational success:

1. UTS should continue **biennial comparator parking pricing** documentation and presentation to TPC and leadership to inform state of best practice. This review should be interpreted to account for the unique characteristics of each institution. As prices are adjusted they should be regularly reviewed and fine-tuned for community needs and a dynamic campus and town system.
2. Failing success in permit price adjustment efforts, leadership and the TPC should revisit the historical commitment of permit **price parity between faculty, staff and commuter** students.
3. As technology advances, the University should consider the revenue and sustainability implications of moving to **'pay per use'** as opposed to 'unlimited use permit' systems for some or all user categories. Such systems may evolve outside of current contract frameworks. They may also offer reduced management costs and demand reductions that would benefit the overall transportation system.
4. **Visitor Parking Fees**: Visitor (defined as neither student nor permit holding faculty/staff) access has been improved since 2003 with a 40% increase in total meter/pay station spaces. However, these increases have not been adequate at peak times to accommodate increased visitor/event demand. This is especially the case in the past five years as these spaces face increased competition from non-resident, non-commuter permit holding Durham students seek to drive cars to campus. Focus groups repeatedly noted UNH needs to give high priority to the visitor experience – especially in regard to Admissions and potential student experience. This accommodation must take some precedence over the convenience of the day-to-day UNH community needs. *It is universally understood that visitors (or their hosts) should contribute some fee to maintain the health of the system.*

5. **System Regulation Hours:** In 2017, the TPC supported a Transportation Services recommendation to expand core campus visitor lot enforcement to evenings (9pm) and weekends. This change has been successful in maintaining visitor access to these lots with only minimal student inconvenience (students can still park for free in permit lots after 6pm and on weekends). The change also resulted in a marginal benefit to system revenue. Over time, it is likely that more incremental expansions to permit and hourly lot enforcement windows will be necessary to actively manage lot access and parking resources. The TPC should see this as a normal maturation of the campus-town parking system and should be supportive of these changes.
6. **Resident Parking Fees** should be managed to reflect Durham market rate but preserve a marginal discount representing the benefit of staying in the UNH housing ecosystem. Car storage should remain limited to upper-class students. Auto ownership is an option, and as such, those who choose this option should pay the additional cost. This preserves a housing/cost advantage for those students that choose to reside on campus without cars. UNH should expand locational pricing options for resident students with west edge car storage being a low cost option.
7. **Non-Resident Vehicle Storage:** Over the past few years, UNH has, as a courtesy, offered a limited supply of West Edge parking to students that reside in non-UNH owned housing in Durham. These sales are closest to market rate and capped based on availability. As UNH community parking demands have grown this availability has shrunken. UNH will need to re-evaluate if it has the luxury of providing these spaces to non-resident students. If it does so, the rate should be full market rate.
8. **Emeritus:** UNH has offered permits to retiring faculty (with Trustee approval) that permits free parking on the UNH campus at most non-ADA spaces. The number of these permits has grown in recent years. UTS should implement more frequent renewal processes and consider further use restrictions.
9. **Special Event Parking Management:** The university parking system is evolving to require coordinated, 24/7 event management systems (EMS). During focus groups it has become clear that the two systems that exist now (UTS management of weekday) and Athletics and limited UTS weekend and special event parking is not fully coordinated or efficiently achieving our PTDM goals. Although EMS is a first and essential step, it is not sufficient to achieve full coordination. UNH should begin implementing necessary structural changes to ensure parking management is coordinated by UTS using the EMS system for all events (including athletic and special events) on a 24/7 basis. Pricing and management strategies should be coordinated to reflect TDM principles and wise traffic management. Event attendees should be actively made aware of UNH transit and other options. This transition affects numerous departments and will take time to implement. It is, however, necessary to implement our principles and ensure first class access and interface with the community.
10. **Incentivizing Low or No Cost Access:** One of the 2003 recommendations that requires pricing structure changes for success is the idea of infrequent user permits. That strategy should be explored as permit prices rise. In addition, event and athletic parking should be priced to generate parking system revenue while supporting overall PTDM initiatives. UTS should provide parking management in exchange for revenue collection on a break even basis to UNH event managers.
11. **Parking Information and Technology:** Focus groups are very supportive of UNH enhancing its parking information technology to provide a 'NextBus style' service for parking. These technologies should be supported when they are cost-effective and enhance PTDM strategies as well as demonstrate emissions and energy reductions. The technology investment must do more than facilitate convenient parking. Some examples cited where dynamic signs integrated with Campus Connector arrival information for West Edge parking. Regardless of technological progress, UNH should continue to enhance both *pedestrian and vehicular wayfinding* on its campus as it has begun in 2016-17.

12. **Parking Enforcement Technology Enhancements:** Changes in NH law have opened the door to possible increases in scanning technology which might improve and lower the cost of parking enforcement. UTS should pursue these opportunities. When possible, with leadership approval, it should work to educate lawmakers on the benefits of law changes regarding enforcement technologies.
13. **Moped and motorcycle accommodation** UNH has seen a dramatic increase in mopeds on campus with a slight decline in motorcycles. Over the past 5 years, UTS has instituted moped permit and parking regulation systems that have been successful at managing these vehicles. It has become apparent, however, that moped growth will require accommodation of these vehicles in larger centralized lots as opposed to small scattered pods. Over the course of the next several years Campus Planning and UTS will move to replace building proximate pods with larger, centralized moped lots distributed across core campus. The current permit cap of approximately 500 will be managed in accordance with moped lot and pod/lot capacity.

## Transit System Evolution




The University has operated community-supported transit since the early 1980s. Originally established to provide access from campus to off-site rental housing and later integrating with the COAST regional transit system. By the mid-1990s, the University chose to establish an independent system – the modern Wildcat Transit and Campus Connector which have seen cycles of dramatic growth and investment from the late 90s up until the recent dramatic changes in the local housing market. The systems brought UNH the distinction of having the largest public transit system in the state, some of the highest ridership growth rates and lowest cost operations (due to 90% student drivers) for more than 15 years. The two public route systems comprise a fleet of more than 30 ADA accessible vehicles now face unique issues and opportunities. They share a common framework of successful federal financial assistance for capital equipment and minimal, if any, public assistance for operational needs.

Student leadership has strongly supported system costs with a transportation fee supporting transit and other non-parking system initiatives. That fee has been essential to the maintenance of university-based transit and our best in class equipment and transit facilities. The fee has also enabled the Wildcat system to be free fare for faculty, staff and students and the Campus Connector to be free for all within Durham. Although challenged over the past few years with adjustments to a new Durham-centric student housing market, the transit fleet, management, operations culture and support infrastructure remain essential to the long-term mobility and accessibility of this campus.

The presence of strong, student-supported transit system serving campus and region is a key factor enabling students to attend UNH without car ownership…saving them money and reducing our parking demands and overall emissions. Campus mobility would be impossible, with given parking and street capacity without the quality services provided by Wildcat Transit and the Campus Connector. The student transportation fee is currently one of the lowest and most strongly supported fees in SAFC. In recent years, UTS has had to turn down requests for fee increases tied to additional services due to staffing and infrastructure limitations.

## Transit Recommendations:

***The TPC must reaffirm the core need and maintain adequate transit system service and investment while encouraging and supporting system evolution in response to changing campus, housing and regional dynamics.*** Annual route productivity reviews should be completed and services adjusted with an understanding that ridership will require adequate frequency and incentive to be successful. *The TPC should carefully weigh the costs and benefits of soliciting financial support from faculty and staff to complement that of student fee. Although the vast majority of riders of the Wildcat system are students, equity dictates that the F/S community should make some systemic contribution – either voluntarily by users or universally in future transportation system models.*

**Campus Connector:** The in-town route system structure has recently been condensed in efforts to streamline operations and maximize efficiency. Ridership has declined in the past three years both caused and affected by changes in Durham. An effective, efficient and reliable Connector is essential for the success of the campus and, most directly, earning community confidence in using peripheral lots.

1. **Service level declines** must be reversed. An effective local shuttle system is integral to UNH maximization of parking/access resources. Recent declines are caused by:
   - reduced bus frequency/overcrowding– *speaks to need for increasing resources in that system*
   - growing traffic on Main Street – s*peaks to completion of South Drive and Transit reconfigure when done*
   - *attempts at carving out short-term operational savings*
   - *ongoing inefficiencies caused by requirement for fixed route service to low volume and high delay locations such as the Child Study Development Center (CSDC) which must be reconciled*

2. **Leadership must work** with UTS to affect improvements in this system. UTS should work with Campus Planning and the Town to review opportunities to:
   - enhance Madbury-Garrison corridor-downtown-campus connectivity with possible route changes
   - embrace South Drive use by Campus Connector for peak hour/express service

**Wildcat Transit:** The UNH regional system has dramatic growth and now significant decline over the past 15 years. UNH (and partner) investment in the system (fleet, operations, technologies, fuel systems and customer enhancements) resulted in dramatic growth from 2003 through 2013. UNH has offered best in class transit service with clean, modern alternative fuel fleet and implantation of real-time transit information systems (a first in northern New England). Since that time, student housing growth in Durham, regional traffic and construction impacts have resulted in ongoing challenges. UTS and Campus Planning have been making frequent and data based changes to the system (approximately 25% service cuts in the past several years). These changes have stabilized some routes to sustainable levels (Dover) but likely furthered the demise of others (Newmarket). Grant supported service to Rochester (which on paper seemed to be a winner given faculty/staff residence locations) was attempted for 5 years before seeing its termination in 2017.

**It is hard to overstate the impact of student in-migration to Durham on Wildcat Transit ridership.** Many of the former riders now live in Durham. As such their 'commute' is either by foot or Campus Connector. For those students remaining in surrounding towns, the strong economy has made car ownership irresistible. Cars that are owned like to be driven. On the faculty/staff side there have been similar attritions in recent years – likely due primarily to a strong economy. *Notably, there has NOT been a resulting increase in faculty/staff or commuter permits* – again pointing the wave of Durham student migration.

**UNH has not devoted adequate resources to professional promotion of Wildcat Transit and other transportation alternatives (Amtrak, ZipCar, departmental bikes) to faculty, staff and students.** This omission must be changed. It still stands to reason that if even 5% of current faculty/staff were switched to Wildcat Transit this would result in a daily

parking demand reduction of > 100 parking spaces on core campus. The demise of the system will result in expanded parking competition and a return to the condition of the late 1990s which began the current TPC era.

In 2019-2020 several of the large construction projects which have been impacting our transit routes will be winding down. This is a great opportunity for UNH to refocus and recommit to a robust transit system marketed strongly to faculty staff and student demand. The University and UTS should do this by:

1. making multi-year commitments to defined to core service hours and standards for key communities. It should make the difficult decision as to whether Route 5 (Newmarket) remains a core community. These standards should include commitment to serve campus from early morning to late night – relaxing benchmark passenger count standards for first in and last out runs.

2. continuing to aggressively pursue grant funding (including operational funding share) from NHDOT/FTA
3. moving aggressively into electric transit fleet as grant incentives are available. This is especially relevant given our low cost of off-peak power provided by Co-Gen. In the meantime, UTS should continue to focus on a primarily CNG fleet with B20 vehicles as a balance for system reliability and resiliency.
4. revisiting route designs to streamline and reroute as required for current times. UTS staff and the Transit Advisory Committee should review existing commuter permit locational data to inform this process much as it did in the late 1990s. No major changes are expected but the review should be done with fresh eyes open to the changed region.
5. further incentivizing transit (or de-incentivize) private vehicle use in upcoming labor negotiations as well as pricing which UTS controls directly
6. discussing financial and route partnership opportunities with Dover and Portsmouth/Pease. These communities receive great access gains with no investment. UNH should look especially at the intra-town transit provided to these cities. Partnership might permit fee contribution that might garner higher local utilization.

## Other Operational/Systemic Changes:

A key theme arising in TPC15 discussion was the increased need for and awareness of *active, cross-campus coordinated* management of transportation resources in alignment with campus life, academic and special event needs. Clearly, since 2003, the technology platforms and resources available to facilitate this effort have grown exponentially. Cost-effective technology solutions, paired with wise PTDM policies and land use choices will play a much greater role in the next 15 years of transportation system enhancements.

**Systems Enhancement Recommendations** will require ongoing collaboration between UTS and Campus Planning on long-term capital planning but increasingly project focused collaborative work between new players such as our campus technology resources, events management, Admissions, Athletics and the public safety community. These collaborations should be designed around concrete, cost-effective partnerships and technology sharing. Several of these projects are already well underway. It is imperative that all collaborators understand and embrace the shared benefits of PTDM in their core missions. It is also imperative that UNH maximize the coordinated utilization of its parking and transit resources.

1. **Public Private Partnerships on transportation infrastructure and services** The University has been in discussions with the Town and with third parties on possible structured parking and other partnerships. These opportunities should be done in manners which support a systems PTDM approach – enhancing the walking environment and the walking campus. A vibrant downtown should be built around a 'park

once', transit-oriented development scheme. Any partnerships should consider long-term traffic, land use and safety impacts. New investments shall enhance the system and be financially self-supporting.

2. **EV infrastructure to accommodate growing demand/expectations** The University should pursue grant and internal funding opportunities to build public EV charging infrastructure that is supports its emissions reduction strategies and accommodates guests. In addition, UTS should move aggressively into EV technology for its transit fleet as grant funds are available to support these ventures. UNH is in the enviable position of having low cost electric 'fuel' available in off-peak hours. This provides a unique opportunity for operation of these vehicles at very low cost.
3. **Collaborative regulation (with Durham) of shared personal transport vehicles** The Town and University should proactively establish policies and regulations which will manage the arrival of new technologies with a focus on safety. New transportation technologies such as electric scooters and shared personal vehicles offer opportunity to enhance mobility, but introduction should be regulated to enhance the community, not simply sponsor profit.

## Other Components of the UNH-Durham Transportation System

UNH is not an island. Our success has been based upon supporting and developing effective private, local and regional partnerships. UNH should expand this practice.

1) **Support of Partners (Amtrak, ZipCar and future intercity bus services)**. The university should continue to welcome and support a diversity of transportation service partners which provide enhanced services to our community – especially when those services provide alternatives to private vehicle use. This support includes maintenance of first-class hubs such as the Train Station and facilitation of partnerships when in the best interest of the UNH community.
2) **Bike and Shared Vehicle Culture and Accommodation** (bike share, departmental bikes, shared personal transit vehicles/technologies). Biking should become synonymous with the UNH walking campus. UNH should safety integrate new biking and shared personal transport options technologies into our campus demonstrating best practices and reducing vehicle use.

## Appendices

a) **TPC15 Summary Data Dictionary** *2p (also included in Primary document)*
b) Parking Permits Inventory 1999-2018 1p
c) Parking Space Inventory 1999-2018 1p
d) Standard Tracking Ratios 2002-2018 1p
e) UNH Transit System Ridership 1999-2018 1p
f) Transportation Survey Summary Presentation 2003-2016 4p
g) fall 2018 Comparator Parking Price Information 2p