



Report to the Board of Regents

June 12, 2008

Report Objectives:

- Why is CCLRT important to the U?
- What policy direction and principles have guided the U in this effort?
- How has the U participated in CCLRT planning?
- What were the results of the analysis of the Washington Avenue tunnel?
- What are the findings of the Northern Alignment feasibility study?
- What is necessary for Washington Avenue at-grade to work?



Why is CCLRT important to the U?

- CCLRT will shape the regional transportation system, the campus, and the surrounding neighborhoods for the next 100 years.
- Transit is essential to the functioning of the University and its community.
- Placement of the line will impact mission-critical activities, the future campus, academic programming, and the development of the community.
- Ease of access is an urgent requirement for the future of the hospital and clinics.



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University Commitment to Public Transit

The University is a national leader and already a transit oriented community

- 68% of daily commuters walk, bike, bus or carpool
- Over 20,000 students use U-Pass
- 2,000 faculty and staff use Metropass
- Almost 30% of the projected daily Central Corridor riders will be generated by the University

The University is committed to the CCLRT and its funding



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What policy direction has guided the U's efforts? 2001 Board of Regents Resolution

NOW, THEREFORE, BE IT RESOLVED that the University recommends that the following alternatives be evaluated for the Central Corridor:

- A feasible northerly Light Rail Transit alignment over the existing # 9 railroad bridge that provides for excellent connectivity with University intra-campus shuttle bus service and future development;
- A modified Bus Rapid Transit alignment on the Avenue that provides improved bus service to the University, with East and West Bank stations, and with no exclusive transit lanes through campus; and

BE IT FURTHER RESOLVED that if the Central Corridor planners decide to study a Light Rail Transit alignment on the Avenue, the University requires that the alignment and station be below grade in a tunnel; and

BE IT FURTHER RESOLVED that if the Central Corridor planners proceed with an alternative that proposes to close a section of the Avenue to automobile traffic through the campus, that the section of the Avenue to be closed be vacated and the land become a part of the campus; and

BE IT FINALLY RESOLVED that if a section of the Avenue is vacated and becomes a part of the campus, the University would grant the necessary utility and surface easements needed to accommodate acceptable transit service.



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What principles have guided the U's planning?

- The **optimal operation** of the Central Corridor LRT line is vital to a **strong, regional, multi-modal transportation system**.
- **Safety** is fundamental to the success of the operation of the line.
- The Central Corridor should realize **development opportunities** while reducing impact to the urban environment.
- The **functionality** and **aesthetics** of the University campus must be enhanced.



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How has the U participated in CCLRT planning?

- University professional staff team charged in 2005 with providing strategic direction and support in the University's planning efforts regarding the Central Corridor LRT
- Since 2005, University has contracted with SRF Consulting for engineering counsel, modeling, and planning
- Utilized faculty expertise in civil engineering, design, planning, and urban studies
- Consultation with University faculty and student governance, alumni, neighborhood and business communities
- Coordination with CCPO staff since project team was assembled in August 2007
- U Staff served on CCMC, Community Advisory Committee, Project Advisory Committee, and other project teams
- Ongoing coordination with city and county project partners



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University has studied three reasonable and feasible alternatives

U's strategy: Thorough planning and analysis of all options to ensure the University community is presented with an alternative that recognizes and reflects our guiding principles

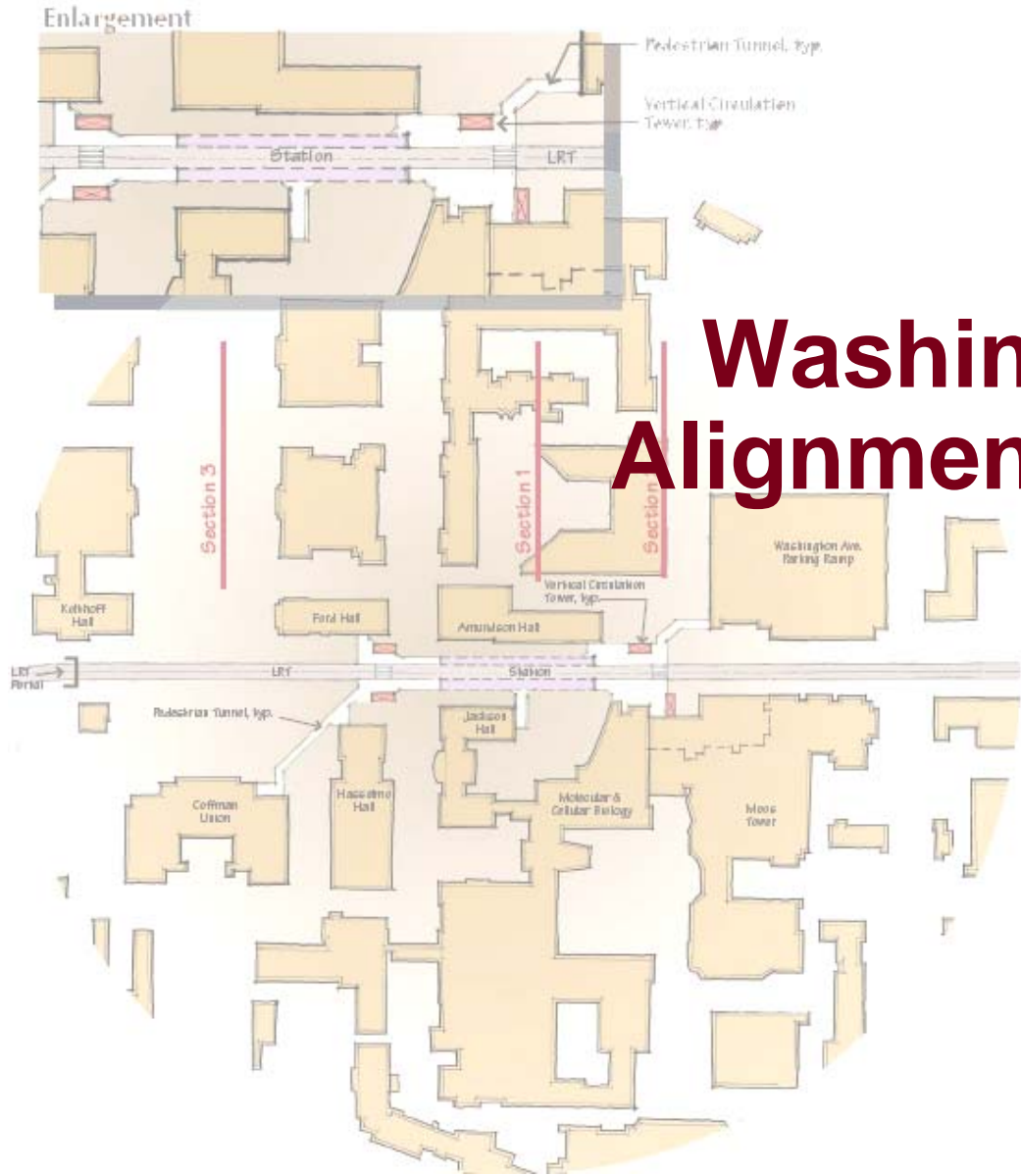
Three reasonable and feasible alternatives:

- Washington Avenue with a tunnel
- Northern Alignment
- Washington Avenue at-grade with pedestrian/transit mall and mitigations



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Washington Avenue Alignment with a Tunnel



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Washington Ave in a Tunnel: First Locally Preferred Alternative

- April 2006 – Met Council issues draft EIS – analyzed 3 options: LRT with tunnel on Washington Avenue, no build, and Bus Rapid Transit
- June 2006 – University comments on DEIS – supports LRT with tunnel, consistent with 2001 BOR resolution
- June 2006 – Met Council adopts tunnel alignment as locally preferred alternative (LPA)
- December 2007 – FTA approval to move forward with preliminary engineering on LPA
- March 2007 – University CCLRT design workshop – considered value engineering tunnel; moving West Bank station to 19th Ave to better connect to community; Stadium Village multimodal transportation center



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Washington Ave in a Tunnel: First Locally Preferred Alternative

- August 2007 – immediately after CCPO team assembled, U hosts project staff and consultants to discuss U issues – presents traffic simulations of at-grade
- Fall – Winter 2007 – U, CCPO, and partners continue to explore value engineering alternatives for tunnel
- Winter 2007/2008 – Cost estimates for tunnel add \$110 – \$135 Million to DEIS alignment; at-grade reduces budget by \$128 - \$148 Million
- February 27, 2008 – Met Council votes to pursue Washington Avenue at-grade alternative



What are the findings of the Washington Ave Tunnel – CEI and key factors?

With Portal Station

- CEI: 25.62
- Ridership: 43,940
- Ride Time: 38:53
- Cost: \$988.6 Million

With Mezzanine Station

- CEI: 27.00
- Ridership: 43,940
- Ride Time: 38:53
- Cost: \$1.044 Billion



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LRT NORTHERN ALIGNMENT



- Legend**
- Tracks
 - LRT Platform
 - Road
 - Structure
 - Sidewalk/Trail
 - Future Road
 - Future Walk/Trail
 - Future Structure

PRELIMINARY
SUBJECT TO CHANGE
5/7/2008
S&B CONSULTING GROUP, INC.

Northern Alignment

How did we approach the study of the Northern Alignment?

- November 2007 – University requests Met Council study the Northern Alignment (NA) and include NA in SDEIS
- Early January 2008 – Met Council agrees that NA can be studied if paid for by the University
- January – February – Negotiations with project consultant as to cost and scope of work
- Early March 2008 – BOR authorizes \$400,000 contract with SRF to study feasibility of Northern Alignment
- March 2008 -- Steering committee of University, CCPO and project partners established to direct study and review and analyze engineering and findings
- April 11, 2008 – University presents preliminary results to the BOR
- April 30, 2008 – University presents preliminary results to CCMC; CCPO raises concerns about risks
- Early May – SRF revises NA engineering to address issues raised by partners
- Mid May – University receives results of CEI and ridership analysis
- May 28, 2008 – CCMC and Met Council vote to discontinue all work related to the NA

What are the findings of the Northern Alignment study -- Opportunities

- Improve Transportation
 - Adds capacity to the University's district transportation system
 - Using existing railroad ROW minimizes disruptions
 - Reduces conflicts with pedestrians, autos, buses, and emergency vehicles
 - Avoids many construction schedule disruptions
- Strengthen Communities
 - Strengthens connections between campus and the SE Minneapolis and West Bank communities
 - Supports new housing and business revitalization in Dinkytown and Stadium Village
 - Minimizes disruption to Stadium Village businesses
- Enhance Service to the University
 - Roadway capacity is preserved and the capacity of the entire transportation system is increased
 - Maintains access to the hospital and clinics
 - Avoids negative impacts to two historic districts: Northrop Mall and the Historic Knoll area

What are the findings of the Northern Alignment study -- Risks and Challenges

- Reconstruction of Bridge #9 – required approvals
- Mission-critical research impacts
- Obtaining railroad right-of-way and required insurance due to proximity to freight line
- Required remediation of contaminated soils
- Operational issues in trench along Law School
- Affordable housing replacement on West Bank
- Future need for signalized intersections at road connections along Granary Road



What are the findings of the Northern Alignment study – CEI and key factors?

Northern Alignment

- CEI: 28.25/24.58*
- Ridership: 35,240/36,560*
- Ride Time: 40 min 26 sec
- Cost: Total: \$889 M

*Enhanced Access not approved by FTA



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Washington Avenue At-Grade Alignment with Pedestrian Mall



Central Corridor
Light Rail Transit

THE CENTRAL CORRIDOR LRT
University of Minnesota At-Grade Alternative 17

Transit Mall to
Walnut Street

SCALE
0 100 200

DMJM HARRIS | AECOM
Kimley-Horn
and Associates, Inc.
January 7th, 2008



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At-Grade Mitigation Principles

1. Provide a total transportation system with increased capacity and improved access for the central city area.
2. Provide safe, direct access routes to the University that can accommodate daily visitors and have the surge capacity to handle event traffic.
3. Avoid negative economic impact to the University's Academic Health Center, hospital and clinics.
4. Create a traffic plan that is understandable and usable by those unfamiliar with campus.
5. Ensure necessary emergency and service vehicle access to the University and surrounding business.
6. Ensure a safe environment and efficient operation of LRT through the campus.
7. Retain the vibrant and aesthetically inviting streetscape that respects and enhances the University's historic character and campus environment.
8. Transform Washington Avenue on the West Bank into an arterial street that unifies and connects the neighborhood and campus.
9. Ensure that the total transportation system unifies neighborhoods, promotes a sense of community, and fosters economic and University-related development, addresses environmental justice concerns and protects the University's historic districts.
10. Provide safe, functional bypass routes for non-University-destined through traffic that do not negatively impact the surrounding neighborhoods.



Initial Washington Ave at-grade alignment proposed LRT with automobile traffic

- University contended that cars, trains, buses, pedestrians, bicycles, and emergency vehicles can't all work on Washington Ave
- Traffic analysis and modeling documented a need for a pedestrian mall solution
- February 27, CCMC and Met Council finalized scope of CCLRT, including Washington Avenue at-grade with pedestrian/transit mall



What are the findings for Washington Avenue at-grade -- Opportunities

- Removal of cars from Washington Avenue will enhance the pedestrian environment and dramatically change the East Bank campus
- Has the potential to become a vibrant public space that integrates the East Bank rather than dividing it
- View from the train along Washington Avenue provides a greater connection to the campus for the rider
- Alternative supported by all other project partners



What are the findings for Washington Avenue at-grade -- Risks and Challenges

- Removal of one of the two main arteries that serve campus and the surrounding communities
- Impact on mission-critical research located in close proximity to the line
- Reduced access to hospital and clinics.
- Increased traffic throughout other areas of campus and neighborhoods
- Impact on historic Northrop Mall, Knoll, and East River Road
- Safety conflicts between trains and pedestrians
- Adverse impacts to Stadium Village businesses



What is necessary for Washington Ave at-grade to work?

- U identified initial set of potential mitigations and presented to project staff
- Continued analysis of issues:
 - Traffic modeling and analysis
 - Vibration and EMI testing
 - Historic and environmental reviews
- Development of draft agreement to memorialize and obtain commitment from project partners to the mitigation plan and future mitigations
- Intent to develop a second agreement to guide design, construction, and operations



Mitigations plan and draft agreement are a foundation for moving forward with Washington Avenue at-grade

- Proposed roadway and traffic control improvements
- Impacts to sensitive research equipment
- Impacts to the historic Northrop Mall, Knoll, and East River Road

- Design, engineering and operations of the line on campus (West Bank, Pedestrian Mall, Stadium Village)
- Ownership of Pedestrian Mall and Washington Ave Bridge
- Future bus operations serving the U and neighboring communities



Proposed Roadway and Traffic Control Improvements

Identification of three types of improvements to be pursued in and around campus:

- A. Improvements, included in the base project budget, needed to ensure the functionality of the LRT line
- B. Improvements needed to mitigate traffic and other environmental impacts resulting from the construction and operation of the LRT line (Mitigation Measures)
- C. Improvements not needed to ensure the functionality of the LRT line or to mitigate its impacts but that the parties agree to pursue, outside of the CCLRT project scope and budget, to enhance the transportation system & advance development opportunities (Betterments)





Traffic Study 3

Impacts with LRT at grade,
transit/ped mall, 2030 -
Mitigation Strategies

Cedar @Riverside

- 2nd WB right turn lane on Riverside
- NB left turn on Cedar
- Traffic signal detection
- Retime signal

E. River Rd @ Washington

- Install traffic signal
- Add 2nd approach lane

Franklin @ Cromwell

- Remove parking on north side of Franklin

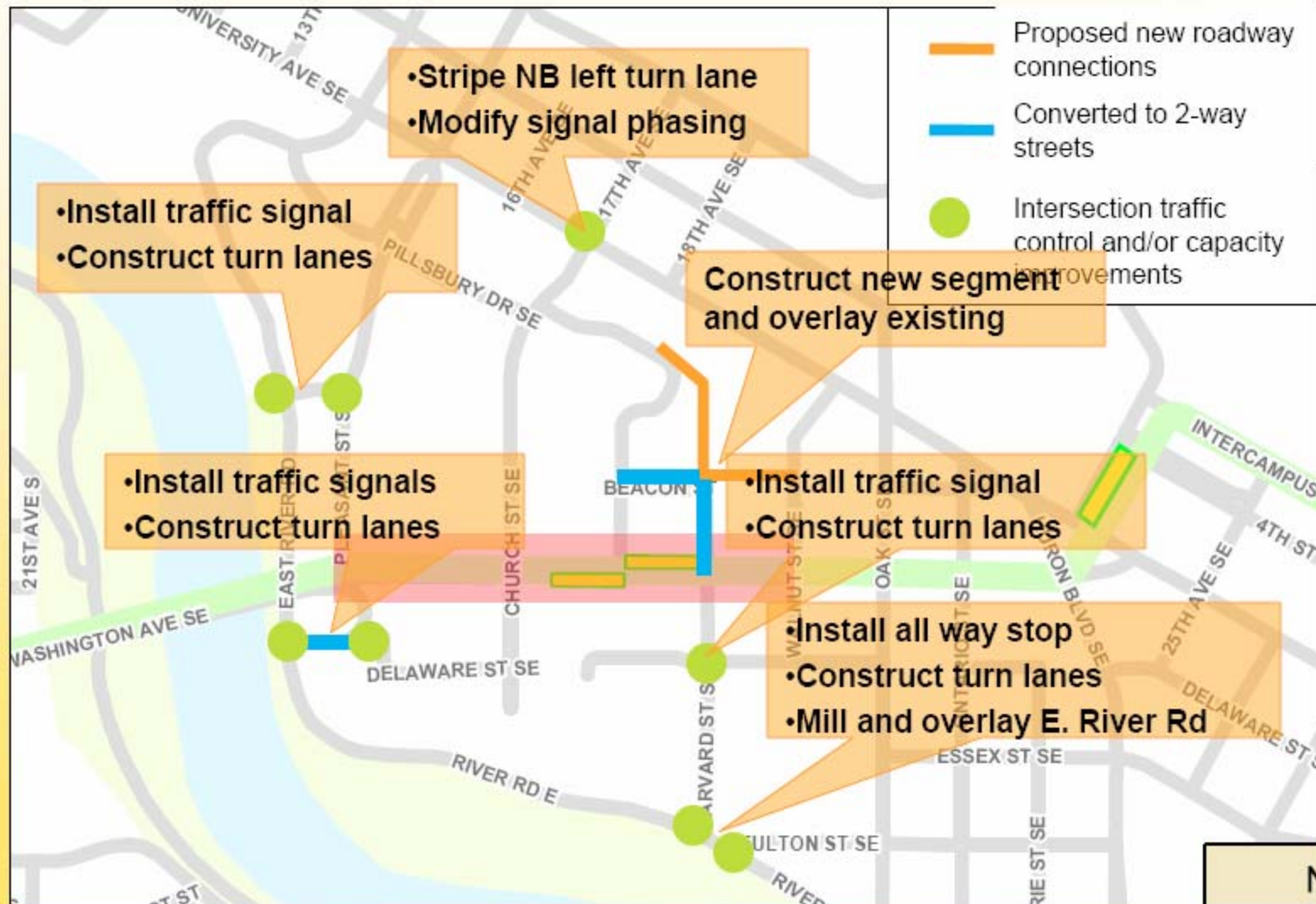
Riverside at 19th and 20th Avenues

- Reduce backup @ Cedar and Riverside
- Eliminate parking on east side of 20th

Traffic Study 4

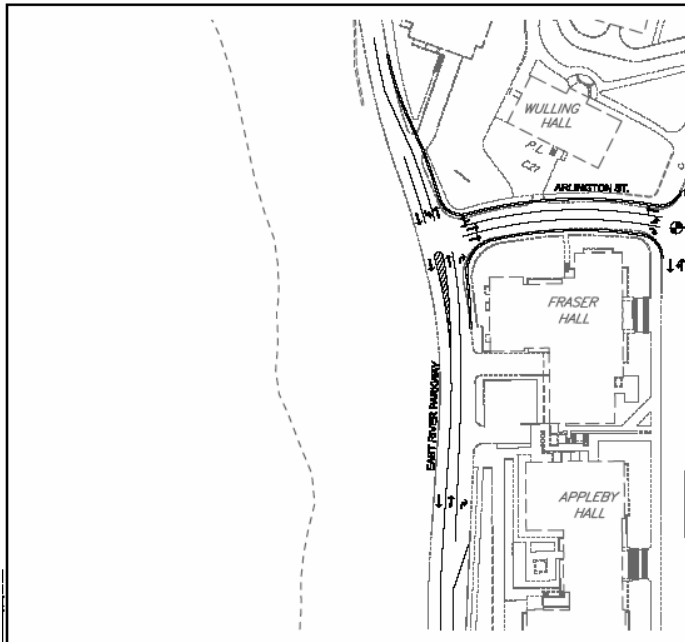
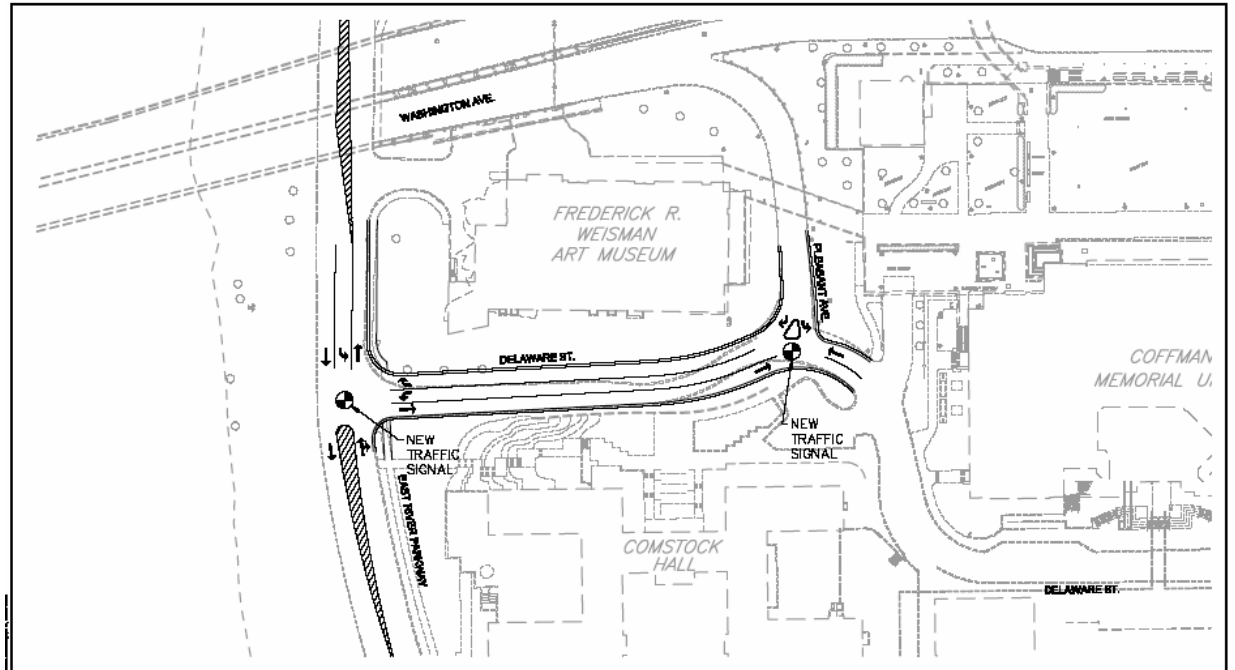
Intra-campus Roadway Network Mitigation Strategies

Central Corridor Light Rail Transit



Pleasant & Delaware

Delaware & East River Parkway



Central Corridor
Light Rail Transit

THE CENTRAL CORRIDOR LRT
TRAFFIC STUDY #4 IMPROVEMENTS



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Kimley-Horn
and Associates, Inc.
APRIL 23, 2008

East River Road & Arlington

Arlington & Pleasant

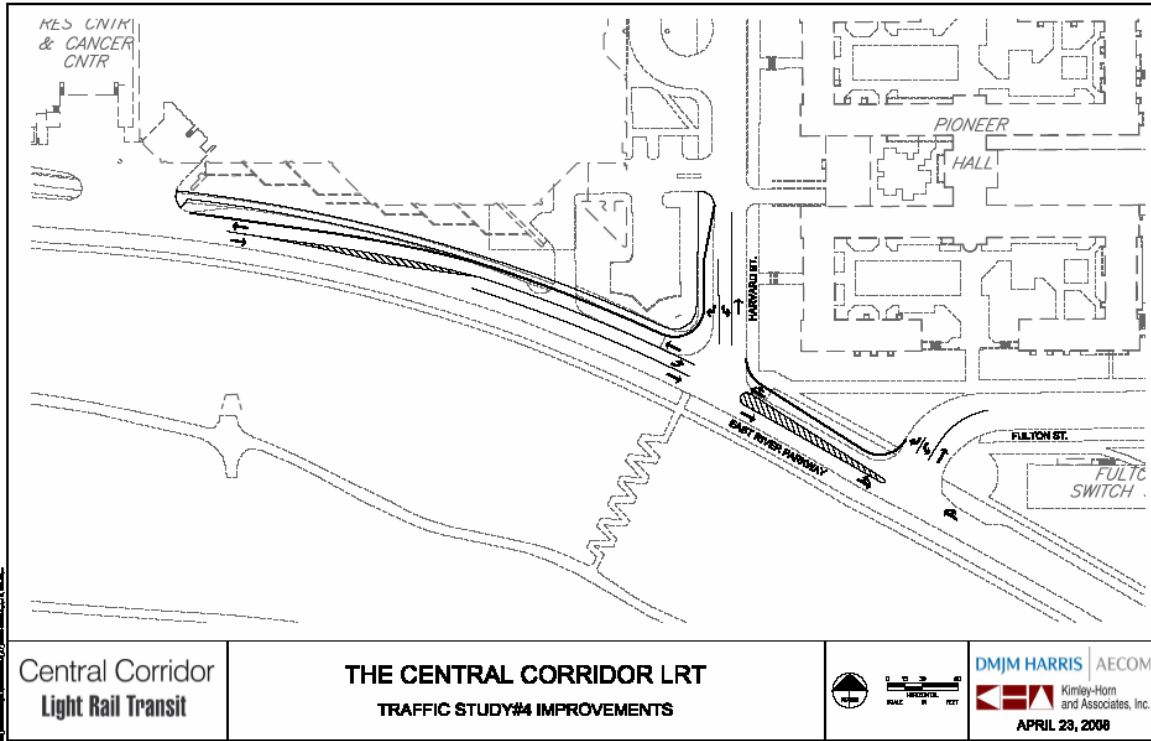
Central Corridor
Light Rail Transit

THE CENTRAL CORRIDOR LRT
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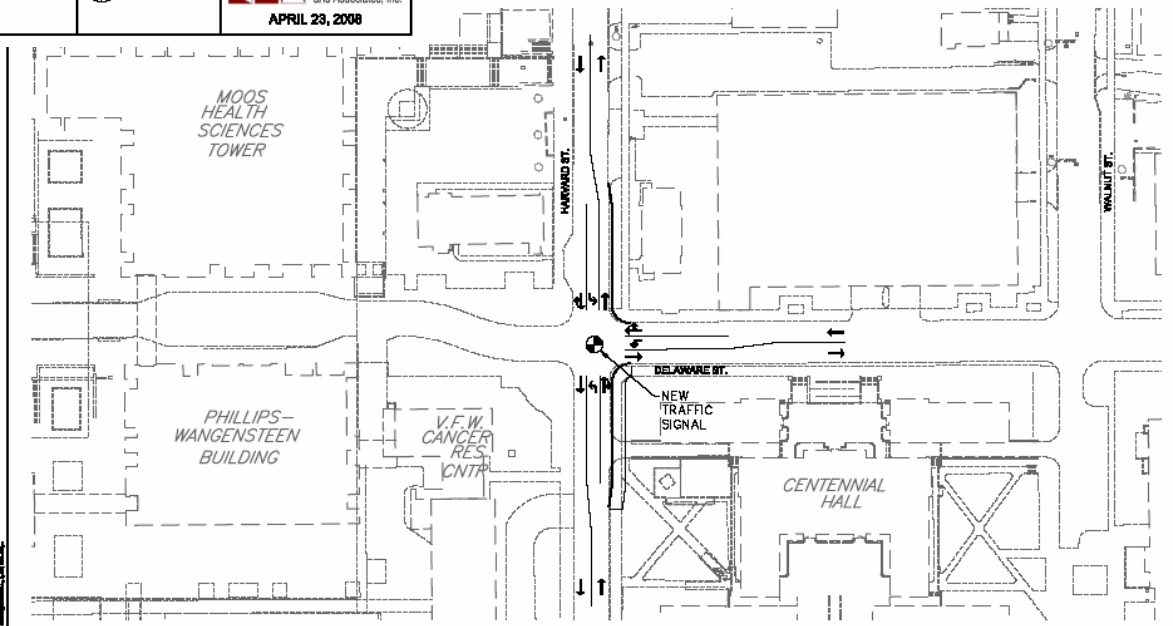
U O N B O A R D !



East River Parkway & Harvard Street

<p>Central Corridor Light Rail Transit</p>	<p>THE CENTRAL CORRIDOR LRT TRAFFIC STUDY#4 IMPROVEMENTS</p>		<p>DMJM HARRIS AECOM Kimley-Horn and Associates, Inc. APRIL 23, 2008</p>
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Harvard Street & Delaware



<p>Central Corridor Light Rail Transit</p>	<p>THE CENTRAL CORRIDOR LRT TRAFFIC STUDY#4 IMPROVEMENTS</p>		<p>DMJM HARRIS AECOM Kimley-Horn and Associates, Inc. APRIL 23, 2008</p>
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Proposed Roadway and Traffic Control Improvements

- Street traffic improvements shall require agreement from the responsible road authority, the University and the CCPO
- CCPO will work with stakeholders to refine all planning and designs to ensure maximum functionality and mutual acceptance by the parties
- Redesign of the West Bank Station area must be completed to accomplish traffic calming, safe interactions of pedestrians and creation of developable parcels



Impacts to Sensitive Research

- Electromagnetic Field Interference
 - Identified most sensitive research equipment (NMRs) and locations
 - CCPO has hired national experts to test Hiawatha line and develop mitigation strategy for Washington Avenue
 - Presented mitigation strategy/design solution to faculty researchers June 9
 - Mitigation plan under review – will be finalized in final engineering with faculty researchers



- Vibration
 - Identified most sensitive research equipment (NMRs and electron microscopes) and locations
 - CCPO has hired national experts to test how vibrations travel through soil and specific buildings
 - Presented test findings to faculty researchers June 11
 - Mitigation strategy under development
 - Construction mitigations will need to be addressed



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Impacts to the historic Northrop Mall, Knoll area, and East River Road

- Environmental and historic preservation issues related to the mall will be disclosed and documented in the SDEIS and addressed in the Final EIS process
- Applicable FTA policies, procedures and standards related to EIS processes and environmental and preservation issues will be followed



Funding Plan to be Developed before Application for Final Design

- Recognize that all necessary mitigation measures may not yet have been identified
- Opportunities for additional mitigation funding within the project budget may become available
- Partners will strongly support and advocate for the implementation of betterments
- Will jointly develop a funding strategy for betterments implementation



Design, construction, ownership and operations

- Second agreement to address design, construction, ownership, and operations
- Full length of the alignment through campus
- Special focus on pedestrian mall
- Roles and responsibilities, authorities, and funding mechanisms for each component



Design, Construction, Ownership, and Operations of Pedestrian Mall

- University shall participate and have final design and engineering approval over the pedestrian/transit mall elements
- The responsible road authority for Washington Avenue shall retain control of engineered design elements of the Washington Avenue pedestrian/transit mall and elements that affect public safety
- Metro Transit shall retain control and approval over design and engineering elements specific to the entire Central Corridor LRT line

Pedestrian Mall Design Requirements

- The pedestrian mall will be an enduring world-class civic/academic space.
- The pedestrian mall will be a place unique to and recognizably a part of the University that is a desirable destination.
- The pedestrian mall will link and integrate spaces along Washington Avenue into a coherent district.
- The pedestrian mall will encompass a combination of programmed active and passive informal gathering spaces that reflect the uses adjacent to the Avenue.
- The pedestrian mall design will focus on safety, functionality, accessibility, and readability and will be at a human scale.
- The pedestrian mall will create and facilitate connections across and along Washington Avenue, the campus, and regional systems, and will pay attention to side street transitions.
- The pedestrian mall will be designed for all seasons (from both a maintenance and human comfort perspective).
- Quality, durable materials will be used in its construction and the design will take into account future utility access.
- The pedestrian mall will reflect the University's sustainability policy goals.



Ownership and Operations within the University Campus

- Subject to BOR real estate policy, BOR consideration, action and final approval, CCPO requesting U to donate all required ROW needed for the project at the conclusion of 2nd agreement
- Recognize that ownership and maintenance issues pertaining to Washington Avenue pedestrian mall need to be negotiated and resolved
- Agree to cooperatively advocate in favor of MN-DOT owning the Washington Avenue bridge



Future Bus and Transit Operations Serving the U and Neighboring Communities

- MetroTransit has authority for bus and rail operations, with a commitment to review and consult with all partners
- Specific detail regarding the transportation and operation issues shall be detailed in the second agreement
- Operation issues include but are not limited to train speed, the volume and operation of buses and emergency vehicles on the mall and campus streets



What are the findings of the Washington Ave at-grade analysis – CEI and key factors?

Washington Ave at-grade with pedestrian mall and mitigations

- CEI: 24.39*
- Ridership: 42,170
- Ride Time: 40:15
- Cost: \$909.1 million*

*value engineering to reduce budget by \$17.1 million to bring CEI to 23.99



CCLRT Options Comparison

	Value engineered tunnel		Washington Avenue At-Grade with Transit Mall and mitigations	Northern Alignment	
	With Portal Station	With Mezzanine Station		FTA approved ridership model	Enhanced Access ridership model (not FTA approved)
Cost	\$988.6 Million	\$1.044 Billion	\$909.1 Million (Will reduce budget by \$17.1M to get to CEI of \$23.99)	\$889 Million	\$889 Million
Ride Time	38 minutes 53 seconds		40 minutes 15 seconds	40 minutes 26 seconds	
CEI	25.62	27.00	24.39/23.99	28.25	24.58
Weekday Ridership	43,940		42,170	35,240	36,560



May 28, 2008

Met Council Resolution

- Reaffirmed February 27 resolution, including a U of M at-grade Transit/pedestrian mall on Washington Ave
- Directed project office to discontinue all work related to northern alignment, effective immediately
- Expressed intent to work toward MOU for Washington Ave at-grade
- Expressed intent to work to maintain current project schedule



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