

**2011 Campus Plan Community  
Task Force  
June 22, 2010**



1. Welcome and Introductions
2. East Campus Updates
  - Pedestrian and Vehicular Transportation Analysis
  - Further Description/Discussion of Buffer Area
3. Issues Discussion
4. Other Business



# Study Overview



- ▶ Goal: Determine traffic impact from AU's development of East Campus, notably the increase in pedestrian traffic across Nebraska Avenue
- ▶ Variables:
  - ▶ Increase in pedestrian traffic
    - ▶ New buildings
    - ▶ Change in number of parking spaces
  - ▶ Changes to vehicular traffic
    - ▶ Change in number of parking spaces
    - ▶ Change in access locations
    - ▶ Opening of SIS garage



# Pedestrian Trip Generation



- ▶ Pedestrian trips generated for:
  - ▶ Residence Halls
  - ▶ Admissions welcome center
  - ▶ Campus Store
  - ▶ Other Retail
  - ▶ Change in parking spaces
- ▶ No National standards exist for pedestrian generation on campuses from residence halls
- ▶ Methodology created using closest analogs from standard methods



# Pedestrian Trip Generation



- ▶ Trips were based on the Institute of Transportation Engineers' (ITE) Trip Generation, 8<sup>th</sup> Edition for the closest land uses available
  - ▶ Apartments & shopping center
  - ▶ Trips were given a mode split of 100% walking
- ▶ The number of pedestrian trips from the East Campus to the Main Campus, across Nebraska Ave was calculated by assuming 1 pedestrian crossing per vehicular trip.



# Pedestrian Trip Generation



- ▶ The pedestrian trips were split across the crossings at New Mexico Avenue (75%) and Ward Circle (25%).
- ▶ This estimates that students traveling from the Residence Halls on the East Campus to the Main Campus will utilize the New Mexico Avenue crossing because it is closer than Ward Circle.
- ▶ Similarly, commuters traveling from the parking lot on the East Campus to the Main Campus will utilize the Ward Circle crossing.
- ▶ Pedestrians traveling to the Retail on the East Campus from the Main Campus were split between both crosswalks.
- ▶ The proposed streetscape design of the East Campus will force pedestrians to utilize the Ward Circle and New Mexico Avenue intersections and will prevent mid-block crossings.



# Vehicular Trip Generation



- ▶ Vehicular demand will change with 903 spaces removed and 500 new spaces constructed, resulting in a net decrease of 403 spaces.
- ▶ Existing trips were determined from counts at driveways to Nebraska Ave parking lot.
- ▶ Trip rates/space were derived by comparing the driveway counts with observations of the accumulation of spaces during a typical weekday (rates based on the assumption that supply equals demand)
- ▶ Future trip rate used was 0.30 trips/space during the morning peak hour and 0.5 trips/space during the afternoon.
  - ▶ Morning peak: 0.25 trips/space inbound and 0.05 trips/space outbound.
  - ▶ Afternoon peak: 0.20 trips/space inbound and 0.30 trips/space outbound.



# Vehicular Trip Generation



- ▶ Although there is a future decrease in the number of parking spaces on the East Campus, there is an increase in trips during the morning peak hour. This is due to the assumption that the future lot will fill to capacity, while the existing lot does not.
- ▶ A trip distribution for the existing and future trips was determined based on regional traffic patterns in the study area.
- ▶ Existing trips (based on driveway counts) were removed and new trips (based on trip generation rate) were added to the study area roadways.
  - ▶ Replacement of existing trips was done to reflect changes in East Campus access locations
- ▶ Results also included construction of future SIS Garage (based on traffic impact study performed for garage)





# Summary of Trip Generation

AM Peak Hour



PM Peak Hour



**Legend**

- - Vehicular Movement
- ↔ - Pedestrian Movement
- XX +/- XX - Existing Volume +/- Future Change





# Summary of Trip Generation - Percentages



**Legend**

- - Vehicular Movement
- ↔ - Pedestrian Movement
- XX +/- XX - Existing Volume +/- Future % Change





- ▶ Intersection capacity analyses were performed for existing and future conditions using the software package *Synchro, Version 7.0*, which is based on the Highway Capacity Manual (HCM) methodology.



# Capacity Analysis Results



## Nebraska Ave/New Mexico Ave Intersection

- ▶ Intersection of Nebraska Avenue & New Mexico Avenue operates under acceptable conditions.
- ▶ Intersection operates with little change in vehicular delay due to existing separation of turning vehicles and pedestrians.
- ▶ Right-turn arrow from New Mexico Avenue to Nebraska Avenue separates large volume of turning vehicles from pedestrians crossing the street.
- ▶ Large volumes of pedestrians do not negatively impact intersection operation as pedestrians will cross in large groups during the “Walk” phase.



# Capacity Analysis Results



## Nebraska Ave/Ward Circle Intersection

- ▶ Intersection of Nebraska Avenue & Ward Circle operates under acceptable conditions.
- ▶ Proposed right-turn arrow from Ward Circle to Nebraska Avenue separates large volume of turning vehicles from pedestrians crossing the street.
- ▶ Large volumes of pedestrians do not negatively impact intersection operation as pedestrians will cross in large groups during the “Walk” phase.
- ▶ At some times, right-turn traffic from Ward Circle to Nebraska Avenue will experience increase in delay due to retiming of intersection to include right-turn arrow. However, this change will significantly improve conditions during the afternoon peak hour, as well as provide for separation of vehicles and pedestrians.

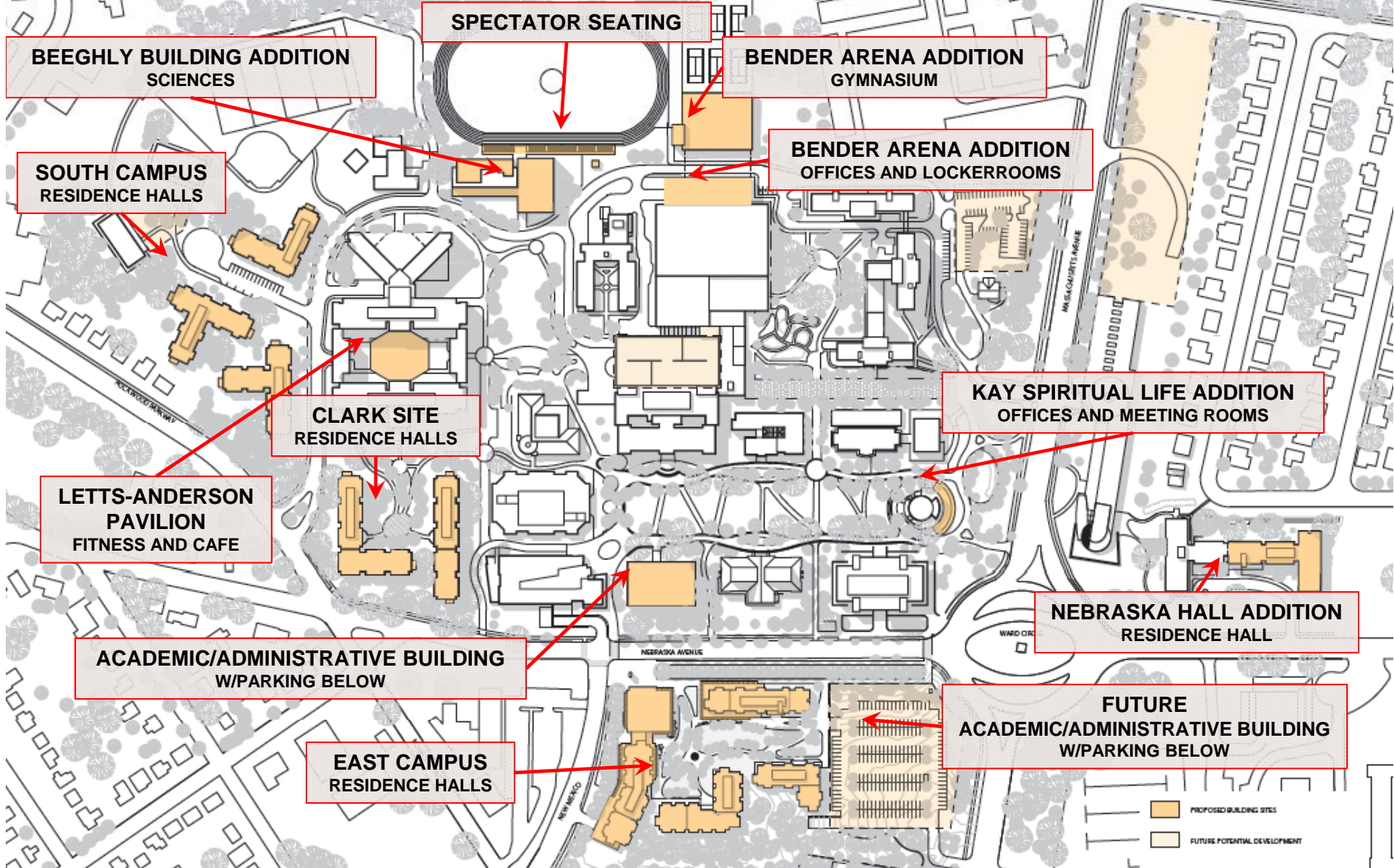


# Summary



- ▶ Development of AU's East Campus will not create negative impacts to vehicle traffic in the surrounding area
- ▶ This is due to existing and proposed signal timings at existing intersections
  - ▶ Signal at New Mexico has a right-turn arrow from New Mexico to Nebraska, and a left-turn arrow from Nebraska to New Mexico
  - ▶ DDOT and AU discussing adding a right-turn arrow to the signal from Ward Circle to Nebraska Ave
- ▶ These pedestrian phases at the signals allow for minimal vehicular impact as a result of the increase in pedestrian activity that will occur due to the development of the East Campus

# 2011 Campus Plan





# Sensitivity Analysis



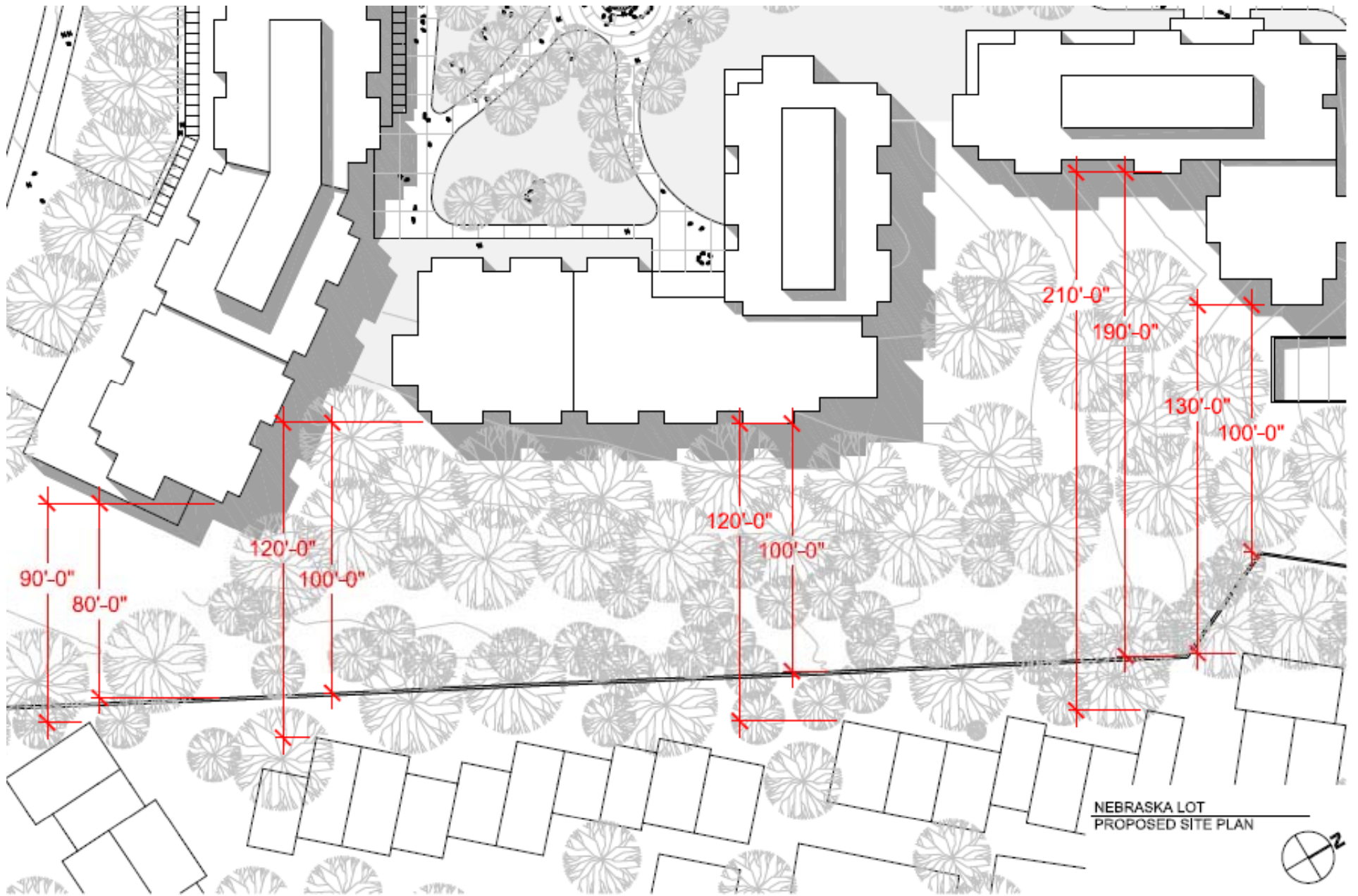
- ▶ **Because no standard methodology exists, sensitivity analyses were conducted**
  - ▶ Test #1: Concentrated the entire projected increase in pedestrians at the Ward Circle crosswalk
  - ▶ Result: Same results. New right-turn arrow phase at signal negates potential increase in delay during afternoon rush hour
  - ▶ Test #2: Concentrated the entire projected pedestrian increase at the New Mexico Avenue crosswalk
  - ▶ Result: No negative impacts to New Mexico Ave or Nebraska Ave traffic. Possible impacts to traffic exiting left from the SIS garage.





NEBRASKA LOT  
PROPOSED SITE PLAN





NEBRASKA LOT  
PROPOSED SITE PLAN

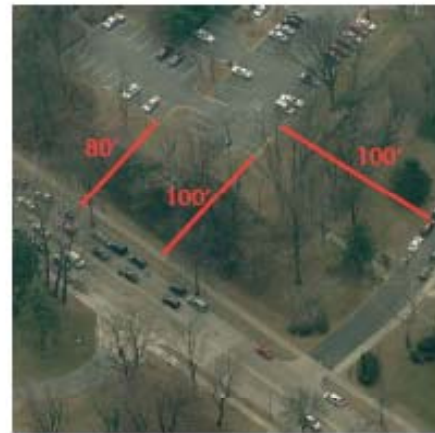




AMERICAN UNIVERSITY CAMPUS



1 PRESIDENT'S OFFICE BUILDING SITE



1A



1B



AMERICAN UNIVERSITY CAMPUS



3 WARD CIRCLE BUFFER



3A



3B



NEIGHBORHOODS SOUTH OF AMERICAN UNIVERSITY



1 4200 MASSACHUSETTS AVE. NW



1A



1B



NEIGHBORHOODS SOUTH OF AMERICAN UNIVERSITY



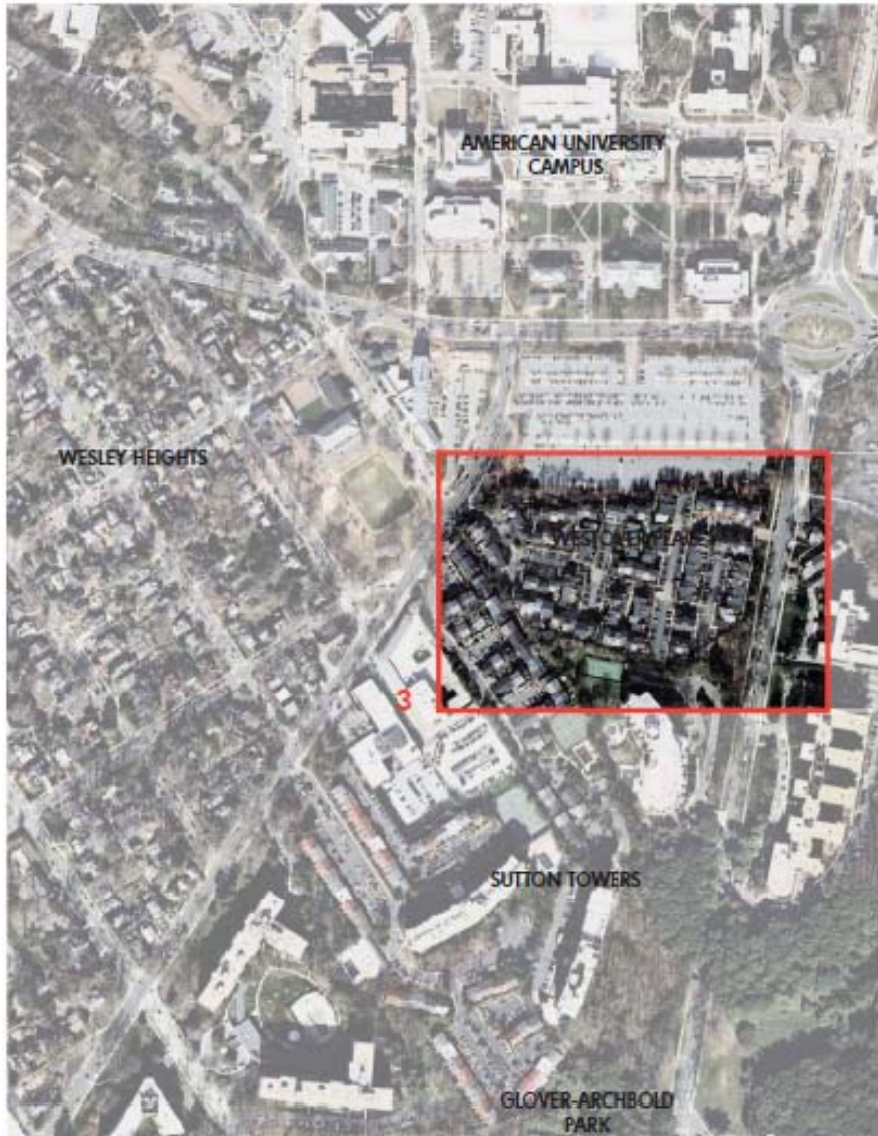
2 SUTTON TOWERS



2A



2B



NEIGHBORHOODS SOUTH OF AMERICAN UNIVERSITY



3 WESTOVER PLACE



3A



3B



NEIGHBORHOOD NEAR KATZEN ARTS CENTER AND NEBRASKA HALL



1 NEBRASKA HALL



1A



1B





NEIGHBORHOOD NEAR KATZEN ARTS CENTER AND NEBRASKA HALL



2 KATZEN ARTS CENTER



2A



2B



AMERICAN UNIVERSITY

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Future Meeting

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July 27



### Community Relations web page

<http://www.american.edu/communityrelations/>

### Campus Plan web page

<http://www.american.edu/finance/fas/Campus-Plan.cfm>

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- Katzen Arts Center
- Learning at AU
- Library Access
- Neighborhood Guide
- Osher Lifelong Learning Center
- WAMU
- Working at AU

COMMUNITY INFORMATION

UNIVERSITY LINKS

**The Garden of Knowledge**

With over 2,000 trees on campus, AU was designated an arboretum and public garden.

READ MORE

Katzen Center | Arboretum and Public Garden | Retail Shops | Campus Store | Dining on Campus

› Campus Plan

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› ABOUT THE CAMPUS PLAN

American University's Campus Plan is a "roadmap" that details proposals and objectives to enhance and build upon our campus facilities for the next decade. We are launching a new Campus Plan - to be approved by the Zoning Commission - to replace the existing plan.

Visit this site frequently to keep abreast of all the latest news and developments regarding the Campus Plan currently in the works, as well as information about the 2000 Campus Plan.

› WHAT'S NEW

Next 2011 Campus Plan Meeting

Tuesday, October 20, 7 p.m., Mary Graydon Center, Rooms 3

[Previous Meetings](#)

› 2000 CAMPUS PLAN

READ THE ENTIRE CAMPUS PLAN

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Get the latest developments of our "roadmap" for the next decade.

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