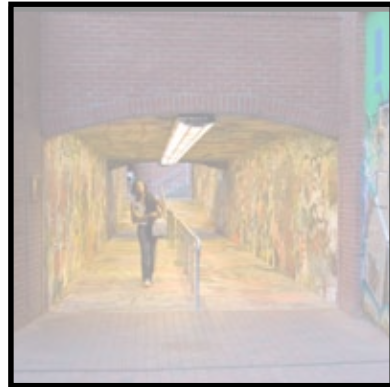


NORTH CAROLINA STATE UNIVERSITY



**WEST LOT
MASTER PLAN**



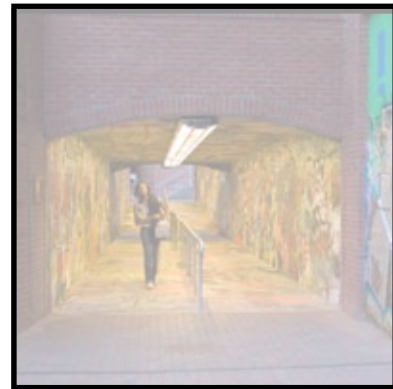
NORTH CAROLINA STATE UNIVERSITY

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Project Purpose

The NC State University West Lot Master Plan represents the culmination of the planning phase for redevelopment of this critical piece of the Central Campus Precinct. This document is intended to be a working document and to serve as the basis for design development activities as plans progress through design, construction documents, and construction. This report documents the products of the planning effort and the planning process and methodology employed to arrive at key design decisions including key factors that helped to shape the outcome of the approved master plan concept. It should serve as the foundation for moving forward into the design phase and as a point of reference for reconfirming future decisions related to this site.

Project Overview

The size and character of the NC State University campus continues to evolve with the addition of new buildings, plans for a regional rail system, and a growing student, staff and faculty population. The recent update to the Campus Physical Master Plan (October 2007 - reference image to right) establishes specific recommendations for redevelopment of the West Parking Lot site as well as some guiding principles for planning and design of all major campus projects. With publication of A Campus of Neighborhoods and Paths, University planners and administrators have clearly defined an emphasis on enhancement of the overall campus experience for students, faculty, and visitors alike.

In November of 2007 Kimley-Horn and Associates was selected by the University to prepare the master plan for redevelopment of the West Lot in Central Campus of North Carolina State University in keeping with recommendations of the University Physical Master Plan completed October 2007. The objective of the Master Plan phase of the project was to reach consensus on a plan that could realize a maximum net gain in parking, integrate transit services, and accommodate an unspecified amount of office space.

The consultant team met with the University and various user group representatives between December 2007 and May 2008 to generate a development program and review concepts for proposed improvements. The primary goal for this effort of was to develop a master plan that successfully addressed the following key issues:

- Achieve a net increase in parking facilities available to students, visitors, and administrative support personnel
- Provide for administrative office space and associated parking
- Create meaningful pedestrian zones and connectivity through the site
- Prepare preliminary opinions of probable cost for redevelopment

This report documents the Master Plan process and establishes the basis for future decision-making relative to detailed design, phasing, and implementation. Included in this report is an overview of the planning process, the development program, a summary of owner and user group input, cost analysis, and alternative concepts evaluated during this process. Support exhibits are also included providing additional project background to validate the process and final master plan.



Process and Methodology

The master planning process for West Lot was conceived as a highly collaborative and multi-disciplinary process that would yield a plan that responded to the programmatic, operational, and aesthetic goals for the University. The Consultant team worked with a project steering committee headed up by the University Architect's office as well as selected stakeholders from University academics and facilities. Following is brief outline of the process.

Task 1 – Programming Phase and Schematic Design

1.1 Data Collection

1.2 Site Analysis and Mapping

1.3 Programming

- Program Statement
- Vision Statement
- Site Visit and Site Analysis
- User group input

Task 2 – Master Planning

2.1 Conceptual Master Planning

- Traffic Assessment
- Parking and Building Development Program
- Concept Development and Preliminary Master Plan

2.2 Estimate of Probable Cost

2.3 Phasing Plan

2.4 Final Master Plan

Task 3 – Master Plan Report

Executive Summary

West Lot redevelopment Vision Statement:

The master plan for the West Lot redevelopment project should satisfactorily address and be consistent with key Guiding Principles of the Campus Physical Master Plan including commitments to Sustainability, Integration of Academic, Programmatic, and Physical Planning, Human-Scaled Campus neighborhoods and Paths, and Design Harmony. The master plan should maximize, to the extent practicable, the number of total vehicle parking spaces to serve campus parking needs for students, university employees, and visitors as well as special events parking. In addition, the plan should accommodate and incorporate efficient transit routes and user facilities and integrate transit into the overall pedestrian and vehicular patterns in safe, effective manner. Overall, the project should provide for a safe, efficient and enjoyable pedestrian experience interconnecting the site with the All Campus Path system while providing opportunities for gathering spaces and a node for social activity.

The adopted Master Plan contemplates a phased redevelopment of the West Lot facility with an ultimate program that could support the following uses:

- Approximately 1600 parking spaces in two structured parking facilities
- Approximately 75,000 sf – 80,000 sf of administrative office functions in one building
- Transportation Services office of approximately 10,000 sf - 12,000 sf
- 4,000 sf of shop zone space incorporated within the parking structure
- transit stops with shelters and associated amenities
- a transit office with restrooms
- bicycle storage and showering facilities

Following are some of the fundamental organizational principles associated with the adopted Master Plan:

- a net gain in available parking relative to existing surface parking quantities
- a strong, safe pedestrian path with appropriate levels of landscaping, seating, lighting, and accessibility
- preservation of significant existing vegetation and general character along Sullivan Drive
- a pedestrian scale for building heights and façade treatments framing the pedestrian pathway
- integration of transit routes and stops with limited conflicts with pedestrian and passenger car traffic

Recommended phasing of the project would include the following:

Phase I

- West deck – approximately 865 spaces
- Residual surface parking - approximately 210 spaces
- Transportation offices
- Pedestrian zone
- Sustainable site features
- Off-site road improvements

Phase II

- East deck - approximately 715 spaces
- Zone Shop

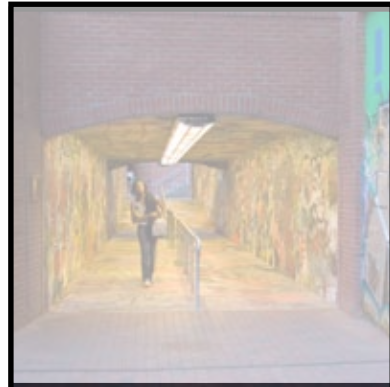
Phase III

- Administrative offices

Recommended off-site roadway improvements on Western/Varsity Drive include the following:

- Additional southbound lane between East/West Collector Street and Western Boulevard (for total of 3 southbound lanes)
- Additional northbound lane between Western Boulevard and right-in/right-out driveway serving phase I deck (for a total of 2 northbound lanes (lane drops at RIRO driveway))
- Westbound left and right-turn lanes and East/West Collector Street at Varsity Drive.
- Designated eastbound left turn lane at first driveway on East/West Collector Street.
- Lengthen eastbound left turn lane on Western Boulevard at Varsity Drive.
- Provide northbound left turn lane on Varsity Drive at Wolf Village Way.
- Provide southbound left-turn lane on Varsity Drive at East/West Collector Street.
- These are preliminary recommendations and may be verified with a detailed traffic analysis during the design phase.

NORTH CAROLINA STATE UNIVERSITY



**THE DEVELOPMENT
PROGRAM**



The Program Phase was Organized Around Four Important Tasks

- *Site Inventory, Opportunities, and Constraints*
- *User Group Input*
- *Adoption of Project Vision Statement*
- *Formulation For a Draft Development Program*

Program Development

The Programming phase of the project included efforts to understand the physical nature of the site, its relationship to the immediate campus neighborhood, and the University's desired development program. The resulting Development Program was intended to provide a guideline for master planning and a framework for desired development yield and general performance standards for the project. The original Development Program served as a working basis for planning that continued to evolve as additional input was gathered from University staff and user groups. The following is a summary of the original development program resulting from initial input from the University during the December 20, 2007 kick-off meeting.

Site Inventory, Opportunities, and Constraints

The overall project Study Area is generally bounded by Sullivan Drive on the north, Varsity Drive on the west, Dan Allen Drive on the east, and Western Blvd. on the south. For master planning purposes associated with this effort, the proposed redevelopment area is generally limited to the existing commuter surface parking lot of approximately 750 spaces and immediate surrounds.



DESIGN IMPLICATIONS

The West Lot site is a potentially very important piece of the overall pedestrian and vehicular fabric of the Central Campus Precinct. Redevelopment of this site will impact the character of two major collector roads and service as an important link in pedestrian connectivity for the central campus Precinct.

Site Context and Adjacent Uses

The project Study Area is generally defined as the “superblock” bounded by Sullivan Drive on the north, Varsity Drive on the west, Dan Allen Drive on the east, and Western Blvd. on the south. The West Lot is situated in the Central Campus Precinct at the intersection of Sullivan Drive and Varsity Drive, two major campus collector roads. In addition to parking, the West Lot accommodates two Wolfline transit stops on Sullivan and Varsity. The site shares the immediate campus neighborhood with the Butler Communications, Grinnells Animal Health labs, Weaver Labs, and Schaub food sciences buildings.

North of the site is Doak Field, Fountain Dining Hall and a major student residential neighborhood with three residence halls. The greenway path on the north side of Sullivan represents a major east-west corridor for pedestrian movement connecting the residence halls of Wolf Village and the West Lot to Dan Allen Drive. The master plan for the West Lot must account for the relationship of these neighboring uses relative to baseball game traffic, normal student pedestrian patterns, and transit activity.

West of Varsity drive are various administrative office functions, public safety facilities, and Wolf Village, a 1212 student apartment community. Pedestrian patterns from Wolf Village through the West Lot are an important factor for consideration in master planning.

While the proposed redevelopment area is limited to the area currently occupied by the West Lot, the master plan effort will consider vehicular, transit, and pedestrian circulation patterns and connectivity within the “superblock” and to the surrounding areas to the extent that it may impact plans for redevelopment.

The master plan for the West Lot must provide for the desired development program while resolving issues related to edge conditions, circulation through the site, transit services, and for creation of neighborhood spaces appropriate in scale and character for the intended uses. Building structures for both parking and offices should be supported by the architectural vocabulary of the campus and the immediate neighborhood and be in scale with pedestrian zones and streetscapes.



DESIGN IMPLICATIONS

The Sullivan Drive edge is significant in terms of defining the overall character of this part of the Central Campus. Alternatives for either preserving, enhancing, or redeveloping this edge must be carefully considered relative to its impact on the overall character of this campus neighborhood.

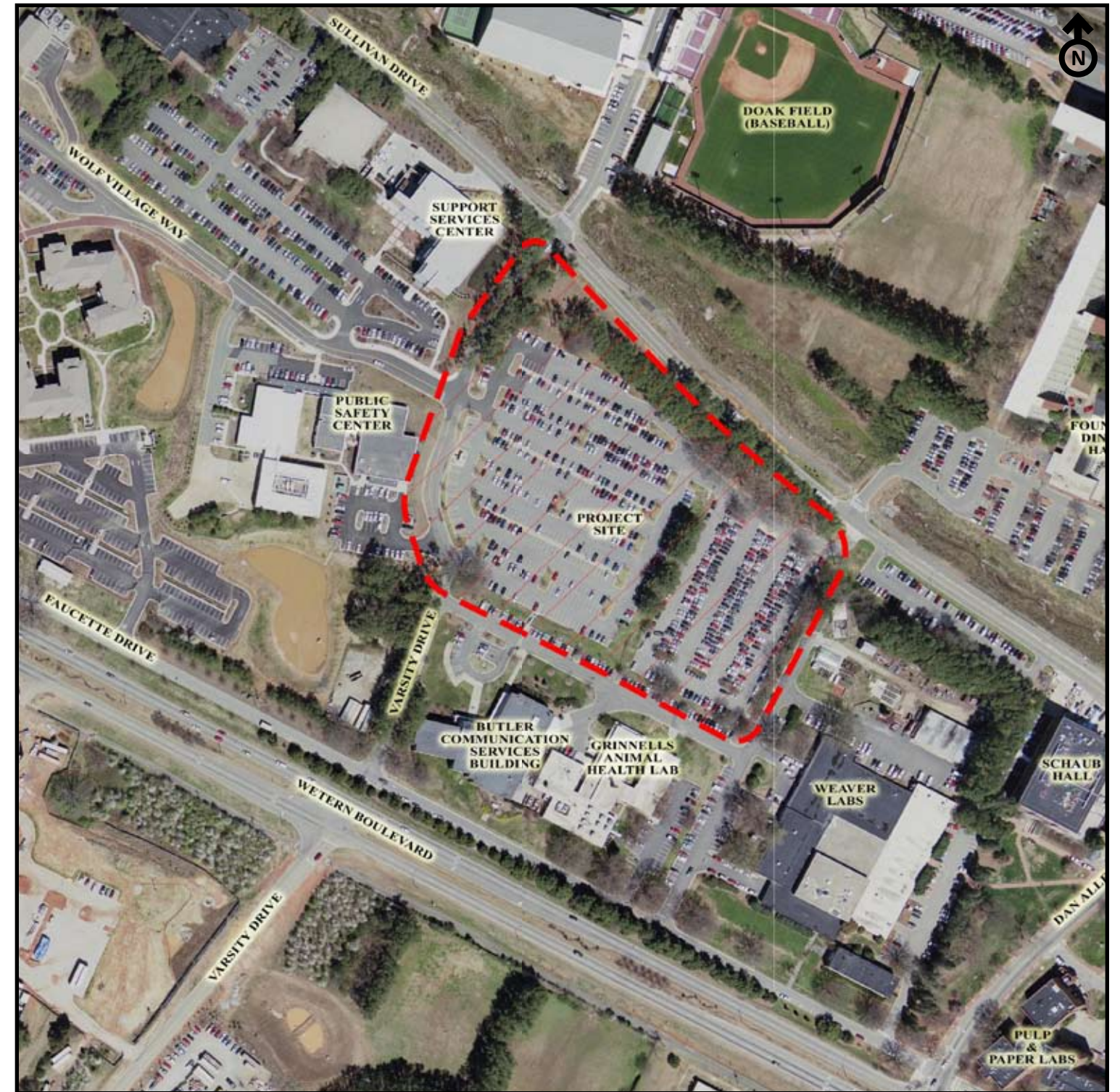
Edge Conditions

The site is bounded on two sides by Varsity Drive (west) and Sullivan Drive (north) and by university buildings and support functions on the east and south sides. The Sullivan Drive edge presents a strong image defined by large pine trees, several large specimen oaks, and a wide natural area with significant change in elevation between the road and the parking lot. The opposite side of the road is characterized by the greenway trail and natural area as well helping to define a more non-urban feel to this corridor relative to others parts of campus.

The Varsity Drive edge is also characterized by tall pine trees and a significant change in elevation along the road rising up from Sullivan Drive toward Western Blvd. There is sidewalk along the east side of the road for a portion of the site.

The south edge of the site is defined by a wide landscaped area and elevation change between the parking lot and the parking above serving the Butler Communications building. A large set of concrete steps in the island provide for pedestrian movement between the two sites. There are several large oak trees in the island separating the two parking areas that help define this edge.

The eastern edge of the site is defined by an internal drive aisle and landscape area with significant trees and scrubby understory vegetation. The landscape area accommodates a significant grade change rising to the adjacent site above the parking lot elevation. Utilitarian storage units associate with Weaver Labs present a less than desirable image for this part of the site.



DESIGN IMPLICATIONS

Edge conditions are critical and existing vegetation is significant in terms of defining the overall character of this part of the Central Campus. The master plan should offer specific recommendations with regard to preservation or new plantings to establish or reinforce streetscape and pedestrian zones associated with this project.

Vegetation

Perimeter vegetation is extremely important in the defining this site and the streetscape environment around it. Vegetation is characterized by a mix of tall pines and specimen hardwoods including some unusual, mature Laurel Oaks along Sullivan Drive. The overall image is informal and natural, and gives a decidedly non-urban feel to this part of campus.

Internally to the site there are typical plantings of shade trees within parking islands that are likely to be impacted by redevelopments. There are several large specimen oaks on the south side in the landscape island that should be evaluated relative to redevelopment plans for potential preservation where practicable.

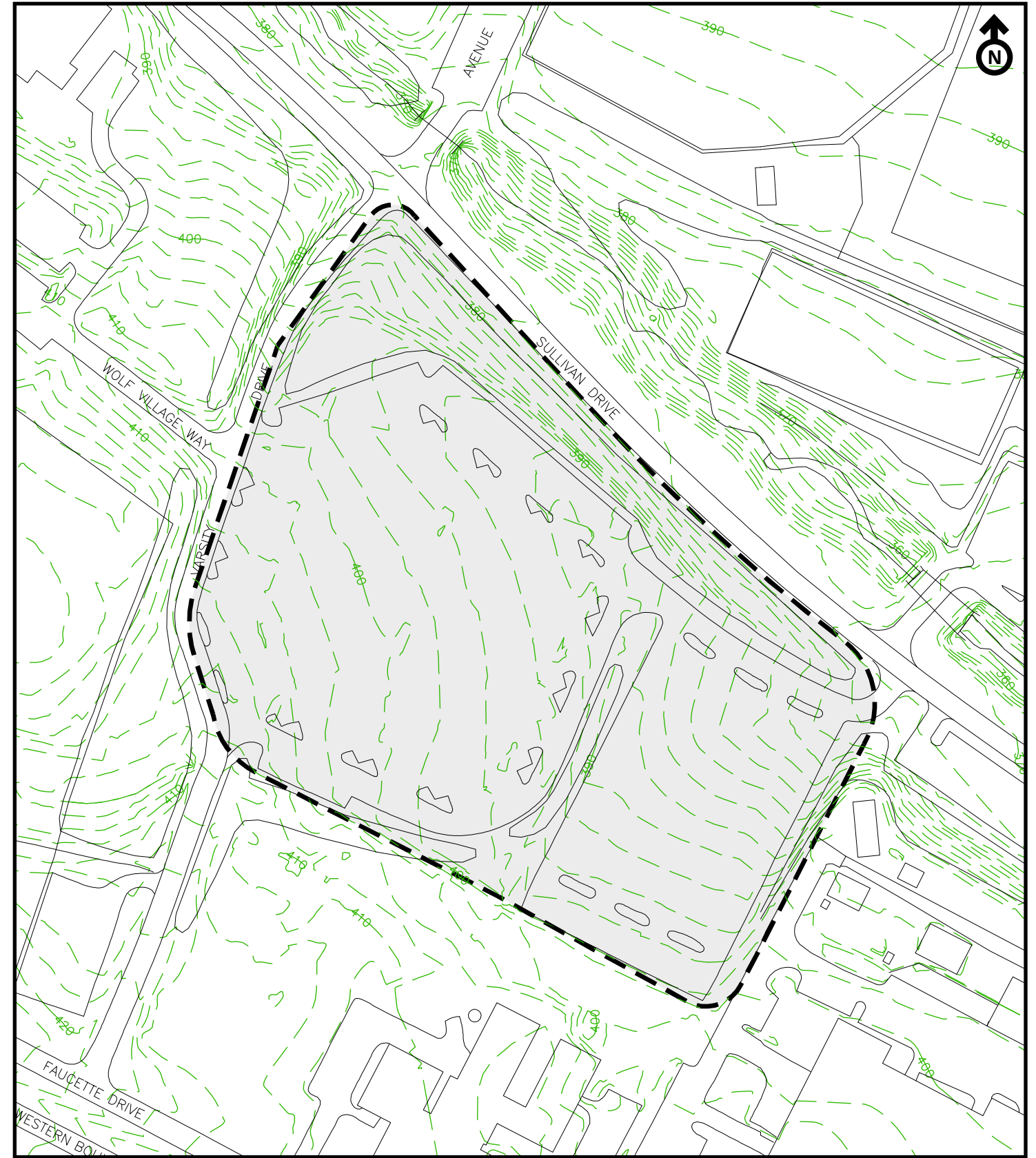
Vegetation along the east edge of the site includes volunteer understory and invasive exotics that present a rather unkempt image.

DESIGN IMPLICATIONS

Grade changes must be considered relative to ADA accessible routes, sight lines at driveways, and earthwork. Alternatives for taking advantage of the grade change with multi-level or split-level buildings should be evaluated and could help to minimize the overall effective building height in some cases.

Topography

Grade changes across the site are significant including differential in elevations between the site and adjacent roadways. The site is situated approximately 15 feet above Sullivan Road and approximately 16 feet above Varsity Drive at the most sever condition. The site sits below adjacent facilities to the east and south. Internally, there is as much as 38 feet of fall from the southwest corner to the northeast corner of the parking lot.



DESIGN IMPLICATIONS

The capacity of the roadway network immediately adjacent to this site will be an important factor in determining the ultimate development program and potential off-site roadway improvements. Transit stops should be integrate into redevelopment plans and accommodate bus staging and planned changes to service routes.

DESIGN IMPLICATIONS

Pedestrian patterns will continue and see increased volumewithredevelopmentas additional parking and office functions are added. Pathway nodes, gathering spaces and transit stops should be developed to accommodate natural patterns and promote safe pedestrian movements relative to parking and vehicular circulation routes.

DESIGN IMPLICATIONS

The master plan should incorporate ADA accessible routes through the site and provide for accessible connections to established ADA routes in the campus neighborhood. Pathways that accommodate bicycles should be evaluated as well.

Vehicular Site Access, Transit Routes and Perimeter Roadways

The site is well connected to the overall campus roadway network. There are currently three points of access into the site - one from Sullivan and two from Varsity Drive. Both Sullivan and Varsity are two lane roads. Connectivity to Western Blvd. is available via Varsity and to Dan Allen or Gorman Street via Sullivan. The northern access off of Varsity Drive aligns with Wolf Village Way to the west. The southernmost access off of Varsity Drive is a shared access with the Butler Communication building.

There are two transit stops associated with the West Parking Lot, one on each off Sullivan and Varsity. Each stop is equipped with a standard shelter and bench seating. The normal bus routes include stops at these locations at approximately 10 to 15 minute intervals.

The Wolfline currently has multiple routes that utilize the transit stops on Varsity Drive and Sullivan Drive adjacent to the site. The proposal currently recommends relocating both of these transit stops and consolidating them into a single location north of the proposed parking decks. A one-way bus-only driveway will be constructed from Varsity Drive to Sullivan Drive to serve the new transit stop. Relocating the transit stop to the north of both parking decks will also minimize pedestrian conflicts with vehicles entering and exiting the decks.

While the Triangle Transit Authority (TTA) and Capital Area Transit (CAT) currently serve various locations throughout the campus, neither service currently has a transit stop in the vicinity of the site. This site could accommodate future transit stops.

Pedestrian Access Points and Destinations

Well traveled pedestrian travel patterns originate, terminate and move through the West Lot site as a normal part of campus life and will continue to do so after redevelopment.

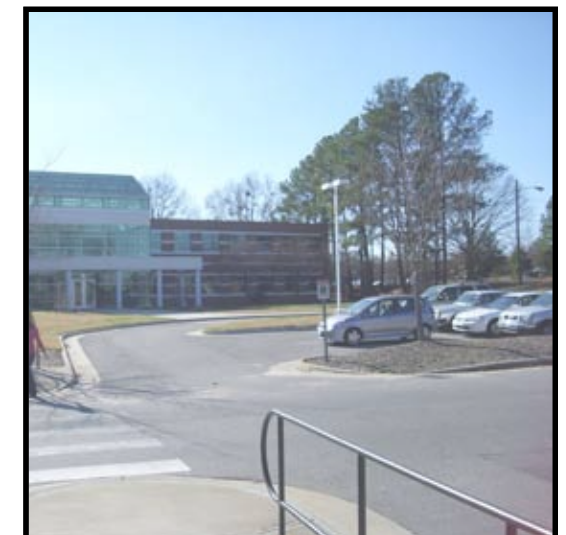
The West Lot site essentially holds the keystone position in the Central Precinct as pedestrian movement follows the east-west pattern between residence halls and academic buildings.

Pedestrian points of access include the driveways from Sullivan and Varsity and the concrete walkway from the lot to Sullivan near the transit stop at the north east corner. Students coming to and from Wolf Village may use Varsity Drive to get to the walk or greenway on Sullivan or simply work their way through the parking lot to the east side driveway and access Sullivan from there. There is also an established pattern of crossing at the transit stop to the Fountain Dining Hall driveway and following informal routes from there to academic buildings via Dan Allen.

The site visit conducted on Thursday, February 21, 2008 showed a number of pedestrians (likely employees of the University) crossing Varsity Drive from the existing parking lot to access offices to the west. Currently, only one crosswalk exists at each intersection along Varsity Drive. Due to the increase in pedestrians and vehicles expected at these locations, it is recommended that the pedestrian plan provide for high visibility crosswalks to be located on all approaches at each intersection on Varsity Drive and Sullivan Drive adjacent to the site. In addition, a sidewalk should be constructed along or near the east side of Varsity Drive from the proposed decks to Sullivan Drive.

ADA Accessibility

Existing sidewalks adjacent to this site do not currently comply with ADA criteria due to slopes that exceed design thresholds. The greenway north of Sullivan Drive is an established ADA route but there is currently no connection to the site meeting ADA criteria.



DESIGN IMPLICATIONS

It is possible that redevelopment of the site will not result in a net increase in impervious area. Whether required or not, opportunities to implement water quality measures should be evaluated as a show of commitment to sustainable design and as a visible means of public education about stormwater issues.

DESIGN IMPLICATIONS

Utilities for the project site are readily available, with minimal off-site extensions required. The location of the stream line needs to be carefully considered and treatment of the storm drainage should be utilized as an amenity.

DESIGN IMPLICATIONS

Lighting for wide open parking areas will not be needed and the introduction of building facade and landscape lighting, smaller pedestrian scale fixtures shall be utilized.

Drainage Patterns

The site grading generally falls across the parking surface from west to east at a 4 to 5% slope. Catch basins collect surface runoff along the eastern edge of the site and convey stormwater into the piped drainage system along Sullivan Drive. There are currently no stormwater management measures in place for this site. Per the University's general permit with the State of North Carolina, there are no requirements for stormwater management measures if post-development impervious areas are equal to or less than pre-developed area.

Utilities

Water: The nearest chilled water line is located in Wolf Village Way, with a future line (per the Physical Master Plan) connecting Wolf Village Way through the site, over to Dan Allen Drive.

Steam Line: A newly installed steam line cuts across the northwest corner of the project site, proceeding up Varsity to Wolf Village Way. The location of this line will have to be considered for location of structures in this corner of the site.

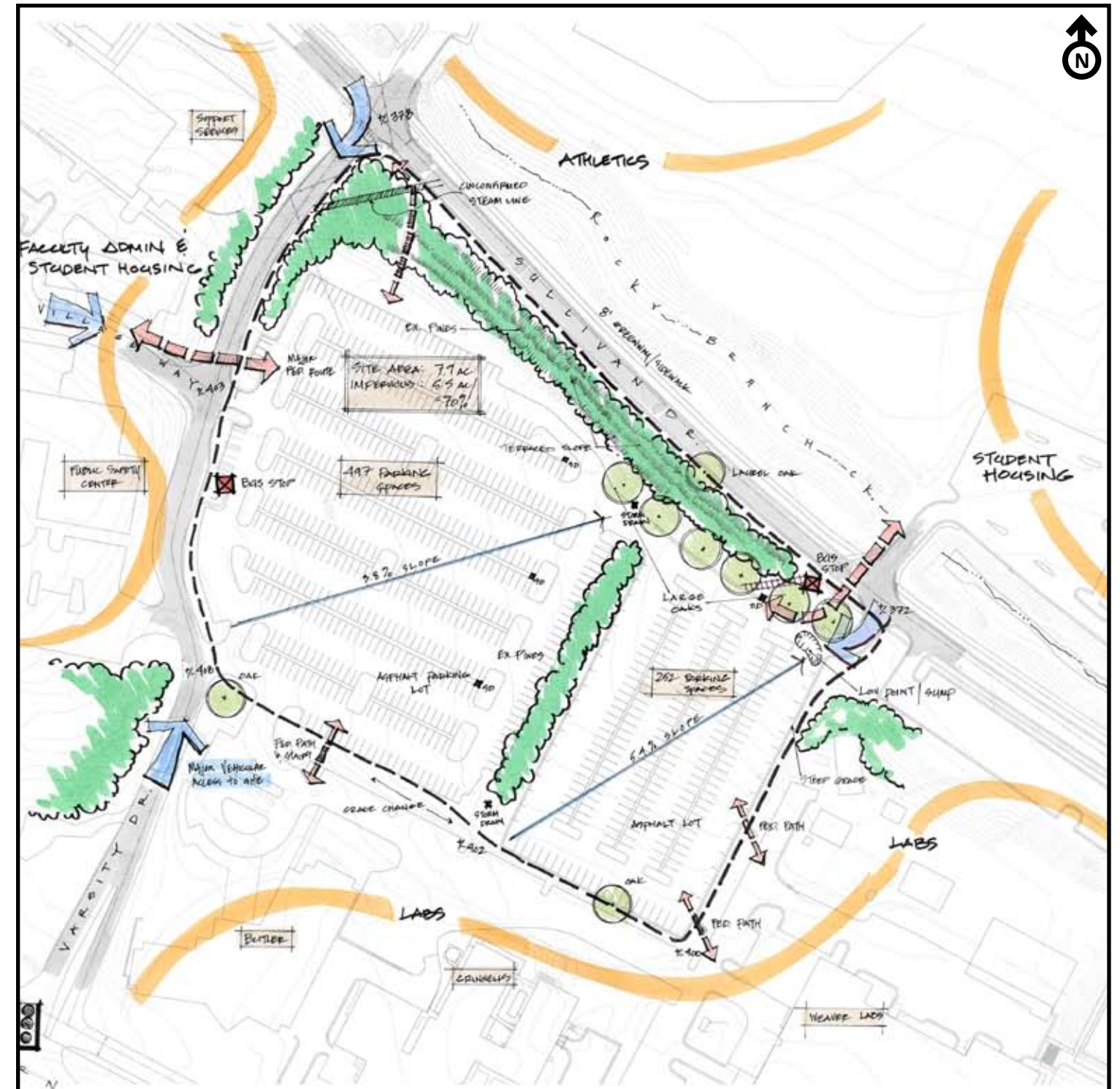
Storm Drainage: Sheet flow from the site currently is captured in several drop inlets located throughout the parking lot. It is believed that the underground storm drainage lines point discharge into Rocky Branch Creek.

Overhead Power and Telecommunications: Power distribution and telecommunication lines currently run along Sullivan Drive. Power for the existing light fixtures in the lower lot are fed overhead, while power for the light poles in the upper lot, as well as all new shoebox fixtures, are fed underground.

Lighting

The existing west parking lot is currently lit with 30' tall shoebox light poles (brown) and the east (lower) lot is lit by 25' cobra head light poles (wood). The upper parking lot adjacent to Grinnells and Butler is lit with shorter shoebox fixtures (white).

Wolf Village Way and the adjacent access drives are lit with shoebox fixtures in either brown or white and at a variety of mounting heights. Sullivan Drive is lit with cobra fixtures on poles mounted on wood poles.



STATED GOAL

To introduce the project and schematic diagrams to various user groups and obtain input regarding the development program and master plan direction specific to their respective areas of interest.

PARTICIPANTS

Representatives from the following groups participated in discussions:

- Transportation
- Facilities Maintenance
- Student Body
- College of Agricultural Life Sciences / Dairy
- Capital Project Management (CPM)
- Bio-Ag

DISCUSSION

Each user group was allotted time to address their specific concerns relative to their areas of interest. An overview of the project vision was presented as was a brief review of three schematic concept plans. Open discussion followed. Following are selected issues and key talking points from these sessions.

User Group 1 (CALs)

- Strengthen the pedestrian connections throughout the super block.
- Review function of Faucette Drive in terms of one vs. two way.
- Review the current transit stops in their current locations. Stacking distance is an important consideration given the anticipated increase in bus traffic for this location.
- A relatively strong consensus was noted that a commercial component should be located near the west end of the site to capture pedestrian traffic moving toward central campus from parking and Wolf Village.
- The general opinion was that pedestrian routes behind Weaver Labs headed toward Dan Allen were not significant.
- Review the existing transit stops at Carmichael and Textiles for effectiveness of their current layout and integration with active pedestrian zones.
- The area behind Schaub and Weaver could incorporate a more formalized pedestrian zone but the potential conflicts with service activities in this area were noted as a concern. This space is currently being used for large truck deliveries, staff parking, storage, and project related experiments. Consideration must be given to whether this area is appropriate for pedestrian routes and whether or not the area currently used to support Weaver Labs can be condensed to support pedestrian movement. Truck circulation and deliveries to Weaver and Schaub need to be considered.
- A commercial ice cream outlet is currently programmed near Dan Allen, between Schaub and Weaver. Because of details related to financial support of the program, there may have to be a physical connection to Schaub Hall, either through academic facilities or offices. This would preclude the inclusion of this element into the deck or office program.
- The current parking needs that currently exist along the drive in front of Butler and Grinnels could be relocated within the deck.

User Group 2 (Transportation)

- The needs for the zone shop area were confirmed for 4,000sf including room for a pick-up truck and small office space. Direct access to Sullivan from the Weaver Lab area is desirable. 8-10' ceiling height would be adequate. The service area for office directly off of Sullivan was viewed as a positive.
- The Founders Drive was identified several times as a transit stop that functioned well because of the stacking ability and shelter facilities.
- The parking deck connection point off of Sullivan shown in Plan B may create a unwanted traffic on this portion of Sullivan, but would disperse the traffic load entering and existing the decks at peak times.
- Staging for buses (special events) could be as many as 8-10 at one time. There was a desire to have this function moved off site (centennial Campus). Staging for 2-3 would be a plus but not required.
- The right turn from Dan Allen north to Sullivan is too tight. A minimum 30' radius is needed.

- Provide a rest stop (small office with bathroom facilities) for bus drivers. Provide a 40'x40' Transportation Shop storage area.
- University will obtain pedestrian counts completed in the past for the general study area.
- A general preference for Plan A was expressed because of the efficiency of the transit loop interior to the site. The preferred one way direction for this drive would be from west to east. This drive could be fully integrated into the design of the plaza, perhaps delineated by paving color and patterns, bollards and planters.

Group 3 (Dining and Housing)

- Having the parking deck in close proximity to the athletics is a positive.
- Concerns about the current conflicts with cars, pedestrians, and buses at the northeast corner of the site were noted.
- User Group input from Wolf Village residents was recommended.
- The potential of redeveloping the Schaub parking lot and potentially the service yard (Schaub/Weaver) as a housing opportunity was discussed.
- Look at the potential to utilize a mid-block crossing on Sullivan.
- Consideration should be given to the future redevelopment of Grinnels Labs and how the new building would be integrated into the West Lot.
- Susan mentioned that Housing would like to consolidate all of their shops spaces into one central storage/shop area. No specifics were given for space requirements.
- Per Concept C, the idea of using either the commercial space, zone shop, or the transportation shop as a skin for the parking deck was viewed as a positive.
- A central stair/elevator tower between the two decks could anchor a central activity area.
- The existing oak at the SW corner of the site should remain if possible.
- A general preference toward Plan A was identified in this group.

Group 4 (Athletics and Students)

- Having the parking deck in close proximity to the athletics is a positive.
- Plan B preferred in terms of proximity of the parking deck to baseball and tennis.
- The buses for the visiting team needs to stage near by in case of inclement weather. Staging at Centennial Campus may be too far away.
- The parking deck design needs to be architecturally pleasing.
- The potential for solar capture and rain water harvesting was discussed.
- Consider a pedestrian bridge from the parking deck over to the ball field.
- Can left turns be accommodated from Faucette to Varsity.
- Incorporating shelters into the deck façade would be a positive.
- The tennis facility was looking for storage space.

Vision Statement

The project vision statement can be a helpful tool to ensure that evolving plans remain true to the original goals and objectives for the project and should provide a benchmark to assess future plans for consistency with those established goals. This statement should represent the core values of the project and should be revisited throughout the planning and design process to measure progress against the stated goals for success.

The recently updated (October 2007) Physical Master Plan for NC State University references Guiding Principles for each campus development project. These principles can serve as a good basis for a vision statement augmented by specific goals unique to the West Parking Lot redevelopment project.

Some common elements of a good vision statement may include language related to:

- Financial Success
- Accessibility
- Public Safety
- Traffic and Transportation
- Pedestrian movement
- Design Integrity
- Sustainability
- Maintenance

Vision Statement for NC State University West Lot Master Plan:

The master plan for the West Lot redevelopment project should satisfactorily address and be consistent with key Guiding Principles of the Campus Physical Master Plan including commitments to Sustainability, Integration of Academic, Programmatic, and Physical Planning, Human-Scaled Campus neighborhoods and Paths, and Design Harmony. The master plan should maximize, to the extent practicable, the number of total vehicle parking spaces to serve campus parking needs for students, university employees, and visitors as well as special events parking. In addition, the plan should accommodate and incorporate efficient transit routes and user facilities and integrate transit into the overall pedestrian and vehicular patterns in safe, effective manner. Overall, the project should provide for a safe, efficient and enjoyable pedestrian experience interconnecting the site with the All Campus Path system while providing opportunities for gathering spaces and a node for social activity.

PRIORITIES

Achieving a maximum of parking spaces and strong pedestrian connectivity are top priorities.

Provision of office space is an important, but secondary goal in that the amount of planned space should not come at the expense of satisfying critical parking needs for this site.

Reduction of traffic and student volume on Dan Allen is a desired result through improvements to Varsity Dr. and other roadway improvements associated with the redevelopment of the West Lot.

Development Program Summary

The basis for the development program is directly related to the recommendations for this site and the Central Precinct put forth in the Campus Physical Master Plan and in the 6-year Capital Plan, 2007-2009 Biennium. These documents establish the desired program for the major elements including needs administrative office space and structured parking. These program elements are supported by site development and transportation elements necessary to provide for a cohesive and effective project with design integrity specific to the character and function of the Central Precinct.

General: The Development Program can be categorized into three main components:

A. Parking and Transportation Program

- Parking demand: the goal is to achieve a net increase in parking above the existing West Lot parking amount and to maximize the total parking based upon the capacity of the site and adjacent roadway network. Evaluate potential for 1200-1600 spaces.
- Primary parking facilities shall be provided for in structured parking decks supplemented with surface parking if and where appropriate.
- Parking should be provided for student commuters, office personnel (at 1/600 ratio), and visitors.
- Structured parking should not exceed three bays in width.
- Recommend off-site roadway improvements needed to support the increased development intensity and ensure efficient and safe traffic flow on adjacent roads.
- Provide adequate transit stops and support facilities to accommodate existing and planned bus routes.
- Provide stacking for 4-5 buses max.
- Evaluate potential for bus parking for special events (relocated from Coliseum Deck surface lot)
- Consideration shall be given to providing convenient parking for scooters and other means of sustainable transportation methods.
- Sustainability – ‘Special area’ consideration for Hybrid Car spaces (# of spaces reserved shall be determined based on # of potential users).

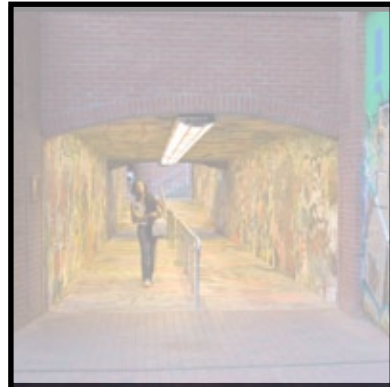
B. Building Program

- Office building space shall be provided for to the extent possible assuming that a desired number of parking can be achieved and still support an office program
- 60,000 sf to 100,000 sf of office space in one to two buildings would be appropriate goals for planning purposes
- Administrative office buildings should not exceed four stories in height
- Evaluate potential mixed use opportunities
- Sustainability - Consider energy saving and sustainable design practices
- 4,000 sf facility zone shop (~4,000 sf with associated parking), ideally located with the parking deck.
- 10-12K sf transportation offices associated with Phase I Deck

C. Site Amenity Program

- Maintain / enhance character of Sullivan Drive streetscape
- Consider drought tolerant and water-efficient landscape approach
- Incorporate public gathering areas
- Provide for ADA accessible routes
- Provide bike storage facilities
- Sustainability – integrate stormwater as an amenity / educational tool

NORTH CAROLINA STATE UNIVERSITY



**MASTER PLAN
ELEMENTS AND
ORGANIZING
PRINCIPLES**

The West Lot Master Plan

The Final Master Plan for the West Lot represents application of the development program to the site and incorporation of key elements from the project Vision Statement developed with the University. This plan should be viewed not as a static product, but instead utilized as a basis for future design and engineering phases. The Master Plan has been crafted to respond to the project Vision Statement developed in the programming phase to the extent possible.

Parking and Access

“The master plan should maximize, to the extent practicable, the number of total vehicle parking spaces to serve campus parking needs for students, university employees, and visitors as well as special events parking”.

Parking and Access

The master plan proposes two separate parking structures with potentially 1600 parking spaces. This would represent a total net increase in parking above the existing West Lot parking amount of 750 spaces.

Within these structures, parking would be provided for student commuters, office personnel, and campus visitors. It is important that visitor parking be easily accessible from Varsity Drive, well signed, and located on the ground level with easy pedestrian access to offices and nearby destinations.

The decks are sited on the southern end of the site to accommodate the natural, east-west, pedestrian desire-line through the site and preserve the significant trees that define character of Sullivan Drive. This locations also best accommodates loading and unloading from Varsity and provides secondary connectivity to Faucette and Sullivan. The key circulation element in this plan is a new loop road proposed around the east and south sides of the site to provide more efficient access to the parking structures and increased stacking opportunities. Development of this drive will require modifications to parking fields and drive aisles associated with Butler Communications and impact service access to Weaver Labs.

The orientation of the structures accommodates preferred points of access from varsity and the proposed loop road in an effort to distribute loading and unloading volumes to the maximum extent possible. The east deck is oriented north-south to align access from the proposed loop road in line with internal ramps as is the east-west orientation of the west deck aligned with ramps accessed from varsity. Both decks would be served by two points of access which is critical for proper function. Site topography also provides an opportunity for having one access for each deck on the ground floor level and one access a level above to help distribution to the side streets. The decks are programmed for five levels each, which is a desirable limit for safe and efficient operation.

The proposed deck massing attempts to maximize footprints for parking efficiency based upon typical design guidelines for structured parking. They also create some façade interest, particularly along Varsity Drive where the decks may be used to create a meaningful green space around the existing specimen oak tree north of the Butler Communications building. The separation between the two decks helps to minimize the overall massing, provides a logical separation for phased development, and creates a pedestrian zone to connect the site with campus facilities to the south. A minimum of two stair and elevator towers will be required for each deck. The plan suggests a central location for these elements on the north side of both decks to help activate the core pedestrian area near transit stops and bike storage.

The architectural delineation of the parking facades is critical to creating the appropriate scale and character for this important piece of Central Campus District. The north side façade must integrate transit functions and is crucial in creating scale for the primary pedestrian corridor

through the site. Varsity Drive is an important gateway into this part of the campus and will demand thoughtful treatment of the west parking façade on the west deck. This is likely to be the most publicly visible architectural element of the project and can take advantage of an extensive green foreground all along Varsity Drive framed between the road and building.

The proposed master plan eliminates some surface parking with the closest proximity to Doak Field that currently serves as overflow for athletic events. Parking for these events within the proposed plan would be accommodated by use of structured parking with the need to effectively direct and move people from the decks, around the office building, and across Sullivan Drive to Doak Field. The plan proposes to develop a new walkway along varsity to Sullivan to collect people from the west deck and the plaza area. This walkway should be inviting and highly visible with good directional signage to aid visitors not familiar with campus. In addition to this connection, consideration may be given to another walkway on the east side of the proposed office building between the stair towers and Sullivan Drive. This would be a more direct route from the parking decks in the direction of Doak Field.



Transit

“... the plan should accommodate and incorporate efficient transit routes and user facilities and integrate transit into the overall pedestrian and vehicular patterns in safe, effective manner.”

Transit

The Master Plan attempts to integrate adequate transit stops and support facilities into the overall development plan to accommodate existing and planned bus routes. The proposed dedicated bus lanes and integrated shelters reflect an effort to balance integration with pedestrian safety.

The plan reflects University input regarding a future bus route anticipated to serve the needs for the increased parking for this project at build-out. The new route would travel from east to west and ultimately north on Varsity then east-bound into the site along the dedicated bus lane to pick up passengers along the north face of the parking decks. Buses would then exit the site at the northeast corner on to Sullivan.

Key elements of the transit plan include the following:

- **Dedicated bus lane:** The integration for a dedicated bus lane would be defined by a combination of paving patterns, bollards, and landscaping to define the drive aisle without physically segregating it from the main pedestrian plaza. The intent is to accommodate bus traffic when needed but in the absence of buses create a contiguous pedestrian environment that looks and feels like one space from the face of the parking decks to the office building. The bus lane would accommodate stacking for up to nine or ten buses.
- **Integrated Shelters:** The north face of the decks would incorporate bus stops as well as bike storage facilities and rest facilities for transit drivers. The opportunity would exist to integrate shelters with the building façade augmented with planters, lighting and street furnishings to create a pleasing pedestrian environment. Care should be taken to design shelters that are fairly minimalist in their visual impact and open to natural light as they will be located on the north side of the building.
- **Transit facilities:** The plan responds to a defined need for restroom and office facilities for transit drivers on campus. Space for such facilities is proposed along the north face of the parking structures convenient to the bus lane and shelters.

The potential for accommodating bus parking for special events (relocated from Coliseum Deck surface lot) was considered. However, a determination was made that this function would best be accommodated off-site and to not compromise the functionality of the west lot master plan.



Off-Site Roadway Improvements

...” incorporate efficient transit routes and user facilities and integrate transit into the overall pedestrian and vehicular patterns in safe, effective manner.”

Off-Site Roadway Improvements

The recommended off-site roadway improvements are needed to support the increased development intensity and ensure efficient and safe traffic flow on adjacent roads. The master plan illustrates proposed roadway improvements designed to better accommodate loading and unloading of the parking decks and safe ingress/egress from the surrounding streets. Proposed improvements include the following:

- 3-5 lane section Varsity Drive – the widening of Varsity Drive between Western Blvd. and the intersection of the bus lane and Wolf Village Way would accommodate north-bound right turning movements into the deck and exiting south-bound movement from the site (approaching Western Boulevard). In addition, the widening can serve as a means to reduce the severe horizontal curve in Varsity Drive and create an improved alignment.
- Right-in-right-out Varsity Drive - the proposed right-in-right-out on Varsity is designed to help distribute incoming and existing traffic from the site but eliminate conflicting left turn movements.
- 3-lane section to east/West Collector – a 3-lane section will provide storage for left-turning vehicles entering the deck while maintaining east/west traffic movement Weaver/Grinnells to Varsity Drive.



Pedestrian Zones and Interconnectivity

...“the project should provide for a safe, efficient and enjoyable pedestrian experience interconnecting the site with the All Campus Path system.”

Pedestrian Zones and Interconnectivity

The heart of the West Lot Master Plan is the east-west pedestrian spine that will formally recognize current pedestrian desire-lines from residential areas to main campus and provide for social interaction along the way. The intent of this space is to move beyond a simple linear transitional space toward a gathering space linking transit, parking, office and residential uses.

The western end of the pedestrian zone should create an inviting gateway to collect pedestrians’ from across Varsity Drive from Wolf Village and the academic buildings. Traffic calming measures at the intersection such as contrasting paving patterns, crosswalks and signage should be developed to create a safe environment for crossing to enter the plaza.

The plaza space is proposed as a broad space with no physical barriers to movement excepting amply spaced shade trees in grated tree pits. The plaza should form a pleasant streetscape along the proposed office façade on the north side of the plaza and accommodate movement into and out of the building which will front on the plaza. On the south side the plaza should incorporate subtle pavement changes to delineate the bus lanes using bollards to provide some safety measure without physically segregating this zone from the primary pedestrian plaza. In concept, the plaza should feel like one contiguous space when buses are not staging for pickup or drop-off.

The plaza interface with the parking decks should incorporate bus shelters, landscaping, and site furnishings as well as bike lockers and access to restroom facilities for transit drivers. This being the north side of the parking structures, care should be taken to design shelters that transmit and capture daylight, and augment the area with lighting.

Pedestrian connectivity from the site will play an important role in the success of the site redevelopment as a transitional space and as an activated space for social interaction. Within the plan there are several key nodes and departure points for interconnectivity with the surrounding campus:

- **Northeast Corner:** the Master Plan suggests an enhanced definition of pedestrian routes from within the site to Sullivan Drive in the direction of the main campus. Existing travel patterns bring students from wolf Village and the West Lot to this corner of the site to acquire transit or move across the road toward the main campus past Fountain Dining and Bragaw residence hall north-bound along Dan Allen. The proposed plan supports this pattern with improved walkways along the main desire line traversing the grade change among the large oak trees to remain along Sullivan in this area. Crosswalk designations, signage and pavement changes should be considered on Sullivan in this location to enhance pedestrian safety at this location.

- **South:** The Master Plan proposed making use of separation between parking structures for pedestrian connectivity between the site and destinations South including, Butler Communications, Grinnell’s Animal Health, and Faucette Drive. This connection is currently not a primary route but potential redevelopment of the Grinnells facility could change desire lines and bring more importance to this connection.

- **East:** There is anticipated a small amount of pedestrian flow through the site to the east toward Weaver Labs and Schaub Hall. Destination points for this movement include Schaub Hall, Dan Allen, and academic building along Faucette and Western Blvd. In addition, the proposed development of a commercial dairy outlet associated with Schaub Hall would benefit for a more direct route for pedestrians to this element. In response to these factors, the Master Plan proposes the development of a minor pathway north of Weaver Labs to connect to Schaub Hall and Dan Allen Drive. This pathway would help define the boundary between the Weaver Labs outside storage area and potential redevelopment of the existing parking lot fronting on Sullivan Drive. Development of this pathway will remove potential conflicts between pedestrians and the Weaver lab operations that exist today. A natural wooded area can be preserved north of the pathway and a physical barrier and landscaped screening should be developed between the path and Weaver Labs. Lighting should be incorporated to ensure a safe environment.

- **West:** Pedestrian movement through the site from the west is the most significant traffic pattern beyond foot traffic generated internally to the site. The Master Plan has been developed to accommodate this movement in the physical form of the linear spine that interconnects the office, parking, transit and gathering spaces within the site. The key node for collecting and dispersing pedestrians along the east-west corridor is at the intersection with Varsity Drive. The plan proposes traffic calming measures at the intersection to create visual interest and provided for enhanced safety for crossing at this locating including:

- Decorative pavement patterns
- Raised Speed table
- Signage

The wide plaza and highly activated space will invite pedestrians to utilize this crossing as the most efficient, and most interesting means of moving east toward transit and the main campus. Interaction with office workers, visitors, transit stops, bikers, and casual users of gathering areas will create a vibrant campus node and a safe environment to move through or just spend time.

**Office Building and
Mixed Use
Opportunities**

...“providing opportunities for gathering spaces and a node for social activity.”

Office Building

A proposed three story office building of approximately 70,000 sf is provided for in the Master Plan. The office location will establish a street presence for the corner of Sullivan and Varsity and create an activated façade for the pedestrian plaza. Parking for the office would be provided for in the new parking decks. The office building can take advantage of the grade change between the elevation of Sullivan drive and the existing parking lot by developing a ground floor at street level or, as the plan shows, a lower level service area. A ground floor at street level would require a large amount of excavation whereas a lower level service access would need less excavation but elevators to move supplies and equipment to upper levels. Keeping the service area off of the plaza area would be preferred and a service access from Sullivan Drive could be effectively screened.

Mixed Use Opportunities

During the program development phase of this study plans for a commercial dairy outlet at Schaub Hall were revealed and discussed with respect to redevelopment. A commercial component associated with Schaub would benefit from pass-by pedestrian traffic moving toward Schaub Hall in route to Dan Allen Drive and destination points east of the site. It was noted that State Funding Agreements with CALS may prevent a stand-alone commercial operation managed by the University without incorporation of academic space and that plans for this use need to be physically attached, or at a minimum, in very close proximity to Schaub Hall. In July of 2008 the University solicited proposals for development of this facility at the northwest corner of Schaub Hall near the Sullivan Street parking lot.

The incorporation of a hub of activity, such as the dairy outlet, small coffee shop or a small plaza for gathering, is viewed as a great opportunity to further activate daily use of this site. The potential to draw from pass-by foot traffic, visitors, parking deck users, office workers, and athletic event patrons is very appealing. Such a use could be associated with the ground floor of the parking structures facing the plaza or a freestanding location as a terminus to the plaza on the east end as represented on the Final Master Plan. The latter location would also benefit from adjacency to Schaub Hall and potential redevelopment uses on the Schaub parking lot along Sullivan Drive. The impact of a freestanding commercial element apart from a University dairy outlet should be carefully considered with regard to possible complimentary uses or competitive disadvantages that may be created between commercial ventures.



Site Amenities

“...providing opportunities for gathering spaces and a node for social activity.”

Site Amenities

Sullivan Drive Streetscape: The Master Plan seeks to preserve the critical areas of vegetation along Sullivan Drive that help create the character of this site and this part of the central campus. No new development is proposed beyond the existing limits of pavement in the vicinity of the largest hardwood trees near the east end of the site and the office building is proposed to be situated above the slope on the west end preserving the group of mature pine trees that characterizes that area.

Social Spaces: The transitional nature of this space can be highly activated and establish this site as a vital activity node with proper articulation of the pedestrian plaza. The proposed scale of the plaza can easily accommodate pedestrians moving through the space as well as provide for smaller, defensible spaces along the edges and building facades for people to gather or pause for a casual break for lunch or a quick study between classes. The north side of the plaza provides opportunity for informal seating in the shade of the existing trees or sun soaked spaces to use during cooler weather. The south side of the plaza will be in the shadows of the parking decks and have seating associated with bus shelters. It is likely to be less attractive for social gatherings beyond those purposes but should have a well articulated façade and shade tolerant landscaping to create an attractive edge to the plaza.

Seating, lighting, and site furnishings should be abundant and carefully planned along the pedestrian corridor. A variety of seating is important to create interest and attract users seeking different experiences from social conversation, to quiet reading and study time, to casual rest and observation of surrounding activities. Seating should be located in sunny areas, shady areas, in groupings and in stand-alone settings to attract a cross section of users. A small seating area more closely associated with the office building may be appropriate to serve office workers as an exterior break or lunch area but should not be visually closed off from the plaza. Trash receptacles should be placed at seating areas, building and parking deck

exit and entry points along walkways, and at transit stops. Lighting should be of a pedestrian scale and coordinated with the architecture of the space. Building mounted lighting can add to security lighting levels and create atmosphere in evening hours. Bike storage facilities are proposed as part of the transit corridor associated with the parking decks. The potential exists to incorporate bike lockers with showers and a transit office in one location adjacent to or within the shell of the parking structures. This location, near the north stair towers serving the two decks would help to energize this “multi-modal” element of the plan where transit, bicyclists, and pedestrians converge.

In addition to day-to-day functions, a properly articulated plaza may also serve to host programmed activities for the University or community at large during weekends or breaks in the student calendar. Student activities, small festivals, or public art displays may be appropriate uses and benefit from convenient on-site parking facilities, and potential food and beverage outlets.



Stormwater Management and Sustainable Design

...“be consistent with key Guiding Principles of the Campus Physical Master Plan including commitments to Sustainability...”

Stormwater Management and Sustainable Design

The University’s commitment to sustainable design is now firmly part of its culture for creating the campus of tomorrow. This Master Plan can accommodate a variety of technologies and measures for furthering that ideal. Senate Bill 668 mandates some measure of responsibility for new projects to achieve minimum standards for energy efficiency and life-cycle costing. This project presents a tremendous opportunities to make sustainability public and implement it in such as way as to serve as an educational tool for the casual user and for academically oriented activities.

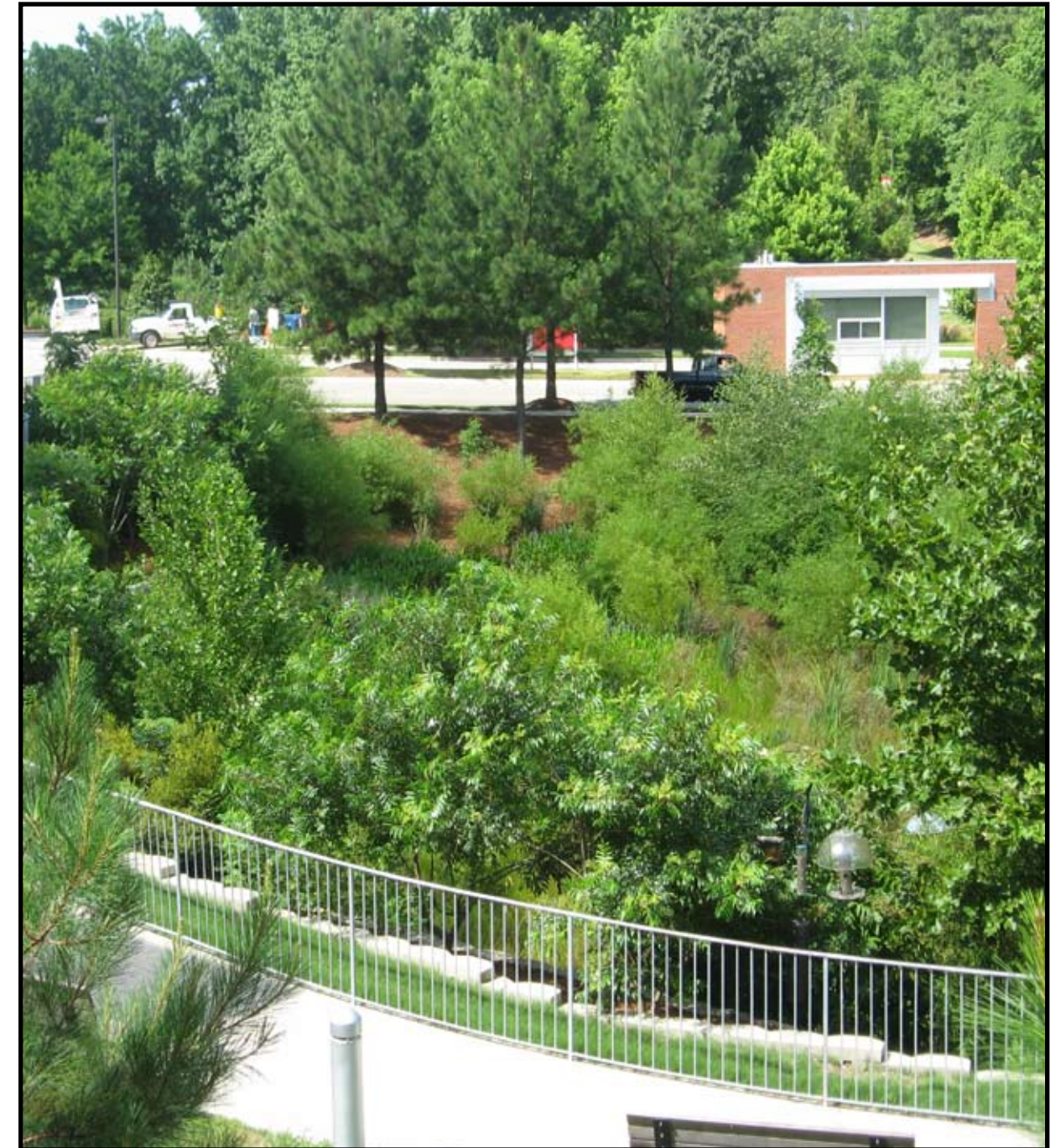
From a building perspective, sustainable technologies and practices should be built in to the design process from conception to the extent possible. Whether or not LEED certification is being pursued, the parking structures and office building design programs can incorporate may of the LEED recommended measures for a more sustainable building. The development of sustainable parking structures is an evolving area of design practice. Green roofs, LED lighting, and captured rainwater are a few of the technologies that should be evaluated as part of the design of these structures.

The proposed redevelopment of the West Lot may result in no net increase of impervious area and, as such, would not require stormwater management measures. However, the Master Plan addresses opportunities for sustainable stormwater management measures in keeping with the project vision statement and University initiatives. Linear sustainable features along the deck facades could incorporate vegetative swales or cistern collection areas for capturing water for re-use. Linear rain gardens or infiltration features could offer water quality treatment and provide a visual sustainable element in the landscape. These features can be developed to serve a valuable function while providing a landscape amenity as well.

Discharge from stormwater collection systems can be conveyed across the plaza to bio-retention areas at the top of the slope above Sullivan Drive. Care should be taken to protect the root systems of the large hardwoods to remain in this area. Bio-retention areas can be heavily landscaped and provide a nice landscape amenity for this area, as well as another teaching opportunity.

Other potential sustainable components of the plan may include provisions for hybrid vehicle parking and electric charging stations within the parking decks. Designated spaces could be set aside for this use in highly visible and convenient locations to encourage use and publicly display this growing technology. Solar energy sources can be mounted on buildings or pole structures around the plaza to power site lighting.

The project shall comply with all applicable NCSU and State permit requirements for Stormwater Management and Nutrient treatment and removal.



Landscape, Plaza and Sustainability

...” Integration of Academic, Programmatic, and Physical Planning, Human-Scaled Campus neighborhoods and Paths, and Design Harmony.”

Landscape

Landscape development for this site should be considered with respect to several distinct zones of visual impact and function within the site. Those zones maybe described as Public Streetscape, Plaza, and Sustainable Features.

Public Streetscape: Sullivan Drive and Varsity Drive are characterized by existing vegetation including large specimen hardwoods and stands of towering pines. This vegetation generally occurs on slopes between the site and the public roadways. Much of this vegetation is should be preserved within the proposed Master Plan concept.

One opportunity for a landscape statement is in the southwest corer of the site between the west parking deck and the large specimen oak tree. This area is highly visible from Varsity Drive and has enough area to accommodate some lawn area and planting beds which in combination should serve to visually frame the oak tree. Feature lighting on the tree may also be considered to enhance the evening aesthetics of the site.

Plaza

The plaza landscape should properly relate in scale to the adjacent building structures, provide shade during warm months and permit sunlight to warm the space during the winter. Shade trees in tree grates within the plaza can create structure and rhythm for this space and minimal disruption to sight lines and mobility. Emphasis on tree locations should be given to providing shade to the north side of the plaza that will be exposed to summer sun. Trees along the southern edge of the plaza should be planted an adequate distance away for the transit lane to allow for full crown development and not overwhelm the shaded spaces along the parking deck facade. Proper subgrade preparation and drainage is required to ensure a viable growing environment of trees in this condition.

Sustainable Landscapes

Senate Bill 668 proposes a 50% reduction in outdoor water usage for new projects. The use of drought tolerant and water-efficient landscape material should be considered and balanced with maintenance needs and functionality in an area of high foot traffic.

The large landscape area between the west deck and the large specimen oak at Variety is an opportunity to create a highly visible landscape utilizing drought tolerant plants and grasses or a xeriscape approach with little or no irrigation requirements. The visibility of this area would serve as a good educational opportunity to incorporate some interpretive signage and plant identification tags.

The rain gardens between the parking decks and on the north side of the plaza along Sullivan can be densely planted as part of the stormwater management function of these features. Plants are selected for their ability to thrive in short periods of inundation following rain events. Native grasses, shrubs and tree varieties can be combined to create a functional landscape of high visual interest.

Sustainable features along the parking deck facades will require careful section of plant materials to identify highly shade tolerant species. Use of inert ground covers or natural rock may also be a low maintenance means to create some interest.



Landscape, Plaza and Sustainability

...” Integration of Academic, Programmatic, and Physical Planning, Human-Scaled Campus neighborhoods and Paths, and Design Harmony.”

Facilities Storage and Shop Space

The Master Plan program includes space for facilities functions including equipment storage and a zone shop. These functions are proposed to occur near the southeast corner of the site, attached to the parking structure with convenient access from the proposed internal access road. This area is also serving back-of-house service functions for Butler Communications and Weaver Labs and keeps these vehicles away from primary pedestrian and transit zones.

Connectivity to Adjacent Facilities

Residential Redevelopment Site: The parking lot and undeveloped site immediately east of the site offers a good redevelopment opportunity for student housing or a mixed use project. The site topography could support some parking underneath residential units if needed. Consideration must be given to existing parking currently used by Weaver and Schaub that would be displaced. Residential in this location could benefit from proximity to the transit stops, structured parking, and potential commercial components.

Weaver Labs Service Area: The Master Plan proposes some consolidation for outdoor activities associated with Weaver Labs to make room for a separation of pedestrian routes from these activities. Parking and delivery areas would remain unchanged and potential improvement to truck access could be achieved through creation of the internal loop road. A solid wall or fence and landscaping should provide screening between Weaver Labs and the proposed walkway between the site and Schaub.

Butler Communications: The proposed internal loop road will utilize circulation routes currently incorporated into parking for Butler Communications. The proposed Master Plan sets up this area as the primary loading and unloading for the parking structures, retaining access to the drop-off for Butler and the service area. Should the Grinnell Animal Health Lab be redeveloped in the future, attempts to better relate that site to Butler and the West Lot should be made, including improvements to pedestrian circulation and unimpeded service areas.

Regarding pedestrian circulation, it is noted that pedestrians should be discouraged from passing through the loading areas between Butler and Grinnells. Sidewalk connections have been shown on the north side (parking structure) of the internal access drive; as well as the existing sidewalk on the west side along Varsity Dr. shall remain in place.

Grinnells Animal Health Lab: The proposed north-south driveway connecting Faucette to Sullivan could be routed to impact parking and service to either Grinnells or Weaver Labs depending upon the preferred location. A western alignment would utilize the Grinnells parking field and provide for a more direct alignment through the site and accommodate a

conventional intersection with the east-west driveway south of the parking decks. This could be accomplished with minimal disruption to the existing facilities although some delivery functions to the east side of the building would have to be accommodated without shutting down the driveway connection. Location of the driveway within the existing Weaver Labs parking would create a more challenging intersection and less desirable service access to Weaver Labs relative to turning movements for delivery trucks. Should Grinnells be redeveloped in the future, the north-south driveway could be coordinated to serve the new building and perhaps access to loading and service areas could be oriented south. This would allow for a stronger relation between Grinnells, the West Lot, and Butler Communications.

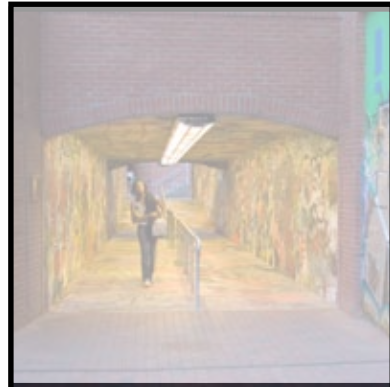
CPTED Design Considerations

Community Protection Through Environmental Design (CPTED) principles should be incorporated into every major master plan or site design effort on campus. This approach to design places focus on eliminating spaces or conditions that might facilitate illegal, unwanted, or dangerous activities for users of those spaces or facilities.

Building relationships should be developed so as to not create potential hiding places, particularly adjacent to pedestrian zones. Lighting levels should be meet minimal security levels, even during daylight hours for parking decks and service areas. It is important to keep landscaping at appropriate heights to avoid creating dense hedges where people can hide or surprise someone along a walking path.

Perhaps the most effective means of self-policing a site is to create a highly activated place with high levels of public engagement. Active environments where there are people, either using outdoor spaces or looking into a space from an adjacent buildings, are more likely to deter unwanted activity. Mixed-use environments do this well as they tend to bring people into these places for more hours each day. Office workers and parking deck users are constantly around the site edges looking in on the public spaces and able to monitor what is happening around them and to others. Transit activity and simply the presence of an office building overlooking the public plaza can be of great benefit in this regard. Exterior security call boxes should also be considered.

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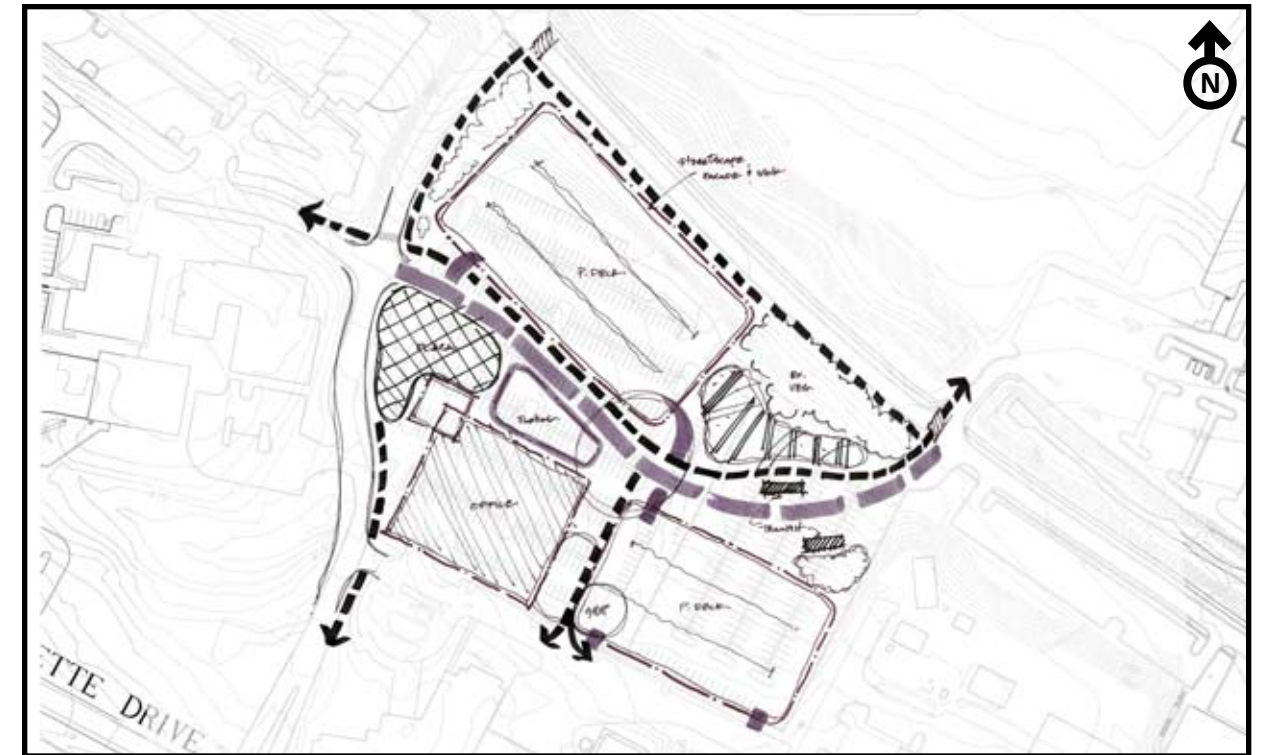
**CONCEPTUAL
MASTER PLAN
DEVELOPMENT**

CONCEPTUAL MASTER PLAN DEVELOPMENT

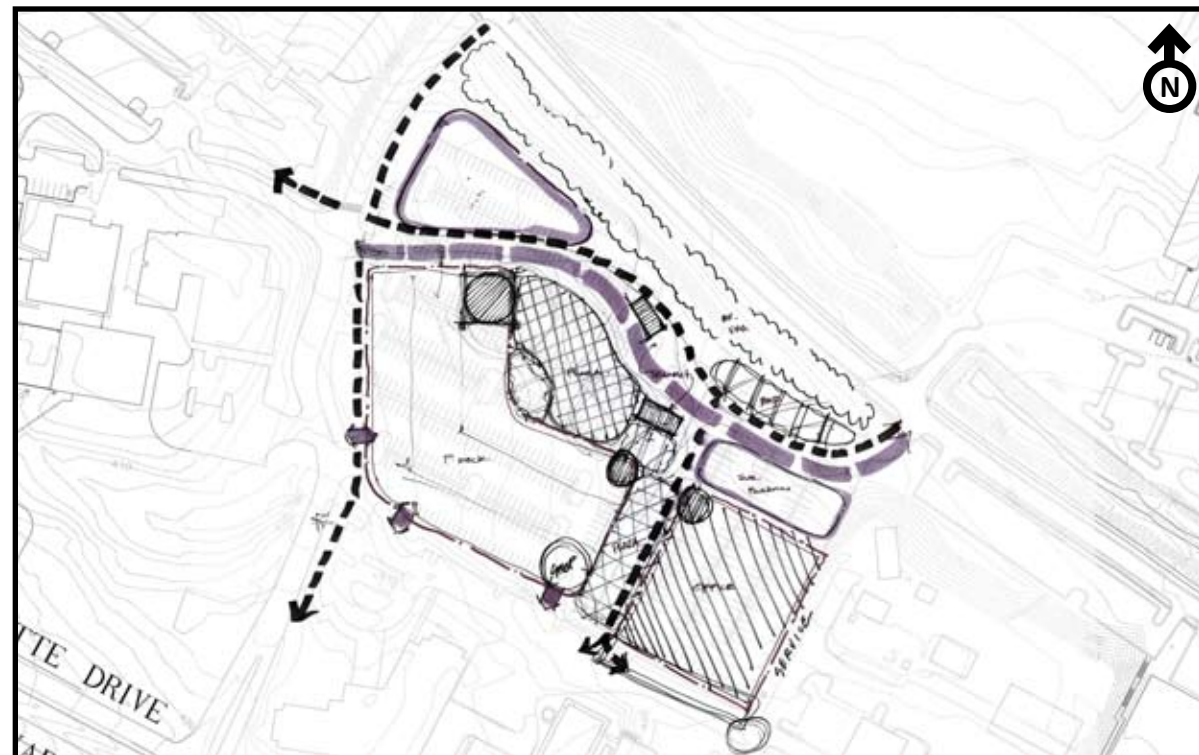
Several alternative master plan concepts were developed to evaluate different ways of applying the program to the site. All plans generally held in common the basic organizing principles described above but presented different approaches to circulation, land use relationships, and urban form.

During Conceptual Plan Development a new program element was introduced to the project by the University. Based upon input from user groups and continued evolution of long term campus planning, the university added a Transportation office component to the project program and equated accommodation of approximately 12,000 square feet of space within the phase one parking structure. Previous studies were reevaluated to include this component.

Following is a brief summary of selected characteristics differentiating some of the alternative concept plans and discussion points relative to each issue that helped inform the final master plan.



Preliminary Program B



Preliminary Program A



Preliminary Program C

Parking and Access

The general location and massing of the parking structures remained consistent among most plan alternatives. The focus of evaluating different access schemes was concentrated on two issues:

- loading and unloading to Varsity Drive
- intersection of internal north-south and east-west driveways in southeast corner

Loading and unloading to Varsity Drive: with priority attention to the location of the two ingress/ egress points south of Wolf Village way. The southernmost driveway was evaluated both north and south of the large specimen oak tree with distinct advantages and disadvantages for each. The northern location provided additional stacking along varsity for inbound traffic and longer protected southbound stacking lanes. This location also closely aligned with the public safety driveway on the opposite side of Varsity. However, this configuration made for a tight relationship between the parking deck and the road and severely limited stacking for traffic loading the deck to the north.

The southern location would provide a more direct route for loading from Western Blvd. and give more flexibility to the parking deck location. This approach would maintain the existing offset from the public safety driveway and limit stacking distance along varsity for incoming traffic. Neither of these conditions was viewed as a fatal flaw for traffic operations.

The north entrance to the deck off Varsity Drive is a recommended right-in -right-out. This will prohibit conflicts with turning movements between unloading from the deck and traffic from Wolf Village Way but help disperse loading and unloading for the deck.

North-south and east-west driveways: The east-west internal driveway terminates near the southeast corner for the site where it intersects with the internal north-south driveway. The challenge of this intersection is one of reconciling geometry to accommodate traffic from Faucette Drive, loading and unloading from the decks, and service vehicles for Grinnells and Weaver Labs. Alternative alignments were aimed at maintaining exiting parking and driveway surfaces while creating a simplified and more clearly drawn circulation pattern. Alternatives using parking fields adjacent to Grinnells and to Weaver were studied keeping mind potential impacts to possible redevelopment of the Grinnells site. The western alignment is preferred from a circulation standpoint given that it allows for a simplified geometry and proper intersection design. The amount of traffic anticipated on this driveway is not significant. However, with either alignment, the impact to loading and deliveries must be considered. .



User Group Concept A



User Group Concept B



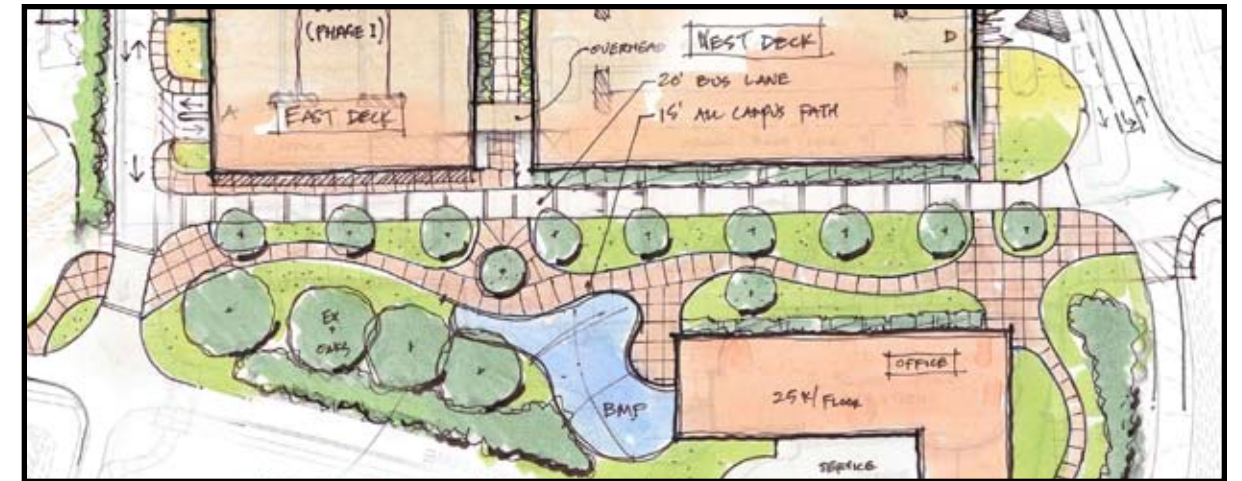
User Group Concept C

Pedestrian Zones and Interconnectivity

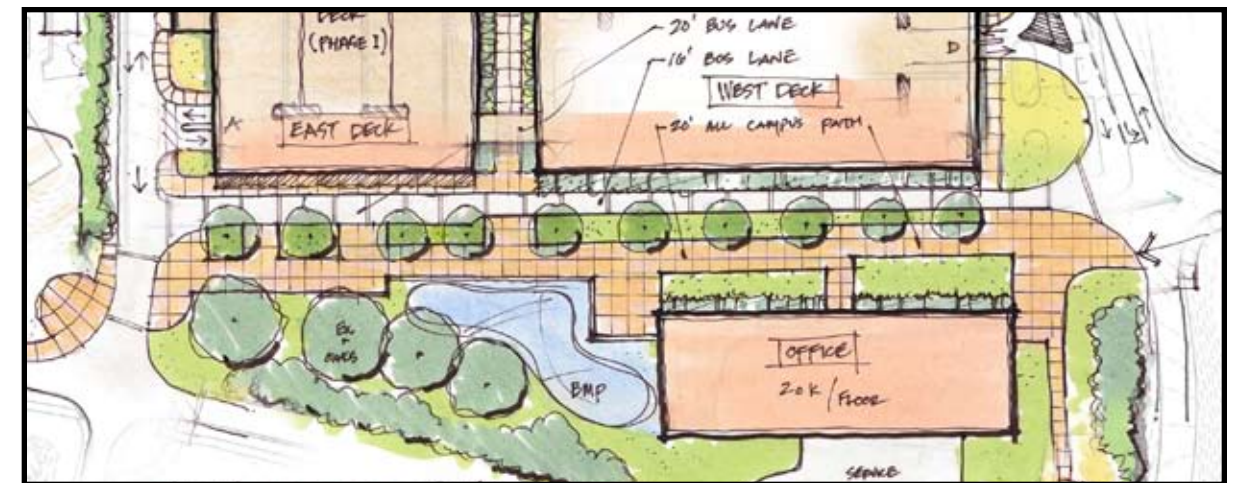
The original vision for the project included an emphasis on the movement of pedestrians through the site and between uses. The stated intent of the primary pedestrian zone was to move beyond a simple linear transitional space toward a gathering space linking transit, parking, office and residential uses and to create an inviting gateway to collect pedestrians' from across Varsity Drive from Wolf Village and the academic buildings. Much of the alternative plan evolution was focused upon refining and redefining the vision for the primary east-west pedestrian spine.

Early concepts for the pedestrian corridor suggested the creation of a more urban plaza that was part of a main-street type of environment linking transit, office and parking uses. The strength of this approach was in the definition of path as a public space with undefined edges and potential for social gathering or organized events. Later concepts sought to minimize the amount of pavement and create a more defined pathway separated from transit and office uses by landscape areas. This approach provided for a larger proportion of landscape and reduced overall impervious area.

The best routes for accommodating the anticipated small amount of pedestrian flow to the east were evaluated with input from staff at Weaver Labs and Schaub Hall and Dairy Sciences. One possible route is the wooded area between the Weaver Labs outside storage area and potential redevelopment of the existing parking lot fronting on Sullivan Drive. A second route is to follow a walkway adjacent to the parking deck and a new walkway path on the north side of the service area behind Weaver. This latter route would encourage a similar pattern that exists today with a more defined pathway but not entirely eliminate potential conflicts between operations and pedestrian traffic. This would likely not be an accessible route due to significant topographic change.



Pedestrian Zone Concept B



Pedestrian Zone Concept C



Pedestrian Zone Concept A



Pedestrian Zone Concept D

Office Building Uses

A location of a proposed office building of approximately 70,000 sf in the northeast corner of the site was consistent in most alternative concepts. However, the introduction of the Transportation offices was discussed in a variety of approaches. The general approaches considered included:

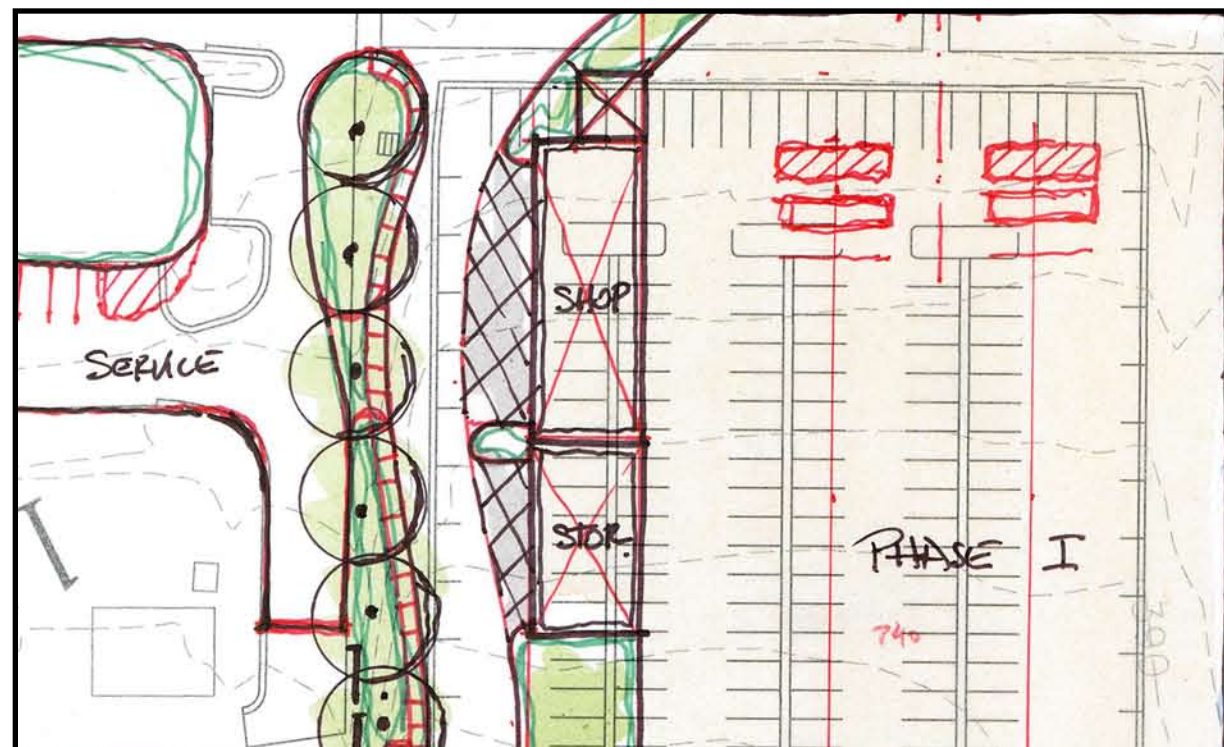
- Association with the phase one deck – ground floor
- Association with the phase one deck – second and third floor
- Location within the primary office building

Landscape

The key difference in landscape approach was related to the different plaza scenarios and the nature of the pedestrian zone as either plaza or linear path. The plaza approach relied on more structured tree plantings, in planters or urban grates, and flat lawn panels that would not inhibit movement across the space. The linear path approach results in larger, potentially more organically organized planting areas that separate pedestrian from transit and office uses. In both cases the use of lawn under tree canopy needs careful planning and consideration with regard to vitality of lawn in shaded areas with potential foot traffic. Likewise, the large landscaped areas naturally result in larger maintenance demand to maintain shrubs, mulch beds and lawn area.



Office Building Concept



Zone Shop Facilities

Early concepts targeted the southeast corner of the site for maintenance and service functions. After the introduction of the Transportation office use, concepts were generated to incorporate the zone shop space into the ground level of the parking structures. Incorporation of the zone shop into the deck will require careful evaluation of clearance heights and access to reduce conflict between equipment, maintenance vehicles and other users.

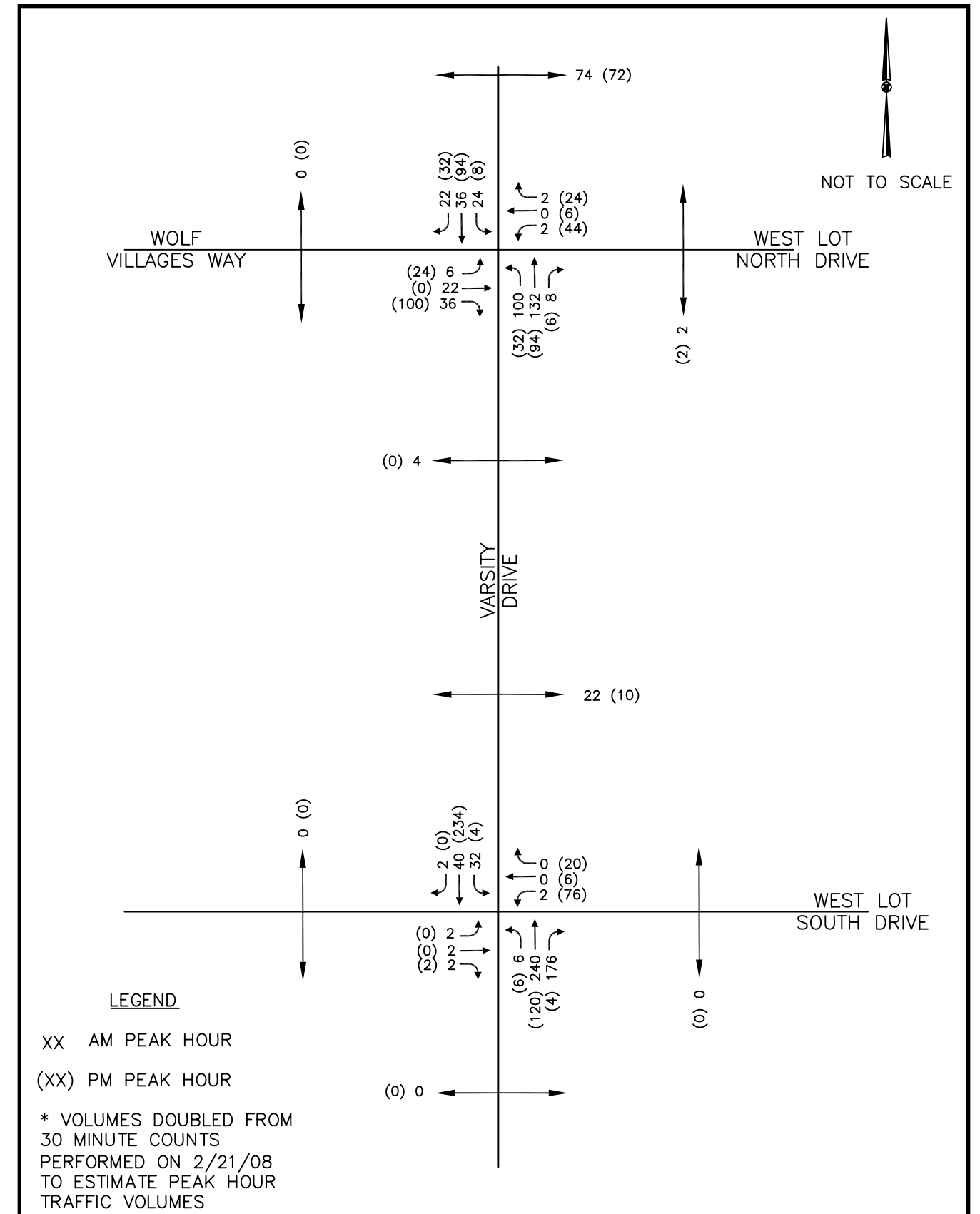
Traffic Assessment

The proposed parking decks are assumed to be open 24 hours and serve faculty, staff, and students. To provide sufficient circulation, it is recommended that each parking deck provide two access points for cars entering and exiting the facilities. The parking deck located adjacent to Varsity Drive should provide one access point as a right-in/right-out driveway on Varsity Drive. The remaining access points should be served internally to the site using the proposed circulation road that will connect Varsity Drive to Sullivan Drive. The circulation road should consist of a three-lane section from Varsity Drive to the first parking deck access point to allow for an exclusive left- turn lane into the deck. A two-lane section from the first access point to Sullivan Drive should adequately serve the other parking deck access points.

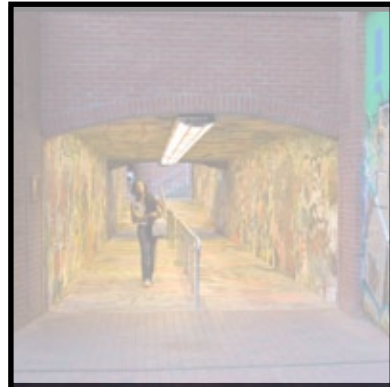
Varsity Drive should be widened to a three-lane section between the proposed circulation driveway and the bus-only driveway. This will allow for a southbound left-turn lane into the site as well as a northbound left-turn lane onto Wolf Village Way. In addition, right-turn lanes or tapers should be provided at the circulation driveway and the right-in/right-out driveway to accommodate the expected increase in vehicles using these access points.

Due to existing operational issues at the intersection of Western Boulevard and Varsity Drive, additional roadway improvements may be needed to accommodate the increase in traffic expected to access the site. During the site visit, long southbound queues were observed on Varsity Drive. As the campus continues to build out, these queues could eventually impact the proposed driveways and hinder vehicles from entering and exiting the parking decks. Geometric or timing changes at the intersection of Western Boulevard and Varsity Drive could help reduce these queues and improve the operations at this intersection. These improvements could be identifies in a detailed traffic impact analysis.

30-minute traffic counts were taken along Varsity Drive at the existing parking lot driveways on Thursday, February 21, 2008. The counts (adjusted to hourly volumes) are shown in the figure.



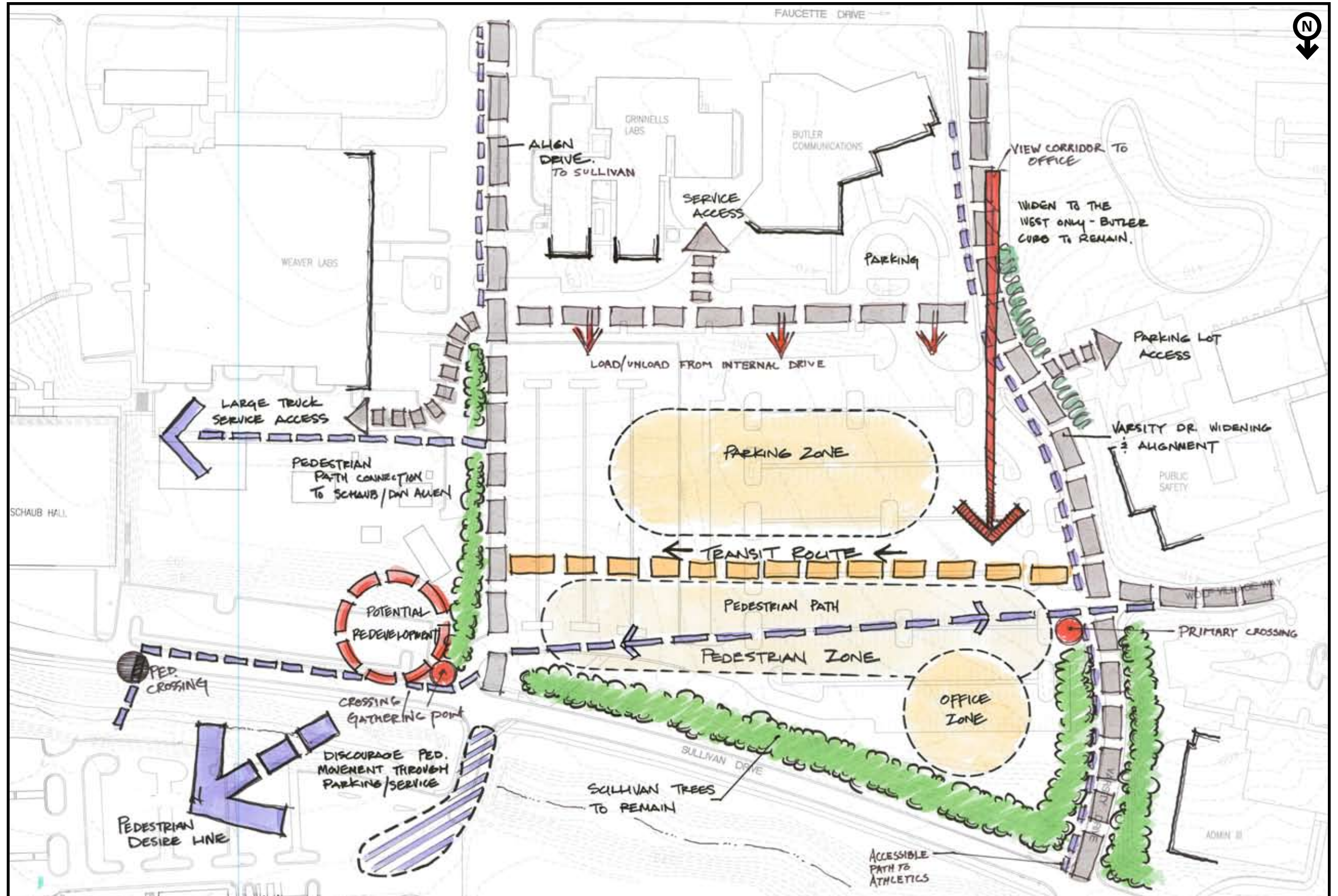
NORTH CAROLINA STATE UNIVERSITY



**FINAL MASTER
PLAN**

Final Master Plan

The final master plan concept maintains the primary organizational principles established during project visioning and programming and is consistent with the early vision for the site illustrated in the Campus Physical Master Plan document. This plan suggests a balance of an urban, mixed-use environment with the more traditional suburban campus feel more prominent in this part of campus. Following are the key design and program elements and brief discussion of possible alternative schemes that should be further evaluated as the project moves into the design phase.



Program Analysis

Pedestrian Pathways

The overall intent of the master plan is to provide for an efficient, pleasant pedestrian experience in a setting that effectively resolves complimentary uses of parking, offices, and transit operations. All paths should be, to the extent possible, accessible for able bodied, physically handicapped, and the visually impaired. All paths should reflect the general guidelines and intent of the All Campus Path plan and connections to off-site paths given particular attention during design phases.

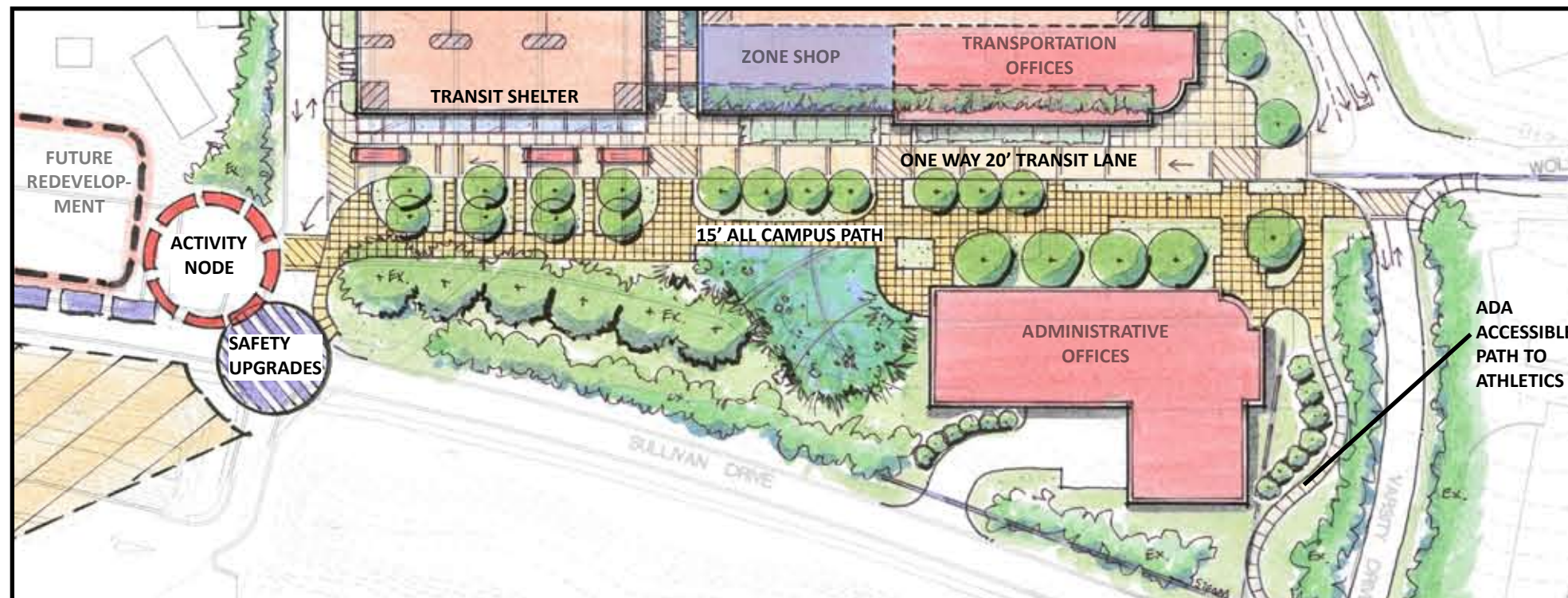
The addition of transportation offices in the parking deck will further activate and enhance the pedestrian zone between the phase one deck and the future administrative offices. The presence of office uses on both sides can transform this space from a mere transient space to a more public realm where exterior views from offices and opportunities for gathering spaces should be given careful design consideration. The design of the pedestrian corridor should seek to minimize pavement widths and overall impervious area while providing for social spaces, ample shading, and comfortable walking zones. Primary walking paths are contemplated to be not more than fifteen feet wide in most locations with flare-outs and coves for casual seating along the way. The general path alignment from west to east should progress toward the northeast corner where crosswalks and a pedestrian node will move pedestrians east along Sullivan toward the main campus and transition to the potential redevelopment site east along Sullivan.

Pedestrian movement from the site east toward Schaub and northeast toward housing and dining must be given careful consideration in association with future projects. Development of pedestrian facilities in this area should address the following issues:

- Safe crosswalk conditions and traffic calming
- Potential Bridge crossing over creek, opposite proposed Creamery at Schaub
- Discourage foot traffic through parking lot and service areas

An ADA accessible path is provided for adjacent to Varsity Drive. This path is traversing significant grade change and may require ramps or switchbacks to meet slope requirements but should be designed to fit the topography and preserve existing trees to the extent possible. This path will, at times, serve patrons attending athletic events and should be designed to handle an appropriate volume of people during such activities. Given the grade changes in this area, this sidewalk connection should also provide direct access to the lower level of the new office building/service area from Admin III along Sullivan Drive.

A soft path was recommended by the University along the south side of Sullivan to accommodate a minimal amount of foot traffic that may desire to walk along the shaded side of the street.



Transit

The transit zone is defined by linear landscape development with occasional breaks to provide for pedestrian movement between parking and offices. Landscaped areas may be flat lawn panels, shrub beds, or a combination of both and should not present a hedge-like barrier or hard physical separation. Raised seat-walls or fixed, bench seating can be incorporated along the edges of the landscape zones with appropriate tree plantings for shade a covered shelter from the weather. Access shall be from Varsity along a one-way, 20' wide drive with turning radii suitable for 42-44' buses.

Parking Structures

The plan illustrates parking facilities for approximately 1600 cars in two structures. Based upon parking guidelines from the University, the breakout of parking potentially available by use would be as follows:

- Administrative offices : 120 Spaces
- Transportation Offices: 30 Spaces
- Commuter Parking: 1235 Spaces
- Visitor Parking : 200 Spaces
- Zone Shop Parking: 15 Spaces

The configuration of the parking decks attempts to maximize the available footprints and capacity, orient access to be in-line with internal ramping, and to create some meaningful spaces around the perimeter, particularly on the southwest corner which is an important view corridor from Western Blvd. The deck orientation and access is arranged to disperse loading and unloading traffic as much as possible.

A potential green roof on the north side upper level of both decks could be incorporated to help reduce the facade height and enhance the sustainable design quotient of the overall site. One concept is to utilize the outer twenty feet on the north end of the structures, the equivalent of one row of parking, for the green roof as it would be visible from the pedestrian zone and office building and screen parking on the upper level.

Careful delineation of the parking structure footprints can set up a feature architectural corner with exposure to Varsity Drive and provide for a view corridor to the west end of the office building. The architectural character of the decks will be particularly critical along Varsity drive. The façade offset in the southwest corner of the west deck creates a focal point opportunity for landscape development.

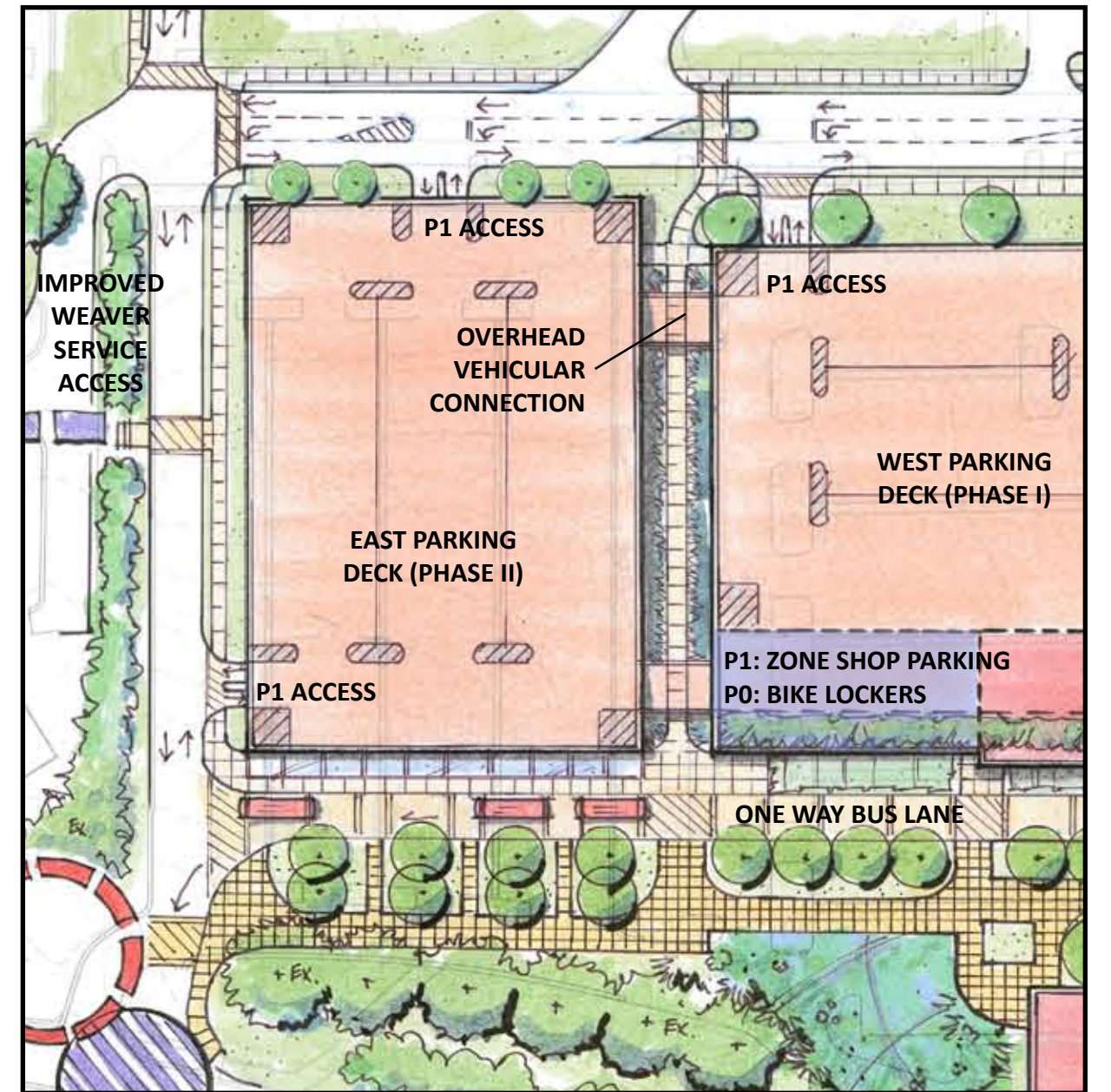
Bike Facilities and Transit Office

The north side of the parking decks offers a good opportunity to integrate transit stops and a transit break room. A wide sidewalk can accommodate seating and shelter for bus patrons and activate the shaded side of the structures. The lowest level of the Phase 1 west deck could accommodate at grade access to bicycle lockers, showers and a transit break room for bus drivers to utilize during off hours. The location of the bicycle lockers will provide secure access within close proximity to parking and the bus stop.

The bus lane entering the site is planned to be a single lane with the minimal width acceptable for emergency vehicle access up to the loading area where it should wide enough to allow for a bypass lane. Shelters may be freestanding or integrated with the parking deck. Landscaping should be minimal in this area to provide for a highly visible, safe environment.

West Lot Parking Summary

	Existing in Blue				Proposed in Red			
	West Lot Upper Lot	West Lot Lower Lot	Butler front (North)	Butler/Grinnels Drive	Grinnels side (East)	Weaver side (West)	Weaver rear (North)	TOTAL
Existing	497	252	18	70	27	48	28	940
Phase I (West Deck)	865	210	18	37	27	48	28	1233
Phase II (East Deck)	865	715	18	0	10	24	6	1638
Phase III (Office Bldg)	865	715	18	0	10	24	6	1638



Scale and Building Heights

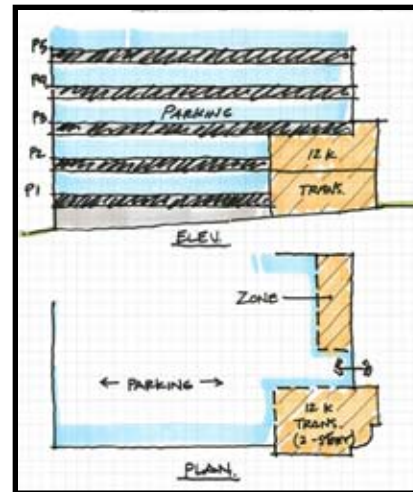
The proposed parking and building footprints are in part defined by the site configuration and ultimately inform the building heights necessary to achieve the desired program.

The relation of building heights to the pedestrian zone is key to establishing an appropriate scale and character for the site and as such it was the feeling of the University that a three story maximum should be placed on the office building.

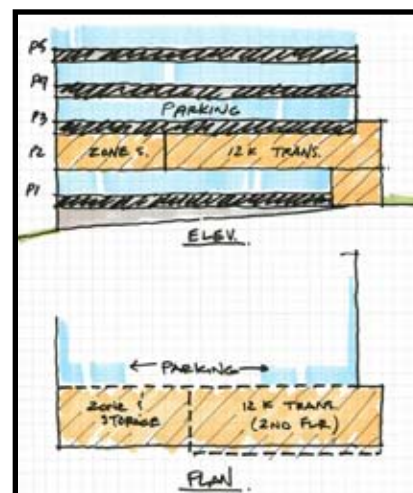
The west parking deck height is more critical than the east in that it directly oppose another structure.

A five story structure is contemplated for those buildings assuming that adequate distance between buildings across the pedestrian zone can be maintained at approximately 110 feet.

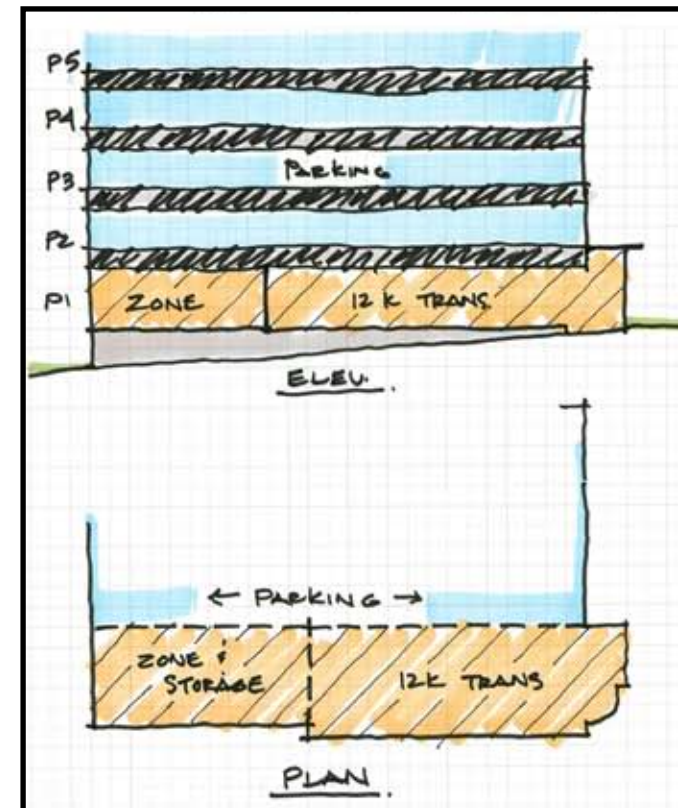
This separation is a comfortable relationship for pedestrians and office users.



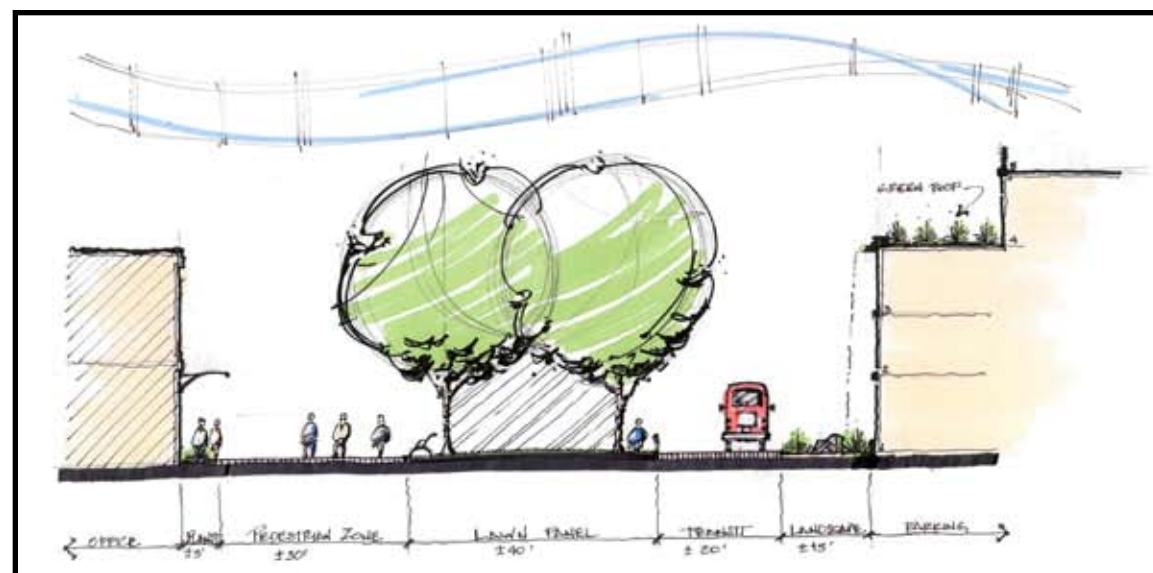
Massing Study A



Massing Study B



Massing Study C



Administrative Offices

The administrative office building helps frame the pedestrian zone and activate the area during the day. The building location can take advantage of the grade change adding a lower service level on the Sullivan Road side. The southwest corner can be exposed to views from Varsity drive and announce entry into the site. The building is sited to preserve existing vegetation along Varsity and Sullivan. A three story elevation is anticipated on the pedestrian side.

The service area should be screened appropriately from Sullivan. There is a potential for conflict with the existing steam tunnel that transects this corner of the site. This will need to be evaluated during design development.

Transportation Offices

The integration of transportation offices into the west deck offers some specific design challenges and opportunities. Two general design scenarios were discussed during planning:

- Ground floor only space
- Two level space on 2nd and 3rd floors

It is desirable that the Transportation offices have frontage and direct access to the pedestrian zone and give an active presence to the space that would not exist with ground floor parking. The two story option was considered primarily as a way to give a more significant architectural presence to the prominent northwest building corner which could extend out further than the main mass of the deck to create a statement. The disadvantage of separating internal office functions on two floors was noted as a concern, or at least, a disadvantage of the two story approach. The north façade of the parking structure rises above the pedestrian zone grades moving east along the building so direct access to the pedestrian zone are best accomplished at the west corner of the proposed office uses.

Zone Shop

The zone shop space is an essential facility to the day to day functions of the University. The Final Master Plan suggests relocation of the current zone shop from Weaver Labs to approximately 4,000 sf within the Phase One parking deck. This location would present specific challenges relative to access and staging for service vehicles and equipment. Height clearances for the deck must be considered to accommodate this use and location of the zone shop near ingress / egress points would be preferable to minimize conflicts with visitor and commuter traffic.

Stormwater Management and Sustainable Design Features

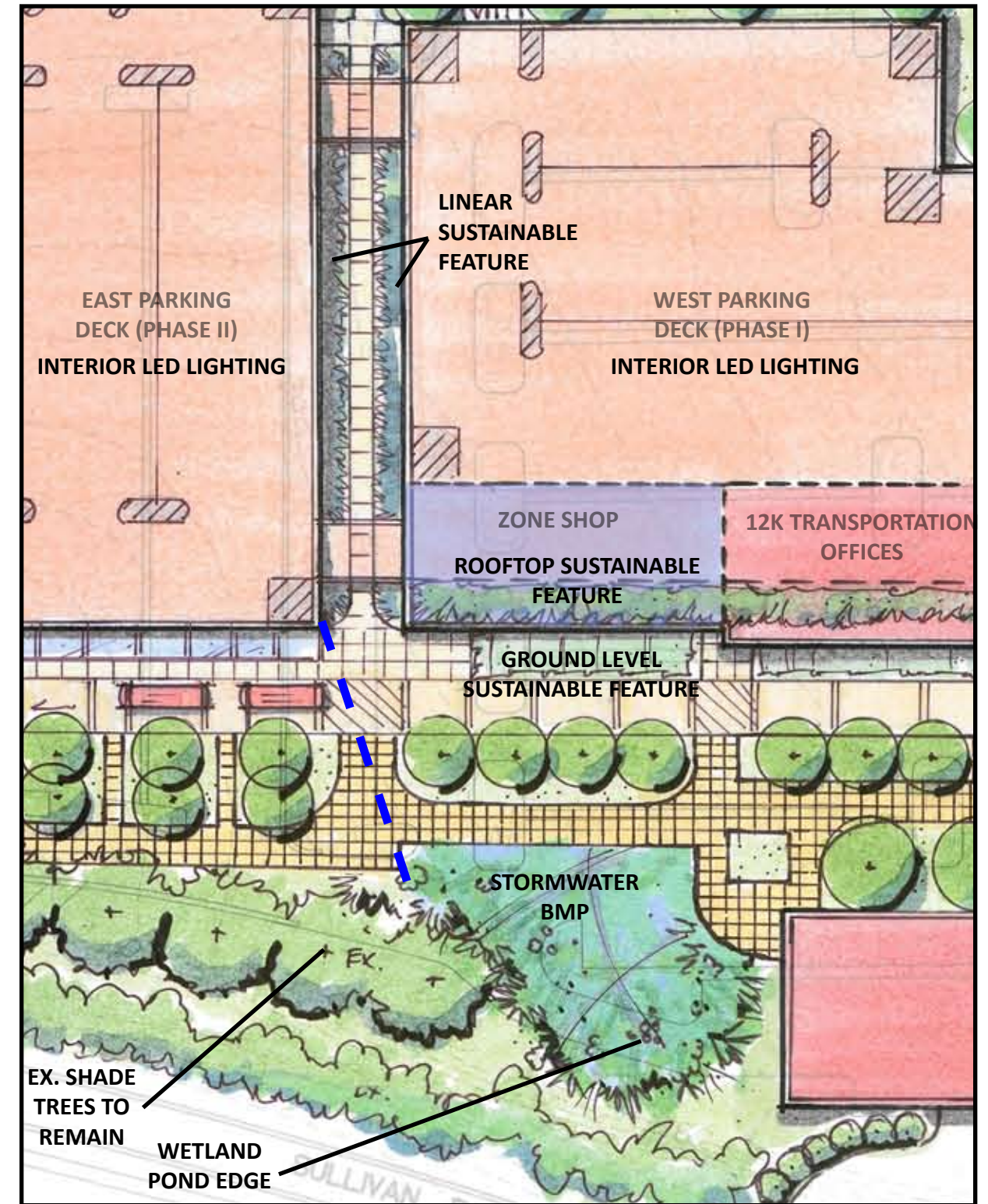
The proposed development should result in a net decrease in impervious area. In that case, stormwater management measures to mitigate runoff quantities would not be required. However, the University has a stated initiative toward high quality, responsible and sustainable design and to seek innovative ways to manage resources responsibly with all new development. Opportunities at the West Lot to honor this commitment should be integrated throughout the design process. In addition to LEED guidelines for new building Construction, some site opportunities identified for this site during planning include the following:

- Partial roof gardens on parking structures
- LED lighting – parking deck interiors and exterior
- Stormwater Best Management Practices for water quality
- Linear rain gardens / infiltration collection systems at parking decks
- Rain garden, bio-retention, or constructed wetlands along Sullivan Street
- Pervious pavement systems for bus lanes
- Material recycling from existing parking lot
- Solar energy systems associated with Administration building
- Specific items outlined in Senate Bill 668.

Existing Vegetation

The preservation of existing tree cover along Sullivan and Varsity is a key component of redevelopment of the West Lot. During the design phase it is recommend that a certified arborist work with a grounds management representative to evaluate individual trees to assess structural integrity and general health. Some consideration should be given to the following issues to ensure a healthy stand of trees to remain:

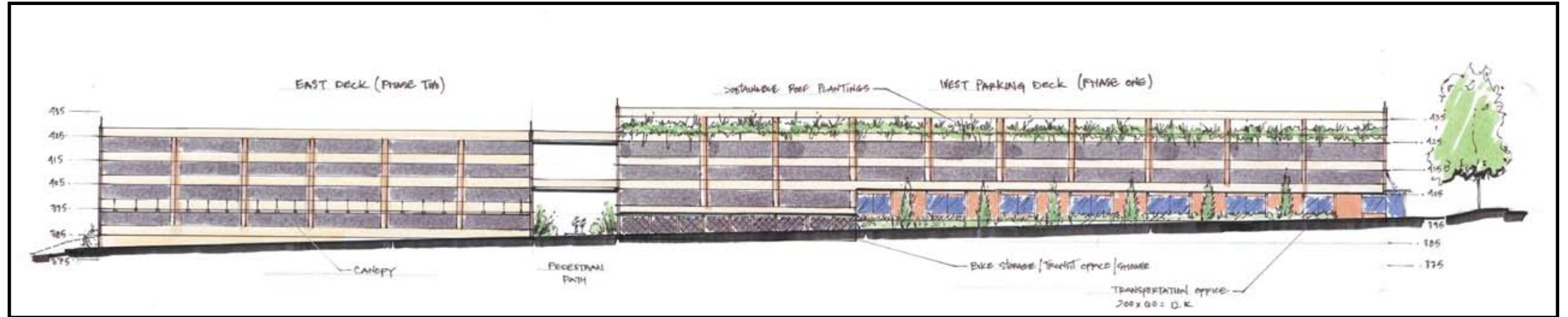
- Removal of trees with structural flaws or leaning trees that may pose a wind throw hazard
- Supplement removal areas with like species at appropriate spacing



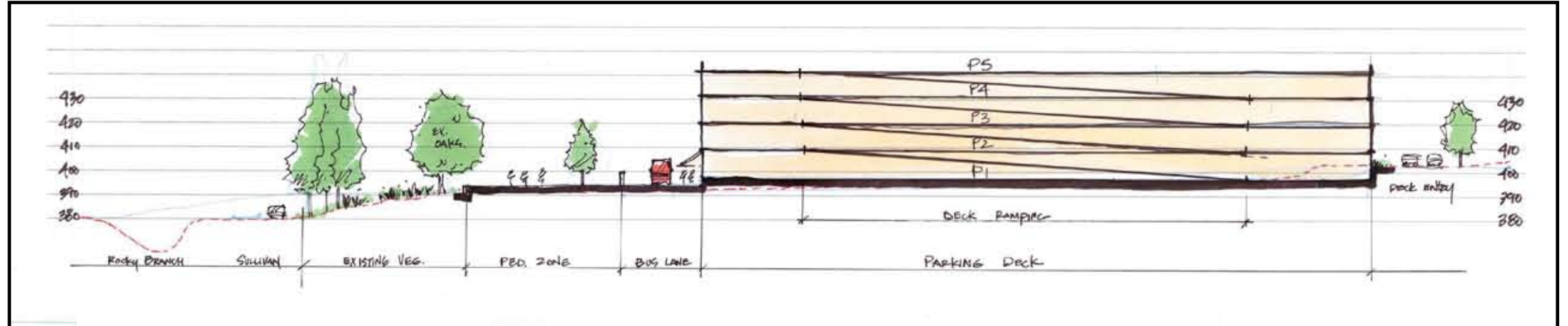
Legend

- (A)** 20' one way transit only lane utilizing specialty paving and curb-less edges.
- (B)** Ground Level: Accessible bicycle lockers, showers, and transit break room.
First Level: 4,000sf Zone Shop and Transportation Storage
- (C)** Forth Level: Sustainable roof top plantings
- (D)** 6' sidewalk with linear sustainable feature
- (E)** 15' All Campus Path including pedestrian plazas, seating and landscaping
- (F)** Parking Deck access
- (G)** Road widening improvements: Ref: Traffic Section
- (H)** Significant trees to remain
- (I)** Transit shelter
- (J)** Potential pedestrian creek crossing
- (K)** Pedestrian connection improvements
- (L)** Service area reconfiguration for better access
- (M)** Drive and parking realignment
- (N)** Varsity Drive lane widening to the west
- (O)** ADA accessible pedestrian connection to Sullivan and athletic facilities
- (P)** Service area
- (Q)** Vehicular Bridge Connection
- (R)** Central Elevator Tower
- (S)** Stair Tower
- (T)** Pedestrian/Safety Improvements

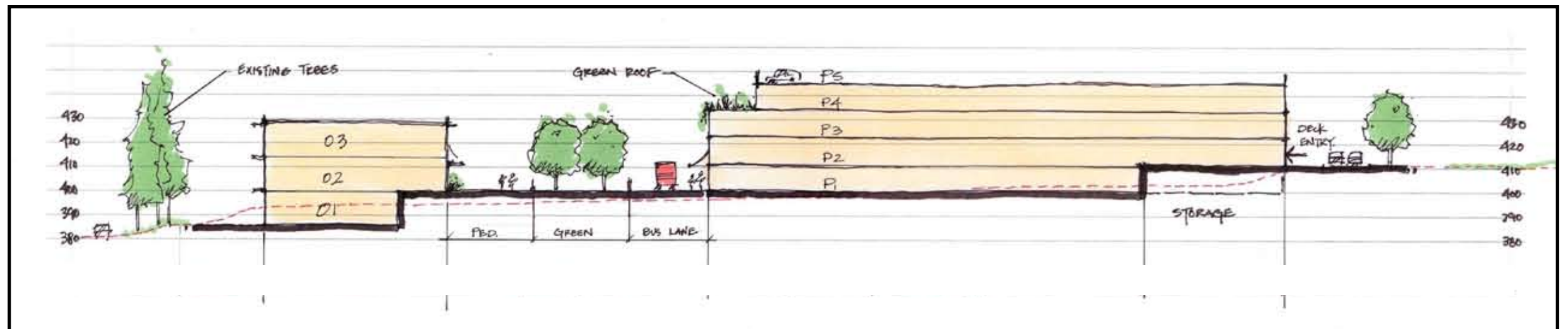




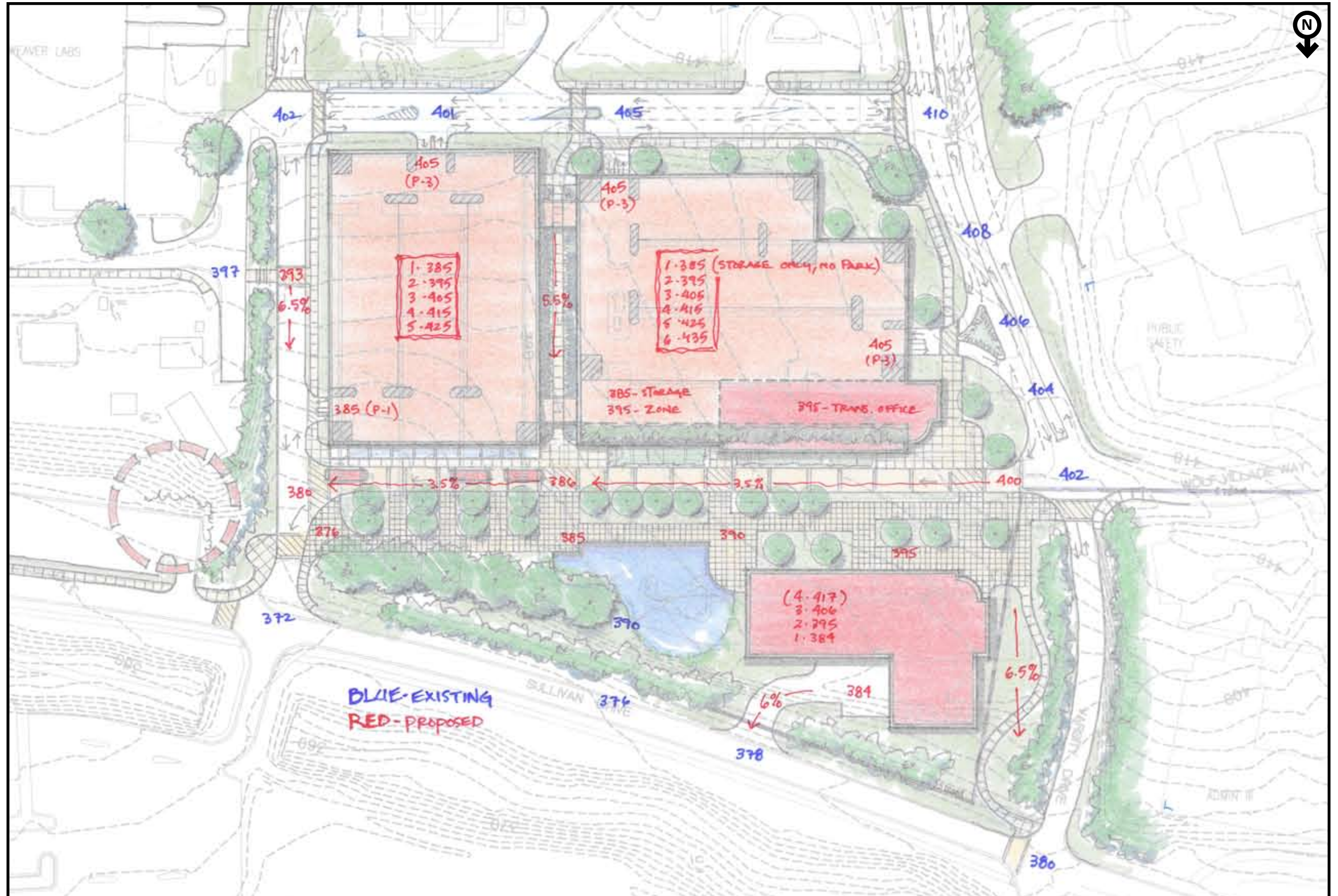
East/West Parking Deck Elevation



North/South Section Through Phase II (East Parking Deck)



North/South Section Through Phase I (West Parking Deck and Administration Building)



OPINION OF PROBABLE CONSTRUCTION COST		DATE PREPARED:		DATE REVISED:							
NCSU West Lot Parking Deck and Admin Building		July 2, 2008		September 12, 2008							
LOCATION:		Basis for Estimate									
NCSU West Lot, Varsity Drive at Sullivan Dr.		(X) Master Planning		(_) Schematic Design							
Kimley-Horn & Associates, Inc.		(_) Design Development		(_) Construction							
Raleigh, N.C.		LS = LUMP SUM		SY = SQUARE YARD							
		SF/LF = SQUARE / LINEAR FOOT		PS = PER SPACE							
				EA = EACH							
Work Description	LABOR & MATERIALS COST PER UNIT	PHASE 1			PHASE 2			PHASE 3			TOTAL COST
		QUANTITY # UNITS	UNIT MEAS.	PHASE 1 COST	QUANTITY UNITS	UNIT MEAS.	PHASE 2 COST	QUANTITY UNITS	UNIT MEAS.	PHASE 3 COST	
Demolition and Site Work											
Mobilization	50,000.00	1.0	LS	50,000	0.5	LS	25,000	0.5	LS	25,000	\$100,000
Asphalt and sidewalk	1.00	215,000.0	SF	215,000	85,000.0	SF	85,000	0.0	SF	0	\$300,000
Common Excavation	5.00	30,000	CY	150,000	10,000	CY	50,000	7,500	CY	37,500	\$237,500
Erosion Control	25,000.00	1.0	LS	25,000	0.5	LS	12,500	0.5	LS	12,500	\$50,000
Subtotal =				\$440,000			\$172,500			\$75,000	\$687,500
15% Contingency=				\$66,000			\$25,875			\$11,250	\$103,125
Total=				\$506,000			\$198,375			\$86,250	\$790,625
Surface Paving											
Asphalt Paving and Striping	26.00	5,000	SY	130,000	3,500	SY	91,000	0	SY	0	\$221,000
Curb and Gutter	23.00	3,800	LF	87,400	2,250	LF	51,750	250	LF	5,750	\$144,900
Heavy Duty Concrete Paving	35.00	300	SY	10,500	250	SY	8,750	450	SY	15,750	\$35,000
Specialty Vehicular Paving	35.00	1,400	SY	49,000	2,500	SY	87,500	2,500	SY	87,500	\$224,000
Brick Sidewalk	18.00	1,850	SF	33,300	500	SF	9,000	150	SF	2,700	\$45,000
Concrete Sidewalk	10.00	10,000	SF	100,000	3,000	SF	30,000	3,000	SF	30,000	\$160,000
Subtotal =				\$410,200			\$278,000			\$141,700	\$829,900
15% Contingency=				\$61,530			\$41,700			\$21,255	\$124,485
Total=				\$471,730			\$319,700			\$162,955	\$954,385
Building Structures											
Parking Deck (including allocation for Transpo offices)	20,000.00	920	PS	18,400,000	715	LS	14,300,000	0	LS	0	\$32,700,000
Bus Shelter	50,000.00	0	LS	0	1	LS	50,000	0	LS	0	\$50,000
Transportation Offices	150.00	12,000	SF	1,800,000	0	SF	0	0	SF	0	\$1,800,000
Admin Offices	225.00	0	SF	0	0	SF	0	67,500	SF	15,187,500	\$15,187,500
Subtotal =				\$20,200,000			\$14,350,000			\$15,187,500	\$49,737,500
15% Contingency=				\$3,030,000			\$2,152,500			\$2,278,125	\$7,460,625
Total=				\$23,230,000			\$16,502,500			\$17,465,625	\$57,198,125
Utilities and Storm Drainage											
Water Line	41.00	700	LF	28,700	500	LF	20,500	50	LF	2,050	\$51,250
Fire Hydrants and misc. valves etc.	2,000.00	4	LS	8,000	3	LS	6,000	1	LS	2,000	\$16,000
Sanitary Sewer	15.00	600	LF	9,000	50	LF	750	50	LF	750	\$10,500
RCP Storm Drain	35.00	500	LF	17,500	200	LF	7,000	100	LF	3,500	\$28,000
Storm Drainage Structure (6' Deep)	2,000.00	15	EA	30,000	10	EA	20,000	5	EA	10,000	\$60,000
Stormwater BMP	25,000.00	1	LS	25,000	0	LS	0	0	LS	0	\$25,000
Misc. Wire Utilities	5,000.00	1	LS	5,000	1	LS	5,000	1	LS	5,000	\$15,000
Subtotal =				\$123,200			\$59,250			\$23,300	\$205,750
15% Contingency=				\$18,480			\$8,888			\$3,495	\$30,863
Total=				\$141,680			\$68,138			\$26,795	\$236,613
Hardscape and Amenities											
Bollards	1,500.00	40	EA	60,000	0	EA	0	0	EA	0	\$60,000
Seating	750.00	15	EA	11,250	5	EA	3,750	5	EA	3,750	\$18,750
Site and Street Lighting	25,000.00	1	LS	25,000	1	LS	12,500	0.2	LS	5,000	\$42,500
Signage	5,000.00	2	LS	10,000	1	LS	5,000	1	LS	5,000	\$20,000
Retaining Walls and Railing	35.00	800	SF	28,000	100	SF	3,500	0	SF	0	\$31,500
Subtotal =				\$134,250			\$24,750			\$13,750	\$172,750
15% Contingency=				\$20,138			\$3,713			\$2,063	\$25,913
Total=				\$154,388			\$28,463			\$15,813	\$198,663
Landscape											
Lawn Areas	1.10	40,000	SF	44,000	15,000	SF	16,500	12,000	SF	13,200	\$73,700
Mulch Bed Areas	5.00	12,000	SF	60,000	5,000	SF	25,000	5,000	SF	25,000	\$110,000
Trees	450.00	35	EA	15,750	15	EA	6,750	20	EA	9,000	\$31,500
Shrubs	35.00	400	EA	14,000	200	EA	7,000	300	EA	10,500	\$31,500
Sustainable Plantings	25.00	500	EA	12,500	300	EA	7,500	0	EA	0	\$20,000
Subtotal =				\$146,250			\$62,750			\$57,700	\$266,700
15% Contingency=				\$21,938			\$9,413			\$8,655	\$40,005
Total=				\$168,188			\$72,163			\$66,355	\$306,705
TOTAL:				\$24,813,665			\$17,257,475			\$17,850,588	\$59,921,728

- The following considerations have not been allocated for in this estimate:
1. Steam Line Relocation.
 2. Sidewalk along Sullivan and Mid-Block Pedestrian Crossing, including ped bridge over stream.
 3. Elements outside improvements shown on the Master Plan Graphic.
 4. Western Blvd signal upgrades.
 5. Permitting Fees, including but not limited to NCSU Stormwater, TFP (Air Quality), and Land Disturbance) are not included within this OPC.

Schedule of Probable Project Permits

- NCDENR Land Disturbance Permit
- Compliance with NCSU NPDES MS4 Permit for Stormwater and Erosion Control
- Transportation Facilities Permit (TFP)
- NCDENR Water and Sewer Permits (applicable for main extensions only)
- City of Raleigh cursory plans review for water and sewer mains
- Building Permit (State issued)

**All permits, including but not limited to the ones listed above, shall be verified during the Design Phase. Fees are associated with each of these permits and have not been included in the Opinion of Probable Cost.*

Phasing Plan

Phase I

Consists of primarily the West Deck and associated Road Improvements while keeping the existing lower lot as functional as possible and adding a temporary bus shelter, internal to the site.

- West parking deck
- Transportation offices
- Zone shop and transportation storage area
- Bicycle storage, showers and transit break room
- All campus path and pedestrian zone
- Sustainable features
- Off-site road improvements
- Residual surface parking on the lower lot (approx 210 spaces)

Phase II

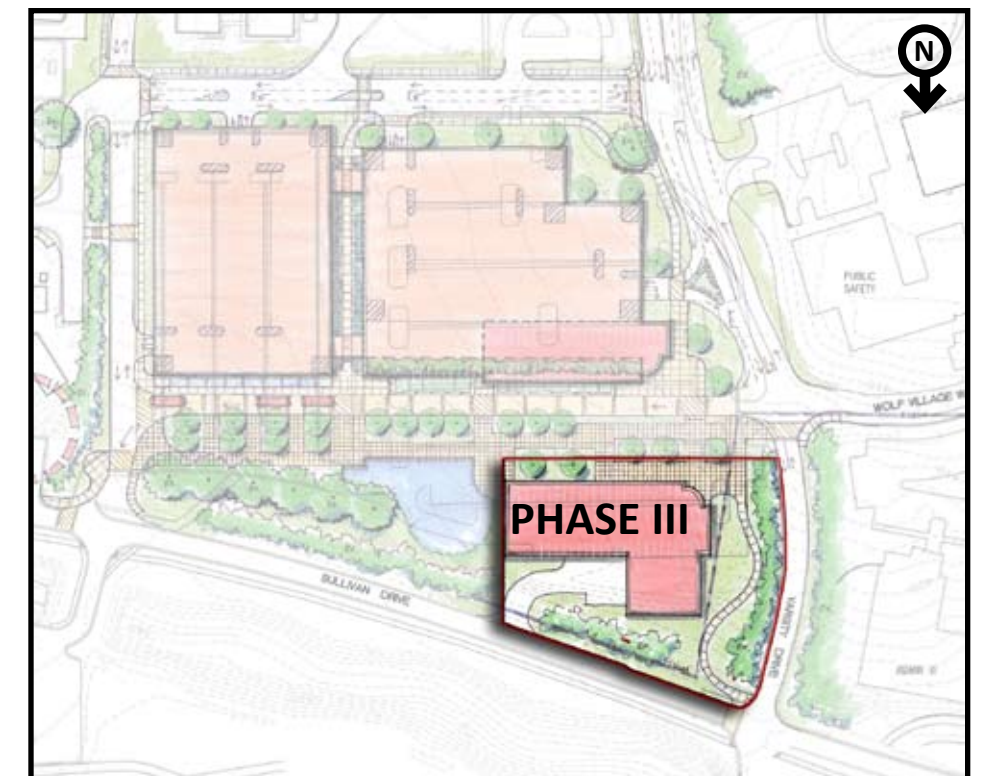
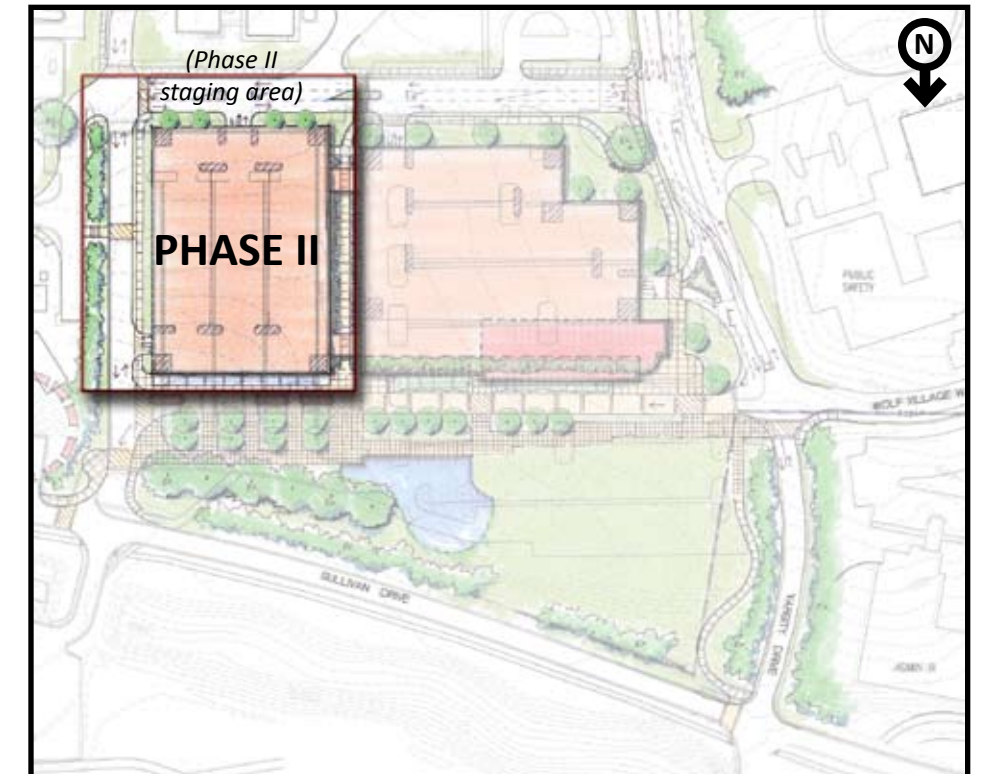
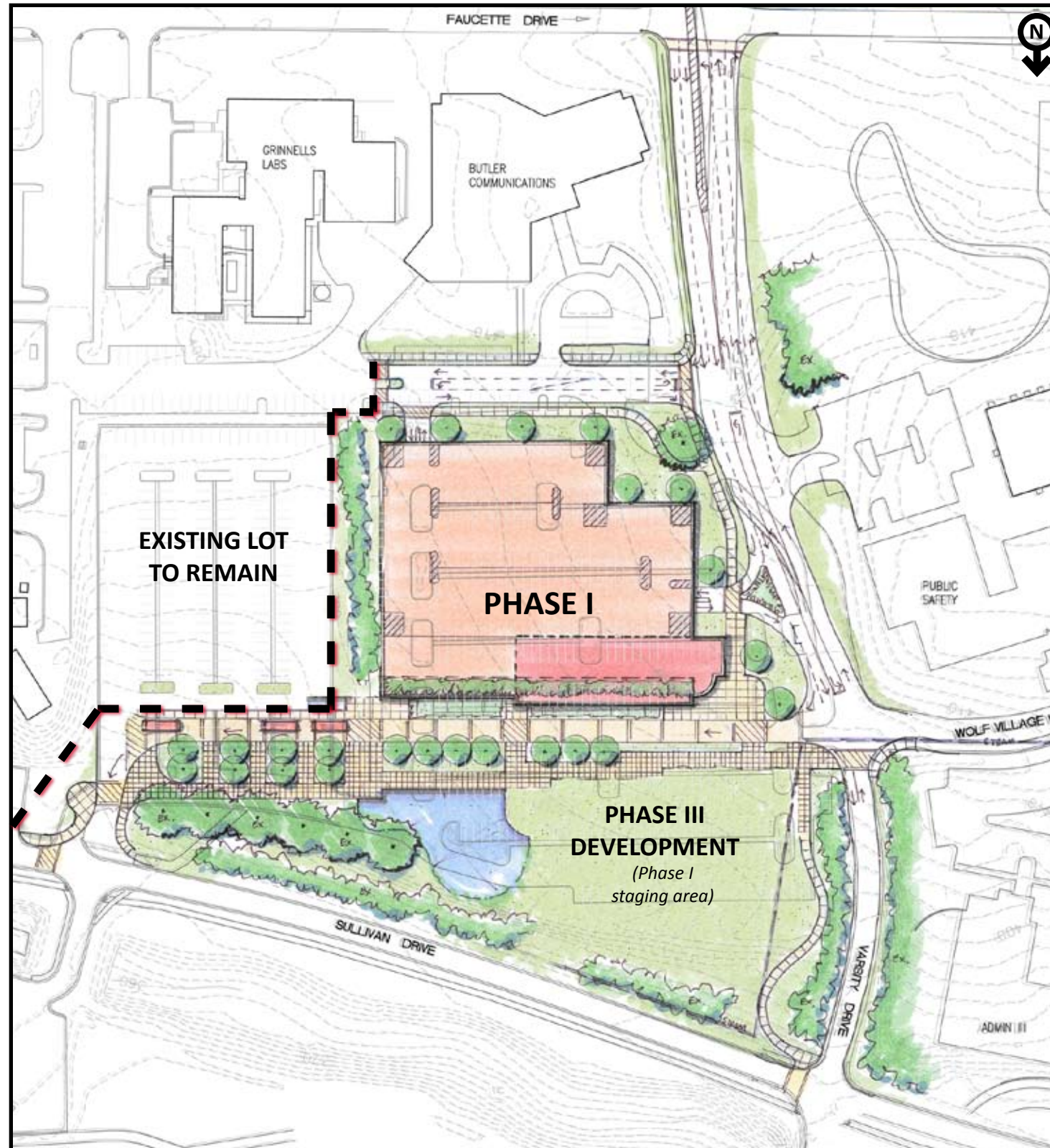
Would consist of East Deck and associated Road Improvements, including the permanent bus shelter.

- East parking deck
- Weaver labs service area Improvements
- Eastern north/south road Re-alignment
- Sullivan sidewalk Improvements
- Mid-block crossing and Pedestrian bridge

Phase III

Would consist of addition of the Administrative Offices.

- Administrative offices
- Final pedestrian zone improvements

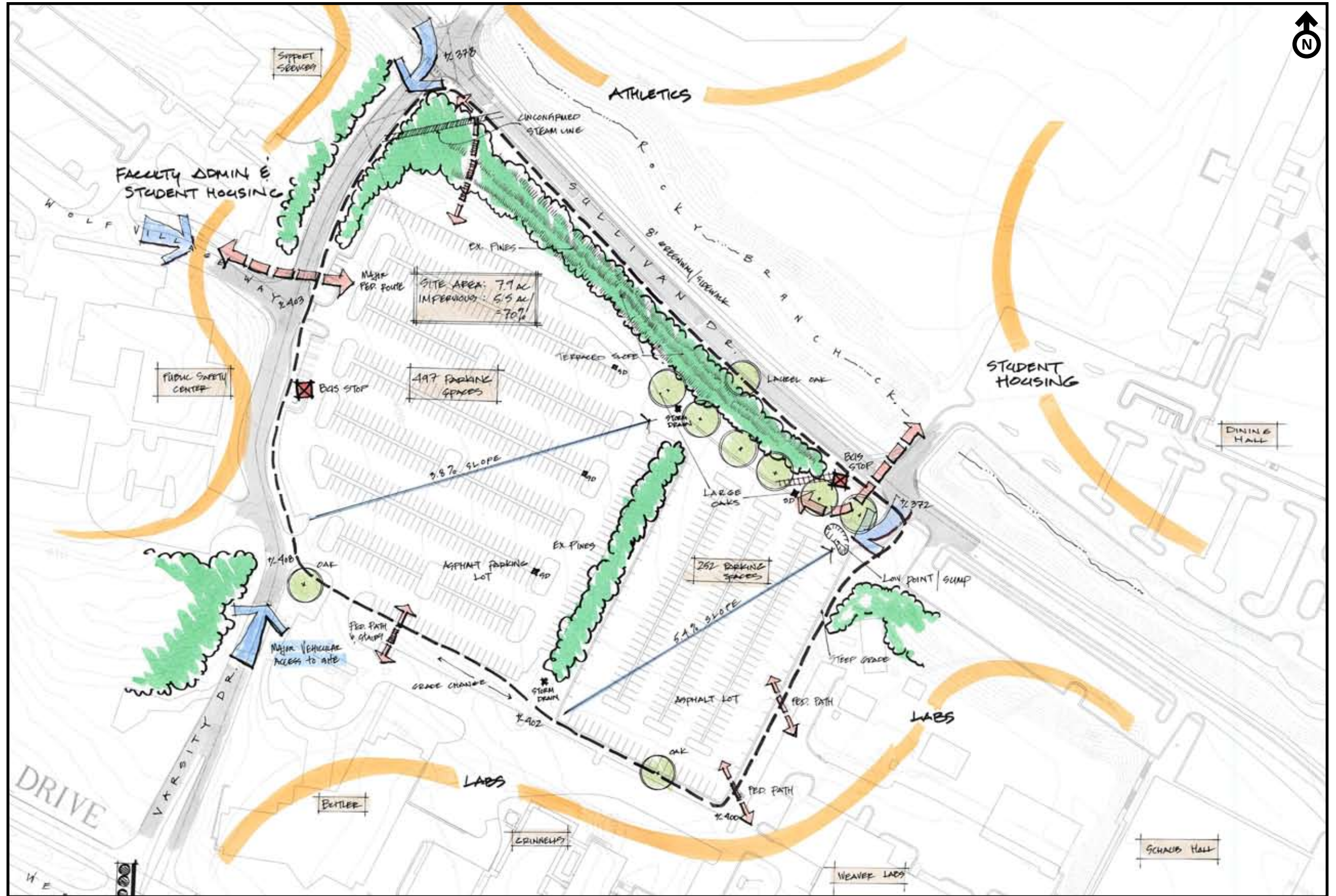


NORTH CAROLINA STATE UNIVERSITY



EXHIBITS





Meeting No. 1

Stated Goal:

To introduce the project team and University Committee and to define the project development program and vision.

PROJECT KICK-OFF MEETING

WEST LOT MASTER PLAN

December 20, 2007
Room 220, 8:00am – 11:00am

Attendees:

Tom Skolnicki	NC State University Landscape Architect
Steve Bostian	NC State University
Tom Kendig	NC State University
Torsha Bhattacharya	NC State University
Michael Harwood	NC State University Architect
Sal Musarra	Kimley-Horn and Associates
Stephanie Hachem	Kimley-Horn and Associates
Jeremy Anderson	Kimley-Horn and Associates

Prepared by: Jeremy Anderson

Welcome and Overview

- Team introductions

Project Administration

- Scope was reviewed and generally validated as written in the consultant agreement.
- User Group Input:
 - Tom S. will coordinate to reserve room at NCSU from 8-12 to hold meetings with representatives of specific user groups in 15-30 minutes slots
 - NCSU representatives will be present as well as KHA.
 - KHA to confirm a meeting day by 12/21 with Tom S. so that invites can go out prior to the holiday break.
 - Potential user groups identified included:
 - Dept of Natural Resources
 - Weaver Labs
 - Athletics
 - Housing
 - Dining
 - Student
 - Steph H. and Tom K. discussed the potential of engaging the Transportation/Structural Engineering Student Group in the process (Prof. J. Stone). Michael H. was cautious not to involve them too much and consider the role of the experienced, licensed professional vs. the student. We can look at ways of

- involving the students, potentially as a parallel project, but not as a user group or active part of the design process.
- Project Schedule was discussed
 - General schedule outline was reviewed and overall timeline extended to include more time for NCSU internal review and comment and provide for a spring 2008 completion.
 - A meeting was added towards the end of Jan. to review the program with NCSU.
 - Potential final deliverable date for the last week of April.

Data Collection

- Tom S. provided KHA with a CD containing CAD and PDF files for recent plans surrounding the site, as well as the overall campus master plan. Additional files may be provided as they are made available.
- NCSU to look for most recent traffic counts for surrounding intersections.
- NCSU to provide KHA with TIA completed by Ramey-Kemp.
- Potential parking loss needs to be considered for Cates Ave (Student Life) future plans, as well as the overall goal of removing parking from internal faculty lots on North Campus.
- Usage studies have been completed by NCSU for the West Lot Area.
- KHA to publish a FTP site for future data and exhibit transmittal.

Programming

- Fluid study boundary, but focus should be on the super block (Sullivan, Varsity, Faucette, Dan Allen) and immediate connectivity to adjacent sites.
- Concentration on the edges and integration with surrounding projects, character and community elements.
- Maximize parking spaces and pedestrian connectivity are top priority. Office square footage is secondary. 60K to 100K gross office space would be acceptable.
- Transportation and Parking:
 - Reduce traffic and students on Dan Allen by improving Varsity Dr.
 - Varsity Dr. could be a 4-lane section to Wolf Village Way. It would flatten out the existing horizontal s-curve in the road and improve capacity.
 - Potential Bus parking for special events (move from Coliseum deck)
 - Parking for baseball and tennis.
 - Tailgating for baseball not likely and not a necessary programming element.
 - Consider queuing lengths for hourly parking.
 - Consider need for visitor spaces in this area of campus.
 - Loading and service needs for admin. buildings.
 - Push student parking to the edges of campus relative to overall campus master plan.
 - ~1200-1600 spaces.

- Parking ratio for office: 1/600
- Maximum of a 3 bay deck preferred.
- Potentially terrace the parking deck into hill side (this would most likely wipe out many of the existing pines along Sullivan Drive)
- Consider importance of Sullivan Drive streetscape.
- Designated parking for hybrid vehicles
- Wolfline Bus Transit:
 - Review existing route, stops, and impact on route timing.
 - Consider the potential impacts of a planned reverse route (counter clockwise)
 - Stacking for 4-5 buses max.
 - Multi-model hub concept.
 - Allow bus access only to Sullivan at current drive and maintain separation of transit movement from internal vehicular and pedestrian circulation.
- Building Program
 - No specific square footage program at this time. Office needs secondary to parking and transit.
 - 100k office use in two buildings is a good starting point
 - Office for relocated Admin. services on North Campus to make room for potential increase in faculty.
 - Evaluate potential mixed use opportunities in either parking deck or office:
 - Schaub Hall Ice Cream shop
 - Coffee Shop for transit users, office workers, and pedestrian students
 - Existing C-Store at Wolf Village and Bragaw.
 - 3-4 stories max height (campus wide initiative).
- Site Amenities
 - Bike storage
 - All campus path (overlay zone)
 - Keep character of Sullivan Drive (Pines/azalea)
 - Coordinate with approved sidewalk projects.
 - Focus landscape on edge conditions. Consider drought tolerant and water-efficient landscape approach.
 - Public gathering areas, perhaps associated with commercial uses. No high demand for significant green space in this location.
- Sustainability
 - Use as a amenity
 - Should meet TSS/Nitrogen/2-10 year storm
 - Green Roof?
 - Hybrid Car spaces
 - Landscape themes and ideas only
 - Solar power

- Building Orientation
- Consider stormwater measures and water quality as teaching tools.

Vision Statement

- Reference principles defined in Campus Neighborhood Master Plan:
 - Sustainable
 - Mixed Use
 - Human Scale
 - Design harmony
 - Universal Design
 - Effective Pedestrian Movement
 - Traffic
- Safe environment
- Satisfy Parking needs and Transit needs
- Can be effectively Phased to meet anticipated funding and budget constraints

Site Visit (Tom S., Sal, Jeremy)

- Potential steam tunnel under site corner at Varsity and Sullivan.
- Preserve / plant Laurel Oaks along Sullivan (use a street tree)
- Use Loblolly Pine as street tree along Varsity Dr.
- Housing Study to replace Lee/Sullivan, most likely the access points will remain as is.
- Cross pedestrian connection from lot to Schaub Hall
- Willow Oaks at the northeast corner should be protected if possible
- Lighting to match what is in the Admin. III lot.
- Parking bay Butler and Grinnells can be considered within the boundary.

Next Steps

- KHA to communicate dates for User Group and Program Review Meeting by 12/21.
- KHA to draft Development Program and Vision Statement for review and approval.

Meeting No. 2

Stated Goal:

To validate a preliminary development program for the project to serve as the basis for master planning.

PROGRAM CONCEPT MEETING

WEST LOT MASTER PLAN

January 23, 2008

Room 220, 10:30am – 12:00pm

Attendees:

Tom Skolnicki	NC State University	- Landscape Architect
Tom Kendig	NC State University	- Transportation
Torsha Bhattacharya	NC State University	- Transportation
Michael Harwood	NC State University	- Architect
Eric Jaskolka	NC State University	
Lisa Johnson	NC State University	
Sal Musarra	Kimley-Horn and Associates	
Stephanie Hachem	Kimley-Horn and Associates	
Jeremy Anderson	Kimley-Horn and Associates	

Prepared by: Jeremy Anderson

Program Review

- Sal M. reviewed the general outline of the Program Summary and reviewed the 3 main program elements described in the draft Development Program prepared after the kick-off meeting.
- Discussion points in addition to those outlined in the handout were as follows:

Parking/Transportation

- Bus stacking and bus staging are separate elements to be considered. Staging, if provided, is intended to address special event parking for busses that currently stage near the Coliseum deck.
- Mike H. expressed the need for the university to identify a per space cost for the parking deck to set general design parameters in place. The university is currently funding \$15-17,000 per space for planned projects.
- Torsha B. stated that as many as 20 buses per hour may utilize bus stops in this area.
- Most likely the parking deck (or portion of) will be constructed before the office building.
- Consider the transit stop being located within the parking deck.

Building

- The ice cream shop should approximately 2,000sf and should include both indoor and outdoor seating opportunities. This is an alternate location to the location off of Dan Allen Drive.

- 4,000sf Zone Shop space should be ideally located within the parking deck and will house up to 15 personnel.
- An additional storage area (size yet to be determined) should also be considered for the parking deck area. This space will house seasonal vehicles and equipment (trailers, snow plows, etc.). NCSU to program a size based on current needs.

Site Amenities

- Lisa J. suggested that a significant green space was desired for this area of campus.
- Consider locations for accessible shower facilities for bicycle commuters. These may be best associated with commercial uses where restrooms may be provided.

General Comments

- Take a wider view to include the entire 'super block' in terms of pedestrian and vehicular circulation.
- Review Senate Bill 668 for sustainability guidelines to be considered.
- New projects on campus may be evaluated at a LEED silver level. This should be highlighted within the Master Plan Document.

Vision Statement Review

- Sal reviewed the draft version of the Vision Statement prepared by KHA. Comments from the University are welcome to further define the statement
- Mike H. stated that this is very similar to Scope Statement that the university typically prepares for building projects.
- The statement was well received and no further comment was offered at this time.

Program Concept Plan Review (General Comments for All Plans)

General:

- KHA presented several alternative schematic concepts representing the application of the basic program to the site. These concepts were intended to facilitate discussion of the functional relationships between the key elements and uses.
- Several concepts were reviewed with some general plan characteristics as follows:
 - A. parking on south side with office in northwest corner; transit in northeast corner
 - B. parking along Varsity with office in southeast corner; transit in northeast corner
 - C. parking at northwest and southeast corners with office in southwest corner
- The base map for schematic studies will be expanded to include the entire super block so that pedestrian circulation can be fully investigated

Below are some of the key talking points resulting from the review of all concepts:

Building Program:

- An office location at Varsity and Sullivan or at Varsity opposite the Butler Communications building is favored.
- Surface parking directly adjacent to the office building is not required. Walking distance from deck parking to the office building is not a specific concern at this time.
- Visitor spaces, either for the office or commercial uses, could be located in the deck as long as it is highly accessible and visible to the public. It was noted that ease of access is critical for commercial businesses that depend on some level of customers from off-site to be viable.
- The preferred location for commercial is along Varsity Drive where visibility and access can be best provided.
- Integration of the commercial use with the deck may help address the deck facade architecturally allow for this use to be incorporated in phase one of development.

Parking and Transit:

- There was discussion regarding the need and challenges of integrating transit into the core of the site as was included as a goal in our initial programming meeting. We will continue to explore concepts with integrated transit but not rule out keeping routes on the site perimeter to avoid conflicts with pedestrian circulation and gathering areas internal to the site.
- Location of parking along the southern site limits can best accommodate service and shop uses as well as storage facilities.
- Concepts with primary vehicular and transit routes developed around the south and west site exterior will be explored further in an effort to keep the core of the site for pedestrian use only.
- Utilization of the parking deck structure for transit should be considered. It was noted that integrating the transit routes and stops within the deck does have cost and design implications but is an approach worthy of evaluation.
- Concepts with parking decks adjacent to Varsity will require a more articulated architectural facade to address the streetscape image and may be enhanced by ground-floor commercial uses to this end.

Site amenities:

- The All Campus Path plan for major pedestrian routes was discussed in relation to this site, particularly departure points and direction for paths leading west from the site and south toward Faucette. Pedestrian connectivity to the southeast (Weaver/Schaub) is important. More consideration will be given to the desired pedestrian routes with input from the University and user groups.
- It was generally agreed that preserving the natural setting at the lower end of the site near the existing oaks is important.
- Sustainable features along the north side of parking structures were discussed in that these areas would be less desirable for pedestrian environments.

- Mike referenced SB 668 which dictates sustainable initiatives for University projects. We discussed possible scoring the site concepts relative to LEED credits as a sustainable benchmark without a specific intention to obtain certification.

Next Steps

- KHA to refine schematic concepts with input from this meeting, distribute to Tom for review, and for use in user group meetings.
- KHA to post Program Concept Plans to FTP site.
- Torsha B. to pull relevant TIA's and traffic counts and send to KHA for review.
- Tom S. to send Senate Bill 668 summary to team for review.
- User Group meetings are scheduled for February 7th.

Meeting No. 3

Stated Goal:

To introduce the project and schematic diagrams to various user groups and obtain input regarding the development program and master plan direction specific to their respective areas of interest.

USER GROUP 'A' PROGRAM MEETING

WEST LOT MASTER PLAN

February 7, 2008

Room 220, 8:30am – 2:30am

Program Review

- Sal M. gave an overview of the project objectives and current development program. The objectives for the meeting were outlined and the main program elements for each of the 3 Concept Plans were described. Comments in regards to the overall project as well as the specific plans are as follows:

Group 1 (CALs) 8:30-9:30am

Attendees:

Robert Evans	NC State University (CALs)
Gary Cartwright	NC State University (CALs)
Carl Hollifield	NC State University (CALs-dairy)
Scott Noble	NC State University (CPM)
Lisa Ferraro	NC State University (Student)
Ramona Herring	NC State University (Student)
David Buffaloe	NC State University (Bio-Ag)
Kathleen O'Brien	NC State University
Tom Skolnicki	NC State University (University Landscape Architect)
Tom Kendig	NC State University (Transportation)
Sal Musarra	Kimley-Horn and Associates
Jeremy Anderson	Kimley-Horn and Associates

- Scott N. expressed concerned over strengthening the pedestrian connections throughout the super block. Make sure that the plan 'takes a step back' and looks at all of these connection points.
- Review Faucette Drive in terms of one vs. two way. Is there an advantage to change the current configuration?
- Review the current transit stops. Are they in the best locations? Stacking distance is an important consideration given the anticipated increase in bus traffic for this location.
- Consideration should be given to the need to stack busses for capacity concerns as well as efficiency of site for fast service.
- Evaluate the existing stops in terms of appropriateness of their location and if they did remain, could the existing facilities be enhanced.
- Review the existing transit stops at Carmichael and Textiles for effectiveness of their current layout.
- Gary C. stated that the ice cream shop currently is programmed for the area along Dan Allen, between Schaub and Weaver. He stated that because of details related to

financial support of the program, there must be a physical connection to Schaub Hall, either through academic facilities or offices.

- CALs anticipates heavy weekend activity from Western Blvd and school bus parking needs.
- There was discussion as to whether the area behind Schaub and Weaver could be more formalized to create a pedestrian zone (out to Dan Allen) that would separate it from the required service activities that currently exist in this area. This space is currently being used for large truck deliveries, staff parking, storage, and project related experiments.
- An opportunity may exist at the northeast corner of the west lot that would be close enough to Schaub to satisfy program requirements, yet integrated into the West Lot Master Plan to take advantage of the increased pedestrian traffic in this area.
- Truck circulation and deliveries to Weaver and Schaub need to be considered.
- The current parking needs that currently exist along the drive in front of Butler and Grinnels could be relocated within the deck.

Group 2 (Transportation) 9:45-10:45am

Attendees:

Gary Bridges	NC State University (Trans)
Timothy Tresohlavy	NC State University (Trans)
Christine Klein	NC State University (Trans)
Starr Wimberly	NC State University (Trans)
Ronnie Wright	NC State University (Trans)
Torsha Bhattacharya	NC State University (Trans)
Alan Stephens	NC State University (Zone shop)
James Lindsey	NC State University (Zone shop)
Cindy Williford	NC State University (Trans)
Tom Skolnicki	NC State University (University Landscape Architect)
Sal Musarra	Kimley-Horn and Associates
Jeremy Anderson	Kimley-Horn and Associates

- James and Alan outlined the needs for the zone shop area. 4,000sf was an appropriate size and would include room for a pick-up truck and small office space. Direct access to Sullivan from the Weaver Lab area would be a plus. 8-10' ceiling height would be adequate.
- Tim T. stated that the service area directly off of Sullivan was a positive. He thought that the one serving Admin II and III worked well.
- The Founders Drive was identified several times as a transit stop that functioned well because of the stacking ability and shelter facilities.
- The turn-around shown on Concept B would create problem in that buses would not be able to pass on such a tight turning radius. The buses need to have the ability to jump ahead and pass a bus waiting in front.
- The turning radius for the Wolfline buses is the equivalent of a WB-40.
- The parking deck connection point off of Sullivan shown in Plan B may create a unwanted

- traffic on this portion of Sullivan, but would divide the traffic load entering and existing the decks at peak times.
- Staging for buses (special events) could be as many as 8-10 at one time. There was a desire to have this function moved off site (centennial Campus). Staging for 2-3 may still be a program element that should be considered.
 - The right turn from Dan Allen north to Sullivan is too tight and prevents buses from currently making this turn safely. A minimum 30' radius is needed.
 - Provide a rest stop (small office with bathroom facilities) for bus drivers to use during late hours when other campus facilities are closed.
 - Provide a Transportation Shop storage area. The program for the space is not specific, but generally would be a conditioned space, 10' in height, have interior parking for 3 large vehicles and a storage area of approximately 40'x40' for snow plows, trailers, etc.
 - Tom S. was going to check with Tom K. as to the availability of pedestrian counts completed in the past for the general study area.
 - Preference for Plan A was expressed because of the efficiency of the transit loop interior to the site. The preferred one way direction for this drive would be from west to east. The thought was that this drive would be at grade with the sidewalk/plaza with delineation coming from pavers, integral pavement colors, bollards and planters.

Group 3 (Dining and Housing) 11:00-noon

Attendees:

Susan Grant	NC State University (Housing)
Scott Curtner	NC State University (Dining)
Kathleen O'Brien	NC State University
Tom Skolnicki	NC State University (University Landscape Architect)
Mike Hardwood	NC State University (University Architect)
Sal Musarra	Kimley-Horn and Associates
Jeremy Anderson	Kimley-Horn and Associates

- Having the parking deck in close proximity to the athletics is a positive.
- Mike noted that the growth of campus has been in a southwest direction, thus the pedestrian flow follows that pattern and is SW to NE and vice versa.
- Susan had concerns about the current conflicts with cars, pedestrians, and buses at the northeast corner of the site.
- Susan thought that organizing a User Group with Wolf Village residents would provide valuable input from the group that transverses through the site most often. Chester is the Wolf Village chair that would be responsible for organizing a meeting.
- Mike H. discussed the potential of redeveloping the Schaub parking lot and potentially the service yard (Schaub/Weaver) as a housing opportunity. There are no current plans to study this area for housing, but it may be an opportunity in the future.
- Mike H pointed out that the current master plan shows a mid-block pedestrian crossing between the Lee driveway and Dan Allen. In combination with the previous point

- regarding housing in the Schaub Lot, look at the potential to utilize a crossing in this location.
- The Grinnels Labs building has been identified on the master plan as a redevelopment opportunity. Consideration should be given to the future redevelopment and how the new building would be integrated into the West Lot.
 - Susan mentioned that Housing would like to consolidate all of their shops spaces into one central storage/shop area. No specifics were given for space requirements.
 - As shown on Concept C as a commercial space, Mike H. like the idea of using either the commercial space, zone shop, or the transportation shop as a skin for the parking deck. Not only does this provide a visual break for the parking deck façade, it provides a mix of uses and a variation in the vertical scale of the 5 story parking deck (vs. 1-2 story shop space)
 - Could a pedestrian bridge span mid-block between Varsity and the Lee lot to provide access to both the main campus (way from the current Lee lot crossing and to Athletics)?
 - In looking at Plan A, central stair/elev towers between the deck would create a central activity area.
 - As the program becomes defined, show the actual road improvements for Varsity Dr.
 - The existing oak at the SW corner of the site has been preserved in previous projects and should remain if possible.
 - A preference towards Plan A was identified in this group.

Group 4 (Athletics and Students) 1:30-2:30pm

Attendees:

Alex Blalock	NC State University (Student)
Mike Roselli	NC State University (Student)
Kenneth Lam	NC State University (Student)
Barry Joyce	NC State University (Athletics)
Tom Skolnicki	NC State University (University Landscape Architect)
Sal Musarra	Kimley-Horn and Associates
Jeremy Anderson	Kimley-Horn and Associates

- Having the parking deck in close proximity to the athletics is a positive.
- Barry liked Plan B in terms of proximity of the parking deck and to baseball and tennis. He had concerns that the season ticket holders tend to be older and thus stair towers and long walks may have a negative impact on them.
- Barry said that the buses for the visiting team needs to stage near by in case of inclement weather. Staging at Centennial Campus may be too far away. Barry was going to look into the actual requirements and pass along to Tom S.
- Alex expressed concerns about the current Bragaw/Lee parking lot in terms of access and circulation.
- Alex wanted to make sure that the parking deck was design so that is was not a eye-sore for this area of campus (such as the Dan Allen deck is)
- The potential for energy recycling was discussed in terms of solar capture and rain water

harvesting.

- Consider a pedestrian bridge from the parking deck over to the ball field.
- The current capacity of the baseball stadium is 2,500, with 3,000 when the grass hills are seated. Carl McGill can give better input on the requirements for baseball parking.
- Currently left turns cannot be made from Faucette to Varsity. This may be something to look at in terms of overall vehicular circulation.
- The idea of incorporating shelters into the deck façade would be a positive in terms of providing shelter opportunities while skinning the deck with a potential architectural feature.
- Barry mentioned that the tennis facility was looking for storage space.

Next Steps

- KHA to post User Group Concept Plans to FTP site.
- Torsha B. to pull relevant traffic count information and send to KHA for review.
- The next meeting date has not been set.

Meeting No. 4

Stated Goal:

To review alternative concept plans for the project to serve as the basis for master plan development.

PROGRAM CONCEPT MEETING

WEST LOT MASTER PLAN

March 21, 2008

Room 220, 1:00 pm

Attendees:

Tom Skolnicki	NC State University	- Landscape Architect
Gary Bridges	NC State University	- Transportation
Torsha Bhattacharya	NC State University	- Transportation
Michael Harwood	NC State University	- Architect
Sal Musarra	Kimley-Horn and Associates	
Jeremy Anderson	Kimley-Horn and Associates	

Prepared by: Jeremy Anderson

General Discussion Items

- Torsha B. stated that the bus frequency for this located would likely be one every 5 minutes.
- The transportation shop should have space for storage of 3 vehicles.
- Mike H. thought that the eastern curb line of Varsity Drive (adjacent to Butler) should be the limit for road widening to the east.
- There was discussion regarding the one-way direction of Faucette Dr and whether it would be reversed. KHA traffic shall review this and give a recommendation.
- Mike H. was concerned with the alignment of the parking deck ramp in relationship to entry/exits points. If they are directly aligned, this will facilitate users speeding out of the deck and create an unsafe condition. KHA traffic and structures to evaluate.
- Begin to show lane striping and widening recommendations for Varsity Drive. (KHA Traffic input)
- Consider sliding the parking eastern parking deck north to avoid low depression and basement access at Grinnells.
- Tom. S. to send KHA more information on the steam line location so that it can be overlaid on the plan.
- KHA traffic to evaluate the egress and ingress from Varsity and consider adding cars to the bus only lane to provide an additional access point to the western parking deck.
- Could the bus lane be gated or signed adequately to prevent cars from using it?
- KHA to evaluate the space between the west deck and the office building. Is this space large enough; to large, what is the scale? KHA to provide further detail for this area.
- The Weaver lab service area should just to be shown with a dashed line to show future connection and improvements are proposed.

- KHA to review the alignment of the new drive that extends from Sullivan to Faucette. Look at straightening this drive and creating more order to the driveways. Tom S. to touch base with Weaver Labs to get further direction as to the required loading areas vs. the ones of convenience.
- KHA to provide a Program Analysis exhibit that will compare the program elements against the existing conditions and where constraints and opportunities exist.

Next Steps

- KHA to refine Concept Plan with input from this meeting and distribute to Tom for review.
- KHA to post Previous Concept Plans to FTP site.
- KHA to engage traffic engineers to review access and lane striping.

Meeting No. 5

Stated Goal:

To review updated concept plan for the project to serve as the basis for master plan development.

CONCEPT PLAN MEETING

WEST LOT MASTER PLAN

April 18, 2008

Room 220, 1:00pm

Attendees:

Tom Skolnicki	NC State University	- Landscape Architect
Gary Bridges	NC State University	- Transportation
Torsha Bhattacharya	NC State University	- Transportation
Tom Kendig	NC State University	- Transportation
Michael Harwood	NC State University	- Architect
Lisa Johnson	NC State University	- Architect
Sal Musarra	Kimley-Horn and Associates	
Jeremy K Anderson	Kimley-Horn and Associates	

Prepared by: Jeremy Anderson

General Discussion Items

- Tom S. gave a download from discussion with staff from Schaub Hall. The feedback has been positive in response to the plans to move the pedestrian flow away from Lee lot and along Sullivan to Dan Allen (or mid-block).
- Tom S. will meet with Chris Smith to discuss the Weaver Lab service and loading requirements.
- Lisa J. would like to see more green space integrated in the plan.
- KHA to evaluate the need for 2 inbound (north) lanes on Varsity from Western blvd. All the widening needs to e to the west, in the area of the staging area and stream.
- To accurately show how much lane widening can occur to the west, KHA to locate the existing stormwater pond behind Wolf Village and show that on the base map.
- KHA to look at the corner of the west parking deck near varsity and look to create more space for pedestrian and landscaping between the deck and the road. 15' should be a minimum distance between the deck face and vehicular route.
- KHA to further look the Weaver service area. Consider a 4-way intersection as well as the ultimate alignment from Faucette to Sullivan. There may be an intermediate solution that is used until Grinells is redeveloped.
- KHA to look at the transit/pedestrian area to more clearly define the pedestrian route and look for opportunities to add green space.
- The step back of the upper level of the parking deck was received as a positive in that it allows more daylight in the pedestrian area, reduces the scale of the parking deck façade, adds a sustainable feature, and provides green interest to the parking deck.
- 15 foot is the desired width for the all campus path. It may be wider in gathering areas or at the areas adjacent to the office building.

- The desirable route from the site northeast to central campus is along Sullivan Dr and not through Lee lot. Do not show a crosswalk on the west side of the Lee lot driveway.
- KHA to consider tree selection and appropriate spacing for the large lawn area. Lisa J. stated the campus tends to mulch under the large trees and eliminate the grass. Tom S. answered by saying that the trees in question were planted to close together, therefore shading out the lawn and requiring mulch only.
- KHA to evaluate the potential for incorporating a dedicated bike lane along side the bus lane or all campus path.

Next Steps

- KHA to refine Concept Plan with input from this meeting and distribute to Tom for review.
- KHA to post all previous concept plans to FTP site.

Meeting No. 6

Stated Goal:

To review final concept plan for the project to serve as the basis for master plan development.

CONCEPT PLAN MEETING

WEST LOT MASTER PLAN

June 13, 2008

Room 303, 8:30pm

Attendees:

Tom Skolnicki	NC State University	- Landscape Architect
Brian O’Sullivan	NC State University	- Transportation
Torsha Bhattacharya	NC State University	- Transportation
Tom Kendig	NC State University	- Transportation
Michael Harwood	NC State University	- Architect
Lisa Johnson	NC State University	- Architect
Scott Noble	NC State University	- Architect
Sal Musarra	Kimley-Horn and Associates	
Jeremy K Anderson	Kimley-Horn and Associates	
Rob Ross	Kimley-Horn and Associates	

Prepared by: Jeremy Anderson

General Discussion Items

An overall review of the revised plan was presented, with the following items being discussed:

- The drive connection from the parking deck entries to Varsity Drive was reconfigured to clean up driveways on Varsity.
- The center median on Varsity, at Western, must remain to prevent continuous Faucette access to the west.
- Varsity can only be widened to the west (cannot encroach towards Butler). Concern over the permitting with NC DENR if the road is widening too far to the west, although a road crossing is an allowable impact.
- KHA to review the access to the Public Safety Lot based on the parking deck drive aisle alignment. Look the grades as widening to the west and shortening this driveway may make the drive to steep. Consider coming out to the south.
- KHA to consider space inside the phase 1 parking deck for the zone shop, due to the space restrictions and grades at the southeast corner of the south, as well utilizing unused space inside the deck as a result of the transportation offices.
- KHA to prepare a Phasing Plan to be include in the Draft Master Plan. Consider the phase one transit stop when preparing the plan.
- Consider 2-way egress (north/south) for the bus lane.
- NCSU to review the current Varsity Drive sidewalk project and is it makes sense to incorporate the sidewalk improvements onto the west lost site to allow for accessibility and the saving of the existing pine trees.

- KHA to look at alternate configurations for the Transportation Offices. The location is correct, but further study as to the number of stories, elevation (floor level) and positioning on the deck in relation to visibility and access. KHA to present these studies with the Draft Master Plan.
- Tom S. considered limiting the parking deck to 4 stories in terms of pedestrian scale and campus conformity.
- KHA to include recommendations in terms of stormwater management as it relates to the change in impervious surface.
- Consider showing the phasing plan in 3 phases (west deck, east deck, admin building)
- Review the grading for the bus lane in an attempt to flatten out as much as possible. Consider the elevation across the deck façade and the elevation around the existing oak trees.
- Tom K.’s preference for the transportation offices would be to keep the offices on a single level, with easy access.

Next Steps

- KHA to submit a draft Master Plan document the week of July 1st.
- KHA to post plans to FTP site.

Legend

- (A)** 20' one way transit only lane utilizing specialty paving and curb-less edges.
- (B)** Ground Level: Accessible bicycle lockers, showers, and transit break room.
First Level: 4,000sf Zone Shop and Transportation Storage
- (C)** Forth Level: Sustainable roof top plantings
- (D)** 6' sidewalk with linear sustainable feature
- (E)** 15' All Campus Path including pedestrian plazas, seating and landscaping
- (F)** Parking Deck access
- (G)** Road widening improvements: Ref: Traffic Section
- (H)** Significant trees to remain
- (I)** Transit shelter
- (J)** Potential pedestrian creek crossing
- (K)** Pedestrian connection improvements
- (L)** Service area reconfiguration for better access
- (M)** Drive and parking realignment
- (N)** Varsity Drive lane widening to the west
- (O)** ADA accessible pedestrian connection to Sullivan and athletic facilities
- (P)** Service area
- (Q)** Vehicular Bridge Connection
- (R)** Central Elevator Tower
- (S)** Stair Tower
- (T)** Pedestrian/Safety Improvements





