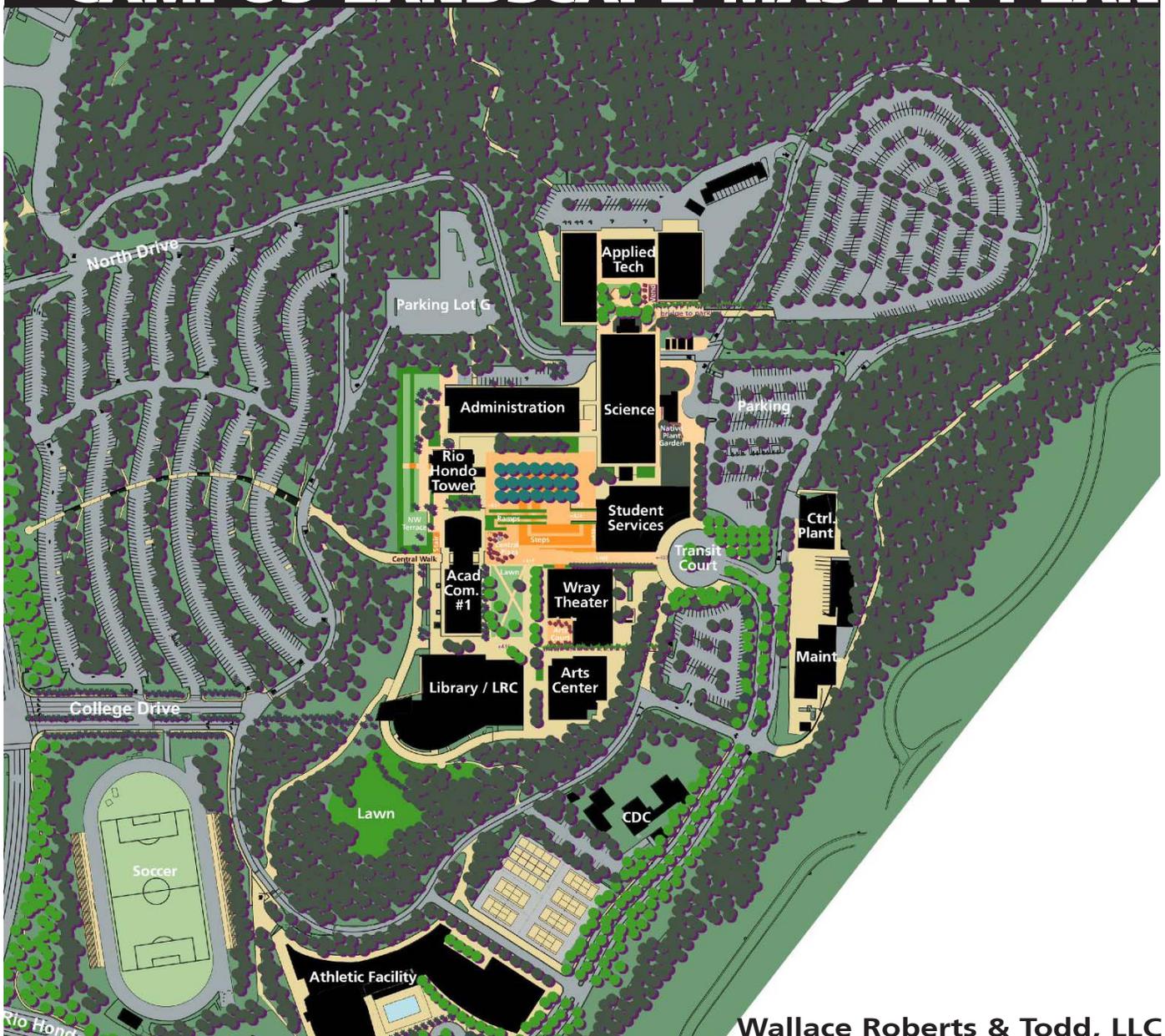


# RIO HONDO COLLEGE CAMPUS LANDSCAPE MASTER PLAN



Wallace Roberts & Todd, LLC



---

**RIO HONDO COLLEGE  
CAMPUS LANDSCAPE MASTER PLAN**

**Wallace Roberts & Todd, LLC**

March 10, 2006



# CONTENTS

## Executive Summary

### I. Introduction

- A. Purpose ..... 1-1
- B. Planning Process ..... 1-2
- C. Campus Landscape Principles ..... 1-2

### II. Landscape Plan

- A. Introduction ..... 2-1
- B. Site Opportunities and Constraints ..... 2-1
- C. Landscape Framework ..... 2-4
- D. Pedestrian Circulation ..... 2-6
- E. Focused Studies ..... 2-8
  - Workman Mill Road Entry ..... 2-8
  - Rio Hondo Parkway ..... 2-10
  - College Drive Entry ..... 2-11
  - Transit Court ..... 2-12
  - Campus Quad ..... 2-14
  - Technology Court ..... 2-18
  - Native Plant Garden ..... 2-19
  - Northwest Terrace ..... 2-20

### III. Design Standards & Guidelines

- A. How to Use This Document ..... 3-1
- B. Site Design ..... 3-2
  - 1. Buildings ..... 3-2
  - 2. Circulation ..... 3-4
  - 3. Open Space ..... 3-6
- C. Landscape Components ..... 3-8
  - 1. Grading and Drainage ..... 3-8
  - 2. Pedestrian Pavement ..... 3-9
  - 3. Planting ..... 3-10
  - 4. Irrigation ..... 3-14
  - 5. Site Furnishings ..... 3-14

### IV. Implementation & Phasing

- A. Introduction ..... 4-1
- B. Short-term Improvement Projects ..... 4-1
- C. Landscape Phasing ..... 4-2

### V. Tree Plan

- A. Executive Summary ..... 5-1
- B. Introduction ..... 5-1
- C. Establishment of Construction Zones ... 5-2
- D. Determination of Treatment ..... 5-2
- E. Evaluation Criteria ..... 5-4
- F. Weighting Factors ..... 5-7
- G. Tabulation Matrix ..... 5-7

### VI. Appendix

- A. Glossary ..... 6-1
- B. Acknowledgments ..... 6-2

### Figures and Tables

- 2.1 Opportunities and Constraints Diagram ..... 2-3
- 2.2 Landscape Framework Diagram ..... 2-5
- 2.3 Pedestrian Circulation Diagram ..... 2-7
- 2.4 Focus Study Areas ..... 2-9
- 2.5 Transit Court Diagram ..... 2-13
- 2.6 Existing Upper and Lower Quads ..... 2-15
- 2.7 Emergency vehicle access diagram ..... 2-16
- 2.8 Recommended Campus Quad ..... 2-17
- 2.9 Technology Court Diagram ..... 2-18
- 2.10 Native Plant Garden Phase 1 ..... 2-19
- 2.11 Northwest Terrace ..... 2-20
- 3.1 Tree Palette ..... 3-11
- 3.2 Shrub and Groundcover Palette ..... 3-12
- 4.1 Campus Landscape Phasing Diagram ..... 4-3
- 5.1 Tabulation Matrix ..... 5-8



## I. INTRODUCTION

### A. Purpose

The purpose of the campus landscape plan is to guide the preservation, enhancement, and care of the Rio Hondo College landscape. The plan will serve the college for many years to come. It is specifically addressed to campus decision-makers, project designers, maintenance staff, as well as the community of faculty and students. The intent is to provide an overall framework and set of design guidelines for the entire campus to ensure that all future decisions affecting the landscape—regardless of scale—contribute to a unified vision of the campus and support to overall goals of the college.

The landscape plan is consistent with the 2005 Rio Hondo College Facilities Master Plan.

The plan defines **landscape** to include all the major elements of outdoor space—circulation routes (roads and pedestrian walks), parking lots, outdoor gathering areas (plazas, malls, courtyards, open space), site furnishings (seating, trash receptacles, lighting), walls, and plants (trees, shrubs, groundcover, grasses, annual and perennial flowers).

The physical environment of the campus—and the landscape, in particular—makes a powerful first, and lasting, impression and can play a key role in recruiting and retaining students, faculty, and staff. A study funded by the Carnegie Foundation for the Advancement of Teaching found that for 62 percent of prospective students, “the appearance of the grounds and buildings was the most influential factor during a campus visit”—a result borne out by subsequent studies. In undertaking the landscape master plan, Rio Hondo College confirms its commitment to creating a collegial and attractive environment that supports the university’s mission, and acknowledges the importance of the landscape in giving order and continuity to the campus.



## B. Process

The approach in preparing the plan was led by the Steering Committee and included multiple meetings with the campus community of faculty, students, and staff. Venues included the Annual Retreat, Campus Input Meeting, Flex Day, and State of the College. Topics of discussion included:

- Campus precedents;
- Existing characteristics including strengths and areas in need of improvement;
- Numerous strategies for building on strengths and addressing deficiencies;
- Alternatives for specific aspects of the campus landscape including: planting, walkways, gathering spaces paving, furniture, lighting, and signage.

The process continues with the phased implementation of growth. The document is a tool intended for active use by project designers (architects, landscape architects, engineers), decision makers, and facilities managers who maintain the campus. Chapter 2 introduces the overriding concepts while Chapter 3 delineates specific recommendations. Chapter 4 presents steps toward completing the campus landscape improvements.



## C. Campus Landscape Principles

The following summarizes the *Vision Plan's* Overriding Guiding Principles as they apply to the development of the campus landscape.

A. Strengthen the unique **Sense-of-Place** of Rio Hondo College through the design and maintenance of the campus.

- Support the educational and community with the provision of meaningful and inviting outdoor settings.
- Use landscape materials (plants, pavement and site furnishings) specified in the design standards and design guidelines to unify the campus character.
- Restore native habitat vegetation toward a viable ecosystem.
- Develop an interpretive program to educate the community about the built and natural campus environment.
- Provide directional and informational signage throughout the campus.
- Improve lighting for safe, inviting evening access.



B. Define the campus' **Open Space Framework** as an interdependent system of gathering places and linked by a network of circulation routes.

- Protect and enhance existing open spaces.
- Improve existing courtyards and create new plazas and courtyards for the campus community. Courtyards and plazas to accommodate tranquil solitude, large performances, outdoor classrooms, study groups, staff gatherings, and larger campus events.
- Define the campus core with rectilinear forms and refined materials in contrast to the curved forms and rustic materials of the surrounding hillsides.
- Enhance views to surrounding hillsides.
- Make campus access and circulation barrier free and inviting.
- Design a sequence of entry experiences to the campus, at open spaces and buildings.
- Provide seating at resting and gathering places.
- Develop alternative paths for a range of abilities and interests.

C. Make the campus a model of **Sustainability** through design, construction and maintenance of the campus to optimize limited resources.

- Plant native and/or non-invasive, drought tolerant trees, shrubs, vines and groundcover.
- Design site forms to minimize grounds maintenance.
- Use construction materials made from recycled and locally produced materials.
- Encourage transit use to campus with improved stations and schedule.
- Coordinate and improve on-campus shuttle system with proposed new access circulation system.
- Pursue national standards for measuring sustainability in construction and operation.
- Develop a strategy for funding and phasing of landscape improvements and maintenance in balance with the specific building and utilities projects.



## Overall Guiding Principles of the Vision Plan:

While all the following principles indirectly apply to the landscape those in **bold** type have a direct or significance influence on the campus landscape.

1. All segments of the College community should be allowed opportunity for meaningful input in the development of the Campus Master Plan
2. The Campus Master Plan shall be reviewed annually by the Planning/Fiscal Council
3. The impact of construction on the instructional program shall be minimized
4. **Buildings, infrastructure and landscape should be environmentally sound and reflect principles of sustainability**
5. All technology systems should be integrated and efficient
6. Related academic programs should be clustered together
7. Spatial isolation of programs should be minimized except where appropriate, e.g. Public Service
8. **The campus should be accessible to all students and employees**
9. **There should be efficient and safe ways to navigate the campus**
10. Parking should be sufficient and convenient to major sites
11. There should be convenient and safe drop-off locations
12. **Appropriate lighting and signage should be provided throughout the campus**
13. Open spaces shall be maintained and enhanced
14. There should be a unified campus design
15. The campus should have a recognizable entrance
16. The natural environment, including the view, shall be maintained
17. The campus should have attractive gathering places both indoors and outdoors
18. Student Services should be combined into a one-stop facility
19. Centers should be conveniently located for local residents



## II. LANDSCAPE FRAMEWORK PLAN

### A. Introduction

The framework for the campus landscape master plan is built upon the site's unique conditions to meet the vision and goals of the Campus Vision Plan. This chapter introduces the broader ideas and illustrates their application in five focused study areas.

### B. Site Opportunities & Constraints

Rio Hondo College, established on a hilltop, is a unique setting for a community college. Its steep topography offers views to the west, south and southeast across the surrounding hillsides.

However, many of the off-site views are obstructed by overgrown vegetation that should be thinned out to enhance views. Likewise, the campus is seen by multitudes passing along the I-605 freeway. Views into the campus can be enhanced with landscape, signage and lighting improvements along Workman Mill Road.



The presence of a vast open space system that seemingly tumbles down to the fringes of the campus, especially on the northern edges, enhances the unique setting of the campus. These unique areas that are rich in plant and wildlife should be protected and enhanced.

Unofficial drop-offs within the central part of the campus create unsafe traffic situations, including an unsafe left-turn into Lower Lot 3 to access the parking booth. One of the goals of the master plan is to organize student drop-off areas whereby students can be safely unloaded from vehicles near the center of the campus.



In addition, there are several instances of students walking in the roads because no sidewalk exists. This is evident on the West Road and also on North Drive as students walk from the lower lots to the campus core. Likewise, there is considerable foot traffic from Lot A towards the Science Building and the campus core. This creates an unsafe pedestrian crossing at Circle Drive and North Drive, below the Science Building. A proposed pedestrian bridge from Lot A to the Tech Quad will alleviate this condition.

Access to the campus core requires climbing through several steep but thickly vegetated hillside roads. Once in the heart of the campus, the noise and distractions from the surrounding freeways and communities disappears and a feeling of calm and solitude pervade. Maintaining and enhancing the thickly forested hillside is an important component of the landscape master plan.

Once within the core of the campus however, a lack of seating, shade and spatial variety creates a vastness that belies the personal and humanistic nature of the students, faculty and staff. One of the main challenges of the campus landscape master plan improvements is to recreate a variety of spaces, each sized for different gatherings, accentuated by seating, shade, and new plant materials.

Multiple entrances to the campus and buildings require an intimate familiarity of the campus. However, the signage master plan has established a direction that will solve issues of wayfinding and information gathering. The recommendations within the landscape master plan will also contribute to the ease of wayfinding, from the point at which one enters the campus either by car or bus, to their point of destination.

Likewise, campus lighting is insufficient today but is being addressed in the lighting master plan. This is special concern since there is a large nighttime population of students on campus. Similar to the proposed signage improvements, the lighting improvements will be closely coordinated with the proposed landscape improvements.

See Figure 2.1 Opportunities and Constraints Diagram.

#### Opportunities:

- The Campus Entry along Workman Mill Road could be a stronger landscape feature.
- The Hillside Tree area is a buffer between the campus core and adjacent off-site uses.
- Distant views are of the Los Angeles basin to the west and the Puente Hills to the east.
- The edge between the open space slopes and the campus adds to the unique setting.

#### Constraints:

- Vehicular access to the parking booth is not direct or clearly visible.
- Hillsides are eroding due to unauthorized foot paths.
- Incomplete direct access from the lower parking lots to the campus core.
- Issues with the Upper and Lower Quads include: Lack of shade, seating, outdoor teaching spaces, and the landscape requires a high degree of maintenance.
- Vehicular and pedestrian conflicts occur at intersections
- The unauthorized drop-off area north of the Administration building is dangerous and restricts efficient circulation.
- The lack of sidewalks along roads is dangerous.

# RIO HONDO COLLEGE CAMPUS LANDSCAPE MASTER PLAN

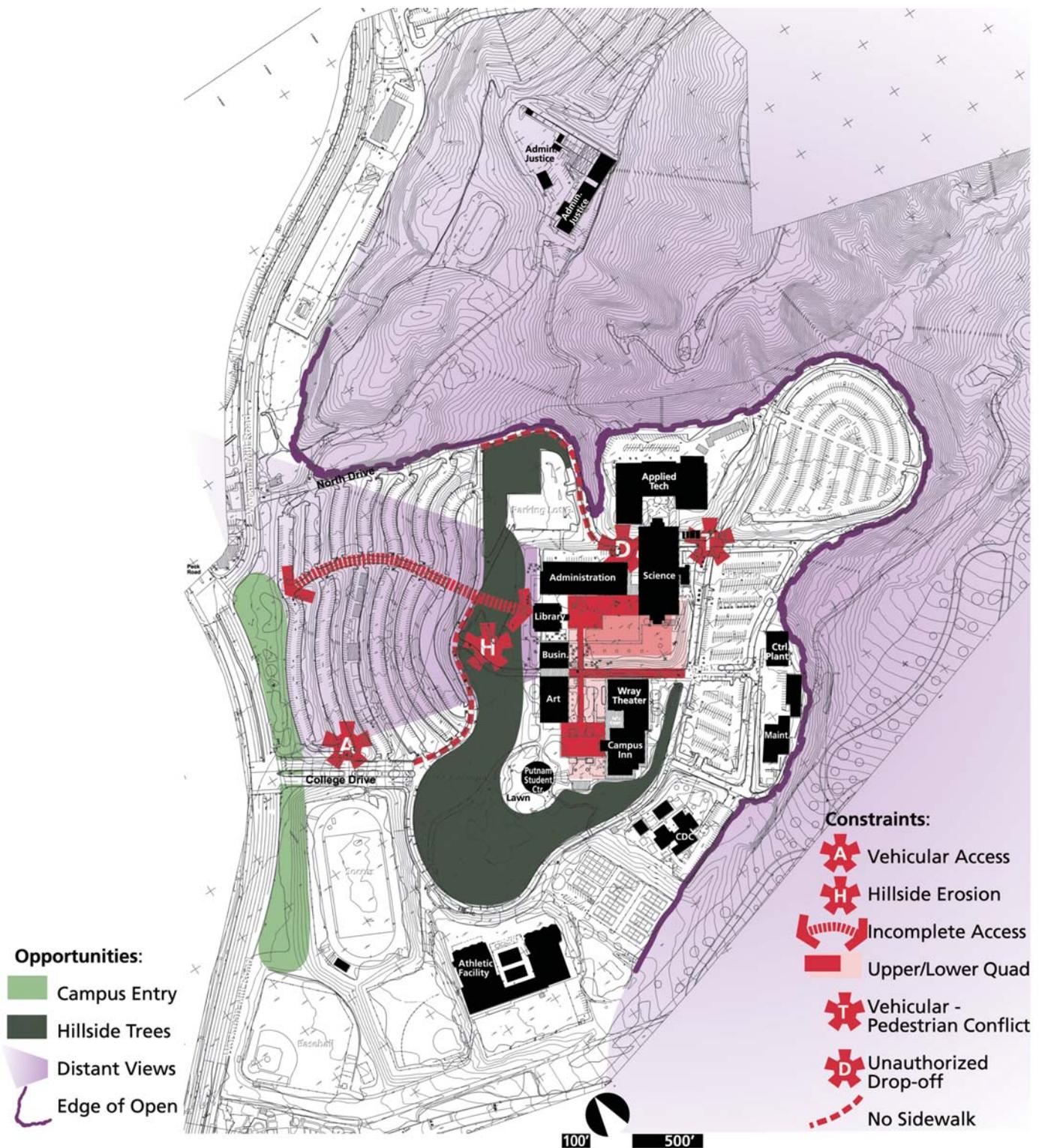


Figure 2.1 Opportunites and Constraints Diagram

## C. Landscape Framework

The framework diagram (figure 2.2) illustrates the key recommended improvements that will define and enhance the sequence of open spaces linked through pedestrian circulation through the composition of plants, pavement and site furnishings.

The campus includes two broad landscape types- the campus core and the thickly vegetated hillsides that extend down to Workman Mill Road. Within these two areas are defined places including entries, courts, quads, and circulation routes. A third area comprises the surrounding hillsides above the campus. There are no improvements proposed for these upper hillside areas other than in conjunction with improvements specifically related to the Administration of Justice (AJ) facility.

### Campus Core

The campus core is where the primary outdoor activity occurs (with exception of the athletic fields). Today, the campus core, comprised of the upper and lower quads, is marked by large open areas without extensive shade or seating. A few smaller intimate spaces are found on the edges of the campus core, such as the lawn area with palm trees between the Library and Business Buildings, the plaza between the Wray Theater and Campus Inn, and the outdoor dining areas on the east and south sides of the Campus Inn.

However, the open areas of the upper and lower quads lend themselves to the frequent larger campus gatherings. Open lawns are enjoyed most in the upper quad, the meadow southwest of the Learning Resource Center (LRC), and the athletic fields. A critical component of the campus landscape master plan is reducing the amount of lawn area (to conserve resources and minimize maintenance), but retaining enough lawn in the campus core for passive relaxation.

As a result of the compact campus core, certain areas offer undesirable views to passing students, faculty and staff. Such areas include the Wray Theater service dock on the east side of the Wray Theater, the mechanical equipment found below the Tech Quad, east of the Science Building, and the views into the Facilities Buildings east of Lots B and C. Tall dense plants will screen undesirable views.

Tall hedges can also buffer views throughout the campus.

### Hillsides

Immediately upon entering the Rio Hondo College campus, from either the existing entries at Central and North Drives, or the future Rio Hondo Parkway to the south, everyone will climb through thickly forested roads before reaching the campus core.

Over time, the vegetation of the campus hillsides, including the terraced parking lots, should be replanted as trees reach the end of their life cycle, pose hazards or create excessive maintenance. New plantings should be phased so that the overall affect upon the appearance and function of the hillsides are minimal. Plant materials should be selected for their appropriateness to the topography and solar exposure, as well as supporting wildlife.

In addition to new walkways proposed on the east side of West Drive, a primary improvement to pedestrian circulation between the lower lots and the campus core, is the proposed central walk, including stairs and ramps, that will allow students to more directly and safely walk from the lower lots to the campus core. The central walk will begin on the lower parking lot, near the existing bus stop on Workman Mill Road and extend to Central Drive.

To aid in easily understanding the pedestrian and vehicular circulation routes, a series of courtyards and spaces will serve as arrival and

# RIO HONDO COLLEGE CAMPUS LANDSCAPE MASTER PLAN

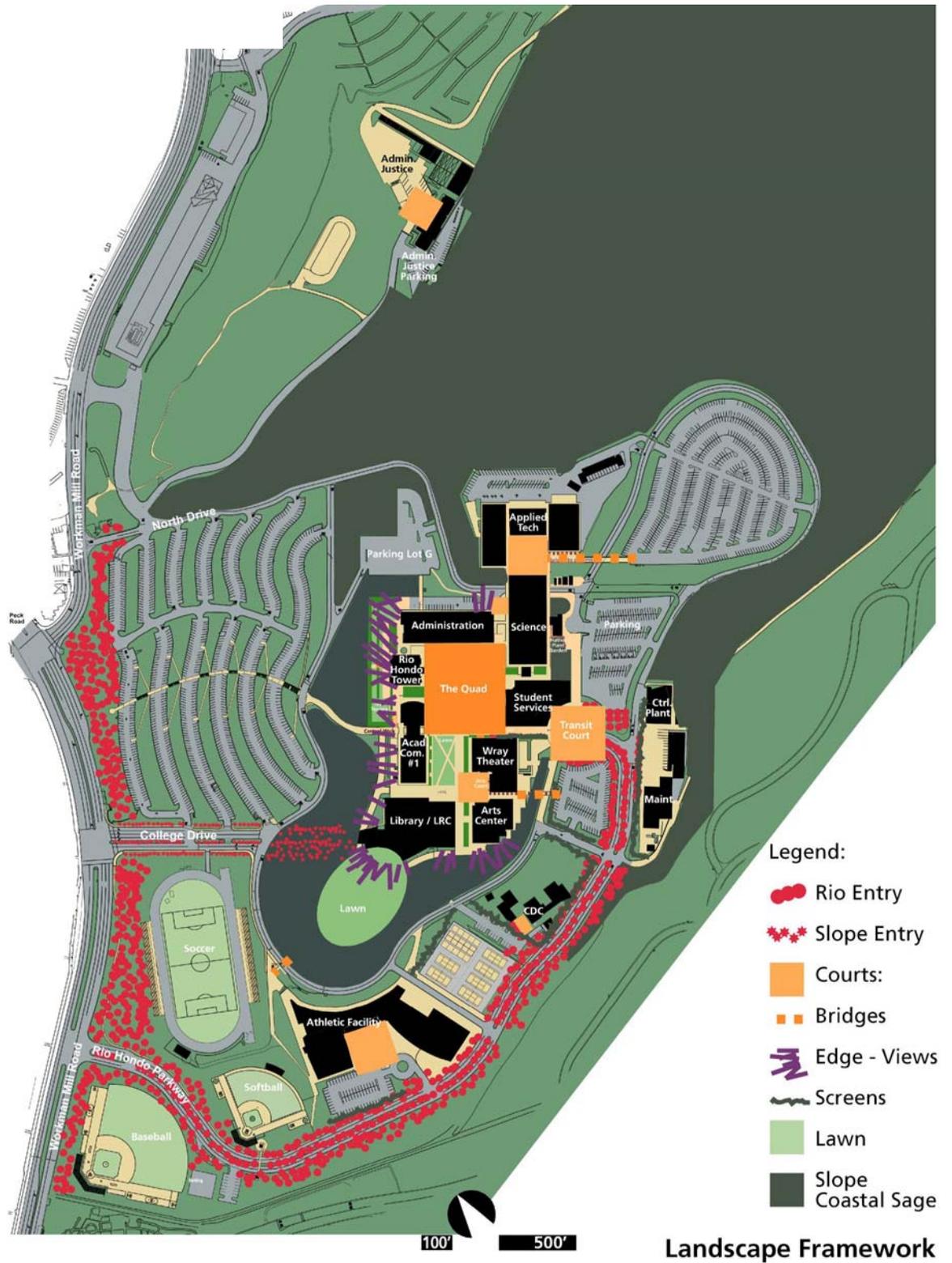


Figure 2.2 Landscape Framework Diagram

drop-off areas between the parking lots and the campus core. These areas begin at Workman Mill Road, and continue through the entry roads to the edges of the campus core.

These areas include the existing bus stop on the east side of Workman Mill Road, proposed relocation of the parking and information booth to the Rio Hondo Parkway, a new drop-off on West Drive just south of Central Drive, a new drop-off on South Drive immediately west of the Child Development Center, and what will be the primary drop-off, the proposed Transit Court at the terminus of Rio Hondo Parkway.

Complementing the landscape improvements in these arrival and drop-off areas will be new lighting and signage.

## **D. Pedestrian Circulation**

Paths into and through the Rio Hondo Campus will be improved with the implementation of the Master Plan's buildings and road improvements. In certain situations today, pedestrians and vehicles share the roads in an unsafe manner. This includes the West Drive and North Drive where sidewalks do not exist. Improvements included within the campus landscape plan, include a new walkway on the east side of West Drive, and on the south side of North Drive. These improvements will allow pedestrians to walk safely on designated sidewalks.

In addition, fitness circuits including sidewalks and hillside trails are proposed. Hillside trails can be constructed with bark mulch as the primary surfacing. The campus landscape master plan has identified three different fitness courses, each of different length, which would allow fitness training at any time of the day. Lighting should be included along the hillside trails. Each walk would offer different challenges of length and elevation change and would connect to the athletic facility.

Complementing the new walkways and trails are new pedestrian bridges will connect parking lots upper levels to the campus core. Two pedestrian bridges are proposed from Lot A to the Tech Quad and from Lot C to the east side of the Wray Theater/Campus Inn. Both bridges will allow safe access from parking lots directly to the campus core, above busy roads.

A proposed third pedestrian bridge will allow direct access from the athletic facility to the athletic fields across the proposed Rio Hondo Parkway.

Public transit buses which currently pick up and drop off at the base of the campus on both sides of Workman Mill Road in the future will be able to pick up and drop off riders at the Transit Court at the terminus of Rio Hondo Parkway. This will hopefully increase ridership and decrease the amount of students, staff and faculty driving to and parking on campus.

Today the college operates a shuttle van between Lot A at the northeast corner of the campus to the lower terraced parking lots. Two shuttle vans are generally running at the same time, affording students a 15 to 20-minute ride from the lower lot to the campus core. As the college builds new buildings and roads as part of the overall master plan, the shuttle van system route should be reviewed. Consideration should be given to a system that loops the campus core with possibly an additional loop within the lower terraced parking lots. If possible, additional vans should be added during peak periods to decrease the headway between vans and minimize wait times for vans.

# RIO HONDO COLLEGE CAMPUS LANDSCAPE MASTER PLAN

## Pedestrian Circulation

Legend:

- Existing Pedestrian Only Path
- Existing Pedestrian Vehicular Route
- Proposed Pedestrian Only Path
- Proposed Pedestrian Vehicular Route
- Fitness Walks
- Pedestrian Bridges

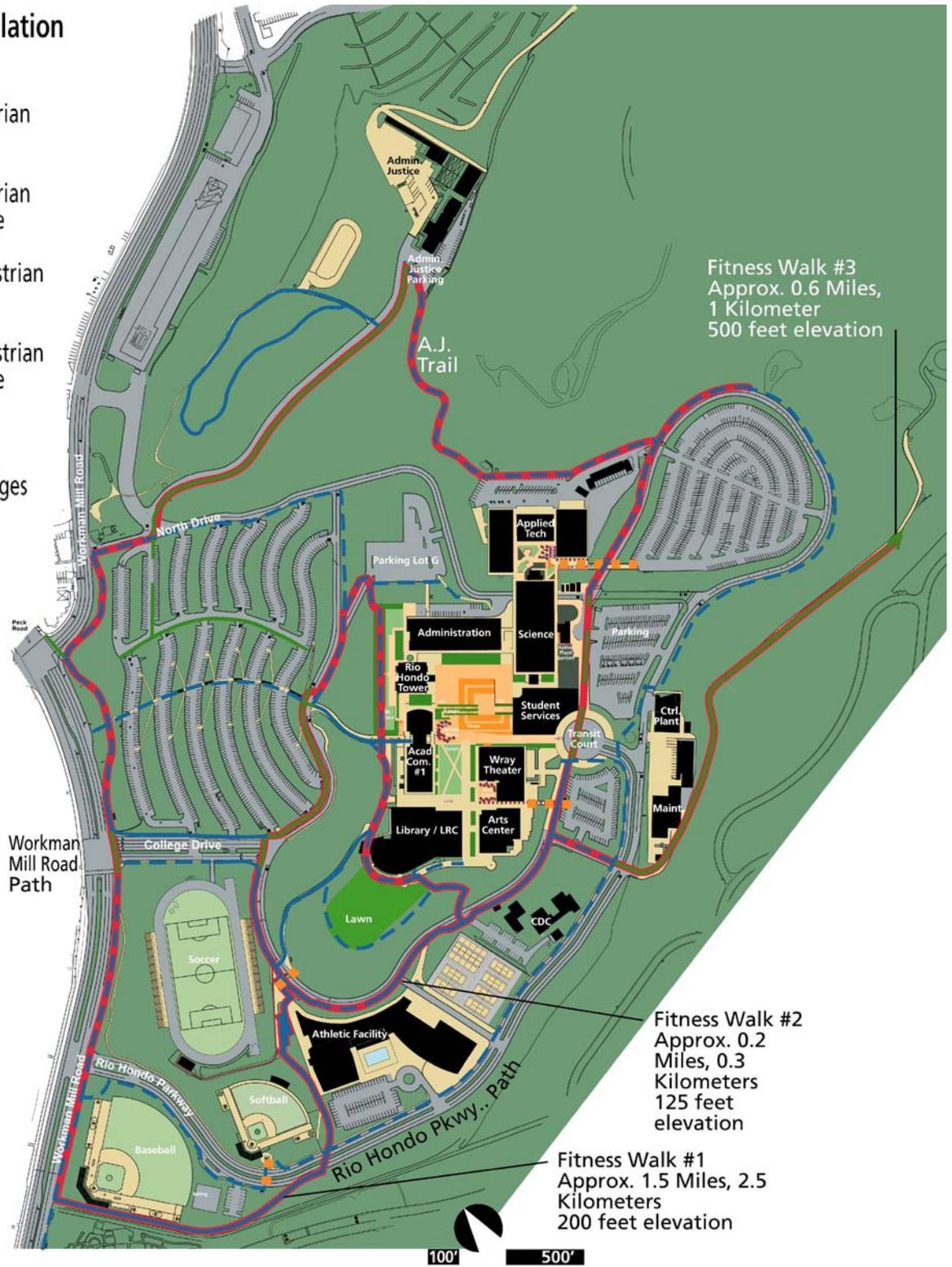


Figure 2.3 Pedestrian Circulation Diagram

## E. Focused Studies

Key areas of the campus are addressed in detail.

### Workman Mill Road Entry

The new campus entrance road is both a functional and ceremonial route. It is an important opportunity to redefine and unify the Rio Hondo campus. Proposed is an intense planting of distinctive trees along Workman Mill Road and the new entry road, known as Rio Hondo Parkway. This will link the core of the campus with the public face.

The California sycamore trees (*Platanus racemosa*) are recommended for their dramatic white trunks, quickly growing large canopy and minimal requirements of maintenance. The lawn along Workman Mill should be replaced with evergreen, drought tolerant groundcover to reduce maintenance and use of irrigation water.

Suggested groundcover plants for Workman Mill Road Entry:

- ❑ *Baccharis pilularis*, Coyote Bush
- ❑ *Muhlenbergia rigens*, Deer Grass
- ❑ *Ribes viburnifolium*, Evergreen Currant



*Proposed planting of California Sycamores along Workman Mill Road*

RIO HONDO COLLEGE CAMPUS LANDSCAPE MASTER PLAN



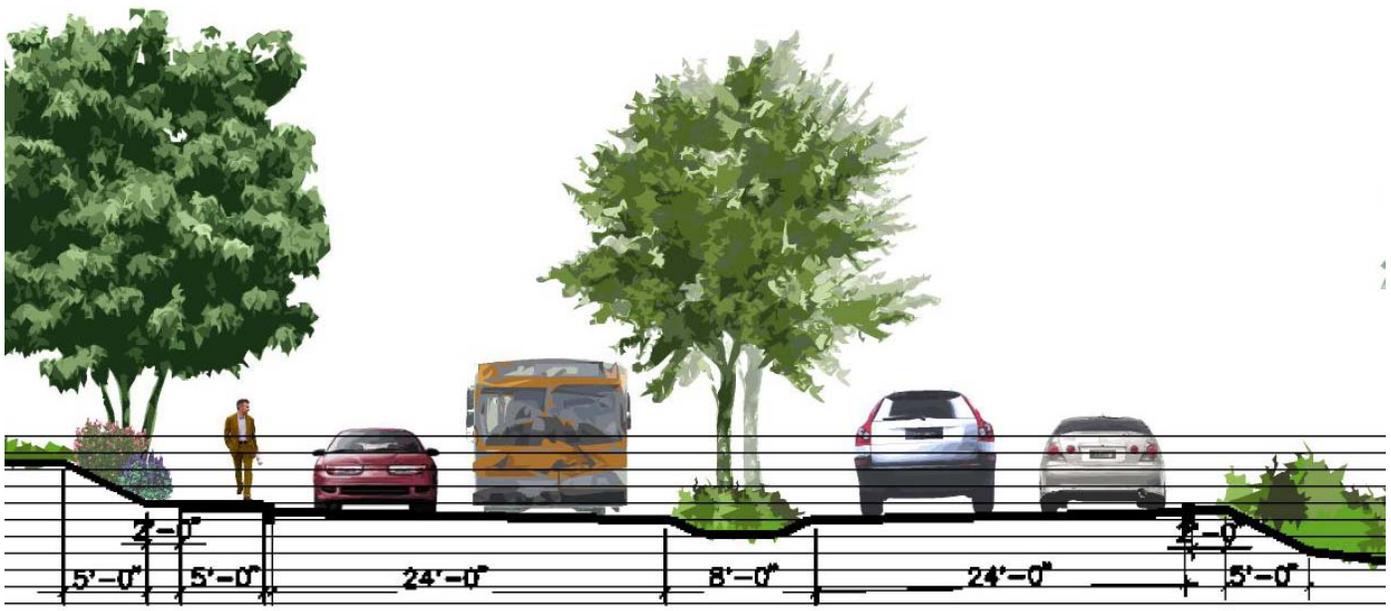
Figure 2.4 Focus Study Areas

### Rio Hondo Parkway

The median on the new entry road will be 8' wide and engineered to collect and cleanse stormwater runoff. The recommended median trees, low shrubs and groundcover are native to the region's streambeds and will help cleanse the stormwater.

Suggested plants for the Rio Hondo Parkway:

- Platanus racemosa*, California Sycamore
- Baccharis pilularis*, Coyote Bush
- Ceanothus 'Joyce Coulter'*, California Liliac
- Diplacus spp.*, Monkey Flower
- Elymus condensatus*, Giant Wild Rye
- Muhlenbergia rigens*, Deer Grass
- Ribes viburnifolium*, Evergreen Currant
- Sisyrinchium bellum*, Blue-eye Grass



The Rio Hondo Parkway bio-swale median

**College Drive Entry**

Palm trees will mark the existing entrance from Workman Mill Road as a functional access to the parking terraces. The medians may be suitable for additional palm trees transplanted from campus building development sites if they meet the criteria of the Tree Plan. The existing pine trees in the median should remain.

Plants for College Drive Entry:

- ❑ *Anigozanthos spp.*, Kangaroo Paw
- ❑ *Dietes bicolor*, African Iris
- ❑ *Helianthemum nummularium*, Sunrose
- ❑ *Salvia leucantha*, Mexican Bush Sage
- ❑ *Washingtonia robusta*, Mexican Fan Palm



*College Drive median today.*



*Palm trees from College Drive are envisioned to extend up the slope to the Library/LRC*

## Transit Court

The Transit Court will be the vehicular terminus on the proposed Rio Hondo Parkway. In addition to serving as the new “entry lobby” to the campus, the Transit Court will serve as the primary drop-off and pick up point for students, faculty and staff. Public city-operated buses will establish bus stops in the Transit Court. Access to the parking structures will be directly from the Transit Court.

Once completed, the Transit Court and the proposed Student Services building will frame this new front door to the campus core. A central promenade will afford direct pedestrian access from the Transit Court to the central areas of the campus quad.

The Transit Court should be designed primarily as a pedestrian plaza that allows cars and buses to move efficiently through the space. Site elements such as lighting, signage, seating and planting areas should be designed to accommodate pedestrians and define the vehicular routes. Pedestrian paving should be given careful consideration and attention to detail, and should flow seamlessly into the central promenade and campus quad. In addition, the vehicular pavement within the Transit Court should reflect the richness of the pedestrian areas. Removable bollards will be necessary at emergency vehicle access points.

The Transit Court will be planted with upright shade and evergreen trees on the perimeter to screen the future parking structures and the Facilities Buildings including the proposed central plant. The circle within the central court is anticipated to be planted with Coast Live Oaks and California Sycamores forming a notable terminus to the Rio Hondo Parkway median planted with riparian oriented plants.

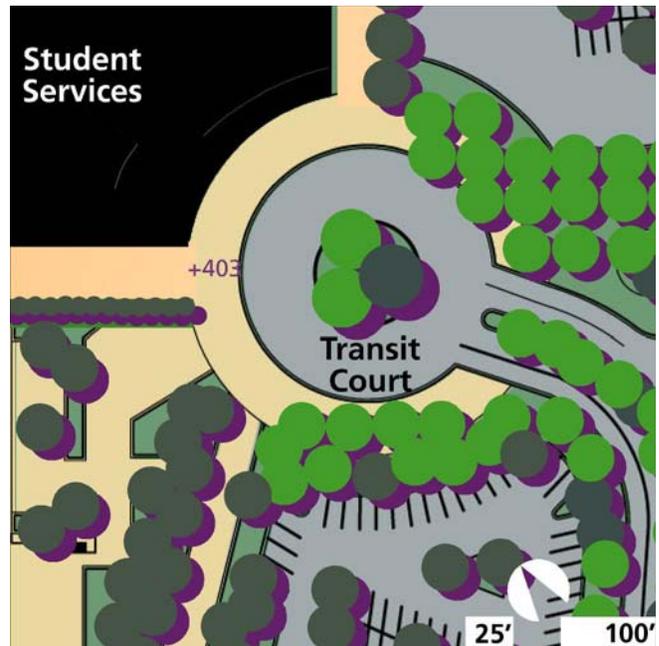


Figure 2.5 Transit Court Diagram

The Transit Court landscape will include the following plant materials:

- Platanus racemosa*, California Sycamore
- Quercus agrifolia*, Coast Live Oak
- Ceanothus 'Joyce Coulter'*, California Liliac
- Mimulus spp.*, Monkey Flower
- Muhlenbergia rigens*, Deer Grass
- Ribes viburnifolium*, Evergreen Currant
- Sisyrinchium bellum*, Blue-eye Grass



*Trees and shrubs to screen the Wray Theater loading area. Seatwalls invite students to relax along the primary pedestrian promenade between the Transit Court and the Campus Quad.*

The parking/loading area southeast of the Wray Theater should be screened with dense vertical planting along the new pedestrian allee, and along the southeast slope.

Suggested trees to define the Transit Court and screen adjacent facilities:

- ❑ *Aesculus californica*, California Buckeye
- ❑ *Calocedrus decurrens*, Incense Cedar
- ❑ *Cupressus sempervirens*, Italian Cypress
- ❑ *Lyonthamunus floribundus*, Catalina Ironwood

## Campus Quad

The Campus Quad is envisioned to be the central open space to host large and small gatherings, provide places for individual study, and barrier free circulation between facilities.



It is currently two spaces divided by a road, trees and a 16 foot elevation change. The new entry road eliminates the need for this route. The change in elevation is seen as an opportunity to create a unique space that is both welcoming and useful.



*The road and steep slopes divide the central campus open space.*



*The upper quad contains an actively used paved area and open lawn.*



*The ramp bridges the road and provides access for all.*

The Campus Landscape Master Plan recommends creating one central open space by sculpting the landform into a grand set of steps terraced down the slope.

The center of the quad can be seen from almost the entire space for large gatherings. The Central Plaza (see figure 2.8) should accommodate 250 to 300 people.

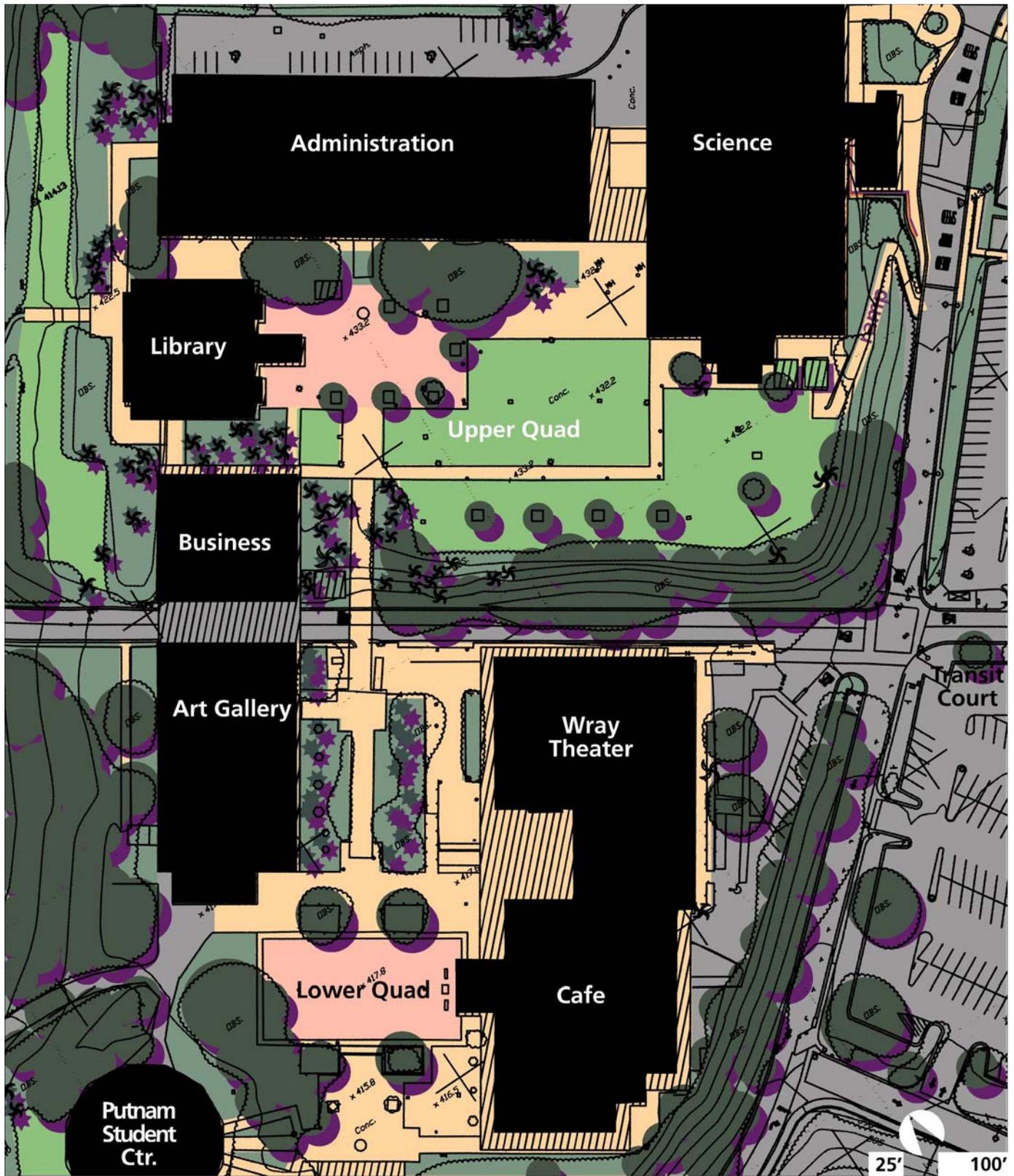


Figure 2.6 Existing Upper and Lower Quads

Central walk slopes up from the Transit Court on the east and from the parking terraces on the west. A plaza is defined east of building one along the central walk. It is intended for tables and chairs, a water feature, and the campus flags.

The new Student Services building should be accessible from multiple levels of the Quad. The 17 foot change in elevation is divided into four 4.25 foot tall sets of stairs (6" risers X 15" treads). This 'Student Square' steps down through a grove of flowering trees. A series of ramps connect each level from the central plaza to the Student Service terrace and up to the top of the square.

The exterior facade of the Way Theater can be used as a large projection screen with viewing from the terrace steps. An outdoor stage on the north side of the theater would be another opportunity for public performances with seating on the steps.

The Learning Resource Center (LRC) will draw students to the southwest. An open lawn invites informal use under canopy trees. The paved plaza will be useful in the many fairs and events programmed throughout the year between the cafe and the LRC.

The Arts Court is a small space off the Campus Quad is at an entrance from the parking lots. It should offer tables and seating.

Mature trees will remain south of the administration building as a buffer from the quad. The new Student Services building, planned at the south east will be a gateway into the quad and a campus destination.

Suggested plants for the Campus Quad:

- ❑ *Ginkgo biloba*, Maidenhair Tree
- ❑ *Jacaranda mimosafolia*, Jacaranda
- ❑ *Koelreuteria bipinnata*, Chinese Flame Tree

- ❑ *Platanus racemosa*, California Sycamore
- ❑ *Quercus englemannii*, Engleman Oak
- ❑ *Tipuna tipu*, Tipu Tree
- ❑ *Ulmus parvifolia*, Evergreen Elm
- ❑ *Dietes bicolor*, African Lily
- ❑ *Parthenocissus tricuspidata*, Boston Ivy
- ❑ *Ribes indecorum*, White-flowered Currant
- ❑ *Rosa Bankasiae*, Lady Bank's Rose
- ❑ *Wisteria sinensis*, Chinese Wisteria

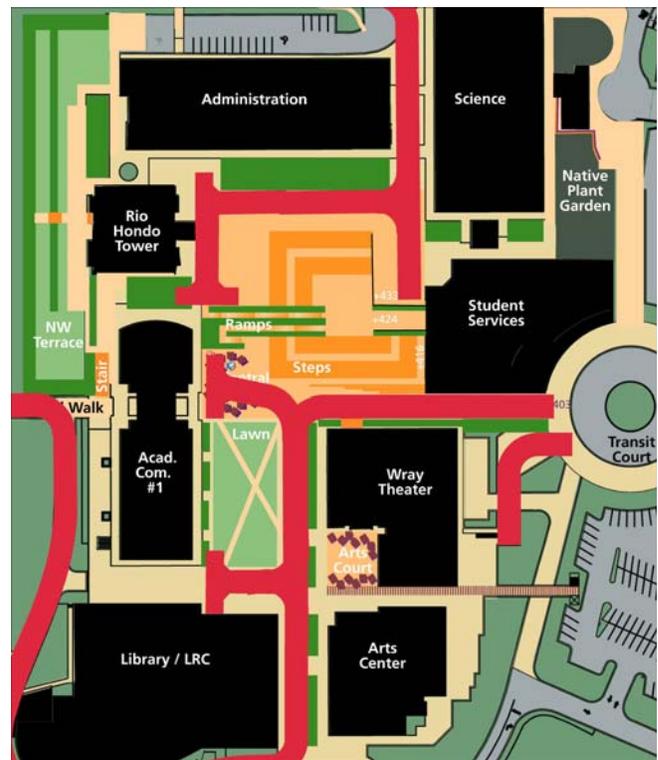


Figure 2.7 Emergency vehicle access diagram

Emergency vehicle access to the lower level will be from the southeast, between the Wray Theater and the new Student Services building, and from the fire lane south of the LRC. Access to the upper level will be from the existing passageway between the Science and Administration buildings.

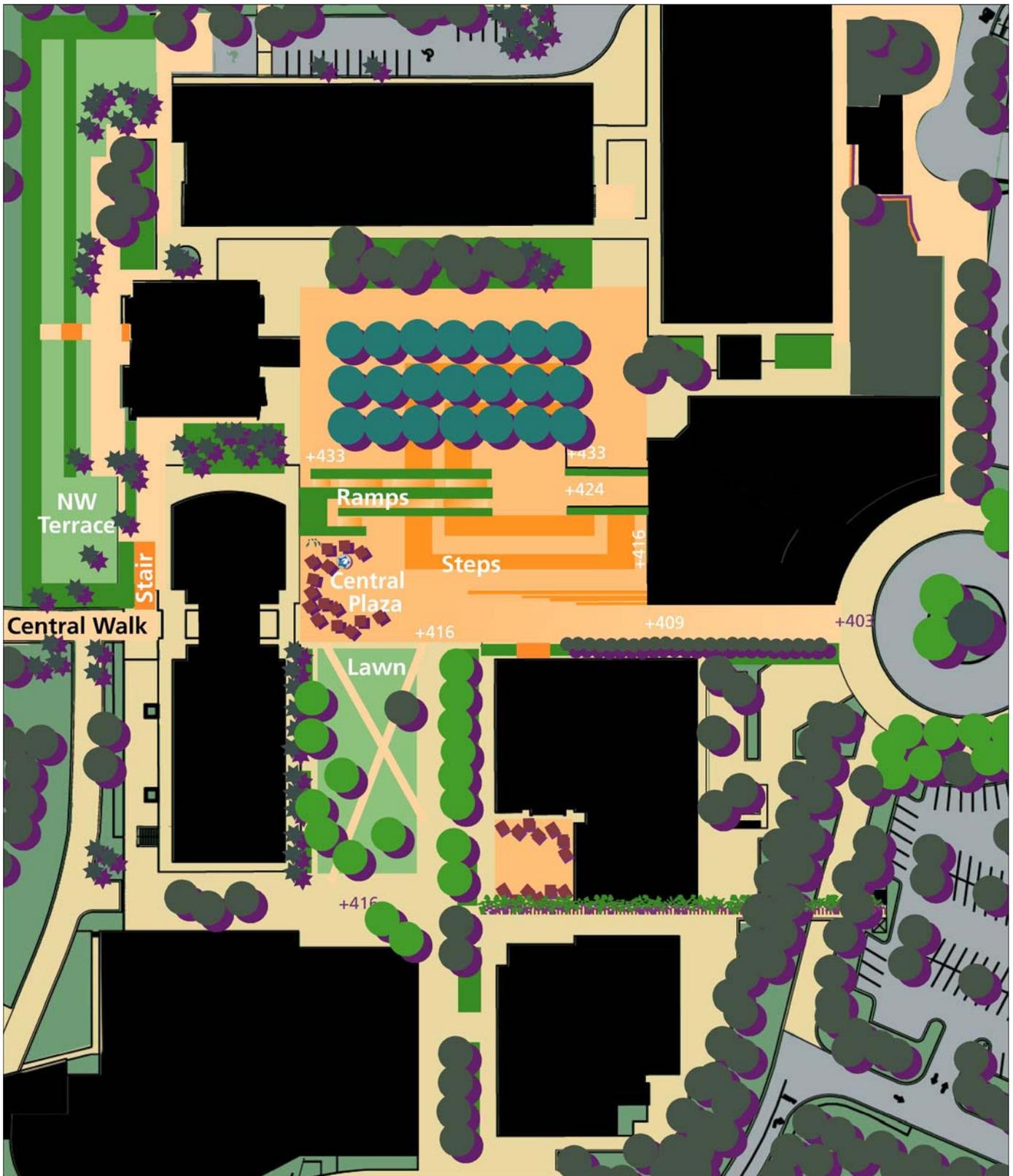


Figure 2.8 Recommended Campus Quad

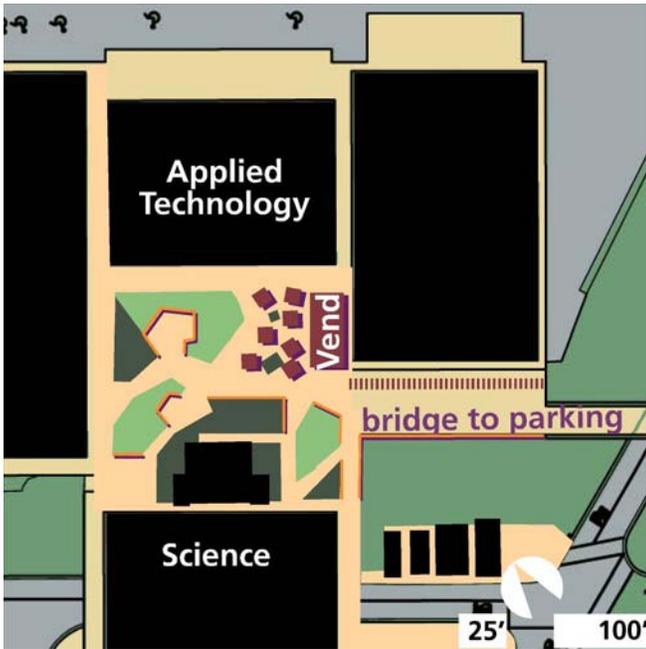
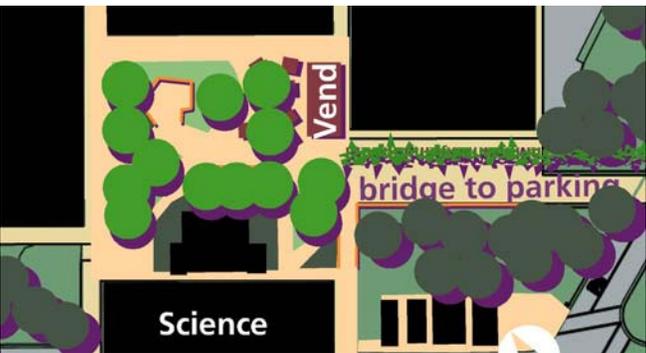


Figure 2.9 Technology Court Diagram



Technology Court with tree canopy

## Technology Court

The Technology Court is between Science and Applied Technology buildings. It is heavily used by a variety of groups and individuals. Originally it was designed with organic forms in the pavement as a counterpoint to the surrounding building's rectangular geometry. Over time lawn areas have been worn by pedestrian circulation. Additionally, a new pedestrian bridge is planned to access parking lot A.

This courtyard will be redesigned in conjunction with the refurbishment of the Applied Technology buildings. Seatwalls should be installed to invite the campus community to enjoy the space, and protect the adjacent planting areas from pedestrian traffic. Lawn should be replaced with drought tolerant groundcover in a few of the planting areas. Existing trees and pedestrian pavement should be replaced. The north facade of the Science building should be screened with tall vegetation. New picnic tables with umbrellas and relocated vending machines should be located in the court. Improvements should be coordinated with the phased renovation of the surrounding buildings.

Suggested plants for Technology Court:

- Koelreuteria bipinnata*, Chinese Flame Tree
- Lyonthamnus floribundus*, Catalina Ironwood



Low concrete walls will direct pedestrian traffic and provide seating for small groups. New trees will screen the Science building stairway.

- ❑ *Alyogyne huegelii*, Blue Hibiscus
- ❑ *Tracheleospermum jasminoides*, Star Jasmine



Native Plant Garden Phase 1

### Native Plant Garden

The native plant garden should be established on the slope southeast of the Science building. This close proximity will encourage use in the science curriculum and will serve as an educational introduction to hillside planting for the wider campus community.

The native plant garden should be implemented in two phases. Initially, a detailed plan should be documented to define the phased grading, pavement, irrigation and types and locations of plants. In the area north of the path, non-native plants should be removed and replaced with native erosion controlling hydroseed and shrubs. The irrigation system needs to be adjusted for the new planting.

The second phase extends south and should be implemented with the construction of the Student Services Building. The existing asphalt path and retaining wall units should be replaced with stairs. A ramp through the garden is not feasible as it the space is too small to accommodate the amount of ramping and a viable collection of plants. If stairs are deter-

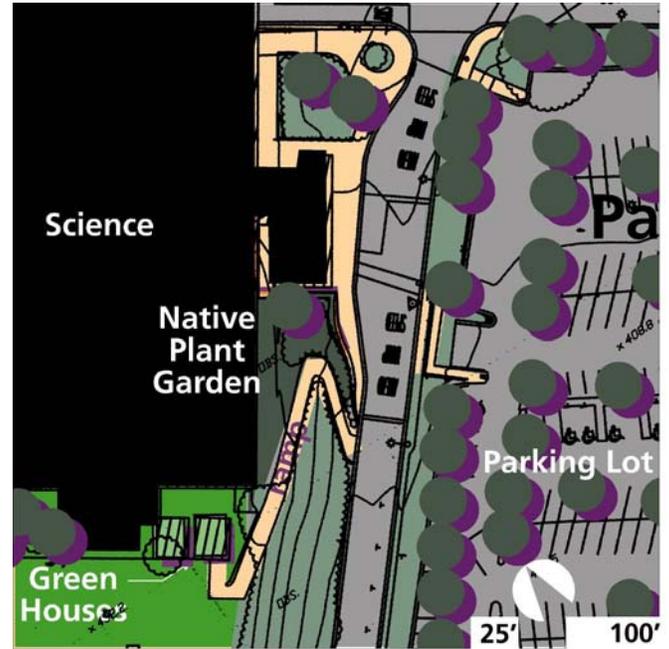


Figure 2.10 Native Plant Garden Phase 1

mined to be a valuable circulation route then ADA access might be achieved via the elevators in the Science building, Student Services and Parking Structure B. It may be determined that because ADA access is not feasible through the site that access stairs should not be installed, which would allow a larger native plant garden. The area north of the Science building elevator should be considered as a possible third phase the Native Plant Garden.

Suggested plants for the Native Plant Garden:

- ❑ *Arctostaphylos spp*, Manzanita
- ❑ *Cistus spp.* Rockrose
- ❑ *Eriogonum giganteum*, St. Catherine's Lace
- ❑ *Heteromeles arbutifolia*, Toyon
- ❑ *Rhus integrifolia*, Lemonade Berry
- ❑ *Rosa californica*, California Rose
- ❑ *Salvia spathacea*, Hummingbird Sage

## Northwest Terrace

The edge of the campus core at the interface of the outlying landscape provides numerous places for study and gathering with breezes and grand views. These spaces must be carefully crafted to ensure safe comfortable settings.



The long narrow lawn terrace on the northwest edge of the campus core buildings (old library and Academic Commons #2) is a quiet area outside the activity of the Campus Quad. It is bisected with the 'goat path' to the parking terraces below. Palm trees serve to frame views.

The lawn should remain as a campus oasis. It is recommended that the English ivy on the flat portions of the lawn are removed to expand the lawn. Replace English ivy on the slope with flowering native low growing shrubs and groundcover in rectilinear beds.

Small trees and shrubs should be planted west of the terrace to screen the Workman Mill Road warehouses. Foreground trees should be carefully laced to frame views of the distant hills.

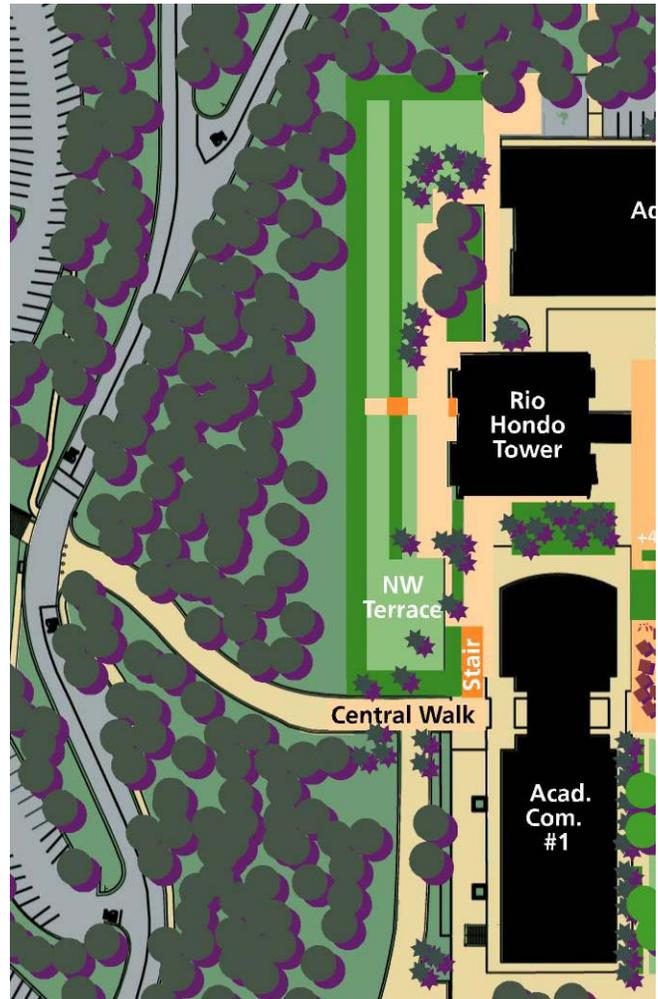


Figure 2.11 Northwest Terrace

Suggested plants for the Northwest Terrace:

- Cercis occidentalis*, Western Redbud
- Pinus torryana*, Torrey Pine
- Quercus douglasii*, Blue Oak
- Carpenteria californica*, Bush Anemone
- Ceanothus griseus horizontalis*, Carmel Creeper
- Dendromecon rigida*, Bush Poppy
- Rhus ovata*, Sugar Bush
- Salvia clevelandii*, Cleveland Sage

### 3. DESIGN STANDARDS & GUIDELINES

#### A. How to Use This Document

Like the landscape framework plan described in Chapter 2, the design standards and guidelines described in this chapter build upon the Rio Hondo College Campus Master Plan.

For ease of use, the design standards and guidelines are presented in two sections, addressing development in 1) site design, and 2) landscape components.

Site design standards and guidelines identifies the minimum landscape improvements associated with each type of construction project — new building, road or utility route, and outdoor gathering area.

Landscape components are the parts — pavement, plant materials, etc. in detail.

It is the interrelationship between the campus' framework of open space, circulation, and buildings that creates the urban form and physical environment . Campus development is typically focused on building projects but the quality and functionality of open spaces are critical to the public realm and life of the campus. The use and treatment of open spaces serve to create an understandable, attractive, and cohesive environment of unifying social spaces. Consistent lines of street trees, pedestrian pavement, and distinct courtyards and plazas all help build these spaces.

While each project must contribute to the character of the campus in a coordinated manner, there are many different ways that an appropriate contribution is realized in detailed design. The guidelines, therefore, are generally expressed in descriptive, qualitative terms that indicate an intended design character that will achieve a necessary addition to the campus' social space. The guidelines leave room for the inventive interpretation by the campus in consultation with planners, designers, architects and landscape architects. The purpose of these guidelines is not to limit the creativity but to

ensure that creativity is working in a desired direction and within a range of acceptable choices focused on achieving the goals and objectives of the master plan.

Together with the landscape framework plan the design standards and guidelines make up the design requirements for projects campus from the planning vision to detailed project design. A designer or project reviewer should be familiar with both levels of direction, starting with the landscape framework plan (see Chapter 2). Both levels are critical to understanding the context from which the design standards and guidelines were framed, and the significance of these to the intended landscape character of the campus.

As projects are implemented, design or review of a specific proposal requires decisions on the architectural and landscape details of the project in relation to the design standards and guidelines. In using this chapter, greater emphasis should be placed on effective interpretation of the statements of intent rather than the particular examples used to illustrate how the intentions can be realized.

The items identified with a box ■ are standards—either required by prescriptive controls that must be met or recommendations that are firm in principle, but nonspecific in detail. Those identified with a bullet □ are guidelines—concepts that present an opportunity that contributes to the character of the campus, but is not required.

To begin, the first standard is:

- Require all professional teams, Rio Hondo project managers, and members of each committee to be familiar with the campus landscape master plan including the landscape framework plan and design standards and guidelines prior to the planning and/or approval of a campus development project .

## B. Site Design

Site design addresses typical situations anticipated for the Rio Hondo College campus improvements. The campus improvements include the planning, design, and construction of new buildings, roads, infrastructure and the campus landscape as well as renovation to existing elements.

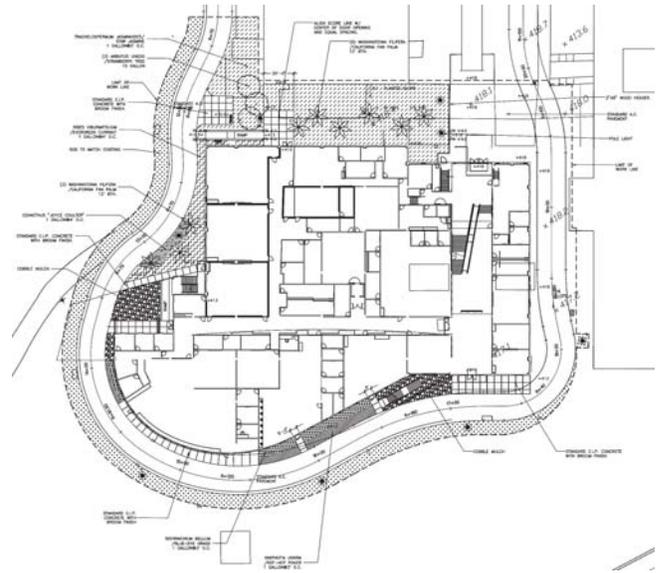
Rio Hondo College's goals toward environmental sustainability are addressed with references to the U. S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System. This is a program that assesses specific criteria in the design, construction and maintenance of building projects. It is recommended that the Rio Hondo College strives for LEED Certification. LEED credits are referenced where applicable in the design standards and guidelines. The *LEED New Construction On Campus Building Projects*, October 2005 offers further details of the USGBC's intent and strategies. LEED credits for specific items are not required.

### 1. Buildings

While buildings shelter the primary learning and support spaces, the landscape associated with each building is important in creating and inviting and collegial environment, connecting the buildings to their larger campus setting, and clarifying circulation and wayfinding.

- a. Require substantive site improvements as part of the design and construction of all new buildings. Typical building funding sources provide only for a minimum amount of landscape repairs and improvements. While building projects are usually a significant interruption to the daily campus life they offer tremendous opportunities for campus enhancement.

The Learning Resource Center is intended to be inserted into lawn area at the southwest



*The new Learning Resource Center will include new pavement for pedestrian and emergency vehicle access, planting and irrigation.*

edge of the campus core, replacing an existing building. The lawn expanse will be protected. Conversely, the new Student Services building will be near the center of the Campus Quad. The reconfiguration of the Campus Quad should be fully addressed with the design and construction of the Student Services building.

*LEED credit Sustainable Sites 7.1: Heat Island Effect requires "a minimum of 30% of non-roof impervious surfaces (within the project limit-of-work) to be constructed with high-albedo materials and/or open grid pavement and/or will be shaded within 5 years."*

*LEED credit Environmental Quality 8.1: Daylight and Views requires specific indoor spaces have visual access to daylight.*

- b. Document the project's whole construction budget at each step for the campus community and design team to understand priorities and expectations.

■ Required □ Recommended



A significant portion of the Campus Quad should be designed and implemented with the new Student Services building.

- c. Coordinate the design of planting areas with building's storm water drainage.

*LEED credit Sustainable Sites 6.1: Stormwater Management requires a stormwater management plan. LEED credit SS 6.2 Stormwater Treatment requires a system to remove a significant amount of total suspended solids and total post-development phosphorous.*

- d. Protect existing trees from damage during construction.
- e. Plant trees at the recommended distance from buildings to meet fire safety goals.

- f. Design routes for emergency, service and pedestrian access.

*LEED credit Materials and Resources Prerequisite 1: Storage & Collection of Recyclables requires a central sorting and collection facility.*

- g. Design building entrances to accommodate campus standard waste receptacles, signage and lighting.
- h. Locate bicycle parking within 50 feet of the frequently used building entrances.

*LEED credit Sustainable Sites 4.2: Alternative Transportation requires secure bicycle storage with convenient changing/shower facilities for a portion of the building's occupants.*

■	Required	□	Recommended
---	----------	---	-------------

## 2. Circulation

Campus circulation includes the vehicular and pedestrian routes linking buildings and facilities as well as recreational trails and campus utility networks.

### Roads

- a. Require site improvements as part of the design and construction of all new roads, and utility corridors to contribute to the quality of the whole campus.
- b. Locate new sidewalks with new roads to encourage pedestrian access throughout the campus.
- c. Install campus standard signage and lighting.

*LEED credit Sustainable Sites 8: Light Pollution Reduction requires an exterior lighting master plan addressing issues such as security, and energy consumption.*

- d. Plant street trees according to the Landscape Framework Plan and the Campus Plant Palette.

### Parking Areas

- a. Require site improvements as part of the design and construction of all new surface parking lots and parking structures.

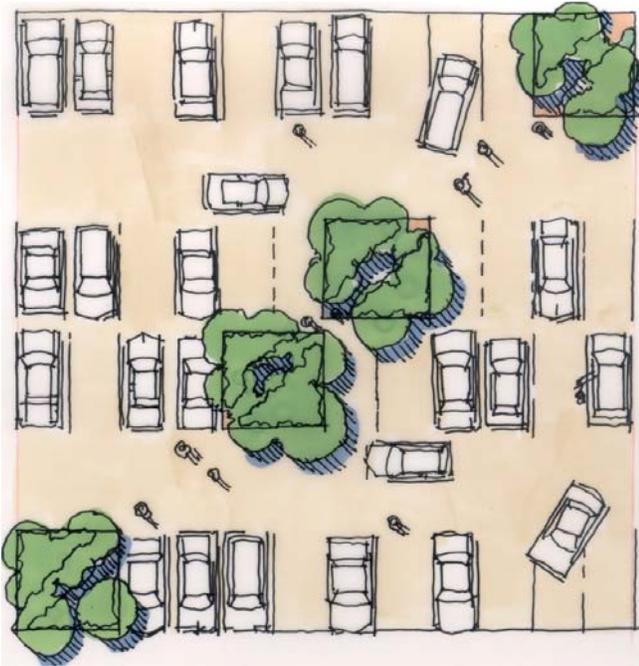
*LEED credit Sustainable Sites 4.4: Parking Capacity requires providing parking spaces for car pool vehicles.*

- b. Plant groups of trees as landscape islands in existing and proposed parking lots to break up the expanse of pavement and cars. Larger pavement cut-outs offer the trees a better chance of healthy growth and provide more shade.

*LEED credit Sustainable Sites 7.1: Heat Island Effect requires "a minimum of 30% of non-roof impervious surfaces (within the project limit-of-work) to be constructed with high-albedo materials and/or open grid pavement and/or will be shaded within 5 years."*

*The projects identified for Rio Hondo Facilities Master Plan are generally buildings. Most parking lots will be improved independent of building projects and therefore would not be directly influenced by LEED criteria .*

■ Required	□ Recommended
------------	---------------



- c. Align planting areas to assist in directing pedestrians to destinations.
- d. Refer to current regional water quality standards to determine the ratio of planting area to paved parking surface.



- e. Locate planting areas to collect and direct storm water runoff for treatment.

*LEED credit Sustainable Sites: 6.1 Stormwater Management requires a stormwater management plan. LEED credit Sustainable Sites 6.2: Stormwater Treatment requires a system to remove a significant amount of total suspended solids and total post-development phosphorous.*

### Sidewalks and Trails

- a. Install lighting and signage out of the path of travel.
- b. Plant low growing groundcover within 8 feet of the paths.
- c. Plant shade trees wherever feasible. Maintain 8 feet vertical clearance of all sidewalks.
- d. Establish a series of campus-wide pedestrian trail loops offering a variety of experiences for a variety of abilities and interest levels.
- e. Provide trail signage to mark routes, distances and points of interest.
- f. Install campus standard seating along the sidewalks and trails.
- g. Make pedestrian paths that are designated for use by authorized vehicles a minimum of 6 feet wide with space for a 8 foot turning radius of a typical maintenance vehicle. Pavement and subsurface should be designed to withstand the load of maintenance vehicles.
- h. Grade paths to direct storm water away from the pedestrian path.
- i. Design pedestrian paths designated as emergency access routes to compliment the pedestrian environment of the campus.

■	Required	☐	Recommended
---	----------	---	-------------

## Utilities

- a. Design and coordinate the location of all above-ground utilities, enclosures, and service areas as part of the adjacent architectural massing and materials. Do not locate utilities above ground in the sidewalk where they block pedestrian access.
- b. Design utility access hatches for below-ground utilities to match the adjacent sidewalk.
- c. Locate public telephones and emergency phones according to demonstrated needs and campus security recommendations.

## 3. Open Space

The Rio Hondo Campus Master Plan identifies the need to protect open spaces, as well as enhance existing and create new outdoor gathering areas.

**Open Space** – an unsheltered, outdoor area that is subject to negligible-to-minimal development and is intended for individuals, small groups, and occasional larger groups, all in activities that place little demand on the area. Such open spaces often contain a viewshed and no buildings. Designed to maximize the natural setting of a particular area, an open space provides a place where both organized activities as well as individual pursuits (recreation, rest and relaxation, etc.) can occur.

**Outdoor Gathering Area** – a moderately developed area that provides interest, encourages interaction, and facilitates movement between adjacent buildings. Outdoor gathering areas would include plazas, approaches to building entries, and shuttle stops. Plazas, as distinct from parks, are intended for relatively heavy use by pedestrians and may include some vehicular traffic and parking (e.g. Transit Court, Campus Quad, Technology Court).

Similar features that may be found in open

spaces and gathering areas include an emphasis on the natural environment, outdoor art, furnishings such as picnic tables, benches, etc., lighting and wayfinding signs.

Outdoor gathering places should be designed for all seasons. They should provide interest, encourage interaction, and facilitate movement between adjacent buildings. Outdoor gathering places, such as plazas, building entries, and shuttle stops, may use a distinct pavement type.

- a. Provide a variety of seating arrangements to allow for conversation, people watching, or quiet contemplation.
- b. Where appropriate, integrate art into outdoor gathering places.



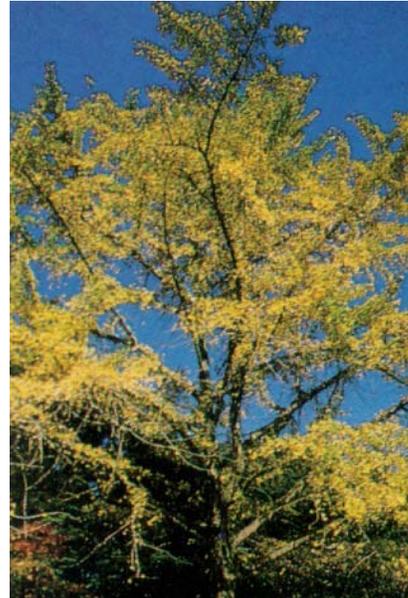
- c. Provide electrical outlets for daily community use and special activities such as special lighting for campus performances. Outlets should be located where they are not susceptible to damage and can be integrated into the adjacent landscape.

■ Required □ Recommended

- d. Provide emergency phones in coordination with campus security.
- e. Provide space for landscape maintenance equipment access and storage.
- f. Define spaces and direct views with the composition of landscape components, including tree massings, pavement, furnishings, etc.



- g. Use native and nonnative plants as indicated on the Campus Landscape Palette for special outdoor use areas including plazas, quads, courtyards and building entries.
- h. Use native plants as indicated on the Campus Landscape Palette for restoration of the development site where adjacent to undisturbed areas.



- i. Use ornamental species from the Campus Landscape Palette to enhance the character of the space.
- j. Design the expansion and/or relocation of recreational fields as part of the campus landscape.
- k. Design water features to match the commitment of funding for construction and ongoing operation and maintenance.

■ Required    □ Recommended

## C. Landscape Components

This section guides the use of particular materials and techniques for use in each project type as described previously. Construction specifications are required for each project to address the site conditions and design goals.

### 1. Grading and Drainage

Rio Hondo's hillside site requires attention to site grading for access and to minimize erosion.

- a. Sculpt landforms to blend with the surrounding landscape.  
  
LEED credit Sustainable Sites Prerequisite 1: Erosion & Sedimentation Control requires a plan to control stormwater and air pollution during construction.
- b. Create bioswales to collect surface runoff before it crosses pavement areas and to reduce puddling and damage to walkways. Bioswales may be grass-lined where adjacent to a lawn area, or planted with low shrubs and grasses. They should be graded to direct water away from paved areas.
- c. Direct storm water runoff away from buildings and circulation routes.
- d. Locate drainage basins throughout surface parking lots to collect storm water. These basins should contain native plant materials that thrive in wet conditions.
- e. Design buildings and site improvements to minimize the need for retaining walls.
- f. Slopes requiring retaining at a height greater than 3 feet should be terraced for planting areas a minimum 5 feet wide.
- g. Site retaining walls should be designed to provide seating where appropriate. In such cases walls should be 16 inch—18 inch tall, and as wide.

- h. Use forms and materials for fences and/or site walls that complement the adjacent architecture and site design.



- i. Construct site retaining walls using cast-in-place concrete, or precast concrete masonry units. Forms should be simple and modern with no ornamental patterns or caps. Color and finish should be consistent across each wall.
- j. Integrate seating and stairs at gathering areas.
- k. Precast concrete masonry unit retaining walls should be of rectangular units with a flat face. The color of precast concrete blocks should match the adjacent soil color, adjacent pavement, and compliment the adjacent buildings.
- l. Site walls within the Quad must be rectangular in form. Precast blocks must be 'precision' finish.
- m. Site walls outside the Campus Quad may be split face block and curvilinear following the landforms.

■ Required □ Recommended

## 2. Pedestrian Pavement

Pedestrian pavement is intended to be a background design element, allowing the activity of the surrounding area to predominate.



*Aerial photo of the original campus layout illustrates the contrast in forms from the rectangular upper quad to the curved forms of the slopes outside.*

- a. Pavement patterns should be simple and respond to the location. Design pavement in rectangular forms for the quad and courtyards .



*The pattern geometry of the original Library offers a good example of forms and composition that could be expressed in the Campus Quad pavement.*

- b. Campus Quad - use rectangular unit pavers, i.e. brick, nonslip tile, or precast concrete pavers set on sand. Consider engraving pavers for fundraising.

Courts - Use cast in place concrete with

integral color to match Schofield Limestone, and medium exposed aggregate, scoring 2 feet on center, maximum.

- c. Patios and paths beyond the courtyards may have curved forms in response to the landforms. Color should complement the building.
- d. Sidewalks - Use plain gray concrete with a medium broom finish as the standard campus paving for sidewalks and pedestrian areas.
- e. Crosswalks - Consider use of asphalt unit pavers.
- f. Informal areas - may be paved with decomposed granite in a color that matches the natural soil of Rio Hondo College.
- g. For colored pavement, use earth tones found on site. Any deviation from the campus standard gray must provide the specific mix for future repair.
- h. Use pavement materials in their primary forms, rather than as imitations of another material. For example concrete stamped to look like brick is not acceptable.

LEED credit Materials and Resources 4.1: Recycled Content requires that at least 5% of the value of construction materials are post-consumer recycled.

LEED credit Materials and Resources 5.1: Manufactured Regionally requires that a minimum 20% of the construction materials are extracted or manufactured within 500 miles.

- i. Design pedestrian pavement of designated accessible routes to meet the Americans with Disabilities Act (ADA) criteria for slopes, width, and finish.
- j. All pavement thickness must comply with recommendations from geotechnical engineers based on site soils).

### 3. Planting

Guidelines for trees and other planting across the campus are intended to ensure that plants are used appropriately for their function and location and can be maintained in the proper manner.

It is a goal to reduce landscape maintenance costs through the use of native and drought tolerant plant species selected with characteristics appropriate for specific situations.

- a. Use color, texture, and form of plants in the composition of landscape spaces.
- b. In plazas and courtyards - make planting areas a minimum of 5 feet by 8 feet for flower, groundcover, and shrub beds.

Provide minimum 40 square feet of water- and air-permeable landscape area at the base of each tree, within the drip zone, using either a tree grate, decomposed granite, unit pavers (in highly used pedestrian areas), or groundcover or shrubs and mulch (in low-use areas).

Consider the use of Structural Soil in paved areas. Structural soil is a particular blend of crushed stone in the tree planting backfill mix which minimizes soil compaction and encourages healthy tree growth.

- c. In open planting areas plant trees a minimum of 5 feet from the edge of pavement, buildings and structures.
- d. Maintain trees along sidewalks and in parking lots with a clear-zone (between the top of pavement and bottom limb) of 8 feet above the sidewalk and 13 feet 6 inches above the street.
- e. Comply with all fire safety standards.
- f. Create a simple ground plane of lawn in areas of active use.
- g. Design lawn areas for efficient maintenance.

nance.

Do not install lawn on slopes greater than 3:1.

- h. Use low-maintenance groundcover and shrubs on slopes steeper than 3:1
- i. Conduct soil testing in the site development stages to obtain recommendations to improve soil fertility and to determine if subsurface drainage and aeration systems are required to maintain the growth of trees.
- f. Use tree grates in pedestrian pavement at locations of high pedestrian traffic such as in plazas, quads, and courtyards.

Tree grates, whether prefabricated or one-of-a-kind, with openings no greater than 1/4 inch meeting current ADA code.

Fill the space between the finish grade of the tree and the tree grate with gravel larger than 1/4 inch to limit the accumulation of debris under the grate while still allowing air penetration.

Use tree grates with a minimum 12-inch diameter opening for the tree and with removable sections that allow for the growth of the tree.

- j. For security, locate tree massing to allow sight lines and not obscure lighting.
- k. Use the Campus Landscape Plant Palettes for trees, shrubs, groundcover and vines.

*LEED credit Water Efficiency 1: Water Efficient Landscape requires the use of recycled water, use of native and drought tolerant plants and use of highly efficient irrigation systems.*

■ Required □ Recommended

Campus Landscape Plant Palette		Approval	Appropriate Uses							Characteristics				Requirements								
		Rio Hondo Maintenance	Median, Bioswale	In Lawn Area	In Planting Area	In Pedestrian Pavement	Shade Canopy	Understory Tree	Visual Screen	Landmark Planting	Seasonal Color	Deciduous	California Native	Attractive to Wildlife	Historically Significant	Small at Maturity	Medium at Maturity	Large at Maturity	Full Sun	Partial Shade	Drought Tolerant	
AESCLUS CALIFORNICA	California Buckeye	■																				
ARBUTUS MENZESII	Madrone			■	■	■	■															
ARBUTUS UNEDO	Strawberry Tree																					
ARCHTOPHOENIX CUNNINGHAMII	King Palm																					
BAUHINIA BLAKEANA	Hong Kong Orchid Tree																					
BAUHINIA VARIEGATA	Purple Orchid Tree																					
BRAHEA ARMATA	Mexican Blue Palm																					
CALOCEDRUS DECURRENS	Incense Cedar																					
CEDRUS ATLANTICA	Atlas Cedar																					
CEDRUS DEODARA	Deodar cedar																					
CELTIS SPP.	Hackberry species																					
CERCIS OCCIDENTALIS	Western Redbud		■																			
CUPRESSUS SEMPERVIRENS	Italian Cypress																					
FRAXINUS ANGUSTIFOLIA	Raywood Ash																					
GINKGO BILOBA	Maidenhair Tree																					
HETERMOLES ARBUTIFOLIA	Toyon																					
JACARANDA MIMOSIFOLIA	Jacaranda																					
JUGLANS CALIFORNICA	California Black Walnut																					
JUNIPERUS CHINENSIS 'TORULOSA'	Hollywood Juniper																					
KOELREUTERIA BIPINNATA	Chinese Flame Tree																					
LYONTHAMNUS FLORIBUNDUS	Catalina Ironwood		■																			
OLEA EUROPAEA	Fruitless Olive																					
PARKINSONIA ACULEATA	Palo Verde																					
PHOENIX CANARIENSIS	Canary Island Date Palm																					
PINUS PINEA	Italian Stone Pine																					
PINUS TORREYANA	Torrey Pine																					
PLATANUS RACEMOSA	California Sycamore		■																			
QUERCUS AGRIFOLIA	Coast Live Oak																					
QUERCUS CHRYSOLEPIS	Canyon Live Oak																					
QUERCUS DOUGLASII	Blue Oak																					
QUERCUS ENGLEMANII	Engleman Oak																					
QUERCUS KELLOGGII	California Black Oak																					
TIPUANA TIPU	Tipu Tree																					
WASHINGTONIA FILIFERA	California Fan Palm																					

The matrices guides the selection of trees, shrubs and groundcover to meet master plan principles.

“Approval” by Rio Hondo Maintenance staff of all plant materials is recommended as they know the campus best and are responsible for its health and appearance.

The category of “appropriate uses” identifies plants for typical situations on the campus. Categories of plant “characteristics” and growth “requirements” further refine plant selection.

	Campus Approval	Appropriate Uses				Characteristics			Growth Rqmnts.				
		Median, Bioswale	On Wall or Trellis	Fruit or Flower for Wildlife/ Habitat	Understory Shrubs & Ground Cover	Visual Screen/ Background	Showy Flower/ Seasonal Color	California Native	Riparian	Coastal Sage Scrub	Full Sun	Partial Shade	Shade Tolerant
Shrubs and Ground Cover													
		<b>Rio Hondo Maintenance</b>											
ACHILLEA SPECIES & CVS				■	■		■			■			■
ACTOSTAPHYLOS 'PACIFIC MIST'					■			■					■
AGAVE AMERICANA					■								■
AGAVE ATTENUATA					■								■
ALOE SPECIES					■								■
ALYOGYNE HUEGELII		■					■	■			■		■
ANIGOZANTHOS SPECIES & CVS					■								■
ARCTOSTAPHYLOS EDMUNDSII													■
ARCTOSTAPHYLOS HOOKERI													■
ARTEMISIA ARBORESCENS													■
ARTEMISIA 'POWIS CASTLE'													■
BACCHARIS PILULARIS CVS		■											■
CALOCEPHALUS BROWNII					■								■
CARPENTERIA CALIFORNICA													■
CEANOTHUS 'CONCHA'													■
CEANOTHUS GRISEUS HORIZ.													■
CEANOTHUS 'JOYCE COULTER'													■
CISTUS 'DORIS HIBBERSON'													■
CISTUS HYBRIDUS													■
CISTUS PURPUREUS													■
CISTUS SALVIIFOLIUS													■
DENDROMECON HARFORDII													■
DENDROMECON RIGIDA													■
DIETES BICOLOR													■
DIETES SPECIES & CVS													■
DIPLACUS SPECIES		■											■
ELAEAGNUS PUNGENS & CVS													■
ENCELIA CALIFORNICA													■
EPILOBIUM SPECIES & CVS													■
ELYMUS CONDENSATUS													■
ERIOGONUM GIGANTEUM													■
ERIOGONUM SPECIES													■
ESCHSCHOLZIA CALIFORNICA													■
FREMONTODENDRON CA.													■
GALVEZIA SPECIOSA													■

RIO HONDO COLLEGE CAMPUS LANDSCAPE MASTER PLAN

	Campus Approval	Appropriate Uses							Characteristics				Growth Rqmnts.		
		Median, Bioswale	On Wall or Trellis	Fruit or Flower for Wildlife/Habitat	Understory Shrubs & Ground Cover	Visual Screen/ Background	Showy Flower/ Seasonal Color	California Native	Riparian	Coastal Sage Scrub	Full Sun	Partial Shade	Shade Tolerant	Drought Tolerant	
Shrubs and Ground Cover															
HELIANthemum nummularium				■	■			■				■			
Helictotrichon sempervirens					■							■			
Heteromeles arbutifolia				■		■		■	■			■			
Hesperaloe parviflora				■				■	■			■		■	
Juniperus species					■	■						■			
Keckiella cordifolia					■				■			■			
Kniphofia uvaria		■			■				■			■			
Muhlenbergia rigens		■		■					■			■		■	
Parthenocissus tricuspidata			■						■			■		■	
Phormium tenax & cvs					■							■		■	
Prunus lyonii						■		■	■			■		■	
Rhamnus californica		■				■		■	■			■		■	
Rhamnus crocea		■				■		■	■			■		■	
Rhus integrifolia						■		■	■			■		■	
Rhus ovata						■		■	■			■		■	
Ribes indecorum		■				■		■	■			■		■	
Ribes malvaceum		■				■		■	■			■		■	
Ribes speciosum		■				■		■	■			■		■	
Ribes viburnifolium						■		■	■			■		■	
Romneya coulteri & cvs						■		■	■			■		■	
Rosa banksiae						■		■	■			■		■	
Rosmarinus officinalis						■		■	■			■		■	
Salvia clevelandii		■				■		■	■			■		■	
Salvia leucantha						■		■	■			■		■	
Salvia mellifera 'terra seca'						■		■	■			■		■	
Salvia munzii						■		■	■			■		■	
Salvia sonomensis						■		■	■			■		■	
Salvia spathacea						■		■	■			■		■	
Senecio mandraliscae						■						■		■	
Sisyrinchium bellum		■						■	■			■		■	
Teucrium chamaedrys						■						■		■	
Trachelospermum jasminoides												■		■	
Wisteria sinensis			■									■		■	

## 4. Irrigation Equipment

- a. Conduct an inventory of the campus irrigation system and assess the condition of all equipment and piping. Develop a plan for phased repair and replacement to complement the Master Plan.
- b. Use standard automatic irrigation equipment to tie into the campus system for each new project. (see appendix for equipment list)

## 5. Site Furnishings

Site furnishings include functional elements—such as seating, trash receptacles, and bicycle racks—that help establish and reinforce the image and character of the campus. Standardizing elements helps to unify the campus visually, reduces maintenance, and simplifies replacement.

### General

- a. Install a family of stock items that coordinate with campus lighting and signage and that are durable, attractive, and easy to maintain.
- b. Coordinate colors and style of similar materials to unify the campus. Avoid hand-painted materials when possible. Natural color of the material is preferred to minimize long-term maintenance and express the campus character. Brushed aluminum is preferred where metal is used.
- c. Consider use of recycled materials when possible. In place of wood, use recycled wood composite in its natural color.
- d. Group different site furniture—benches, trash receptacles, ash urns, etc.—where practical, to enhance use and reduce clutter.
- e. Locate light posts, signage, and furnish-

ings in a way that does not interfere with proper maintenance practices.

- f. Over time, remove and replace site furniture to coordinate with the campus image.

### Seating

- a. Provide seating throughout the campus to promote collegiality, enjoyment of the outdoor space, and enhance the pedestrian character of the campus.
- b. Locate seating in groups and individually at building entrances, in gathering places, and along streets and paths, in sight of campus activity, and to capture distant views.



*Examples of recommended benches*

- c. Use two standard bench types (top) for plazas and courts, (bottom) for recreational trails that is durable and comfortable. Benches should be linear in design, with a metal frame and recycled wood composite slats. Benches may have back supports as the composition of furnishings allows. Benches without backs are useful where seating is accessible from either side.
- d. Make seating height between 14 and 18 inches above the pedestrian pavement and level with the horizon. The depth of each

■ Required □ Recommended

seat should also be between 14 and 18 inches. Appropriate materials for seating include low walls, large boulders, as well as benches. Seating with back supports should conform to the human body and contribute to a relaxing place to sit.

- e. Locate seating in a way that prevents inappropriate use by skateboards, skates, or activities other than seating.



*Examples of recommended cafe tables and chairs*

- h. Consider moveable cafe tables and chairs for the Central Plaza in the Quad



*Examples of recommended tables and umbrellas*

- f. Use moveable outdoor tables that allow for an umbrella. A mix of seating arrangements should be provided, including tables with four seats, three seats (allowing a wheelchair user to sit at the table), and two seats. Locate tables out of the maintenance vehicle path.
- g. Provide square umbrellas in solid colors for outdoor tables. Umbrella fabric should be resistant to ultraviolet rays, mildew and stains. It should be withstand monthly hose-washing with a mild detergent.



*Examples of recommended kiosks*

**Kiosks**

- a. Install kiosks adjacent to major pedestrian routes and near gathering spaces.
- b. Each kiosk should have space for active posting of flyers and posters, and panels with consistent information such as a campus map.
- c. Consider incorporating a light emitting diode (LED) display panel in kiosks.

■ Required	□ Recommended
------------	---------------



### Bicycle Racks

- a. Provide bicycle racks to promote non-motorized travel. Specify a manufacturer that provides individual units to make use of small spaces.
- b. Locate bicycle racks at shuttle stops, in parking lots, and near building entrances.



*Examples of recommended plant containers*

### Plant Containers

- a. Provide containers for plants that can be moved by maintenance staff and stored when not in use.
- b. Locate permanent plant containers as appropriate to complement the site design and allow proper maintenance access.
- c. Ensure that all plant containers are within reach of irrigation water and have proper drainage.
- d. Select plant containers that complement the seasonal planting and adjacent building materials. Avoid plant containers with lettering, logos, and/or bold patterns.

### Trash Receptacles

- a. Locate trash receptacles, as appropriate, at building entries; in high traffic areas, all plazas, gathering areas, outdoor smoking areas, and seating areas; and adjacent to any shuttle bus shelter. Avoid locations where they interfere with pedestrian movement.



Continue use of precast concrete trash receptacle with the Rio Hondo College logo.

- b. Design the location for dumpsters to complement the pedestrian environment.
- c. Locate ash urns at outdoor smoking areas and continue to educate the public about their appropriate use. All receptacles should have easily accessible lids that keep water and birds out.
- d. Move designated smoking areas at least 50 feet from main building entrances and/or air handlers.
- e. Use trash receptacles that are durable, require low maintenance, and can sustain periodic power-washing.

### Bollards

- a. Avoid the use of bollards through comprehensive site design. Where required, install removable bollards in emergency access routes.



■ Required □ Recommended

**Water features**

- a. Locate a small self-contained fountain in the Central Plaza of the Campus Quad. It should be designed to contribute to the gathering area with attractive play of water noise and light.



- b. Consider the use the south facing terrace walls for a cascading water feature.



**Trellises**

- a. Design trellises at building entrances, plazas, walkways, and bridges where pedestrian circulation routes are fixed.



- b. Construct trellis of wood with stained wood or metal members.
- c. Engineer 2 foot x 2 foot (minimum) planting areas at the base of vertical supports. Each planting must be unobstructed by footings and have automatic irrigation.
- d. Plant climbing roses at the base of trellis' vertical supports.
- e. Provide seating in the shade of trellis where possible.



■ Required □ Recommended

## Outdoor Campus Art

Artwork sited in public places can enrich the landscape, showcase efforts of area artists, and further draw the community to the campus. Rio Hondo's outstanding art program, diverse community, and regional leadership provide an excellent opportunity for developing a unique public art program. Programs of other universities and cities, i.e. UCSD Stuart Collection, should be considered in developing goals and methods for enhanced outdoor art.

## Campus Signage

- a. See the Campus Signage Plan.
- b. Select signage materials in conjunction with the lighting and site furnishings.

## Campus Lighting

- a. See the Campus Plan for exterior lighting.
- b. Use full cutoff shades for street and parking lot lights. Minimize use of up-lights.
- c. Design the lighting of utilities, enclosures, and service areas to complement adjacent land uses, architectural lighting, and/or circulation elements.
- d. Provide electrical outlets in light poles in pedestrian gathering areas for special events. Outlets should be readily accessible.
- e. Select lighting materials in conjunction with signage and site furnishings.
- f. Pursue opportunities to use photovoltaic lighting.



■ Required □ Recommended

## IV. IMPLEMENTATION & PHASING

### A. Introduction

The realization of the campus landscape master plan will be accomplished through a variety of actions through the year 2024. New building and roadway projects will each have paving, planting, irrigation and site furnishings improvements included. The following phasing diagrams for landscape improvements follow the Facilities Master Plan.

### B. Short Term Improvement Projects

Short-term Improvement Projects are those that should be accomplished immediately with current funding.

#### A. Upper Quad

1. Relocate existing square containers
2. Replant existing square containers with small shade trees, flowering shrubs and perennials.
3. Construct a native plant garden on the east side of the Science Building.
4. Emphasize the main path of travel from the west side of the Library to the Science Building. (Relocate the containers, kiosk, and vending machines.)
5. Add large containers with plants along the walk and stairs on the west side of the Library to enliven the path of travel.
6. Add moveable tables with attached seats/benches, and umbrellas, with new containers and planting in the following locations:
  - a. Adjacent to the North Drive, near the Bookstore (Bookstore Plaza).
  - b. Southeast corner area of the Administration Building.
  - c. Southeast and southwest corner of the Library.
7. Replace and relocate the kiosk.

## **B. Lower Quad**

1. Replace and relocate the kiosk.
2. Add containers with flowering shrubs and perennials in several locations:
  - a. Drop-off at Central Drive.
  - b. Between the Wray Theater and the Campus Inn.
  - c. Outdoor dining terraces on the east and south sides of the Campus Inn.
3. Add moveable tables with attached seats/benches in the following locations:
  - a. Between the Wray Theater and the Campus Inn.
  - b. Outdoor dining terraces on the east and south side of the Campus Inn.
4. Create attractive construction fencing for LRC including images of LRC and other Master Plan improvements. Consider use of reusable fence fabric that can be attached to temporary chain link fencing.

## **C. Walkway from Upper Terrace Lot to Library**

1. Replant eroded slopes.
2. Close off and replant “volunteer trails”.
3. Add benches where the trail meets the lawn, west of the Library.
4. Examine possibility for reconstruction of trail.

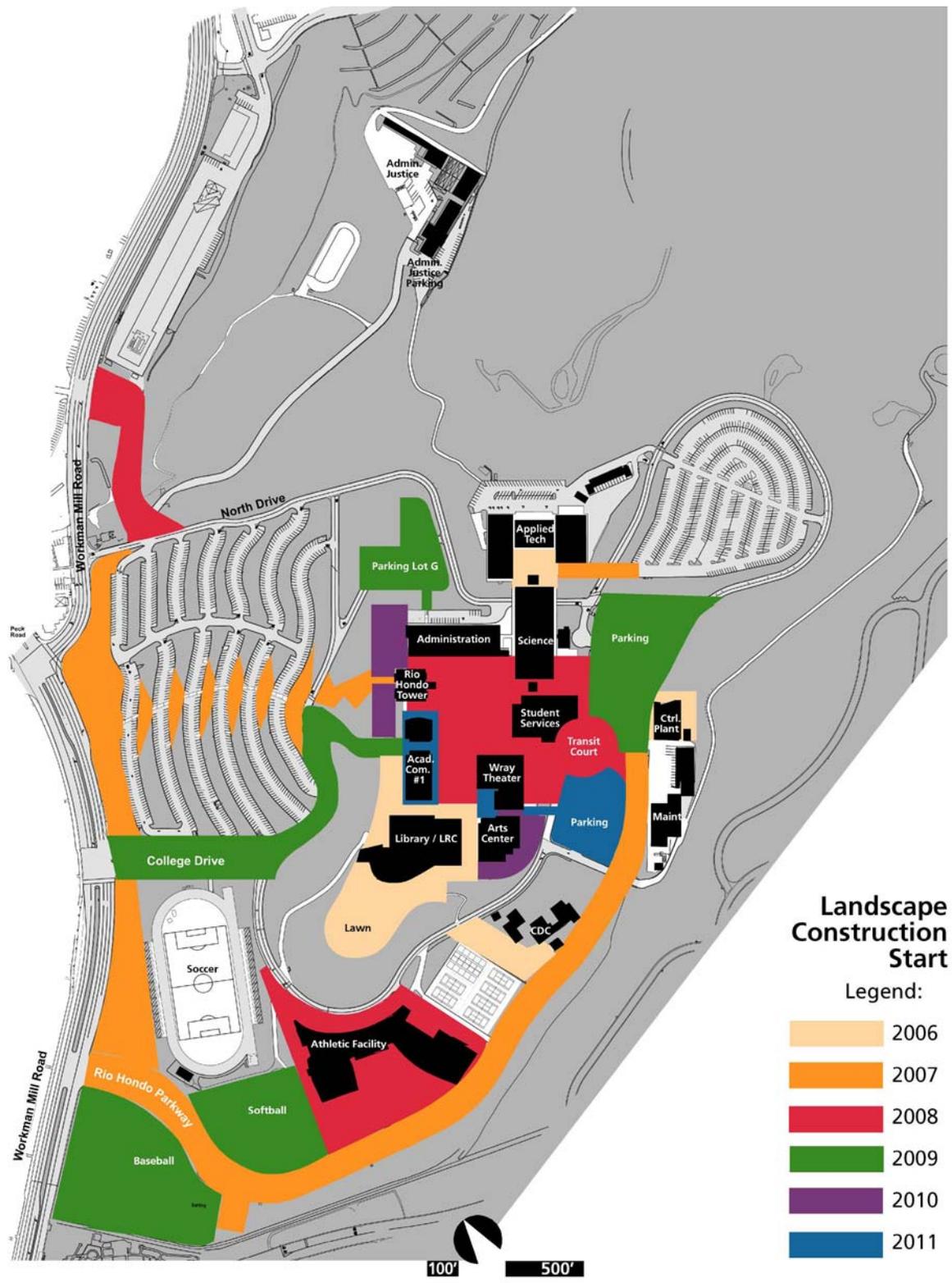
## **D. Walkway from lower terrace parking lot 2-B to Bookstore Plaza**

1. Construct new sidewalk from lower lot 2-B on south side of North Drive to Bookstore Plaza.
2. East of West Road, consider optional route through Staff/Faculty Lot F to get to Bookstore Plaza.

## **C. Landscape Phasing**

The Campus Landscape Master Plan will be constructed in phases coinciding with building and roadway projects.

# RIO HONDO COLLEGE CAMPUS LANDSCAPE MASTER PLAN



4.1 Campus Landscape Phasing Diagram



## V. TREE PLAN

### A. Executive Summary

The purpose of the Tree Plan is to provide a systematic process to address the disposition of major trees that are either in poor health, at risk of causing injury or are affected by proposed construction impacts. Major trees are defined as 8" trunk diameter measured 4 ½ feet above ground (also known as "diameter at breast height" or DBH). The Tree Plan pertains specifically to trees that are planted in natural ground as opposed to planters. The result of evaluation of a major tree will be to determine whether it is more suitable to transplant or replace affected trees.

The preparation of the Tree Plan was developed by a sub-committee of the Planning/Fiscal Council which included the following members:

- o Faculty representatives: Ada Pullini-Brown; Robert Bethel; Ray Williams
- o Classified representatives: Kalani Flores; Carol Rice; Tes Safavi
- o Student representatives: Denise Gunn; Patricia Sopher; Barbara De Grijalva
- o Management representatives: Ruth Cortez; Karen Koos; Maria-Araceli Romero
- o Technical support: Karl Schrader (RHPMT); Manuel Jaramillo (RHPMT); Gus Gonzalez (RHC); Steve Lohr (RHC); Rick Barrett (WRT); Greg Applegate
- o Chair: Andy Howard

The following identifies the process for the making decisions about trees impacted by the building program. The process is based on the criteria detailed in the Tree Plan, which is an appendix to the Rio Hondo College Landscape Master Plan.

1. A tree survey conducted by an arborist will create a database of characteristics of trees larger than 8" in diameter on the core campus. The survey will identify the "tree protection zone" for each tree (see Tree Plan for definition of tree protection zone).
2. The Landscape Master Plan Architect will work with the project architect or engineer to evaluate the location of the proposed building or project in order to minimize impact on existing trees where possible.
3. The project architect or engineer will make a recommendation on the construction zone of the proposed building or project to the Building Program Steering Committee.
4. Once a location for the building or project has been determined, the Landscape Master Plan Architect will apply the Tree Criteria to those trees whose protection zone will be infringed by the construction zone.
5. The Landscape Master Plan Architect will then make recommendations about particular trees to the Building Program Steering Committee.

### B. Introduction

Current master plans for Rio Hondo College include the addition of a number of new buildings, roads, utilities, outdoor plazas, etc. over the next ten years. This represents the first major building development program for the College since its inception in the mid-1960s. In addition, the Landscape Master Plan currently under preparation represents the first ever comprehensive evaluation of the Rio Hondo College landscape and recommendations for its improvement.

When the Rio Hondo College campus was initially constructed in the mid-1960s, the campus landscape was largely devoid of any trees. Over the last forty years, the campus landscape has matured and has generally enhanced the overall value of the campus. However, much of the landscape has been introduced without a guiding master plan and growth has been random and often haphazard. An abundance of non-native plants now make up the campus landscape, many of which are either showing signs of biological stress, improper growth, and/or are nearing their life expectancy.

The purpose of the Landscape Master Plan is to guide landscape improvements for the next 30 to 50 years. Conversely, the Tree Plan will allow a decision to be made when evaluating existing major trees that are affected by disease, life expectancy, structural failure or development. These decisions will generally be to either transplant the tree or remove the tree.

As existing trees are removed, replacement trees will be planted that are specifically suited to the Rio Hondo College landscape. In addition, replacement trees will be planted in locations that are suitable to the intentions of the Landscape Master Plan. Replacement trees will be selected from the proposed plant palette, of which are native or compatible to the Southern California landscape. Overall, implementation of the Rio Hondo College Landscape Master Plan will result in the planting of hundreds of new trees to the campus landscape.

The Tree Plan will be applied to trees that are specifically affected by the following:

1. Building construction projects (i.e. new buildings, building expansion, etc.).
2. Infrastructure projects (i.e. roads, utilities, etc.).
3. General site improvement projects (i.e. plazas, sidewalks, etc.).

## **C. Establishment of Construction Zones**

As new buildings are constructed or existing buildings renovated on campus, each construction project will have a distinct construction zone area. This area is typically fenced to allow construction activities to occur without disruption to ongoing campus activities. Trees that are located within a construction zone can be protected, transplanted or removed. If a tree within the construction zone is beyond the footprint of the new building, and can be adequately protected with a proper tree protection zone (see Item D), the tree should be considered for retention or transplanting. However, as identified below, if the existing grade of the soil is altered in immediate proximity to the tree, the tree should be considered for transplanting or removal.

## **D. Determination of Tree Protection vs. Transplant or Removal**

The following are the recommended steps to follow when evaluating whether a tree can be protected.

### **1. Tree Protection Zone –**

The tree protection zone is the area around an existing tree that should not be altered during construction activities. Alteration includes any disruption to the tree itself including branches, trunk and roots, as well as modifications to the existing grade and watering practices around a tree. In general, tree protection zones will extend at least to the canopy and typically beyond.

**2. Determine Optimal Tree Protection Zone**

A common misperception regarding tree root growth is that tree roots do not extend beyond the "drip-line" of a tree. The drip line is defined as the extent of the overhead canopy superimposed on the ground. In fact, tree roots commonly extend well beyond the drip line of a tree, often in an asymmetrical pattern. A common rule-of-thumb is that tree protection zones should extend a minimum of six feet beyond the drip line of a tree. A more studied approach is to determine the size of the tree

protection zone based on a series of factors that include the tolerance level of a specific tree to adapt to construction impacts, the approximate age of the tree, and the diameter of the tree trunk measured at DBH (diameter at breast height).

The following chart from "Trees and Development" by Nelda Matheny and James R. Clark, offers a guide to determining an appropriate tree protection zone:

**Optimal Tree Protection Zone**

<b>Species Tolerance</b>	<b>Tree Age</b>	<b>Dist. from trunk (feet) (per inch trunk diameter)</b>
Good	Young	0.5 feet
Good	Mature	0.75 feet
Good	Overmature	1.0 feet
Moderate	Young	0.75 feet
Moderate	Mature	1.0 feet
Moderate	Overmature	1.25 feet
Poor	Young	1.0 feet
Poor	Mature	1.25 feet
Poor	Overmature	1.5 feet

The following is an example of the application of the above methodology. For this example, the assumed tree is a moderately healthy, 60-year old (mature), 30" diameter California Black Walnut (*Juglans hindsii*). This tree has a poor tolerance to construction impacts. The tree protection is determined by multiplying the trunk diameter by the distance per trunk diameter (30" x 1.25 feet per inch = 37.5 feet). Therefore, the tree protection zone is a diameter of 37.5 feet measured from the trunk.

## E. Evaluation Criteria

The following evaluation criteria and categories should be used when judging the merit of existing major trees. Each item is ranked from 1 through 5, with 1 being the lowest (poorest) rating and 5 the highest (best) rating. Each major tree that is being considered for either protection, transplanting or removal, should be subjected to the following criteria. A score sheet is included that allows objective appraisal of each major tree. The College can use the numerical scoring system to determine the recommended disposition of a tree.

**1. Value of Tree in Campus History** – Trees have played a major role in the development and image of the Rio Hondo College campus since its inception. As such, some trees will have greater importance than others, given their placement and longevity on campus.

The following criteria are based on the general location of a tree and its approximate duration in that location. Campus core is defined as the area bounded by Circle Drive to the east, South Drive, West Drive, and North Drive.

Scoring:

- 1 pt - tree located outside the campus core for less than 20 years
- 2 pts - tree located outside the campus core for over 20 years
- 3 pts - tree located within the campus core for 10 to 15 years
- 4 pts - tree located within the campus core for 15 to 20 years
- 5 pts – tree located within the campus core for over 20 years

**2. Health and vigor of tree** – The general health of major trees should be taken into consideration during evaluation. This includes any outward signs of stress and decline as well as pests that are known to affect certain species. In addition, consideration must be given to an evaluation of the cumulative impacts of a major tree over time that may affect future health. For example, if a tree been transplanted several times, or has been affected by other previous impacts, it may be more prone to declining health in the future. Health of trees is typically determined to be excellent, good, low, declining, or severe decline.

Scoring:

- 1 pt - tree in severe decline and/or heavy infestation

- 2 pts - tree in declining health and/or significant infestation
- 3 pts - tree in low health and/or minor infestation
- 4 pts - tree in good health and/or insignificant infestation
- 5 pts - tree in excellent health and/or no infestation

**3. Age of tree** – When evaluating major trees, the general life expectancy of a tree should be taken into consideration. Life expectancy is expressed both as the life expectancy of a tree when planted under ideal conditions, and its actual life expectancy under existing growing conditions. For example, a Tree Planted in its native habitat with no competition from other trees or development would ordinarily have a life expectancy longer than that same Tree Planted in sub par conditions.

Scoring:

- 1 pt - greater than 80% life expectancy expended
- 2 pts - between 60% and 80% of life expectancy expended
- 3 pts - between 40% and 60% of life expectancy expended
- 4 pts - between 20% and 40% of life expectancy expended
- 5 pts - less than 20% of life expectancy expended

**4. Deadwood and history of failure** – Often, as trees advance in age, they begin to show signs of structural failure of trunks and limbs. This may be related to any of the first three criteria or may be attributable to other causes. Included within this category are amount of deadwood within a tree and any

history of failure. The loss of tree limbs and/or the uprooting of the entire tree are major safety issues and could result in personal injury, property damage, power outages, fires and other catastrophes.

Scoring:

- 1 pt - tree has large amount of deadwood and loss of more than one branch
- 2 pts - tree has twig and branch dieback, and some loss of scaffold branches
- 3 pts - tree has small twig dieback and loss of small branches
- 4 pts - tree has little deadwood and no history of branch failure
- 5 pts - tree has no deadwood and no history of branch failure

**5. Canopy Density** – Often trees may appear in good health but suffer from less than 100% tree canopy. This can affect the natural photosynthesis of the tree and have long term impacts on a tree's health. Frequently, as tree stands are thinned out, the remaining trees frequently have less than 100% tree canopy. Likewise, deadwood, pests and other issues can affect a tree's canopy.

Scoring:

- 1 pt - tree has less than 20% canopy density
- 2 pts - tree has between 20% and 60% canopy density
- 3 pts - tree has between 60% and 90% canopy density
- 4 pts - tree has between 90% and 100% canopy density
- 5 pts - tree has 100% canopy density

**6. Type of tree** – Consideration should be given to the species of the tree under evaluation. Is it a type of tree that is included within the plant palette of the campus landscape plan? Does it represent a continued high degree of landscape maintenance? If so, this may often prevent maintenance crews from attending to other areas of the campus landscape and would consume a portion of a limited landscape maintenance budget.

Scoring:

1 pt - tree is high maintenance, non-native and not included in Master Plan Tree List

2 pts - tree is non-native and not included in Master Plan Tree List

3 pts - tree is native but not within Master Plan Tree List

4 pts - tree is non-native but included within Master Plan Tree List

5 pts- tree is native and included within Master Plan Tree List

**7. Prognosis for success of transplanting** –

The act of transplanting is an unnatural occurrence to a tree. In addition, the process of transplanting can often take several months or longer to complete, not including subsequent monitoring and maintenance. As a result of transplanting, trees often suffer shock which can affect their ability to rebound from the impacts of transplanting, and could dramatically affect their longevity and health. In addition, certain trees may be suitable for transplanting than others, based either on species or health.

Scoring:

1 pt – less than 30% survival after transplanting

2 pts –between 30% and 50% survival after transplanting

3 pts - between 50% and 70% survival after transplanting

4 pts - between 70% and 90% survival after transplanting

5 pts – greater than 90% survival after transplanting

**8. Cost of transplanting vs. replacement** –

A key consideration during evaluation of major trees is comparing the cost of transplanting against replacement. This is a key consideration due to limited budgets available for overall campus landscape improvements. Consideration must be given to whether it is truly worth the cost of transplanting. The cost of transplanting and reestablishing a major tree can vary between \$5,000 to over \$100,000 depending on the existing site conditions, route of travel to location of transplanting, equipment required, duration, etc. The costs for a new tree, even the largest of new trees (60" boxed container), can be between \$2,000 and \$3,000. Likewise, certain trees are readily affordable, available and fast-growing, which may dictate a preference for replacement rather than transplanting.

Scoring:

1 pt - cost to transplant exceeds like replacement by over 10:1

2 pts – cost to transplant exceeds like replacement between 6 to 10:1

3 pts - cost to transplant exceeds like replacement between 2 to 6:1

4 pts - cost to transplant equals like replacement

5 pts - cost to transplant less than like replacement

Additional criteria that may be considered for inclusion in the Tree Plan includes branching and trunk configuration, and unnatural and altered growing conditions (i.e. planter boxes, has it been transplanted before, etc.).

## F. Weighting Factors

The above criteria is not of equal importance. For example, the actual cost of transplanting (Criterion 8) is of greater importance than the estimated health and vigor of the tree (Criterion 2). Therefore, the following weighting criteria are recommended to aid in the decision making process:

### Weighting Factors

Category	Criteria	Weighting
1	Value of Tree in Campus History	3.0
2	Health and Vigor of Tree	1.0
3	Age of Tree	2.0
4	Deadwood and History of Failure	2.0
5	Canopy Density	2.0
6	Type of Tree	3.0
7	Prognosis for Success of Transplanting	5.0
8	Cost of Transplanting vs. Replacement	10.0

## G. Tabulation Matrix

The following tabulation matrix indicates the array of criteria, the unweighted points, weighting factors, and the corresponding minimum and maximum points per criterion.

Under these criteria, a tree with higher points would be considered a better candidate for transplanting than a tree with lower points.

The minimum number of points is 28 and the maximum number of points is 140.

The recommended point threshold for a tree to be considered a candidate for transplanting is 97 points. A tree with a score less than or equal to 96 should not be considered for transplanting. A tree with a score equal to or greater than 97 should be considered for transplanting.

This was decided by assuming a tree achieved the highest possible rating (best) per category but would incur the greatest cost for transplanting (Category Eight - Cost of Tree Replacement).

### Tabulation Matrix

Category	Criteria	Points
1	Value of Tree in Campus History	15 pts. max.
2	Health and Vigor of Tree	5 pts. max.
3	Age of Tree	10 pts. max.
4	Deadwood and History of Failure	10 pts. max.
5	Canopy Density	10 pts. max.
6	Type of Tree	15 pts. max.
7	Prognosis for Success of Transplanting	25 pts. max.
8	Cost of Transplanting vs. Replacement	50 pts. min.
Total		

Category Number	Criteria	Unweighted Points	Weighting Factor	Weighted Points
<b>1.0</b>	<b>Value of Tree in Campus History</b>			
1.1	tree located outside upper/lower quads for over 20 years	1	3.0	3
1.2	tree located outside upper/lower quads for 15 to 20 years	2	3.0	6
1.3	tree located within upper/lower quads for 10 to 15 years	3	3.0	9
1.4	tree located within upper/lower quads for 15 to 20 years	4	3.0	12
1.5	tree located within upper/lower quads for over 20 years	5	3.0	15
<b>2.0</b>	<b>Health and Vigor Tree</b>			
2.1	tree in severe decline and/or heavy infestation	1	1.0	1
2.2	tree in declining health and/or significant infestation	2	1.0	2
2.3	tree in low health and/or minor infestation	3	1.0	3
2.4	tree in good health and/or insignificant infestation	4	1.0	4
2.5	tree in excellent health and/or no infestation	5	1.0	5
<b>3.0</b>	<b>Age of Tree</b>			
3.1	greater than 80% life expectancy expended	1	2.0	2
3.2	between 60% and 80% of life expectancy expended	2	2.0	4
3.3	between 40% and 60% of life expectancy expended	3	2.0	6
3.4	between 20% and 40% of life expectancy expended	4	2.0	8
3.5	less than 20% of life expectancy expended	5	2.0	10
<b>4.0</b>	<b>Deadwood and History of Failure</b>			
4.1	tree has large amount of deadwood and loss of more than one branch	1	2.0	2
4.2	tree has twig and branch dieback, and some loss of scaffold branches	2	2.0	4
4.3	tree has small twig dieback and loss of small branches	3	2.0	6
4.4	tree has little deadwood and no history of branch failure	4	2.0	8
4.5	tree has no deadwood and no history of branch failure	5	2.0	10
<b>5.0</b>	<b>Canopy Density</b>			
5.1	tree has less than 20% canopy density	1	2.0	2
5.2	tree has between 20% and 60% canopy density	2	2.0	4
5.3	tree has between 60% and 90% canopy density	3	2.0	6
5.4	tree has between 90% and 100% canopy density	4	2.0	8
5.5	tree has 100% canopy density	5	2.0	10
<b>6.0</b>	<b>Type of Tree</b>			
6.1	tree is high maintenance, non-native and not included in Master Plan Tree List	1	3.0	3
6.2	tree is non-native and not included in Master Plan Tree List	2	3.0	6
6.3	tree is native but not within Master Plan Tree List	3	3.0	9
6.4	tree is non-native but included within Master Plan Tree List	4	3.0	12
6.5	tree is native and included within Master Plan Tree List	5	3.0	15
<b>7.0</b>	<b>Prognosis for Success of Transplanting</b>			
7.1	less than 30% survival after transplanting	1	5.0	5
7.2	between 30% and 50% survival after transplanting	2	5.0	10
7.3	between 50% and 70% survival after transplanting	3	5.0	15
7.4	between 70% and 90% survival after transplanting	4	5.0	20
7.5	greater than 90% survival after transplanting	5	5.0	25
<b>8.0</b>	<b>Cost of Transplanting vs. Replacement</b>			
8.1	cost to transplant exceeds like replacement by over 10:1	1	10.0	10
8.2	cost to transplant exceeds like replacement between 6 to 10:1	2	10.0	20
8.3	cost to transplant exceeds like replacement between 2 to 6:1	3	10.0	30
8.4	cost to transplant equals like replacement	4	10.0	40
8.5	cost to transplant less than like replacement	5	10.0	50

Minimum Amount of Points: 28 points

Maximum Amount of Points: 140 points

Minimum score required to be considered for transplanting: 96 points

## VI. APPENDIX

### A. Glossary

**Assignable Square Feet (ASF).** The sum of all areas on all the floors of a building assigned to, or available for assignment to, an occupant or specific use. Assignable area includes classrooms, labs, offices, study facilities, special use, support, health care, residential and unclassified space that are used to accomplish the institution's mission.

**Building Frontage.** The maximum horizontal dimension of the front of a building is the side of a building abutting on or generally parallel to the front lot line or, in the case of a corner building, the combined maximum horizontal dimensions of the sides of the building abutting or generally parallel to the front lot line and the corner side line.

**Building Height.** The vertical distance from the finished grade to the highest point of the coping of a flat roof, or to the deck line of a mansard roof, or from average grade to the highest gable of a pitch or hip roof.

**Build-to Line.** Line that sets the location of building walls in order to give spatial definition to streets and open spaces.

**Building Transparency.** The area of the building facade that is transparent—i.e., composed of glass—allowing views into and out of the building.

**Cultural Resource.** Improvements, buildings, structures, signs, features, sites, landscapes, trees or other objects of scientific, aesthetic, educational, cultural, architectural or historical significance to the citizens of the city.

**Facade.** The face of a building, usually the front.

**Finished Grade.** The natural or revised grade exterior to all buildings or structures created by any proposed development.

**Floor Area Ratio (FAR).** The net floor area of a building or buildings on a lot divided by the lot area or site area.

**Gross Square Feet (GSF).** The sum of all areas on all floors of a building located within the outside faces of its exterior walls, including excavated basement areas, corridors, mezzanines, and storage (not arcades).

**Loggia.** A roofed open gallery especially at an upper story overlooking an open court. It may be used for building circulation.

**Parcel.** A development site or portion of land occupied or capable of being occupied by a use, building, or unit group of buildings and accessory buildings and uses, together with such open spaces and service areas and setbacks.

**Off-Street Service Facilities.** A site or portion of a site devoted to the loading or unloading of equipment or materials, including loading berths, aisles, access drives, and landscaped areas.

**Pedestrian Passageway.** Ground level, outdoor access meeting ADA requirements.

**Story.** A portion of a building between the surface of any floor and the surface of the floor next above it, or, if there is no floor above it, the space between such floor and the ceiling next above it.

**Sustainability.** The physical development and institutional operating practices that meet the needs of present users without comprising the ability of future generations to meet their own needs, particularly with regard to use and waste of natural resources. Sustainable practices support ecological, human, and economic health and vitality. Sustainability presumes that resources are finite, and should be used conservatively and wisely with a view to long-term priorities and consequences of the ways in which resources are used.

<http://www.ucop.edu/facil/greenbldgs/>

## B. Acknowledgments

### **Board Members**

Andre Quintero, Area 1

Maria Elena Martinez, Area 2

Angela Acosta-Salazar, Area 3

Gary Mendez, Area 4

Garry Couso-Vasquez, Area 5

### **Steering Committee Members**

Dr. Rose Marie Joyce, President

Dr. Voiza Arnold, Vice President, Academic Services

Teresa Dreyfuss, Vice President, Finance and Business Services

Henry Gee, Vice President, Student Services

Dr. Andy Howard, Executive Director, Planning and Development

Dr. Steve Lohr, Director, Facilities Services

Karl Schrader, Program Manager

Peter Mitsakos, Technical Advisor

Orla Jensen, Technical Advisor

### **Consultant Team**

#### **Wallace Roberts & Todd, LLC**

Kathleen A. Garcia, FASLA, Principal

Rick Barrett, ASLA, Project Director

Laura Burnett, ASLA, Project Designer

Ming Shui Hung, Landscape Designer

Ida Gianni, Landscape Designer

Minden Ten Eyck, Landscape Designer