# TABLE OF CONTENTS

## Introduction

**Introduction**

1

**INTRODUCTION**

2

Overview

2

General Goals

2

## Concept Plan

**Concept Plan**

5

**CONCEPT PLAN**

6

Planning Zones

6

1. Triad Zone

6

2. Lot A / Townhouse Zone

6

3. Central Campus Zone

6

4. East Campus Zone

6

**PLANNING CONCEPT**

8

Summary of Corridor improvements

8

## Corridor Analysis

**CORRIDOR ANALYSIS**

10

Triad Zone

10

Lot A / Townhouse Zone

11

Central Campus Zone

12

East Campus Zone

13

## Typical Roadway Cross Section

14

## Triad Zone

16

## Lot A/Townhouse Zone

18

## Central Campus Zone

22

## Pergola

24

## East Campus Zone

26

## Standard Details

30

Speed Calming Devices at Cross Walks

31

Granite Curb

32

Light Fixture

33

**Phasing**

34

Immediate Improvements

35

Mid-Term Improvements

36

Long-Term Improvements

37

## Statement of Probable Cost

39

**STATEMENT OF PROBABLE COST**

40
INTRODUCTION

Overview:

This report documents the Concept Plan for the 322 Corridor at Rowan University, between Main Street and Bowe Boulevard.

The Study was conducted over a three-month period between October of 2005 and January of 2006. During the process, the Rowan University Campus Master Plan Committee and NJ DOT, as well as consultants for both organizations, were brought together for consultation and review.

To gain comprehensive knowledge of the 322 Corridor Project and its context within the future of the Rowan campus, please refer to Campus Signage Guidelines, May 2007, as well as Campus Master Plan, May 2007 both prepared by Sasaki Associates, Inc.

General Goals:

The Route 322 Corridor is a state highway which bisects Rowan University creating two distinct campus areas—North and South. The location, level of use, and design of the corridor creates a dangerous situation for students who must regularly cross the road.

The Concept Plan transforms the 322 Corridor into a seam that knits the campus together, rather than an intrusion that divides the campus. The recommended plan establishes a safer pedestrian environment and enhances the street image along the 322 Corridor to appropriately represent Rowan University.
CONCEPT PLAN

Planning Zones (Figure 2)
For the purpose of this study the corridor was divided into the following four zones defined by the nature and character of each segment's immediate surroundings and proposed future use.

1. Triad Zone:
   • Between Bowe Boulevard and the railroad

2. Lot A/ Townhouse Zone:
   • By Lot A and Townhouses

3. Central Campus Zone:
   • From Westby to the University Book Store

4. East Campus Zone
   • From Lot “U” to Main Street
FIGURE 2: 322 PLANNING ZONES
PLANNING CONCEPT (FIGURE 3)

The 322 Corridor Concept Plan incorporates future improvements recommended by the Campus Master Plan as well as future developments by stakeholders outside of the University. The proposed intersection improvement at 322 / Whitney Avenue /Rowan Blvd. was under development at the time of this study; thus, suggested improvements are not reflected in the Concept Plan.

Summary of Corridor improvements:

- Continuous sidewalks on both sides
- Continuous bike route on both sides within the roadway travel lanes
- Continuous street tree planting
- Unified, iconic street lighting
- Pedestrian crossings with or without traffic signals at appropriate locations in coordination with the Campus Master Plan
- Pergola in the Central Campus Zone

In addition to the above, the Concept Master Plan includes planning guidelines for:

- Signage, in coordination with Campus Signage Guidelines, prepared by Sasaki Associates, Inc.
- Speed calming devices in the roadway
- Roadway curbing detail
FIGURE 3: 322 CORRIDOR CONCEPT PLAN

LEGEND
- Pedestrian
- Bikeway
- Pergola
- New Crosswalk
- Signalized Crosswalk
- Overhead Pedestrian Connection
- Major Connecting Routes into Campus
- Campus Entry Signage

Triad Zone / Townhouse Zone / Central Campus Zone / East Campus Zone

1000'
CORRIDOR ANALYSIS (FIGURES 4-7)

The existing conditions of each zone were studied to determine the critical issues necessary to address to achieve the goals of the plan.

Triad Zone

LEGEND

- Undefined west entry to campus
- Inconsistent sidewalk on north side of street
- Unsightly utility lines and cobra head light fixtures

FIGURE 4: CORRIDOR ANALYSIS, TRIAD ZONE
Lot A / Townhouse Zone

LEGEND

- Safe pedestrian crossing between Lot A and townhouses
- Inadequate sidewalk on north side of street
- No curb / sidewalk on south side of street
- Unsightly utility lines and cobra head light fixtures

FIGURE 5: CORRIDOR ANALYSIS LOT A / TOWNHOUSE ZONE
Central Campus Zone

LEGEND
- Uncontrolled pedestrian crossings throughout zone
- Wide paved zone on north side restricts tree planting
- No curb / sidewalk on south side of street
- Bus stop and delivery truck accommodation
- Unsightly utility lines and cobra head light fixtures

FIGURE 6: CORRIDOR ANALYSIS CENTRAL CAMPUS ZONE
East Campus Zone

**LEGEND**

- **Undefined east entry to campus**
- **Inconsistent sidewalk on both sides of street**
- **Undefined / underutilized land uses on north side of street**
- **Unsightly utility lines and cobra head light fixtures**

*FIGURE 7: CORRIDOR ANALYSIS EAST CAMPUS ZONE*
The typical roadway section was established after a study of three alternatives.

The overarching idea of the plan is to boldly define the street while enhancing the existing character of the adjacent conditions - more naturalistic on the south side and more urban on the north side. The center line of the road remains the same as the current condition. The typical cross section encompasses:

- Burial of all existing overhead wires
- 11’ wide vehicular travel lanes, one each way
- 6’ wide shoulders on each side, shared with bikes
- 2’-wide curb and splash strip on both sides
- Curb height (6”) street tree planters when adjacent to the roadway
- Average 14’ wide sidewalk on the north side,
- Minimum 6’ wide sidewalk on the south side,
- Street trees as room allows on the north edge
- Minimum 6’ wide planting strip on the south side with deciduous canopy trees
- Double-fixture post top lighting with banner arms
- Recommended set back for new development on the north side of the corridor is 50’+/- from the centerline of the current roadway so that new building façades more or less line up with the existing campus edge.

The typical section will be adapted to each zone with minor modifications to suit specific conditions.
Figure 8: Typical Roadway Cross Section (Looking East)
TRIAD ZONE

The Triad Zone marks the western gateway to the University, though much of the land in this zone is non-University property. Corridor improvements will signify a sense of arrival on campus and ameliorate the pedestrian experience in this area.

- Gateway signage combined with way-finding information is suggested at the northeast corner of the intersection of 322 and Bowe Boulevard.
- No planting strip is suggested on the south side due to lack of right-of-way dimension along private property.
FIGURE 10: CONCEPT PLAN AT TRIAD ZONE

LEGEND
- Pedestrian
- Bikeway
- Pergola
- New Crosswalk

Signage/Wayfinding
Residential development by Rowan
Triad
Bowe Blvd.
Triad
Harvard Road
Mullica Hill Road (Rt. 322)
Girard Road
Mullica Hill Road
Private residences
Yale Road
Grind Road
Rowan University
322 Corridor Concept Plan
LOT A/TOWNHOUSE ZONE

This zone encompasses a significant student housing area and a possible future University development in what is currently Lot A. Limiting haphazard student road crossings in this area is a priority.

- Currently, students cross Route 322 from the townhouses by climbing over the closed gate and fence. To improve safety for pedestrians, the concept plan suggests incorporating roadway overpass connections at Westby and/or future infill development at Lot A. (Figure 12)
  - A formal drop-off and turn-around area is proposed just west of Westby with a right-turn-only entrance.
  - Street trees line the south edge of 322 and existing trees are maintained to the extent possible.
  - Formal array of street trees line the north edge.
- As the elevation of the 322 corridor drops, a low retaining wall of less than 2.5 feet is suggested to separate the sidewalk level from the roadway along the south side.
- The dimension between the existing townhouses retaining wall and the proposed curb varies. When this dimension decreases to a point where a minimum 6’ planting strip cannot fit, the sidewalk takes priority and no planting strip is provided.

![SECTION LOOKING EAST AT LOT A/TOWNHOUSE ZONE](image.png)
EXISTING GATE AT TOWN HOUSE COMPLEX WHICH CONTRIBUTES TO STUDENTS CROSSING 322 TO LOT A
PERSPECTIVE SKETCH SHOWING IMPROVED CONDITIONS LOOKING EAST AT LOT A/ TOWNHOUSE ZONE (FUTURE OVERPASS NOT ILLUSTRATED)
CENTRAL CAMPUS ZONE

The Central Campus Zone includes the primary campus destination buildings and is a node for north-south pedestrian movement across 322.

- Provide three clear crosswalks between the north and south campus in this zone. Two will coordinate with vehicular access points and a third will be provided mid-block between the library and student center. (Figure 14)
- The continuous sidewalk on the south side of 322 pulls away from the roadway edge in the Central Campus zone. With this deviation, the mature trees at the edge on the campus are preserved and the pedestrian experience enhanced by winding through them. Street edge modifications will be made as necessary to accommodate new crosswalks and bus stops.
- The existing informal green in front of Savitz can be expanded towards Bosshart Hall, making a stronger statement while enhancing the sense of arrival at Savitz Hall, where the admissions office is located.
- Planting street trees is not feasible in front of Savitz, the Library and the Student Center, due to the utility infrastructure below grade.
- In lieu of street trees, a pergola structure is proposed in this zone. This pergola will transform this wide hardspace area to a more pedestrian scale space, provide a shaded area for sitting and congregating at the heart of the campus, as well as control crossing points on 322 by integrating a low screen fence. The pergola shall be planned to accommodate vehicular access points for service and emergency. (Figures 15 & 16)
- A low screen fence, similar in design vocabulary to proposed pergola screen fence may be included on the south side of the road to further reduce random roadway crossing points. (Figure 13)
FIGURE 14: CONCEPT PLAN AT CENTRAL CAMPUS ZONE

LEGEND

- yellow: Pedestrian
- orange: Bikeway
- green: Pergola
- blue circle: New Crosswalk
- orange line: Bus Stop / Shelter

Science Building
Savitz Hall
Library
Student Center
Student Center Expansion
Development Infill
Development Infill

Mullica Hill Road (Rt. 322)

Future Infill
Linden

Student Center Expansion

Expansion
Development infill
PERGOLA

Figures X and Y depict the composition, character and scale of the suggested pergola.

- Brick columns with steel beams and rafters are recommended to compliment the character of the adjacent buildings.
- A steel panel fence is inserted between the columns on the street side to funnel pedestrians to designated crossing locations.
- Gateway structures with similar character are placed on the south edge to reinforce the location of the crosswalks.
- Vine planting, such as wisteria, is recommended to add seasonal interest to the pergola structure.
- Signage locations are to be coordinated with the pergola structure.

Photographs on page 21 represent examples of successful pergola structures in urban environments.
FIGURE 16: SUGGESTED PERGOLA MATERIALS

- Climbing Vine
- Steel Beam/Rafter
- 15’ +/-
- 16’ +/-
- 22’
- 10’
- Brick Column with Stone Base
- Steel Beam/Rafter
- Lights Incorporated
- Building Identification Signage
- Steel Panel Fence

D STREET PERGOLA, SOUTH BOSTON

POST OFFICE SQUARE, BOSTON
EAST CAMPUS ZONE

This zone establishes the eastern gateway to the University and connects Rowan with downtown Glassboro. Future residential development by the University will create an urban edge on the north side of the 322 Corridor in this zone, while private development planned on the south side of the road will further strengthen the urban character.

- A fenced edge on the north side of 322 with openings at strategic locations will provide pedestrian access to the University’s future development area without compromising security.
- The need for fence on the south side of the road will be determined through coordination with the developers.
- Recent NJDOT improvements to the roadway and sidewalks in this zone shall be respected and the new sidewalks will tie into this new work with minimum disturbance.

A new free-standing wall with integrated signage will replace the current sign at the split of 322 and Whitney Ave. Way-finding signage will be located at the northwest intersection of 322 and Main Street. See Signage report prepared by Sasaki Associates, May 2007.

FIGURE 17: SECTION LOOKING EAST AT EAST CAMPUS ZONE
Signage/Way finding

Residential development by Rowan

Future development by others

Main Street

Lake Street

Mullica Hill Road (Rt. 322)

LEGEND

Pedestrian

Bikeway

Pergola

New Crosswalk

FIGURE 18: CONCEPT PLAN AT EAST CAMPUS ZONE
PERSPECTIVE SKETCH SHOWING IMPROVED CONDITIONS LOOKING AT EAST CAMPUS ZONE
STANDARD DETAILS

The following graphics illustrate design intent for some of the key elements in the Concept Plan.
Speed Calming Devices at Cross Walks

Figure 19 depicts a number of options for reducing speed at signalized crosswalks. The following devices can be used individually or in various combinations.

- Raised crosswalk with special paving material
- In-paver flashing lights. This fixture is flush mounted on pavement surface and flashes to warn approaching traffic of pedestrian’s crossing. The device can be activated by laser or manual push button
- LED pedestrian crossing sign, located near crosswalks will warn drivers of pedestrian cross walks. The device could be scheduled to flash on a constant basis or on peak hours.
- Light fixtures are located close to crosswalks to provide sufficient light at night.

![Speed Calming Devices at Crosswalks Diagram](image-url)
Granite Curb

A curb-height planter is suggested where the street tree planting strip is adjacent to the roadside. A healthy continuous tree canopy will calm traffic on 322, express the significance of the University environment, and make pedestrian and bicycle travel along the corridor more comfortable.

- Trees will be protected from vehicles and salt spray within a curb-height planter set 2 feet from the roadside curb
- 1'-6" splash strip between the road curb and the planter protects the trees from roadway salting by shedding water towards the gutter.
**Light Fixture**

Throughout the workshops the stakeholder group collectively favored a double-mounted light fixture on both sides of the street.

A light fixture that is durable, has an historic lantern feel with a contemporary flare is recommended.

- The fixture shall have cut off optics to direct light downward, limiting light pollution and glare.
- Light pole shall have arms to accommodate banners.
- Pole intervals shall be based upon photometric calculation for desired ambiance as well as security.
- Figure 21 represents a general fixture type. A final fixture selection will be based upon further analysis of hardware options.

**FIGURE 21: LIGHT FIXTURE**
PHASING (FIGURES 22-24)

There are numerous ways in which the 322 Corridor improvements could be implemented. The following phasing diagrams document comments heard during the planning process regarding priority areas and elements.
Immediate Improvements

Provide asphaltic concrete paved walkway

Provide painted cross walks at highly desired crossing points (5 locations)

FIGURE 22: IMMEDIATE TERM IMPROVEMENTS

LEGEND
- Improved sidewalk
- Crosswalk
Mid-Term Improvements

- Improve sidewalk with curbing and trees
- Provide new sidewalk with curbing and trees
- Create west gateway with intersection improvements and signage
- Finalize crossing locations with traffic lights
- Provide new sidewalk, curbing, low fence on south side
- Create east gateway with intersection improvements and signage
- Bury overhead utility lines

Legend:
- Improved sidewalk
- Crosswalk
- Gateway
- Location of overhead utility lines
Long-Term Improvements

FIGURE 24: LONG TERM IMPROVEMENTS

LEGEND

Pergola Gates

Pergola Structure with fence on north side

Pergola

FIGURE 24: LONG TERM IMPROVEMENTS
STATEMENT OF PROBABLE COST

This Statement of Probable Cost was prepared in December of 2005, based on the Concept Master Plan.

The University will need to update this cost estimate for the construction year.

Rowan University Corridor Plan - Rte 322

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<th>Material</th>
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<th>Unit Cost</th>
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<th>Owner</th>
<th>Notes</th>
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<td>Construction Fence</td>
<td>4600</td>
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<td>Pergola &amp; Unit Block Wall construction</td>
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<td>Erosion Control</td>
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<td>ls</td>
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<td>$50,000</td>
<td>NJDOT / RU</td>
<td></td>
</tr>
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<td>Tree Removals / Site Clearing</td>
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<td>RU</td>
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<td>Curb Removals</td>
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<td>ls</td>
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<td>$20,000</td>
<td>NJDOT</td>
<td>Assume 5000 lf</td>
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<tr>
<td>Pavement, Miscellaneous &amp; Unclassified Removals</td>
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<td>ls</td>
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<td>RU / NJDOT</td>
<td>Assume 3000 sq sidewalk</td>
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Subtotal: $259,800 NJDOT / RU

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<td>Sidewalks &amp; Curbing</td>
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<td>Dense Graded Crushed Stone</td>
<td>2,200</td>
<td>cy</td>
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<td>10,600</td>
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<td>5&quot; depth, w.w.f.; 14' width North; 8' width South</td>
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<td>Granite Curb for Roadway</td>
<td>10,000</td>
<td>lf</td>
<td>$30.00</td>
<td>$300,000</td>
<td>NJDOT</td>
<td>6&quot; x 18&quot; VA-4</td>
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<tr>
<td>Concrete Cradle for Roadway Curb</td>
<td>185</td>
<td>cy</td>
<td>$360.00</td>
<td>$66,600</td>
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<td>6&quot; x 6&quot; both faces</td>
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<tr>
<td>Granite Curb for Splash Curb</td>
<td>4,150</td>
<td>lf</td>
<td>$30.00</td>
<td>$124,500</td>
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<td>Granite Splash Curb Paver</td>
<td>4,150</td>
<td>lf</td>
<td>$58.00</td>
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<td>RU</td>
<td>2&quot; x 18&quot; x 6' granite</td>
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<td>Concrete Cradle and Base for Double Curb</td>
<td>140</td>
<td>cy</td>
<td>$360.00</td>
<td>$50,400</td>
<td>RU</td>
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Subtotal: $1,379,000 NJDOT / RU

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<td>$31,800</td>
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<td>2 CBs &amp; 1 MH (to accommodate alteration of existing drainage pattern)</td>
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<td>Traffic Control Crosswalk Pavement Lights</td>
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<td>$0</td>
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Subtotal: $56,020 NJDOT / RU

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<td>Lighting / Electrical</td>
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<td>Allowance ($750/pier)</td>
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<td>100</td>
<td>ea</td>
<td>$7,500.00</td>
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<td>25' ht. traditional double luminaire; 100’ O.C. (typ); incl. conc. bases</td>
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<td>$0</td>
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<td>Premium (to match proposed ornamental iron street lighting)</td>
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Subtotal: $1,275,000 NJDOT / RU

Site furnishing is not included.
## Walls

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30" ht; 1 course bury

## Site Structures

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<td>92 ea</td>
<td>$3,500.00</td>
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<td>24&quot; x 24&quot; x 15'; 18&quot; O.C.; Brick-clad concrete-filled CMU</td>
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$1,141,000 Subtotal

## Bollards & Fencing

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<td>At Speed Table Crossing</td>
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<td>6' Ornamental Steel Picket</td>
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<td>42' Ornamental Steel Picket</td>
<td>750 lf</td>
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<td>$45,000</td>
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$598,500 Subtotal

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<tr>
<td>Benches</td>
<td>ea</td>
<td>$1,800.00</td>
<td>$0</td>
<td>Metal</td>
</tr>
<tr>
<td>Tables</td>
<td>ea</td>
<td>$2,400.00</td>
<td>$0</td>
<td>Metal</td>
</tr>
<tr>
<td>Bike Racks</td>
<td>ea</td>
<td>$800.00</td>
<td>$0</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Trash Receptacles</td>
<td>ea</td>
<td>$1,500.00</td>
<td>$0</td>
<td>Metal, with liner</td>
</tr>
</tbody>
</table>

$0 Subtotal

## Planting

<table>
<thead>
<tr>
<th>Description</th>
<th>QTY</th>
<th>Unit</th>
<th>Cost/Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loam</td>
<td>1,000 cy</td>
<td>$30.00</td>
<td>$30,000</td>
<td>2' depth new tree planting strip areas; blend to meet existing</td>
</tr>
<tr>
<td>Canopy Trees</td>
<td>260 ea</td>
<td>$900.00</td>
<td>$234,000</td>
<td>3&quot; - 3 1/2&quot; caliper</td>
</tr>
<tr>
<td>Lawn</td>
<td>10,000 sy</td>
<td>$1.50</td>
<td>$15,000</td>
<td>seed</td>
</tr>
<tr>
<td>Vines</td>
<td>100 ea</td>
<td>$200.00</td>
<td>$20,000</td>
<td>10 gal; arbor / gateway piers</td>
</tr>
</tbody>
</table>

$269,000 Subtotal

$5,045,820 Total for Rowan University Corridor - Rte. 322

$1,009,164 20% Contingency

$6,054,984 Total Project Construction Budget Estimate