



RUTGERS UNIVERSITY PHYSICAL MASTER PLAN

RUTGERS 2030

VOLUME 1: NEW BRUNSWICK

JUNE 18, 2015

PREFACE

Rutgers University embarked on Rutgers 2030 in May 2013, the first comprehensive master plan in over a decade, and the first to incorporate Rutgers Biomedical and Health Sciences (RBHS), created from the integration of the University of Medicine and Dentistry of New Jersey (UMDNJ) with Rutgers University in July 2013. The physical master plan complements the Rutgers University Strategic Plan, prepared in conjunction with the Boston Consulting Group, and approved by the Board of Governors in February 2014, and the strategic plans of each of Rutgers' component institutions.

Rutgers 2030 envisions development at Rutgers over a 15-year time frame, 2015 to 2030, and is comprehensive in its scope; taking into account buildings, the natural and constructed landscape, transportation, and infrastructure. The report consists of three volumes:

- Volume 1: Rutgers University–New Brunswick
- Volume 2: Rutgers University–Newark
- Volume 3: Rutgers University–Camden

RBHS is considered primarily within Volume 1 although constituent elements are found across Rutgers.

The scope of input was broad, involving survey responses from approximately 8,000 members of the community, over thirty presentations and town hall meetings, and meetings with many administrators, faculty, and student groups.

This study would not have been possible without the leadership of Rutgers University President Robert L. Barchi and support of Chancellors Nancy Cantor, Richard Edwards, Phoebe Haddon, and Brian Strom. In addition, the Physical Master Plan Executive Steering Committee, Rutgers University Facilities and Capital Planning members, Deans, staff, faculty and students contributed invaluable insight to the development of the project.

The master plan consulting team included Robert A.M. Stern Architects, Sasaki Associates, VHB, Buro Happold, and Toscano Clements Taylor.

Volume 1: New Brunswick

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INTRODUCTION: TAKING RUTGERS UNIVERSITY–NEW BRUNSWICK FORWARD

This report grows out of a comprehensive study of the Rutgers University–New Brunswick campus undertaken between June 2013 and December 2014, and is part of a broader planning study for all of Rutgers, The State University of New Jersey. The overall planning effort follows upon a Strategic Planning study completed by Rutgers in 2014 and the reintegration of many elements of the University of Medicine and Dentistry of New Jersey (UMDNJ) into the university to create RBHS.

This chapter of the overall report tackles the particular and somewhat unique situation of Rutgers University – New Brunswick as a geographically dispersed yet administratively centralized campus that has evolved from several physically and culturally distinct colleges. In the context of this volume, the term “Rutgers” will be used to refer only to Rutgers University – New Brunswick.

Written at a time of fundamental change in higher education under the influence of revolutionary digital technologies, the report imagines and provides concrete recommendations that will, if enacted, significantly improve the quality of the college

experience for Rutgers University–New Brunswick students, faculty, and staff, and will create a more efficient and environmentally sustainable campus.

Led by the Rutgers administration under the leadership of President Robert Barchi, our study team has been encouraged to think of the Rutgers University–New Brunswick campus as more than an amalgamation of classroom buildings, residence halls and academic malls; rather shifting our focus to its large scale infrastructure and physical systems. We have studied Rutgers’ far-flung transportation networks, the daily ebb and flow of students between their living spaces and classes, the ways in which classes are assigned and how technology might enhance time usage and reduce the need to travel. We have also looked closely at Rutgers University–New Brunswick as a natural ecosystem centered on the Raritan River, and traced how future development could enhance and reinforce that ecosystem.

The sheer size and complexity of the Rutgers – New Brunswick campus, equivalent in size to a small city, combined with its history as a series of independent campuses, has led to an overall lack of legibility for the

campus as a whole. While there is a certain strength in the variety of environments in Rutgers University–New Brunswick, ranging from urban to rural, there is also a separation and balkanization that results, which diminishes a unified sense of purpose and school spirit and is reflected in the relatively low level of engagement of Rutgers alumni.

In this report, five general planning principles have been utilized to organize the recommendations of the master plan. Each principle represents an important aspect of the report. They are:

- **Learning at Rutgers** - Enhancing classrooms, libraries and ancillary learning spaces;
- **Life at Rutgers** - Enhancing experiences outside of the classroom;
- **Navigating Rutgers** - Improving transportation within and between campus districts;
- **Stewardship at Rutgers** - Effectively and appropriately using land and resources; and
- **Personalizing Rutgers** – Using information technology to better communicate options to improve decision-making and educational

outcomes.

Closely related to these broad planning principles, this report offers many significant and concrete proposals for change. These proposals range from specific buildings to a broad re-thinking of the way students move around campus, as well as a new relationship between Rutgers – New Brunswick and the Raritan River, along whose banks both town and University originally grew. Proposals can be grouped into categories related to academic initiatives, transport, student life, housing and health, wellness and recreation.

- **Campus Connectivity - Transportation**
Creation of district transit hubs; bus rapid transit, improvements to parking, pedestrian and bicycle paths;
- **Strategic Academic Initiatives** -
Improvements to learning environments, use of technology to augment classroom teaching, and partnerships with industry;
- **Student Life** - Focus on non-academic quality of life for both residents and commuters;

- **Housing** - Replacement over time of sub-standard housing, creating student communities; new housing proposals for junior faculty; and
- **Health, Wellness and Recreation** –
Improved opportunities for recreation and improved stewardship of the Rutgers natural environment.

Environmental sustainability is a central element pervading all aspects of the proposals in this study. From reducing bus and vehicle traffic, to centralizing hubs, increasing opportunities for biking and walking, reconnecting to the Raritan, planning building locations with an eye to the under-lying hydrology, to significantly upgraded landscape plantings throughout Rutgers-New Brunswick, this plan provides a road-map to a significantly more sustainable campus.

The integration of the former UMDNJ and the creation of Rutgers Biomedical and Health Sciences (RBHS) will have significant impacts to the future planning of Rutgers-New Brunswick. RBHS has a large presence both on Busch and in downtown New Brunswick adjacent to College Avenue. The plan proposes a

possible future scenario for the redevelopment of RBHS Facilities on Busch.

There are many other specific proposals at the district level for new, renovated, and re-purposed buildings, streets, and landscapes. A proposed series of projects, time-line and budgets are included. The evolving discussion regarding the place of the physical campus within the University will of course play a significant role and where it will lead cannot be fully known at this time. Yet, no matter what the future holds, we believe the fundamental actions and orientations embodied in this report will, when implemented, significantly improve the functioning the University, the quality of experience for those who attend and work at it, and of the central New Jersey region beyond.

In Chapter 2 of this volume, the context for planning decisions is established. We look at existing natural systems, land use, transportation and academic scheduling. In Chapter 3.1, the five key principles: Learning, Life, Navigation, Stewardship, and Personalization, are developed. Chapter 3.2 establishes an overall campus framework in response to these principles. Chapter 4 presents detailed

KEY INITIATIVES

FIVE PROPOSED AREAS OF FOCUS
ILLUSTRATE RUTGERS 2030'S PRIORITIES;
TAKEN TOGETHER THEY WILL TRANSFORM
THE NEW BRUNSWICK CAMPUS AND
SUPPORT THE UNIVERSITY'S STRATEGIC
PLAN.

Campus Connectivity – Transportation

This report calls for the reduction of overall stress on the transportation system, and for a physical reorientation of each of the former campuses (now more properly thought of as districts within Rutgers – New Brunswick) around a central and enhanced transit hub. These hubs will form the entry point into each district, and will be surrounded at close proximity by the district’s most intensively used academic and social elements (Figure 1.1). Express bus lines, using dedicated lanes where possible, will connect district hubs. Within each district, a local circulator bus system will complement the express routes (Figure 1.2).

To strengthen the connection between the College Avenue, Cook, and Douglass on the New Brunswick side of the Raritan, the study proposes that Rutgers and the City of New Brunswick enact a loop of dedicated bus rapid transit (BRT) lanes connecting the districts (Figure 1.3). This one action, long under discussion, would significantly improve the quality of the student experience for thousands of Rutgers students, especially those living, studying, and working at Cook and Douglass, and would bind them much more forcefully to the rest of Rutgers University–New Brunswick.

A new bridge incorporating a pedestrian and bicycle pathway is proposed to connect College Avenue with Livingston through the existing ecological preserve; balancing open space preservation with a new direct connection between Rutgers properties on either side of the Raritan. The bridge would also stand as a potent symbol of the potential of 21st century Rutgers – New Brunswick (Figures 1.4, 1.5). Busch and Livingston connections are strengthened by a new dedicated roadway and bridge over Route 18 (Figure 1.6); College Avenue and Cook/Douglass are further connected by an enhanced bicycle and pedestrian route along the Raritan, and restoration of bus service across the Route 27 bridge to serve the Rutgers community at Highland Park.

Transportation can be improved in many ways. Commuter parking can be rationalized and inconveniently located lots can be relocated. The system of bike paths, which is at present incomplete and contains several dangerous conditions, can be improved. Enhancements to landscaping and planning of pedestrian walkways, can, for a relatively small expense, improve the quality of life for many.

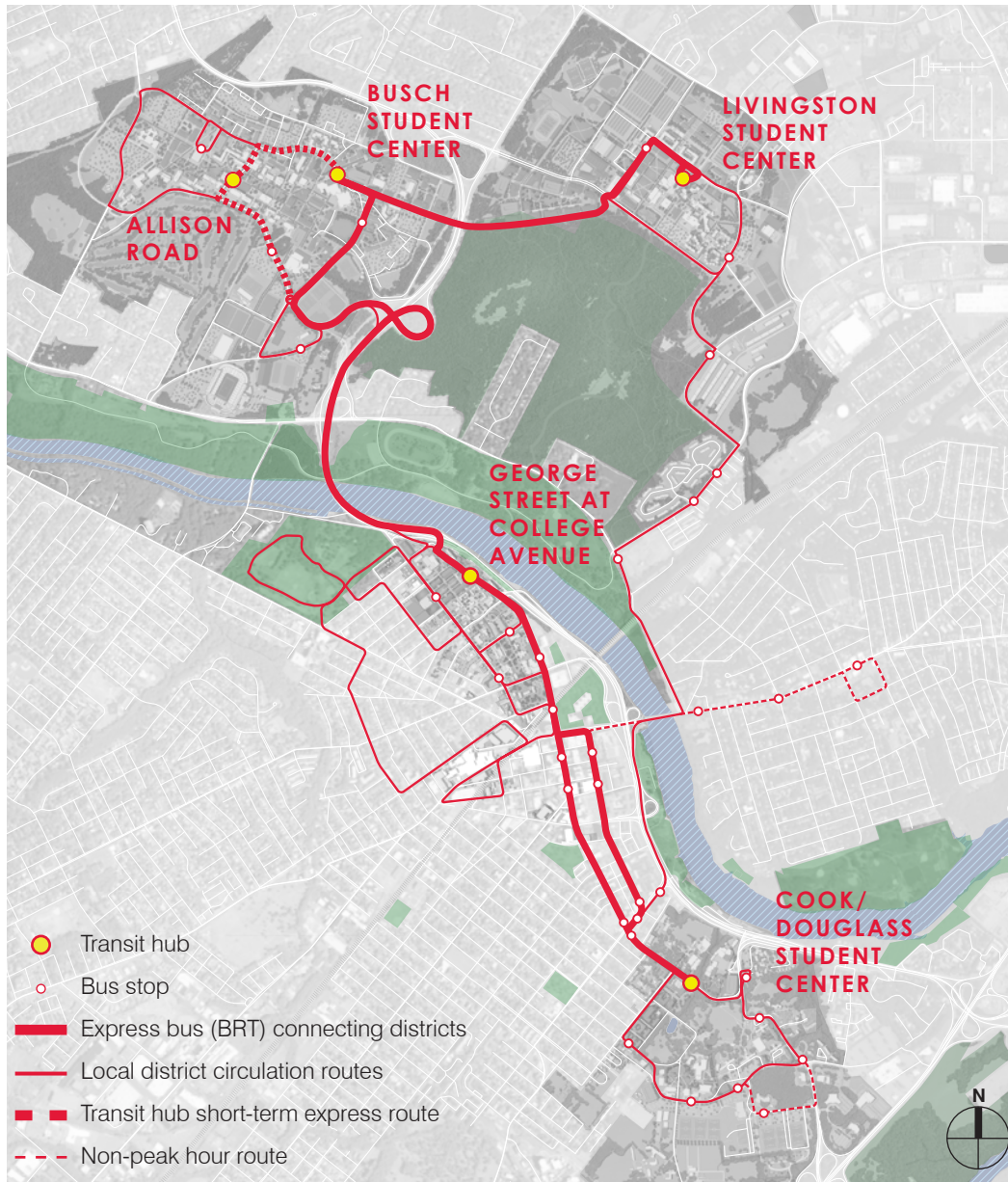


Figure 1.2 Proposed bus network with hubs at each district

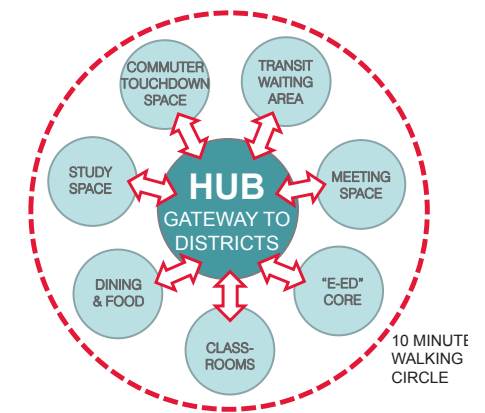


Figure 1.1 Components of a hub

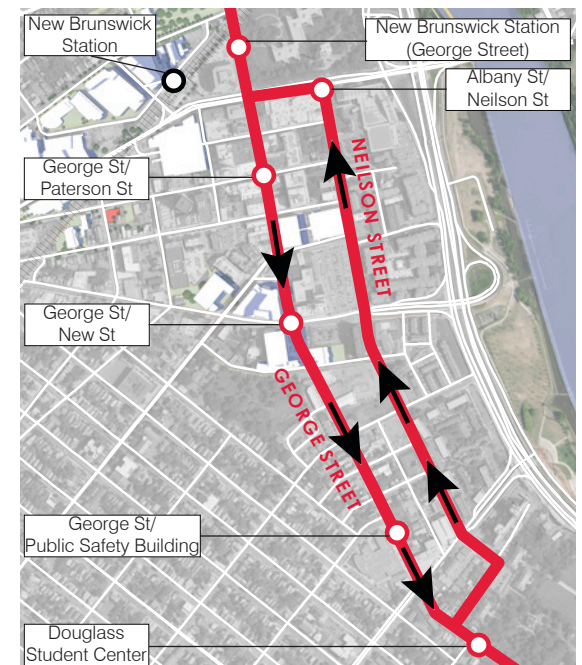


Figure 1.3 Proposed BRT route connecting College Avenue and Cook/Douglass



Figure 1.4 New Trans-Raritan connection between College Avenue and Livingston



Figure 1.5: New bridge across the Raritan

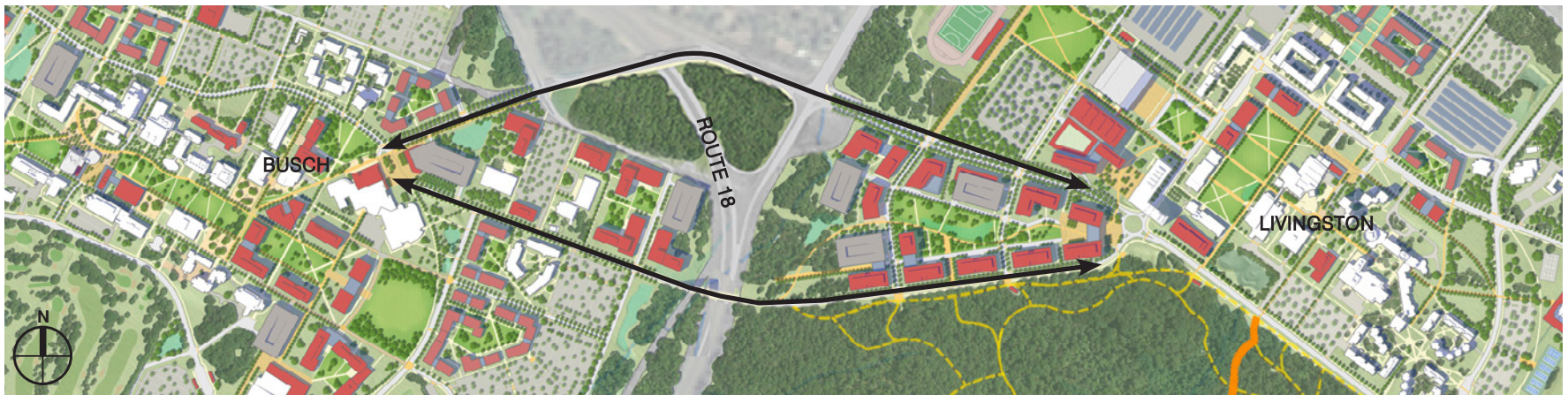


Figure 1.6: New connection from Busch to Livingston

Strategic Academic Initiatives

A significant issue today on the Rutgers University–New Brunswick campus is that too many students spend too much time getting to, from, and between their classes. A fleet of Rutgers buses and a complex series of routes has developed to take students back and forth to far-flung locations. While the system is well managed, the underlying systemic stresses could be reduced by better coordination between different administrative groups that assign housing and class scheduling, along with increased usage of intra-campus distance learning technologies to reduce the need to travel while retaining the quality of classroom learning (Figure 1.7).

In each district there should be a center of student academic activity. The center would include principal classrooms and lecture halls, student dining and recreational spaces, and libraries and study spaces (Figures 1.8-1.11). From these bustling hubs, landscaped, multi-modal streets and pathways will radiate to encompass the remainder of the district, and a secondary bus loop will augment the express BRT lines connecting district hubs.

In order to leverage the enormous intellectual capital at Rutgers University–New Brunswick especially in the sciences, engineering and medicine, a significant new research park is proposed as a physical connection between Busch and Livingston (Figures 1.12, 1.13). Conceived as a partnership between Rutgers and the large New Jersey scientific and technical business communities, the new research park will take advantage both of the proximity to the core of Busch and the new Rutgers business school on Livingston. Straddling Route 18, the research park will be easily accessible from throughout central New Jersey and especially from the Route 1 technology corridor. A conference hotel is proposed as an initial element in this development.

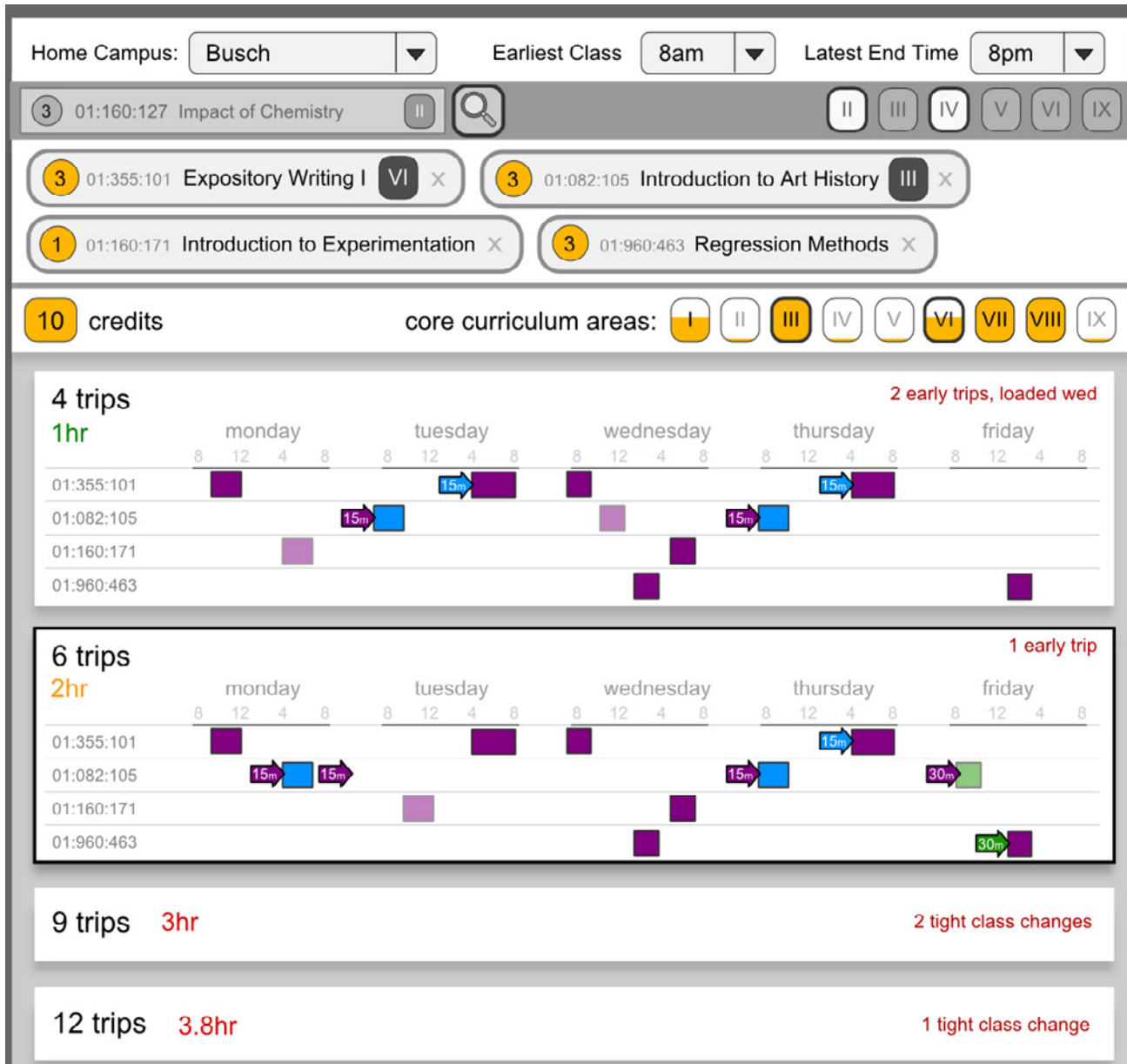


Figure 1.7 “Dashboard” integrating class schedule with transit criteria



Figure 1.8 Hub at College Avenue new quadrangle



Figure 1.9 Hub at Cook/Douglass Student Center



Figure 1.10 Hub at Busch Student Center



Figure 1.11 Hub at Livingston Student Center



Figure 1.12 Plan of high-tech research and innovation park



Figure 1.13 View of high-tech research and innovation park

Student Life

Recent improvements at Livingston have demonstrated that an investment in the quality and quantity of spaces related to the life of students outside of the classroom pays significant dividends (Figure 1.14). Our surveys showed new and renovated facilities are far preferred by students. Currently, several dining halls, gyms, meeting spaces for on-campus clubs, touch-down spaces for commuters, and convocation spaces for larger events are deficient and below the level of Rutgers University – New Brunswick peer institutions (Figure 1.15).

There are many specific recommendations in this report related to the improvement of student life facilities. A significant expansion to the student center at Cook/Douglass is proposed, as is a facility geared toward RBHS students on the west end of Busch. One of the boldest proposals is the reconstruction of the block between College Avenue, George Street, Morrell Street, and Senior Street to create a new quadrangle incorporating a new student center, dining hall, club spaces, a high-tech classroom, below grade parking, and a new transit hub to create a new nexus of student activity not just for College Avenue but for all of Rutgers University – New Brunswick . (Figure 1.16-1.18)

Improvements to one aspect of the student experience has already begun with the consolidation of all student services into a “one-stop shop” at the ASB 1 building on Busch.



Figure 1.14 Dining Room at Livingston Dining Commons



Figure 1.15 Brower Commons at College Avenue

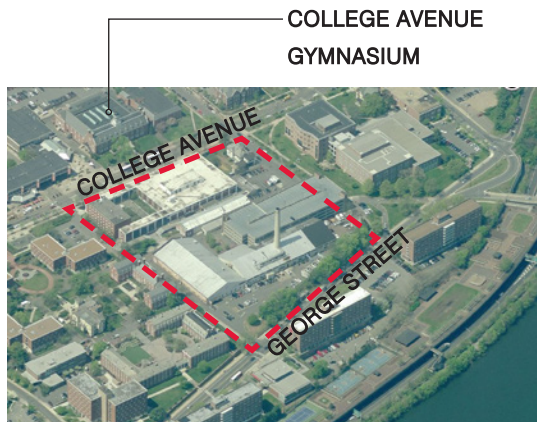


Figure 1.16 Existing condition at College Avenue

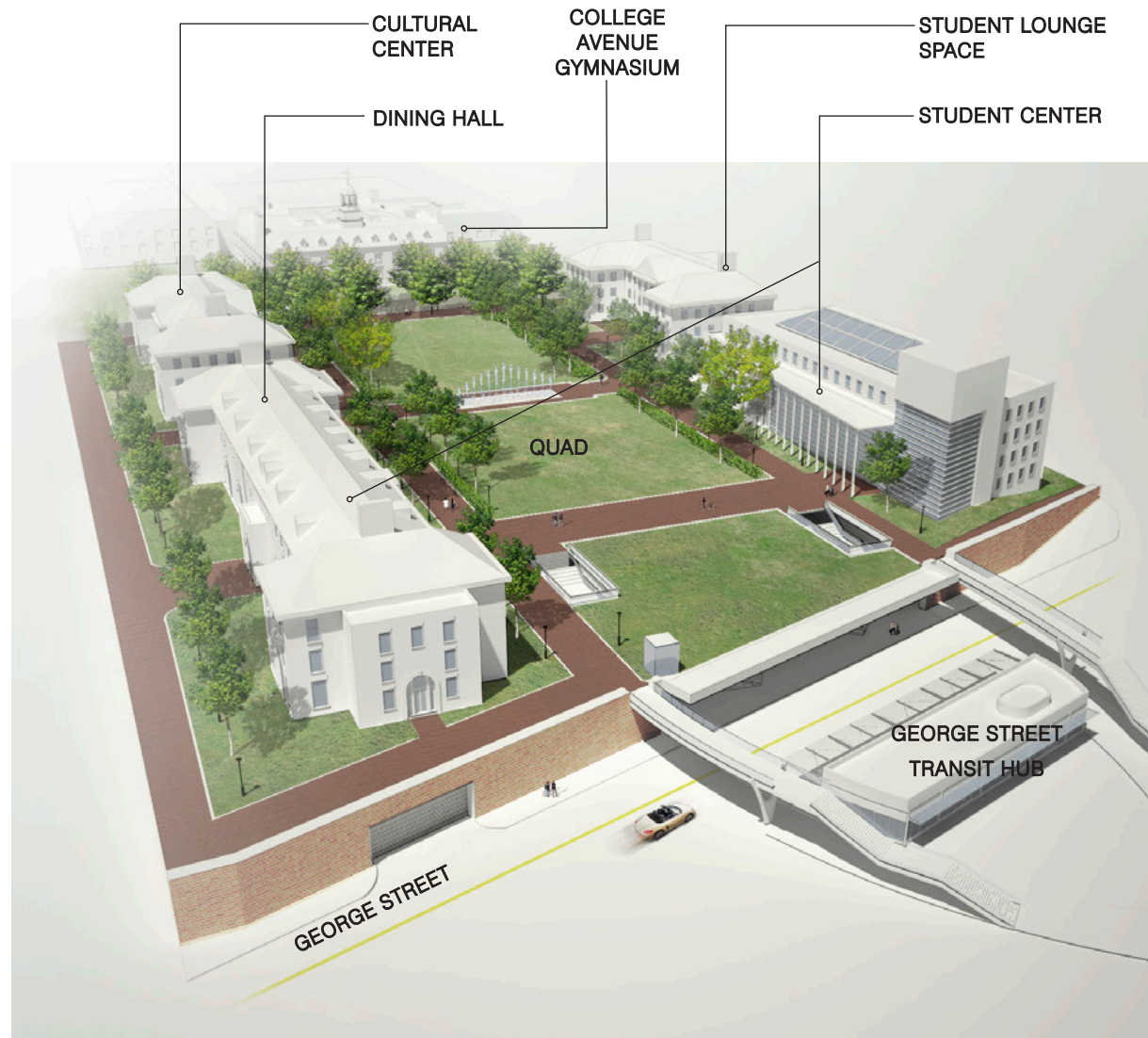


Figure 1.17 New quadrangle at College Avenue



Figure 1.18 College Avenue transit hub - George Street

Housing

Rutgers University–New Brunswick includes a very large residential housing program, among the biggest in the country, with many different types and qualities of housing. Much housing is geographically dispersed and has the tendency to isolate residents from the life of the University, while requiring either a commute by car or extended trip by bus. Further, many units of housing are nearing the end of their useful lives (Figure 1.19). The master plan proposes the rationalization, over time, of Rutgers University–New Brunswick housing stock and the co-location of new housing with Rutgers academic and student amenities. Significant new housing is proposed for Busch and Cook/Douglass, to complement recently completed projects or those currently under way at Livingston and College Avenue (Figure 1.20). Included in the plan for housing is the creation of new living-learning communities, which simplify transport and can lead to the esprit-de-corps found in more intimate college settings.

The provision of high quality, reasonably priced housing is a key ingredient in the ability of Universities to compete for the best talent among young faculty and researchers. A major initiative is proposed to add new housing for faculty at the south

side of Cook, largely within the catchment of the desirable North Brunswick school district, and close to Route 1 (Figures 1.21, 1.22). This location also benefits from its proximity to Rutgers recreational spaces, Rutgers Gardens and the many public performances and exhibitions at the Mason Gross School of the Arts.



Figure 1.20 Livingston retail and housing



Figure 1.19 Russell apartments at Busch

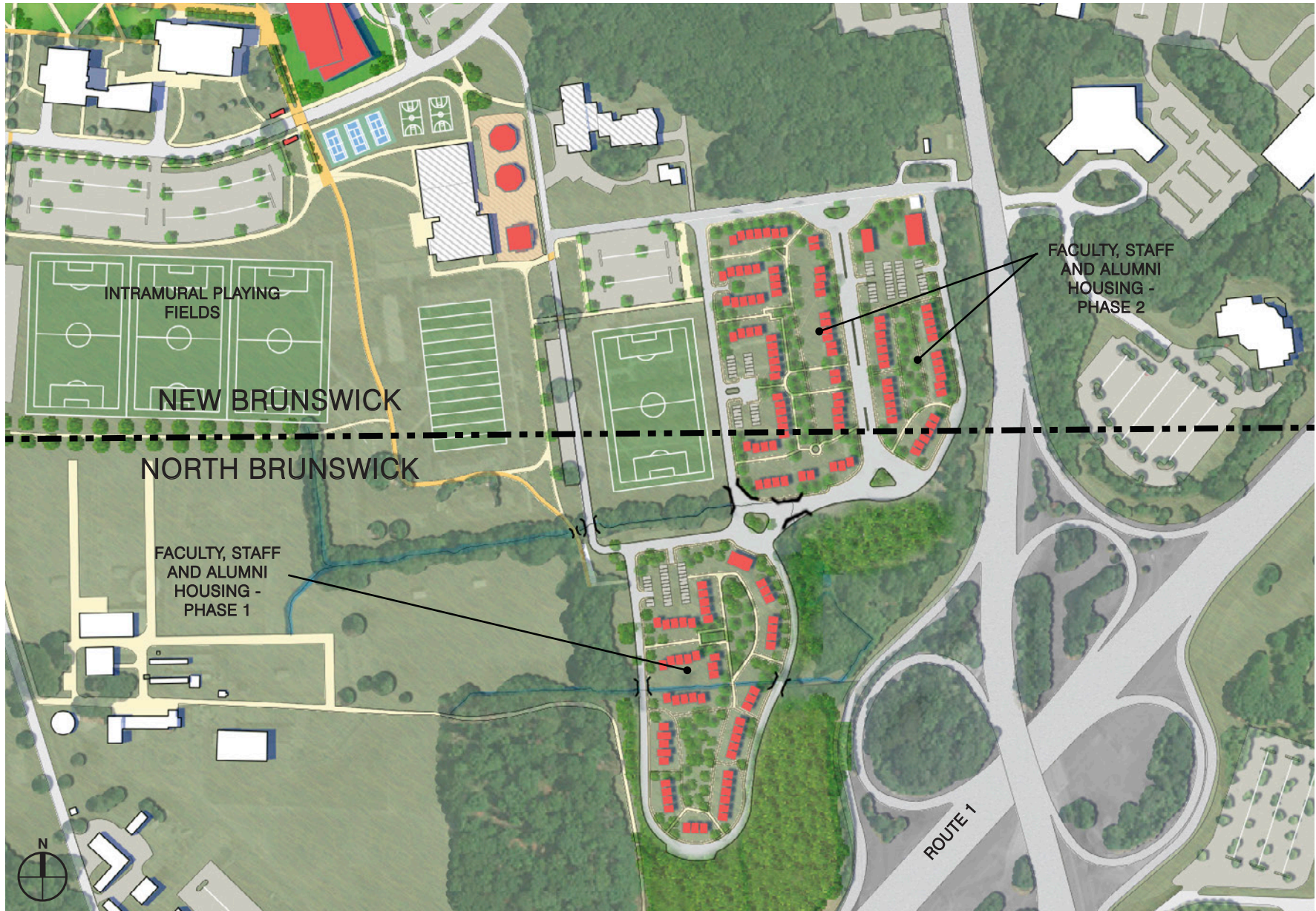


Figure 1.21 Plan diagram of faculty housing at Cook



Figure 1.22 Aerial view of faculty housing at Cook

Health, Wellness and Recreation

Improving quality of life within the Rutgers community include both increasing opportunities for healthy physical activities and reinforcing the values of stewardship and sustainability with respect to Rutgers University–New Brunswick’s large and diverse natural setting.

Benchmarking surveys indicate that Rutgers-New Brunswick trails its peers in the creation of spaces for clubs and intramural sports, a problem that is particularly acute at College Avenue, where outdoor recreational space is minimal and the College Avenue gym is out-moded. The master plan proposes the bold gesture of connecting College Avenue to the plentiful park-land and recreational opportunities across the Raritan River by means of a new bicycle and pedestrian bridge (Figure 1.23).

A second over-arching theme is to reconnect Rutgers University – New Brunswick to its historically central relationship to the Raritan River and to strongly tie together the districts to either side of the Raritan. A walkway, to be created along the New Brunswick side of the River and connecting the College Avenue and Douglass, would be accessible from new and restored

stairs and ramps from the river’s bluff, and will revive town, campus, and river connections severed by Route 18. On the north bank of the Raritan, this report proposes collaborating with local constituencies to increase the recreational use of the necklace of parks that inhabit the River’s flood plain (Figure 1.24).

New playing fields are proposed at Cook/Douglass and improvements are proposed for each of the district recreational centers (Figure 1.25).

Rutgers is also the steward of a large ecological preserve adjacent to Livingston. Our plan calls for measured development within the preserve to allow for another, more direct connection between College Avenue and Livingston, and for the use and enjoyment of the Rutgers University – New Brunswick Community (Figures 1.26).



Figure 1.23 New bridge and campus development at College Avenue



Figure 1.24 New boardwalk extension to the Delaware and Raritan (D&R) tow path with connection to Cook/Douglass campus

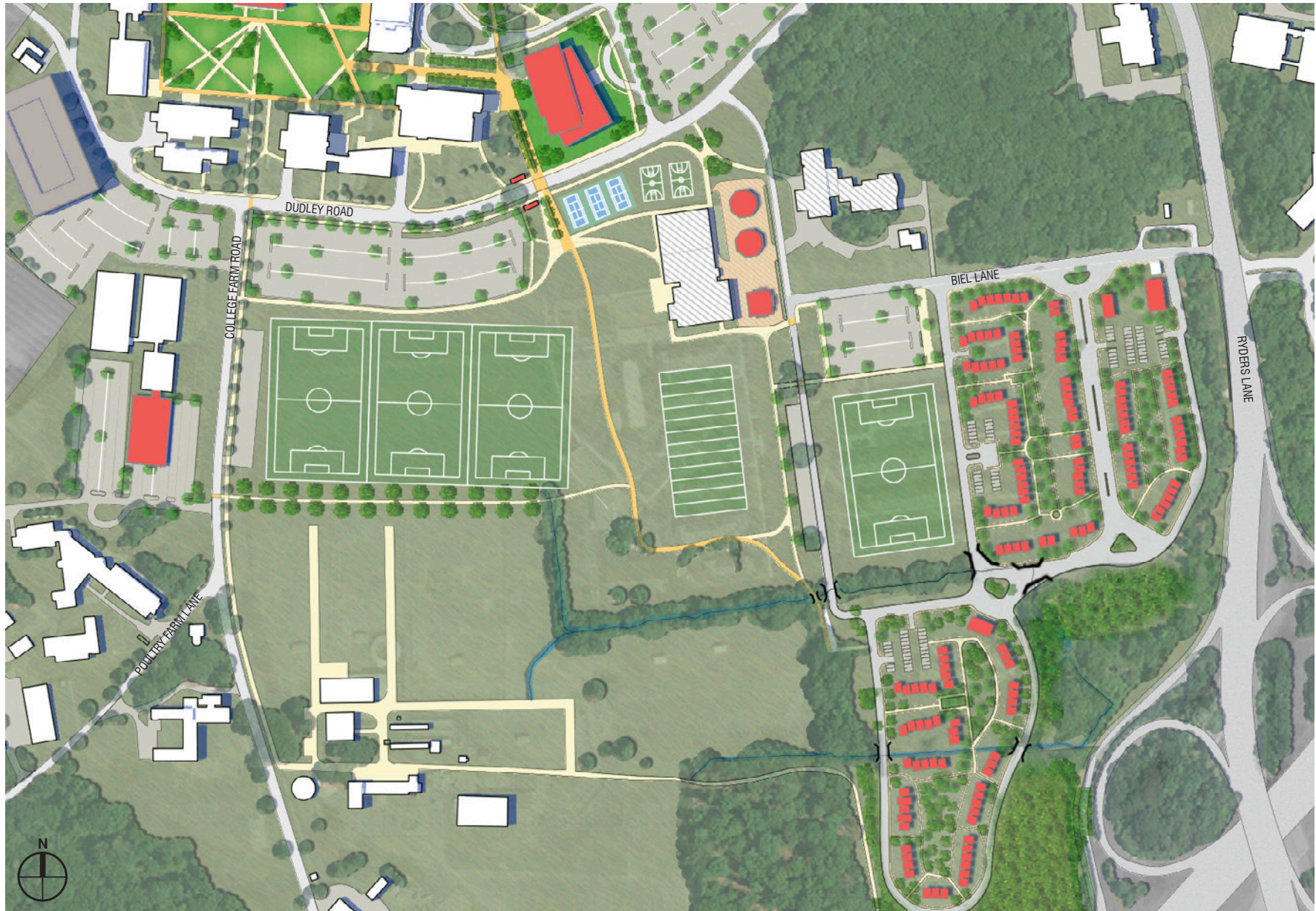


Figure 1.25 New playing fields at Cook/Douglass

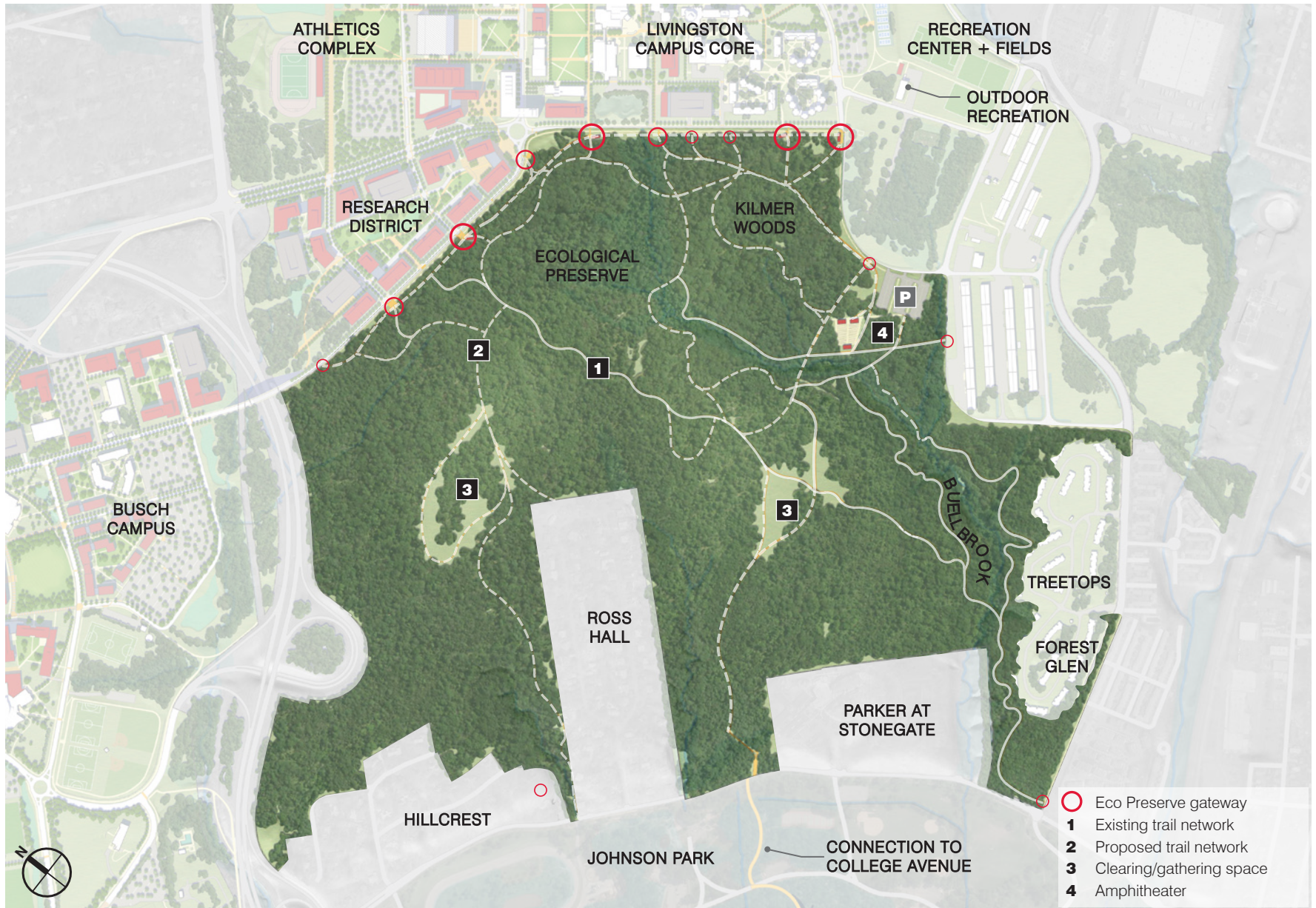


Figure 1.26 Proposed network of connections through the Rutgers ecological preserve

DISTRICT PLANS

THE FOLLOWING ILLUSTRATIONS DESCRIBE THE PROJECTS IN THE RUTGERS UNIVERSITY – NEW BRUNSWICK 2030 MASTER PLAN. PROJECTS ARE DESCRIBED IN DETAIL IN CHAPTER 4.

FIGURE 1.27 COLLEGE AVENUE



FIGURE 1.28 COOK/DOUGLASS

FIGURE 1.29 BUSCH

FIGURE 1.30 LIVINGSTON

FIGURE 1.31 PROPOSED AERIAL VIEW OF RUTGERS UNIVERSITY - NEW
BRUNSWICK

COLLEGE AVENUE 2030

-  Existing Building
-  Proposed Buildings
-  Buildings Under Construction
-  Key Projects

KEY PROJECTS

- 1 George Street Transit Hub
- 2 Student Center complex and quad
- 3 Pedestrian and bike bridge over the Raritan
- 4 Raritan River boardwalk
- 5 College Avenue Gym renovation and expansion
- 6 Power plant
- 7 Undergraduate housing
- 8 College Avenue greening
- 9 Deiner Park renewal
- 10 Alexander Library renovation
- 11 North Gateway mixed-use building
- 12 Parking Garage
- 13 Academic building (RBHS)
- 14 Ford Hall Renovation
- 15 Bicycle Connection to Route 18

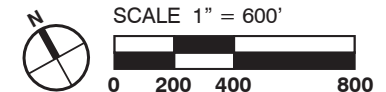


Figure 1.27 College Avenue master plan



TO LIVINGSTON

RARITAN RIVER

NORTHEAST CORRIDOR

ALBANY BRIDGE

TO COOK/DOUGLASS

JOHNSON PARK

BOYD PARK

ROUTE 18

ROUTE 18

JOHNSON DRIVE

GEORGE STREET

SEMINARY PLACE

COLLEGE AVENUE

SOMERSET STREET

LAFAYETTE STREET

HUNTINGTON STREET

RICHARDSON STREET

SENIOR STREET

MORRELL STREET

BARTLETT STREET

STONE STREET

MINE STREET

PROSPER STREET

UNION STREET

HAMILTON STREET

EASTON AVENUE

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COOK/DOUGLASS 2030

-  Existing Building
-  Proposed Buildings
-  Key Projects

KEY PROJECTS

- 1 Douglass Student Center Expansion and Transit Hub
- 2 Undergraduate Housing
- 3 Faculty and Graduate Family Housing
- 4 Pedestrian and Bike Bridge over George Street
- 5 Recreation Field Complex
- 6 Mason Gross Phase 2 + 3 Expansion
- 7 Academic Buildings
- 8 Rutgers Gardens Visitor Center and Expansion
- 9 Woodlawn Art and Sculpture Park
- 10 Passion Puddle Education Gardens

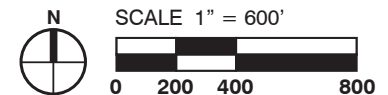
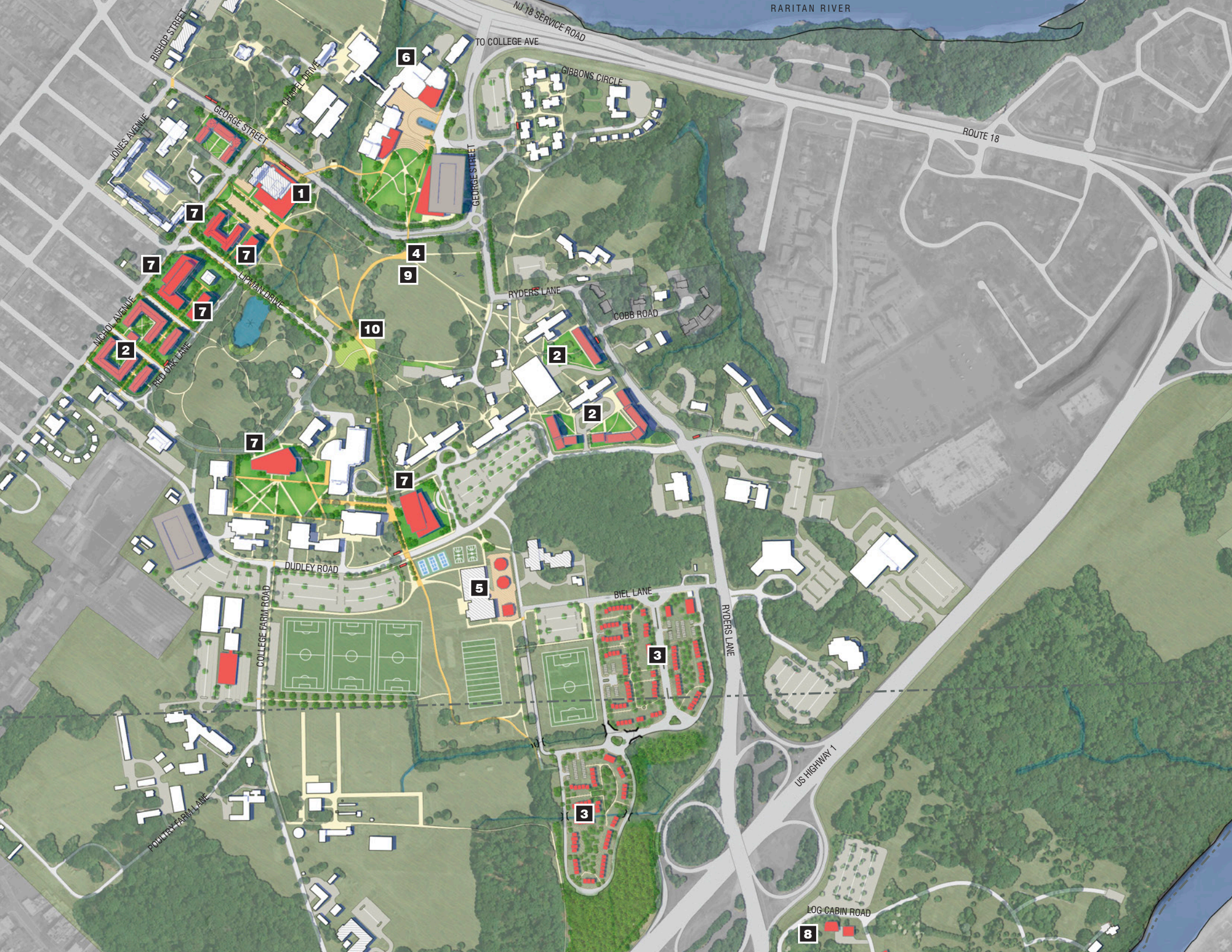


Figure 1.28 Cook/Douglass master plan



RARITAN RIVER

TO COLLEGE AVE

ROUTE 18

BISHOP STREET

GEORGE STREET

GIBBONS CIRCLE

GEORGE STREET

LOJES AVENUE

CHAPPEL DRIVE

RYDERS LANE

COBB ROAD

NICHOL AVENUE

LIPMAN DRIVE

DUDLEY ROAD

BIEL LANE

RYDERS LANE

POWERS FARM LANE

COLLEGE FARM ROAD

US HIGHWAY 1

LOG CABIN ROAD

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BUSCH 2030

-  Existing Building
-  Proposed Buildings
-  Key Projects

KEY PROJECTS

- 1 Busch Student Center Transit Hub
- 2 Allison Road Transit Hub
- 3 Busch Gateway realignment
- 4 RBHS Research Tower replacement
- 5 Kessler Teaching Labs replacement + Quad
- 6 Busch Mall landscape
- 7 Administrative buildings
- 8 High-Tech Classroom Building
- 9 Werblin Center addition
- 10 Undergraduate Housing
- 11 Graduate Housing
- 12 North Garage
- 13 High-speed transit and bicycle connection to Research Park and Livingston
- 14 Central Heating Plant

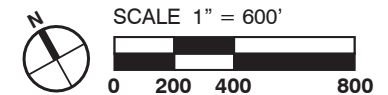


Figure 1. 29 Busch master plan



ROUTE 18

TO LIVINGSTON

DAVIDSON ROAD

BUSCH-LIVINGSTON BRIDGE

BEVIER ROAD

HOES LANE WEST

ALLISON ROAD

NEW CAMPUS ROAD

FREUNGHUISEN ROAD

FITCH ROAD

BART HOLMENEY ROAD

SCARLET KNIGHT WAY

CAMPUS ROAD

SUTPHEN ROAD

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LIVINGSTON 2030

- Existing Building
- Proposed Buildings
- Key Projects

KEY PROJECTS

- 1 Livingston Student Center Transit Hub
- 2 Ecological Preserve trail network and gateways
- 3 Busch-Livingston Research Park
- 4 Future Mixed-Use District
- 5 High-Tech Classroom Building
- 6 Academic Building
- 7 Undergraduate housing
- 8 Livingston Recreation Center expansion
- 9 Practice Facility with Integrated Parking
- 10 Hotel and Conference Center
- 11 Scarlet Knight Park

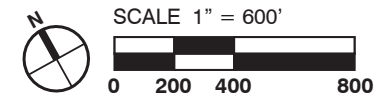
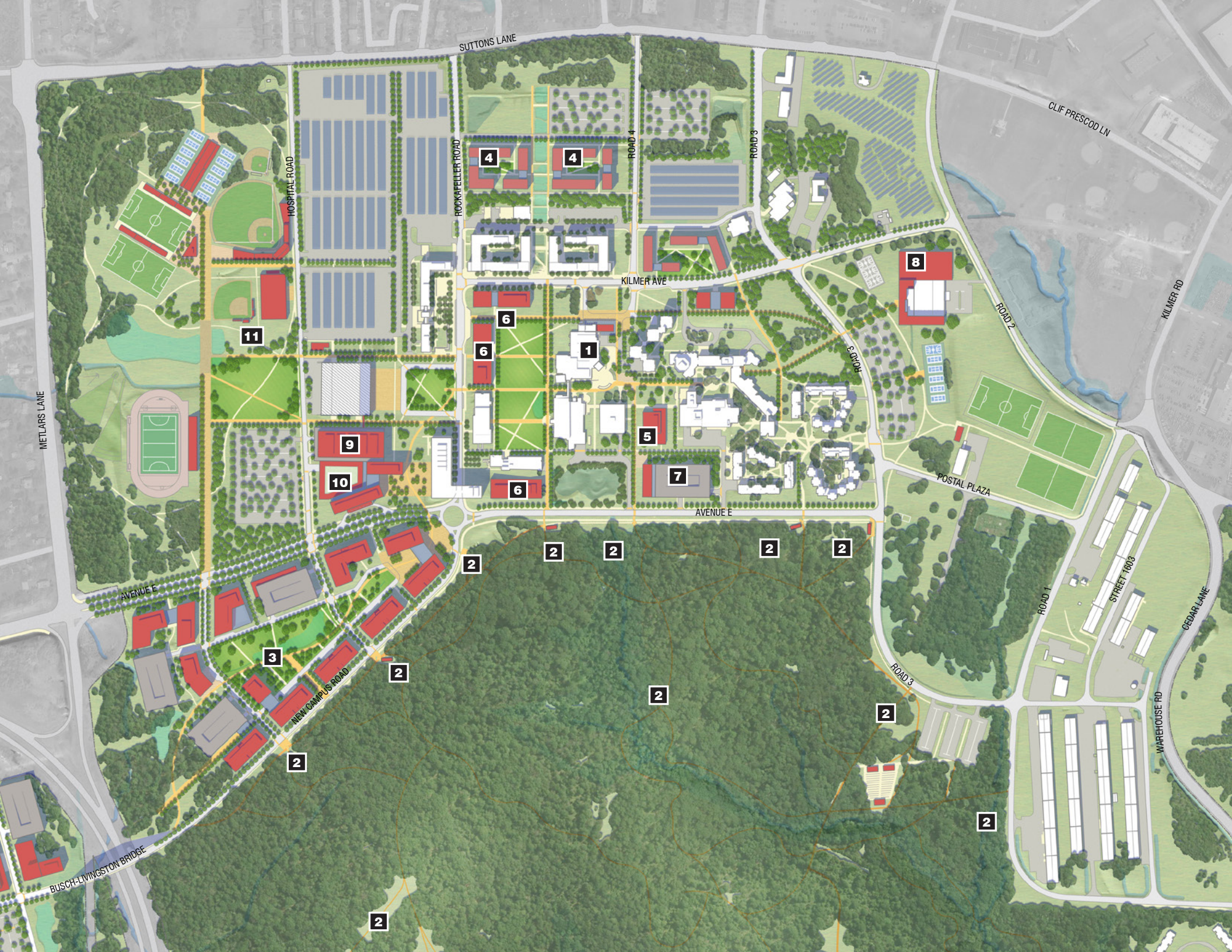


Figure 1.30 Livingston master plan



- Rutgers University – New Brunswick
- Non - Rutgers buildings

*Figure 1.31
Proposed Aerial view of Rutgers University -
New Brunswick*



SASAKI | RAMSA | VHB

