



**George Mason University**  
Fairfax, Virginia

West Campus Innovation District  
Master Plan

1018012  
August 3, 2018

**EYP** /



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## / Executive Summary

George Mason University (GMU) recognizes the potential for new mixed-use development of the areas west of its existing academic core campus. University President Dr. Ángel Cabrera has envisioned this land area becoming a dynamic “Innovation District” that will encourage public-private development, research collaboration, a variety of residential construction, retail and other amenities for the benefit of both the University and the regional community.

In May 2017, a three-day public workshop was held to determine the best overall site area for a GMU Innovation District. The preferred site is called Ox-Bridge based on its location spanning Ox Road (SR 123). In February 2018, a multi-faceted evaluation study of the Ox-Bridge land area was completed, which confirmed there are no significant physical impediments to development of that site. Immediately following this work, GMU commissioned EYP and its consultant team to develop a high-level master plan / conceptual urban design plan for what is now called the **West Campus Innovation District**.

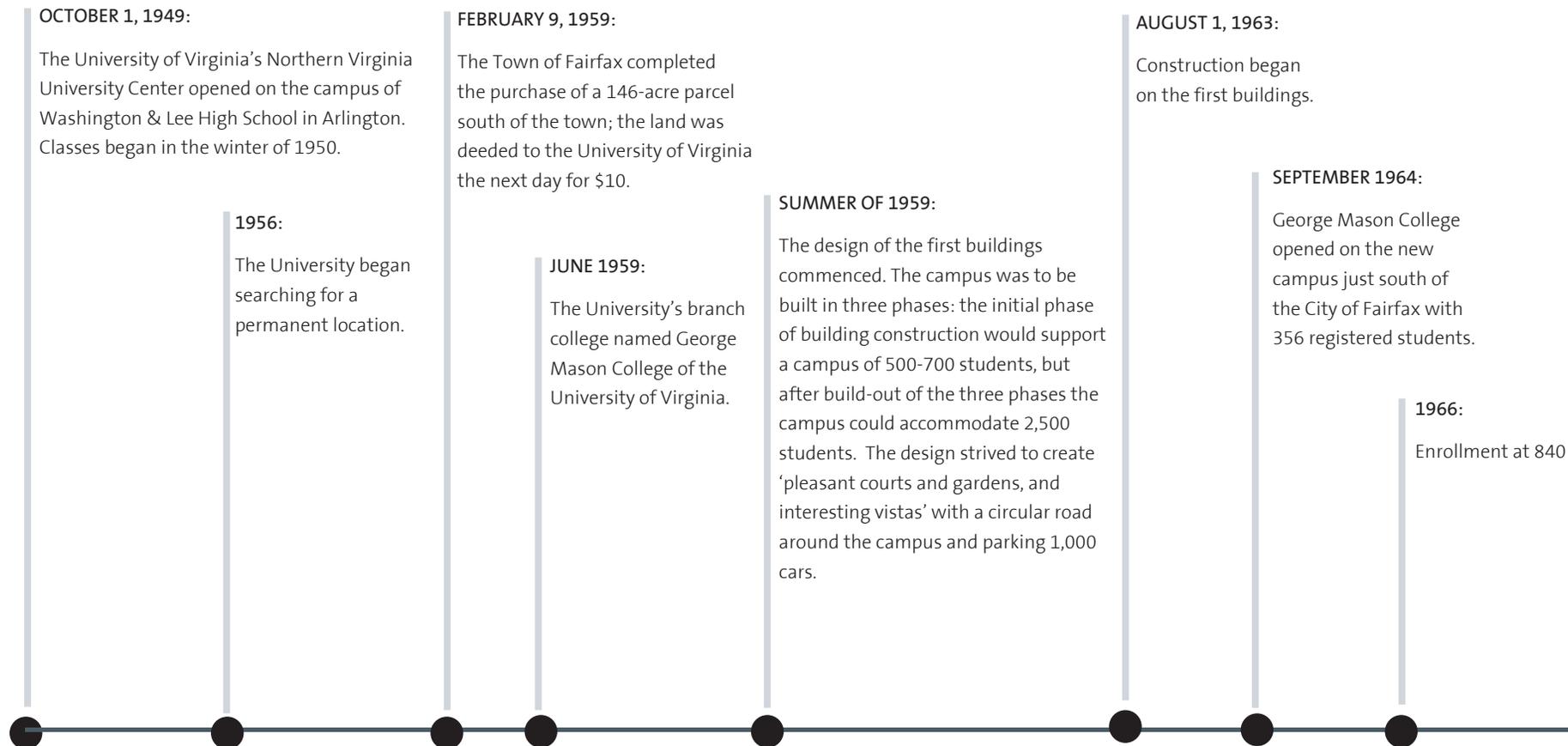
This plan would be guided by the following concepts:

- Create a campus of the future.
- Establish a strong sense of place that celebrates the presence of George Mason University.
- Provide for the orderly growth of the campus to meet the future space needs of the University in support of its mission.
- Establish a mixed-use district which is envisioned as both a university town center and an innovation district that will increase the University’s success and its visibility.
- Provide public space and amenities that will attract and serve the campus and regional communities.

The overall 200-acre site area is south of University Drive and spans Ox Road with 186.75 acres to the west of Ox Road and 16.3 acres east of Ox Road. This conceptual master plan is envisioned as a thirty-year plan and is intended to support an additional 10,000 full-time equivalent (FTE) students, plus the requisite supporting faculty and staff.

At the onset of this planning effort, meetings were held with representatives from the City of Fairfax, the County of Fairfax, and the Virginia Department of Transportation (VDOT) to convey information and to obtain input and guidance. Based on feedback from the President and his senior leadership team, the University’s Steering Committee, faculty, and other relevant administrators, a high-level conceptual urban design plan has been developed that optimizes current opportunities for the overall site, while allowing for flexibility and additional growth.

## / Campus History



**JUNE 1968:**

The first graduating class of 52 seniors received their degrees.

**1968:**

Work began on a new master plan by John Carl Warnecke with the main entrance designated at Ox Road (Route 123).

**JULY 18, 1969:**

An additional 421 acres of land purchased for the campus.

**APRIL 7, 1972:**

The college became an independent university, George Mason University.

**FALL 1972:**

Enrollment over 4,100.

**JULY 1, 2012:**

Dr. Ángel Cabrera becomes the President and begins spearheading the creation of a new vision for the University.

**JANUARY, 2013:**

2014-2024 Strategic Plan

**FALL 2017:**

Enrollment at 35,960.

**FEBRUARY, 2018:**

Site Evaluation Study

**SUMMER, 2018:**

West Campus Innovation District Master Plan

## / Project Goals

### From the 2014–2024 Strategic Plan, Update 2017:

In 2013, George Mason University produced a far-reaching strategic plan that outlined how it would serve students, faculty and staff, its statewide constituency, and the broader global society over the succeeding 10 years. Five years later, that commitment to service and the vision embedded in the plan – to be a world-class research university committed to access and to inclusion – remain the guiding principles that govern the university’s strategic decisions.

Established nearly seven decades ago with the goal of eventually becoming a ‘good regional university,’ GMU has vastly exceeded this founding aspiration and is now Virginia’s largest and most diverse public research university, one of the best public universities in the U.S. and among the top 300 universities in the world. The foundation of this success is a remarkable track record of teaching and scholarship excellence that has enabled Mason to educate hundreds of thousands of students who in turn have been a driving force in the social and economic development of Northern Virginia and the National Capital Region.

In summary, George Mason University has outlined a forward-thinking strategic path towards a robust future. The development of this master plan is intended to strongly support this strategic planning approach.

The goals of the master plan are to:

- Create a campus of the future.
- Establish a strong sense of place that celebrates the presence of George Mason University.
- Provide for the orderly growth of the campus to meet the future space needs of the University in support of its mission.
- Establish a mixed-use district which is envisioned as both a university town center and an innovation district that will increase the University’s success and its visibility.
- Provide public space and amenities that will attract and serve the campus and regional communities.





**“WE MEASURE  
OUR SUCCESS BY  
HOW MANY LIVES  
WE CHANGE FOR  
THE BETTER.”**

**Dr. Ángel Cabrera**  
University President, George Mason University

## / Site Evaluation



In Fall 2017, GMU hired EYP and its consultant team to evaluate the existing site conditions and development potential for areas on GMU's Fairfax East and West Campuses identified by the May 2017 West Fairfax Campus Vision Study. The report analyzed current conditions related to traffic, drainage and storm water management, slopes, wetlands, environmental preservation areas, sanitary sewer, water supply, geotechnical and potential soil contamination concerns. The study site area was defined as an area of approximately sixty acres of land on the GMU Fairfax Campus. Approximately thirty-five acres are located on the west side of Ox Road (SR123); and approximately twenty-five acres are situated on the east side of Ox Road. In brief, the analysis did not identify any significant challenges to development in the sixty-acre site area.

## A summary of the study's findings:

### **SANITARY SEWER:**

#### **East Campus**

- Uncertainty exists about the size and slope for a 28' long section of sanitary sewer pipe on East Campus near outfall at Braddock Road.
- Recommendation - site investigation is required to determine slope and size and a design solution and upgrades may be required to meet projected additional demand.

#### **West Campus**

- The West Campus outfalls to a pump station at Braddock Road that is likely operating at or above capacity.
- Recommendation - An upgrade to the pump station may be required to meet projected additional demand.

### **WATER SERVICE:**

- Recent installation of new 24" transmission main along Campus Drive, and main water tank replacement is in process.
- Recommendation - both enhancements to system will provide improved pressure and service and will increase capacity for additional development

### **STORM SEWER:**

- Land west of Ox Road drains to the East Fork tributary of Popes Head Creek, and land east of Ox Road drains to Mason Pond or the Kelly Drive drainage area.
- Recommendation - Consider maintaining these alignments in any new grading plans.

### **TOPOGRAPHY:**

- Varies from 0.5% up to 50% slopes in isolated areas with athletic fields typically sloped from 0.5% to 2% and parking areas sloped from 1% to 8%.
- Transitional grades in the surrounding areas of up to 33% (3:1 slopes).

- Recommendation - Do not develop in steep slope areas due to complexity and cost.

### **SOILS:**

- Soils are common to region, i.e., predominantly clay and silty sand; however, a vein of asbestos is present to the west on the Shirley Gate Property.
- Recommendation - no recognized environmental hazards or contaminants, except off-site asbestos vein which would need to be abated if that property is developed.

### **STORM WATER MANAGEMENT / BEST MANAGEMENT**

#### **PRACTICES (BMPs):**

- Existing facilities include both Mason Pond and Dry Pond Gov0002
- Recommendation - additional facilities and/or upgrades to existing facilities will be required by the new state regulations to protect the existing stream systems, as well as the Chesapeake Bay

#### **OUTFALLS**

- Existing facilities will not handle additional development.
- Recommendation - additional site-specific analysis will be required at time of development to determine the most appropriate method to meet stormwater outfall requirements.

### **WETLANDS AND RESOURCE PROTECTION AREAS (RPA)**

- Land classified as wetlands and RPA are present to both the east and west of study area.
- Recommendation - any impacts require special permitting and mitigation from the State of Virginia.

### **ENDANGERED AND THREATENED SPECIES (ETS)**

#### **HABITATS**

- Virginia Department of Game and Inland Fisheries and U.S. Fish and Wildlife Service databases indicate that northern long-eared bat may be present in the vicinity of the study area

- Recommendation - Although there are no known northern long-eared bat maternity roosts within Fairfax County, further study should be conducted in potential roost areas prior to any adjacent development.

### **ARCHEOLOGICAL RESOURCE AREAS**

- Several areas have been identified that may require a site-specific Phase I cultural resources survey that are primarily in the western most portion of the study area.
- Recommendation - further investigation by a qualified professional archeologist is warranted.

### **ENVIRONMENTAL SITE ASSESSMENT**

- There are no current recognized environmental conditions, de minimis conditions, potential business environmental risk, or potential non-ASTM scope findings associated with the study area at this time.
- Recommendation - no significant development difficulties are anticipated due to environmental conditions.

### **TRAFFIC CAPACITY ANALYSIS-CONCLUSIONS**

- Future (2030) Forecasts based on campus population growth do not apply specific programmatic elements of proposed Master Plan.
- Reserve capacity exists at the Ox Road/University Drive and Braddock Road/Campus Drive intersections, but there may be needs for spot improvements; i.e., turn lane extensions.
- Regional improvements needed at the Ox Road/Braddock Road intersection to improve levels of service with the County Comprehensive Plan recommending a grade-separated interchange and the extension of Shirley Gate Road to Fairfax County Parkway.

# / Site Conditions & Design Parameters

## Existing Site Conditions

**SITE EXTENTS:** The land designated as the West Campus Innovation District is bisected by Ox Road (SR 123) and comprised of two parcels totaling approximately 200 acres, 186.75 acres west of Ox Road and 16.3 acres east of Ox Road.

**STEEP SLOPES:** The western portion of the site (42 acres) has varying steep slopes that are quite steep and limit the feasibility of new construction.

**RESOURCE PROTECTION AREAS:** The western portion of the site also includes a Resource Protection Area (RPA) of approximately 16 acres. In addition, there is a RPA adjacent to the site on the east, which separates the site from the existing core academic campus. Land designated as a RPA is not to be built upon, and any site disturbance is to be very limited and returned to its natural state.

**OX ROAD (STATE ROUTE 123):** A major consideration in the development of the West Campus Innovation District is the presence of Ox Road which bisects the site. This principal arterial, which currently carries approximately 28,000 vehicles per day, runs between the City of Fairfax and Braddock Road in the County of Fairfax. This four-lane, median divided roadway has a speed limit of 45 mph and provides no full intersections along its 0.6-mile length from University Drive to Braddock Road.

**EXISTING DEVELOPMENT:** A large portion of the remaining land on both sides of Ox Road has been developed for athletic, recreational, and parking uses. The western portion of the site is accessed by University Drive to the north and Campus Drive, via a tunnel under Ox Road, completed in early 2015, near the center portion of the site.

## Design Parameters

After discussions with GMU's administration and input from selected stakeholders, including the City, the County and VDOT, the following parameters were established for the development of the master plan.

**AVOID STEEP SLOPE LAND:** This westernmost, heavily wooded portion of the site would be challenging for construction, and more environmentally-impactful; therefore, no development is proposed in this 42-acre area.

**BRIDGE THE RPAS:** No construction is allowable on RPA lands, except for pedestrian bridges.

**PROVIDE A NEIGHBORHOOD BUFFER:** New construction to be set back from the property lines adjacent to residential neighborhoods by at least 90 feet.

**PROVIDE A CAMPUS PRESENCE AND GATEWAY:** The intersection of University Drive and Ox Road should be considered the primary gateway to the campus. New construction along Ox Road between University Drive and Mason Pond Road will become the face of the University.

**OX ROAD (SR 123):** Access to the western portion of the site will be from University Drive to the north, Campus Drive from the center, and Braddock Road from the southwest. Per VDOT, no additional traffic calming or additional full access intersections will be provided on Ox Road for the foreseeable future.

**OPTIMIZE CAMPUS DRIVE:** The Campus Drive underpass should be maintained as a primary access to the site.

**LINK THE EAST CAMPUS TO THE WEST CAMPUS:** Establish a pedestrian, bicycle and transit link between the academic core campus and the new district following the impending demolition of existing, student housing adjacent to the eastern RPA.

**CAMPUS DENSITY:** The overall density of the West Campus Innovation District should be comparable to the current core academic campus.

**CAMPUS CHARACTER:** The character of the new development, both landscape and architecture should be contemporary, yet responsive to the existing GMU campus environs.

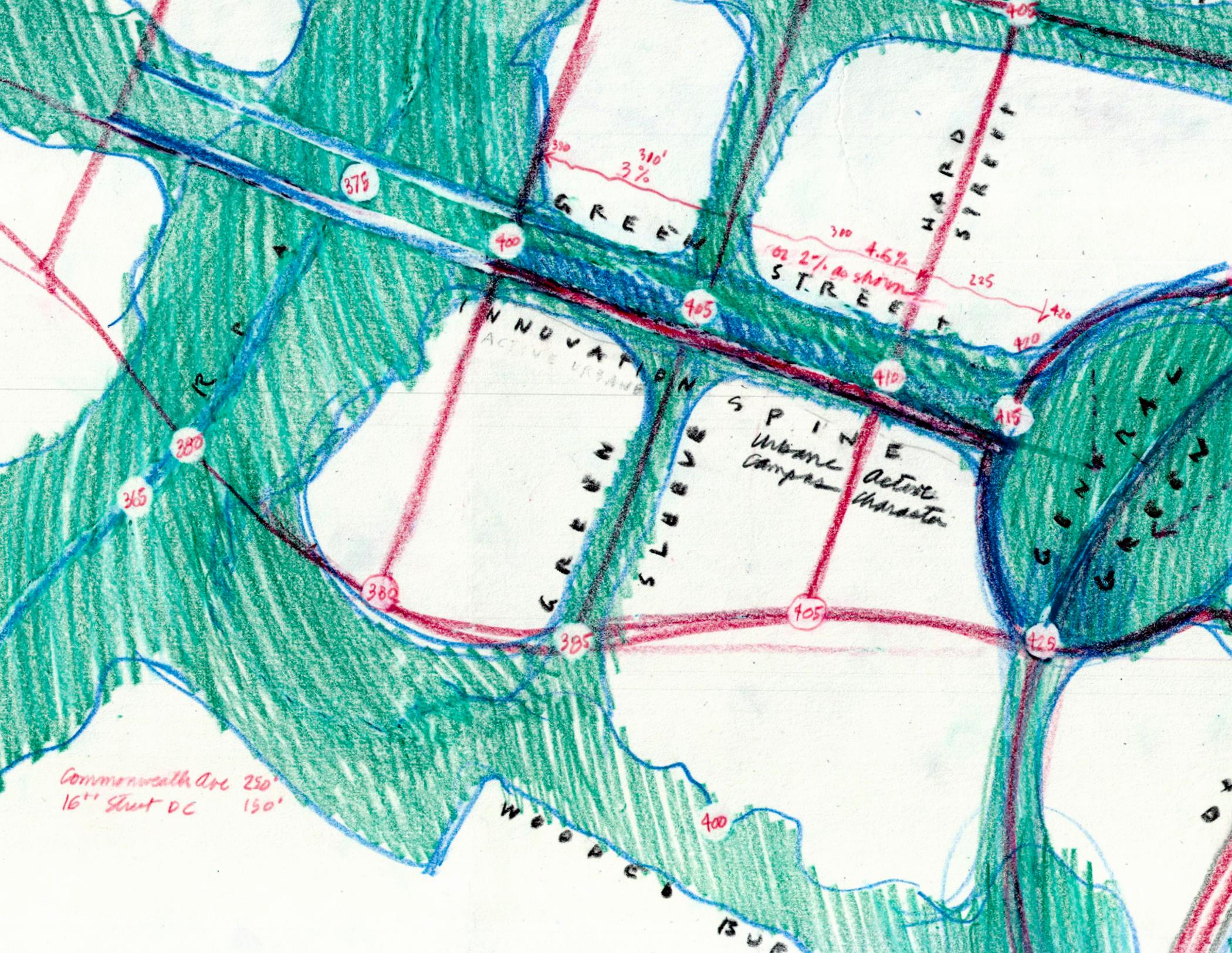
**EXISTING SITE PROGRAM:**

- |                   |                       |
|-------------------|-----------------------|
| 1. FIELD #1       | 9. SOCCER FIELD       |
| 2. SOFTBALL FIELD | 10. TRACK & FIELD     |
| 3. FIELD #3       | 11. FIELD HOUSE       |
| 4. FIELD #4       | 12. THROWING FIELDS   |
| 5. FIELD #5       | 13. TENNIS COURTS     |
| 6. TENNIS COURTS  | 14. RAC FIELD         |
| 7. BASEBALL FIELD | 15. BASKETBALL COURTS |
| 8. SOCCER FIELD   |                       |



- SITE EXTENTS
- CAMPUS PROPERTY LINE
- CITY OF FAIRFAX BOUNDARY
- EXISTING ATHLETIC FIELDS
- RESOURCE PROTECTION AREA (RPA)
- EXISTING SURFACE PARKING
- STEEP SLOPES





Commonwealth Ave 250'  
16" Street DC 150'

375

380

365

380

395

400

390

310'

3%

400

405

410

415

425

300

02 2% do shown

4.6%

225

420

GREEN STREET

HARD STREET

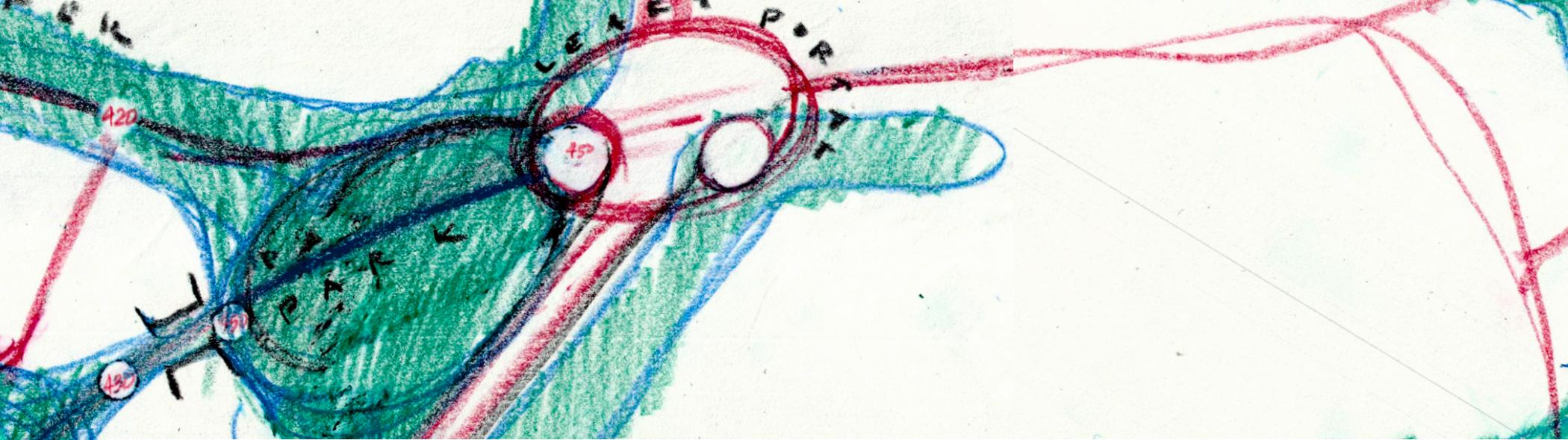
INNOVATION  
ACTIVE URBAN

SPINE  
Urban  
Campus  
Active  
Character

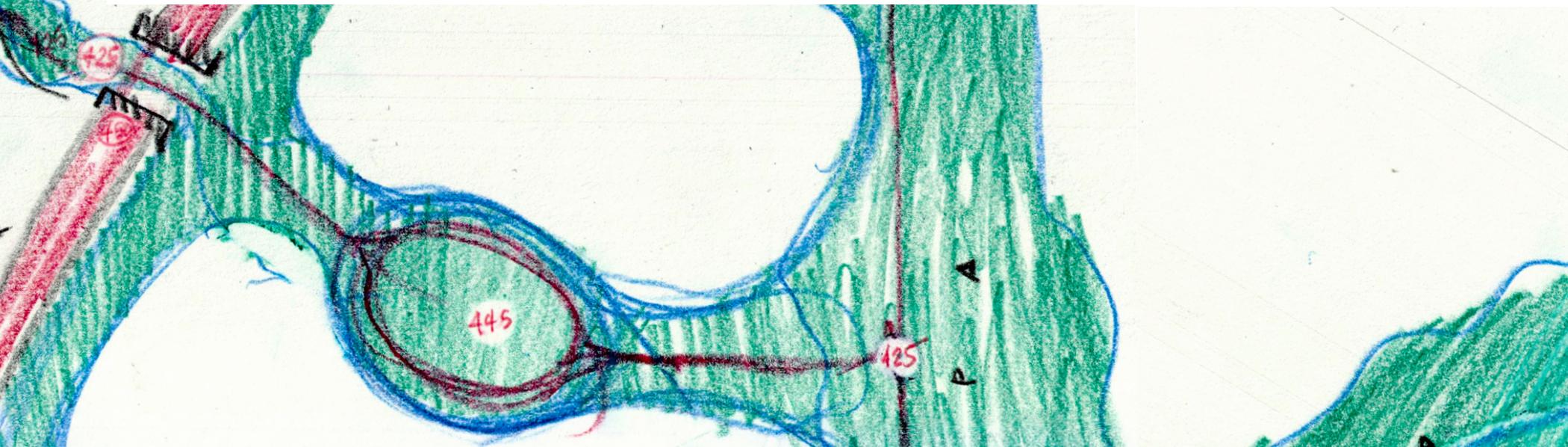
GREEN STREET

GREEN STREET

WOODPECKER



# URBAN DESIGN



## / Site Plan

The West Campus Innovation District Master Plan incorporates the following elements:

- Allows for planned growth over the next 30 years, while being adaptable to change in program requirements.
- Creates a unique university town center as central part of the Innovation District.
- Accommodates enrollment growth of 10,000 FTE students and requisite faculty and staff.
- Provides for a diverse variety of facilities for academic, social, and recreational uses that promote positive interchange.
- Provides research space to support GMU's Carnegie R1 classification.
- Accommodates new student housing in each phase for a total of 2,000 additional on-campus residents.
- Provides land for athletics to replace displaced, older facilities.
- Enhances the natural landscape features while adding a diversity of active and passive exterior spaces.
- Allows for a hotel/conference center, corporate office/research space, and commercial development
- Enhances the University's visibility and presence within the region.
- Emphasizes pedestrian activity and provides a robust bicycling network.
- Promotes connectivity between the West and East Campuses with an innovative multi-modal transportation network.
- Provides for lifestyle options that encourage students to remain on campus over weekends.
- Encourages opportunities to generate revenue through creative P-3 agreements.





-  CAMPUS PROPERTY LINE
-  PRIVATE DEVELOPMENT
-  MULTIPURPOSE FIELDS
-  RESOURCE PROTECTION AREA (RPA)
-  NEW BUILDINGS
-  EXISTING BUILDINGS

# / Landscape & Open Space Plan

Thoughtfully planned streets, walkways, and a diversity of well-conceived and carefully-maintained landscape spaces are essential parts of great campus design.

The entire length of the West Campus Innovation District (WCID) is connected to the core academic campus via the conversion of Campus Drive into a pedestrian-friendly, multi-modal 'Innovation Spine' or 'Innovation Avenue' that includes landscape areas designed for bio-retention, as well as beauty. A central, oval-shaped town center commons provides a major green space with an outdoor amphitheater as well as serving as a multi-modal circulation loop. Extending from the Innovation Spine is a network of streets and pedestrian/ bicycle ways. A variety of other active and passive landscape spaces are incorporated, including a 'Portal Park' located at the prominent intersection of University Drive and Ox Road. This space provides a visually appealing landscape gateway. A wooded buffer provides a physical separation between the WCID and the adjacent residential neighborhood. The plan includes capacity for up to nine recreational multipurpose fields and hiking trails.



INNOVATION SPINE



CAMPUS GREENS AND QUADRANGLES



GREEN STREETS



WOODLAND BUFFER



RECREATIONAL FIELDS



RPA CROSSING



PORTAL PARK



URBAN SPACES AND PEDESTRIAN PATHS



RECREATIONAL FIELDS

WOODLAND BUFFER

RPA

## / Street Typologies

Within the Innovation District, the following street typologies are proposed:

**1. The Innovation Spine (135'-0" wide):** An activated, pedestrian friendly, multi-modal 'Innovation Spine' is at the heart of the Innovation District plan. This Spine provides vehicular, bicycle, and pedestrian access from the core academic campus, under Ox Road, through to the West Innovation District. The buildings to the north of the Spine encircle a pedestrian plaza, free to be used as an extension of the adjacent buildings with outdoor café seating areas for landscape and bioretention. Bicycle lanes (one in each direction) are incorporated to keep riders safe and promote GMU's bicycling network. One lane of vehicular traffic in each direction and a bay for street parking are provided. To provide traffic calming cobblestone street paving is proposed between the oval plaza, or Campus Commons, and the RPA.

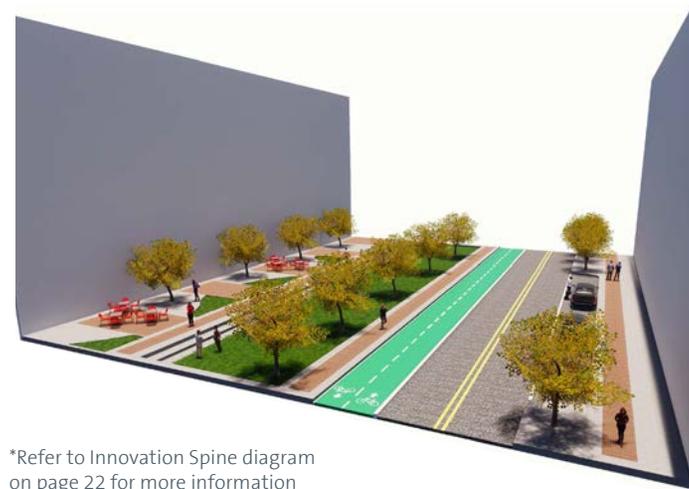
**2. Green Street (74'-0" wide):** The four streets running north to south between University Drive and Campus Drive each include two-way vehicular traffic with street parking on both sides. Ample space for trees and other landscape is provided on each side of the street.

**3. Expanded University Drive (widened by 51'-0):** On the campus side of the street, University Drive will be expanded along the West Campus perimeter to incorporate multi-modal capacity. A wide pedestrian plaza for outdoor seating and plantings is provided to serve as a buffer between traffic and pedestrians. An on-street parking lane, and two-way bicycle lanes will be built along the existing south edge of University Drive.

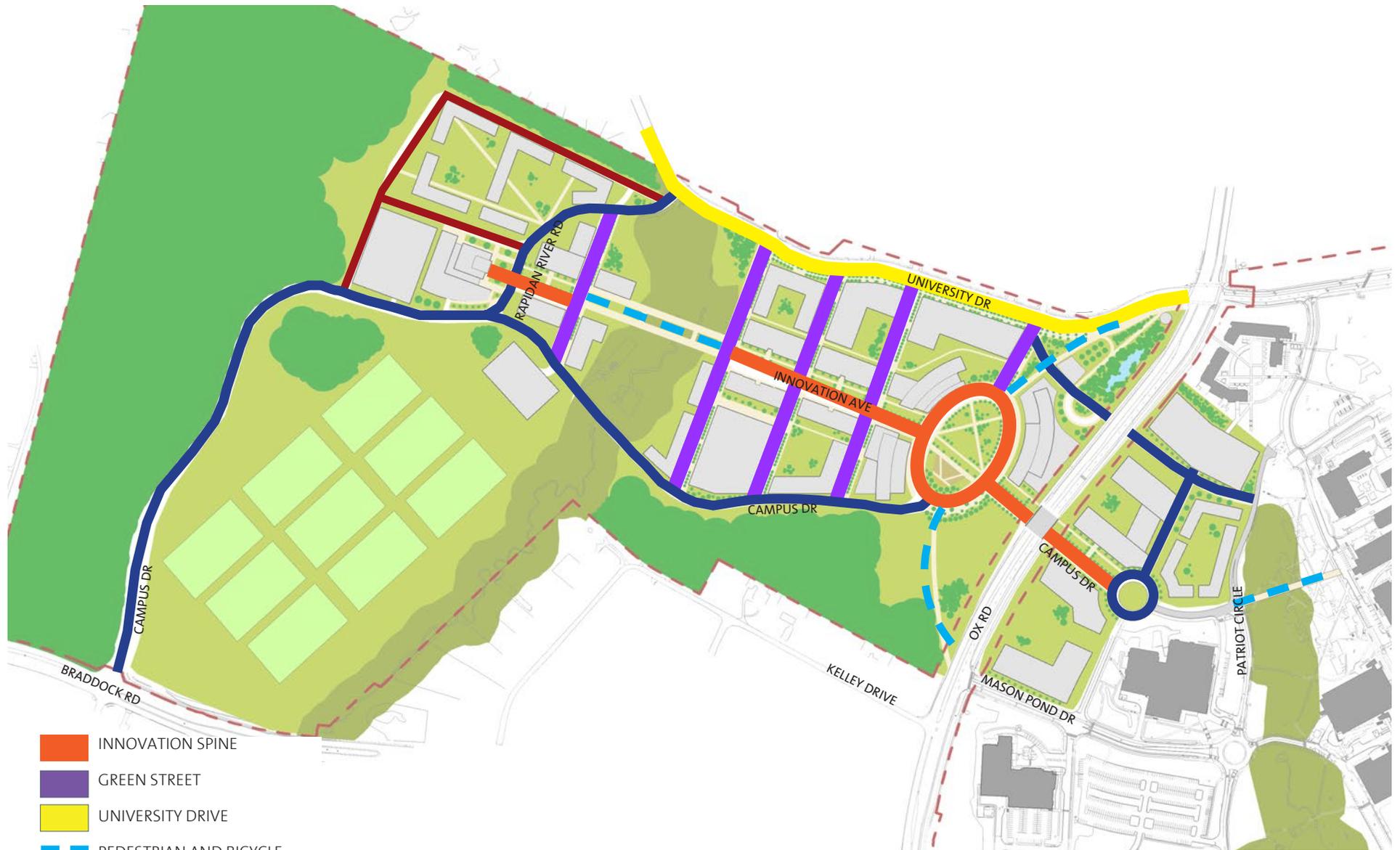
**4. Two-lane Street ( 27'-0" Wide):** This street type carries one-lane of vehicular traffic in each direction. No parking is proposed along this street type.

**5. Service/Fire Lane:** Service and/or fire lanes to be incorporated as necessary.

**6. Pedestrian/Bicycle Travelways:** The Innovation District will promote pedestrian and bicycle movement throughout and will include several pedestrian/bicycle-only (non-vehicular) pathways including a connection from University Drive to Mason Pond Drive and on bridges which span the RPAs.



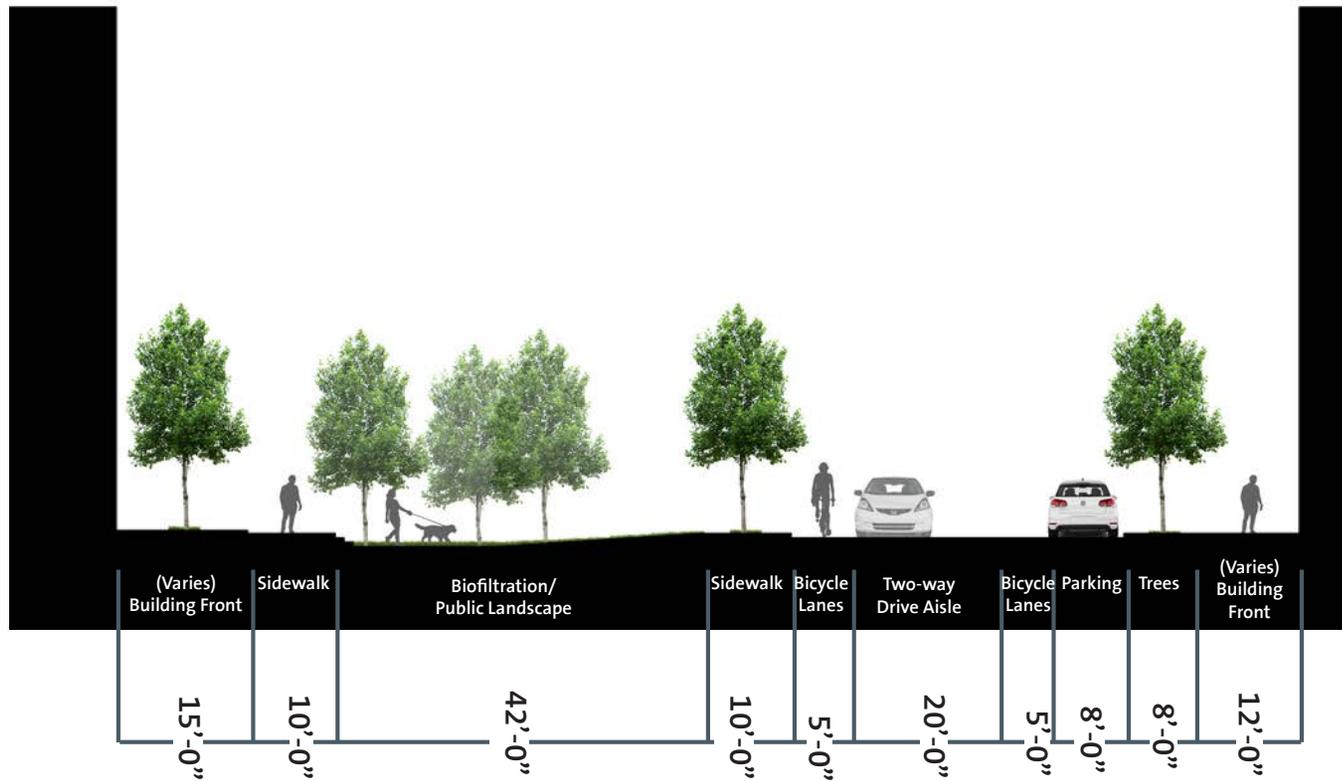
\*Refer to Innovation Spine diagram on page 22 for more information



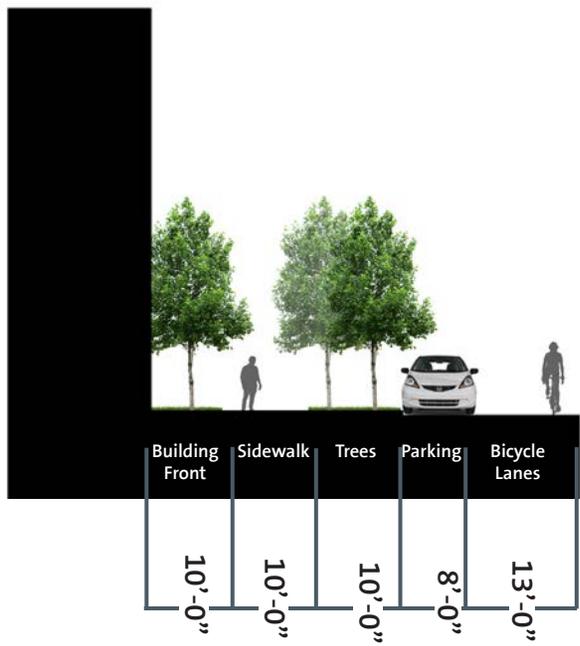
- INNOVATION SPINE
- GREEN STREET
- UNIVERSITY DRIVE
- PEDESTRIAN AND BICYCLE
- TWO LANE STREET
- SERVICE/FIRE LANE
- EXISTING ROADS



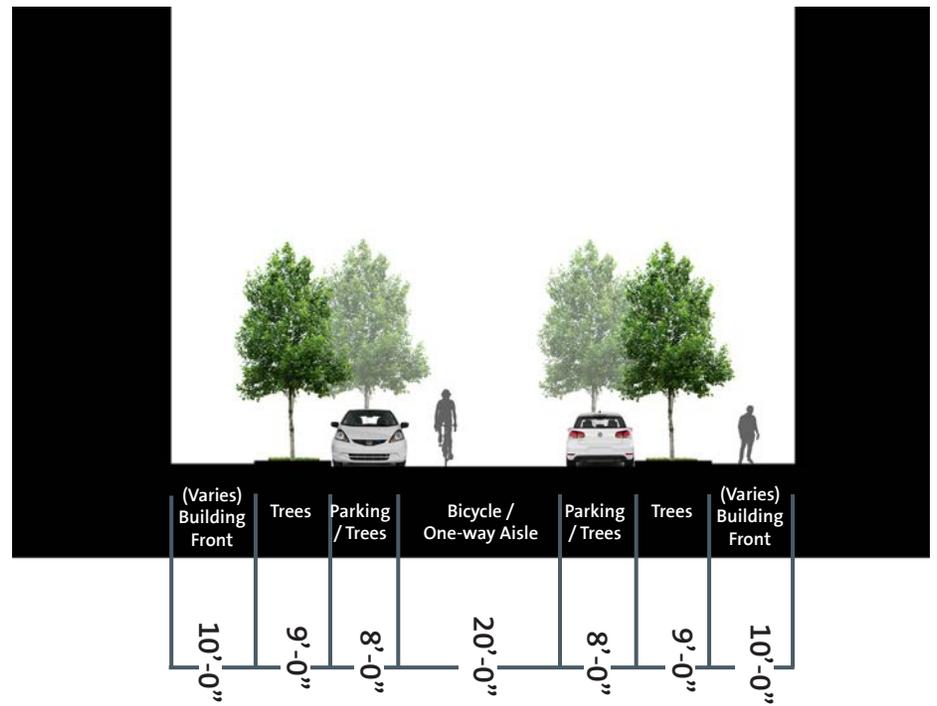
# / Street Typologies



A. Innovation Spine (135'-0" wide)



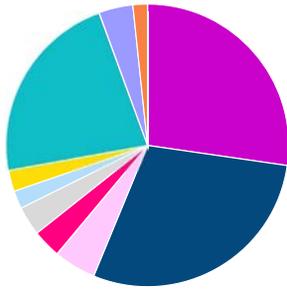
B. Green Streets (74'-0" wide)



C. Expansion of University Drive (widened by 51'-0)

## / Program: Building & Site

The master plan should be flexible and adaptable to adjust to changing program requirements but should be capable of providing space adequate to accommodate growth of the following program areas to support enrollment growth by 10,000 FTE students and opportunities for private partner development.



### BUILDING PROGRAM

E & G: instructional, research, library, Administrative, student services	1,224,721
STUDENT HOUSING & DINING	1,300,000
STUDENT CENTER	216,963
CAMPUS RECREATION	146,674
ATHLETICS FIELD HOUSE (Shirley Gate Site)	150,000
CULTURAL AMENITIES	92,105
CENTRAL PLANT / PARKING GARAGE	108,585
PRIVATE SECTOR OFFICE & RESEARCH	1,000,000
HOTEL / CONFERENCE CENTER	175,000
RETAIL	75,000
<b>TOTAL:</b>	<b>4,489,048 GSF</b>

<b>RECREATION</b>	3	Multi-Purpose Fields
	8	Tennis Courts

<b>ATHLETICS</b>	1	9-Lane Track & Field Stadium including throwing area/Seating for 3,000
	1	Soccer Stadium/Seating for 3,500 expandable to 5,000
	1	Baseball Stadium/Seating for 1,500
	1	Softball Stadium/Seating for 500
	1	Soccer Practice Field
	1	Outdoor Basketball Court

## / Phasing Plan

Because the master plan is envisioned as a 30-year plan, it is anticipated that the development will take place in phases. Four phases are suggested; however, this is dependent on many factors that cannot be currently determined. While it will take time for all the anticipated site and building program to be implemented, GMU wishes to develop a diverse a mix of building types in each phase.

**PHASE 1, EAST OF OX ROAD (16.6 ACRES):** In discussions with the GMU Master Plan Steering Committee, it is likely that the initial development of the plan would occur on the east side of Ox Road due to availability of existing infrastructure and the need to relocate existing uses on most of the west side of the road.

**PHASE 2, WEST OF THE RPA (34.8 ACRES):** It is anticipated that there will be a significant need for upper division student housing in the near future. A residential enclave, with supporting facilities, is anticipated for this phase, along with a multi-modal extension of Campus Drive to connect this development with the core academic campus.

**PHASE 3, RELOCATION OF RECREATIONAL FIELDS (42.72 ACRES):** Recreational fields relocated to the southwestern portion of the WCID site.

**PHASE 4, DEVELOPMENT BETWEEN THE RPA AND OX ROAD (40 ACRES):** Once Phase 3 is completed, the heart of the Innovation District with its mixed-use university town center can be developed. By this time in the master plan implementation, it is expected that a variety of both GMU and private sector users will be committed to the Innovation District concept and this phase will be programmed and developed to reflect the uniqueness of the GMU WCID.



## / Land Use Plan By Building Type

	BUILDING PROGRAM	HEIGHT
	E & G: INSTRUCTIONAL, RESEARCH, LIBRARY, ADMINISTRATIVE, STUDENT SERVICES	5 STORIES
	STUDENT HOUSING & DINING	4 STORIES
	STUDENT CENTER	5 STORIES
	CAMPUS RECREATION	1-3 STORIES
	ATHLETICS FIELD HOUSE	1-2 STORIES
	CULTURAL AMENITIES	3 STORIES
	CENTRAL PLANT / PARKING GARAGE	5 STORIES
	PRIVATE SECTOR OFFICE & RESEARCH	5 STORIES
	HOTEL / CONFERENCE CENTER	7 STORIES
	RETAIL	1-2 STORIES
	MULTIPURPOSE FIELDS	N/A

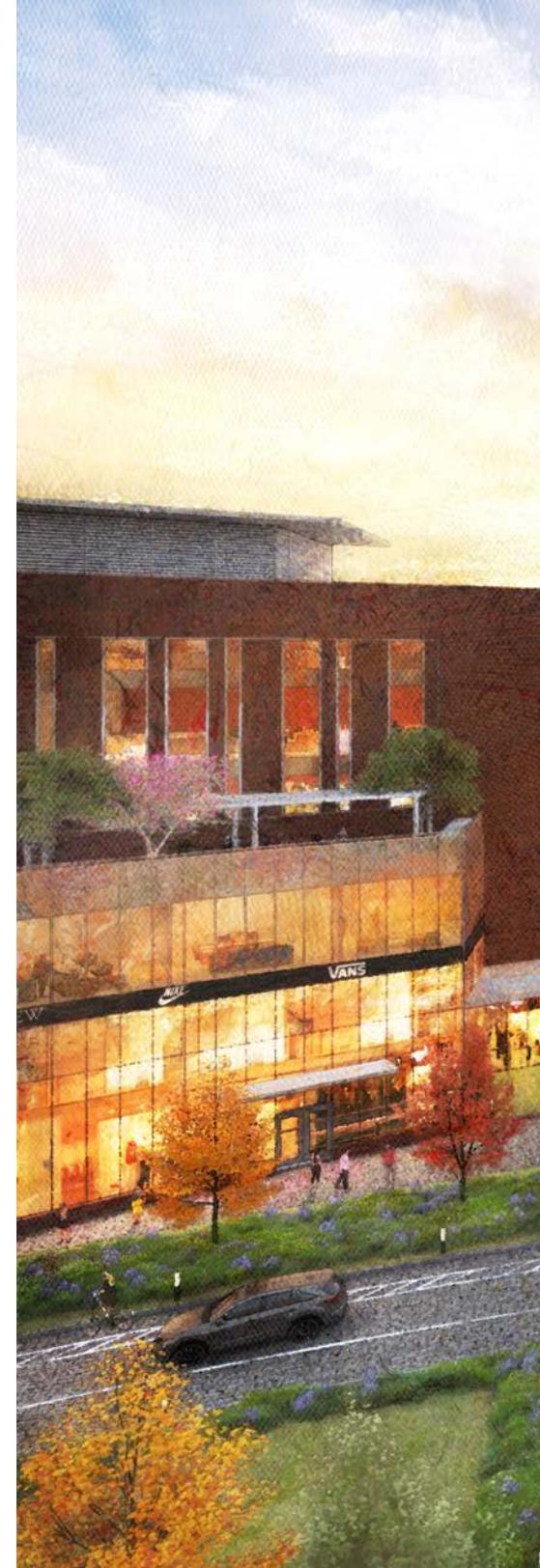


/ Aerial View of Master Plan

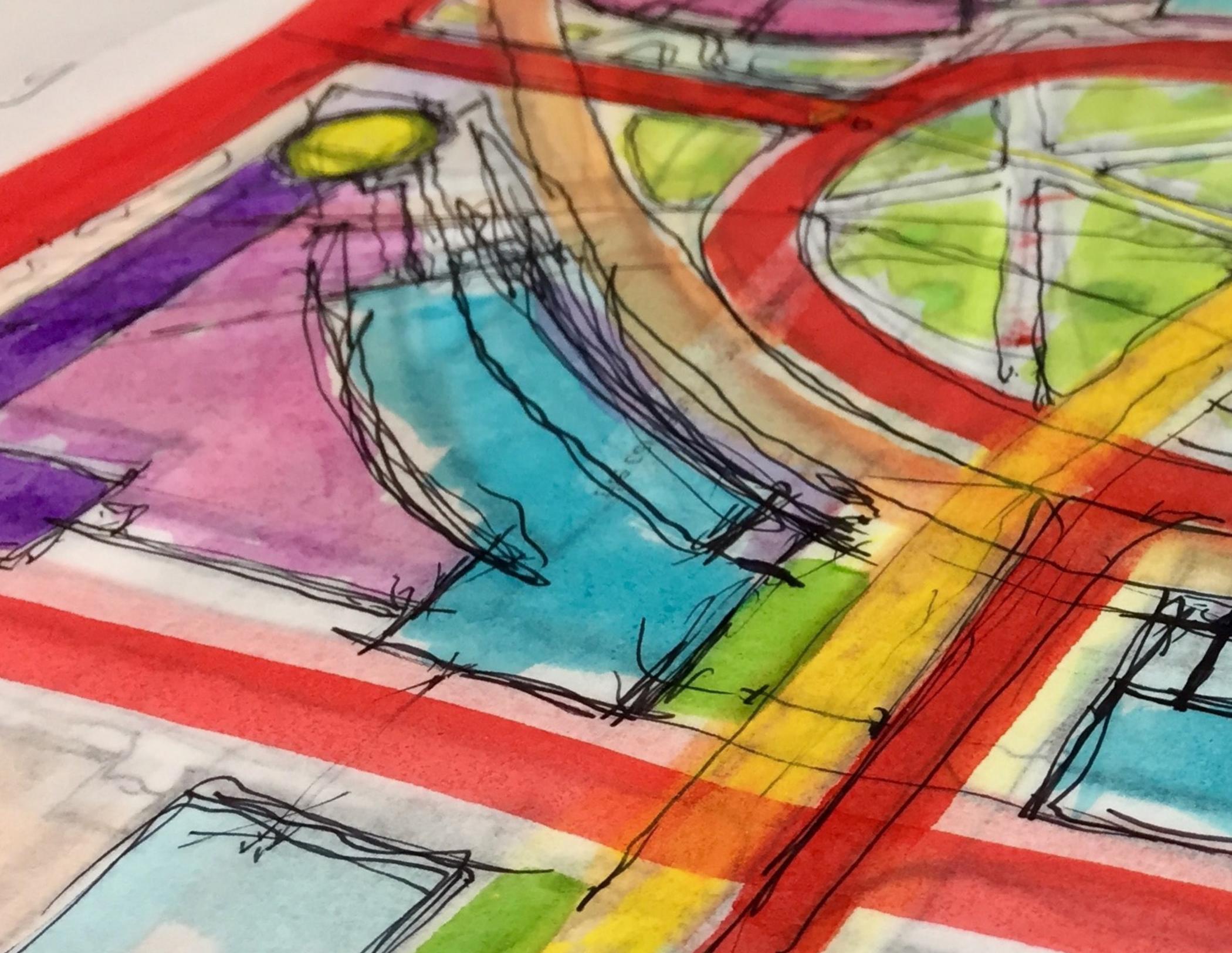


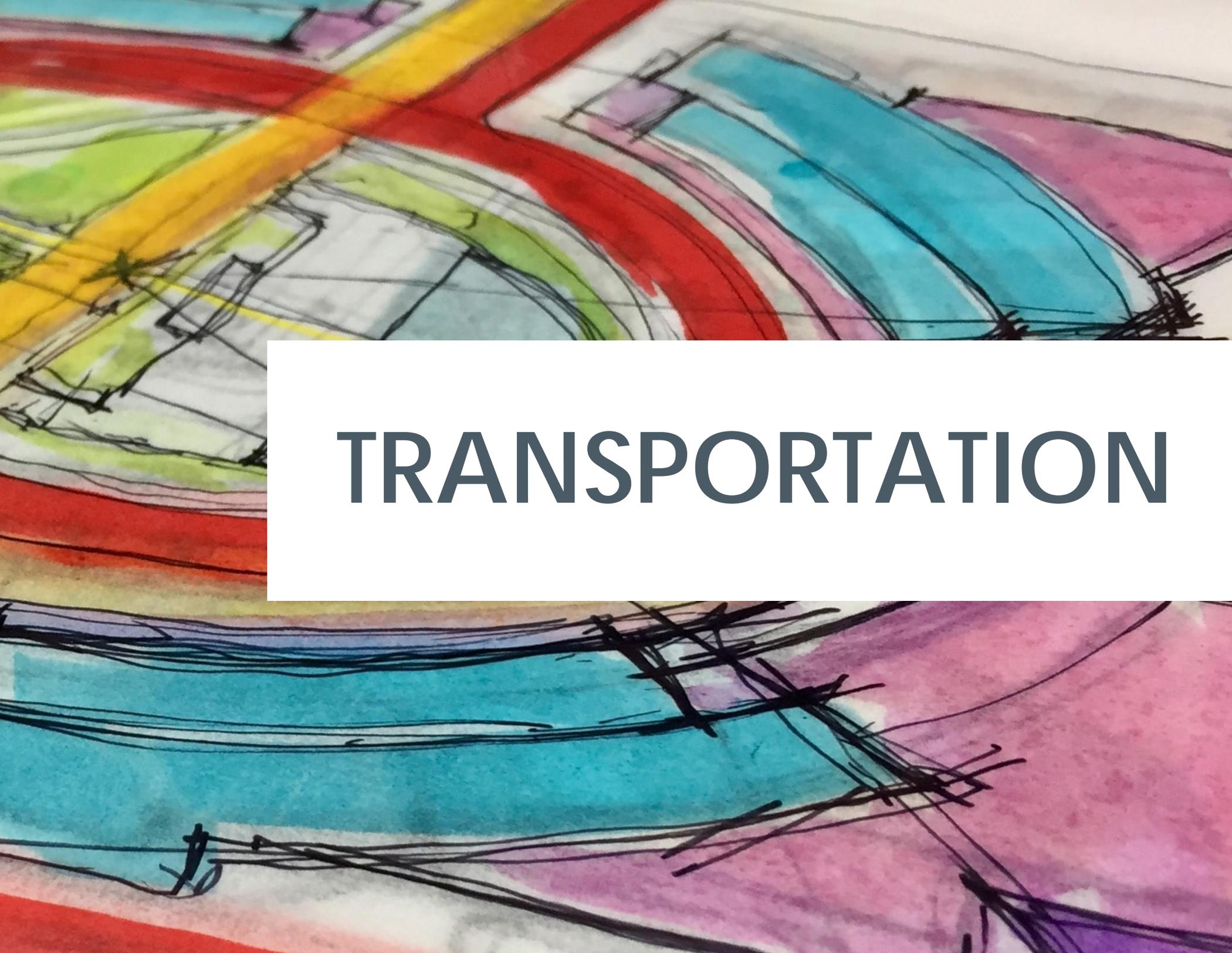


## / Street Level View of Master Plan







An abstract watercolor painting with vibrant colors including red, yellow, green, blue, and purple. The background is filled with these colors, overlaid with numerous black ink lines and scribbles that create a sense of movement and structure. The lines vary in thickness and direction, some forming geometric shapes while others are more chaotic and expressive.

# TRANSPORTATION

## / Multi-modal Network Transit

The George Mason University (GMU) is currently served by a number of bus facilities. The CUE bus and Mason Shuttle systems provide the most direct service between campus and surrounding destinations and have multiple stop locations within the campus. Additional bus services include Metrobus and Fairfax Connector which provide service to the campus via the surrounding highway system. Through these services, the campus is connected to the regional multi-modal transportation network including Metrorail and the Virginia Railway Express (VRE).

As illustrated in the Conceptual Transit Plan, priority should be given to augmenting the CUE bus and Mason Shuttle systems to expand service to the Innovation District. Such expansion of services, in concert with a robust pedestrian and bicycle network, will ensure that the Innovation District is connected to the existing campus core and that GMU students, faculty, and visitors have multi-modal options to access and circulate within the campus.

### Multi-Modal Strategy

To support the Innovation District Master Plan's goals and objectives of promoting multi-modalism and sustainability, GMU should implement a formal Transportation Demand Management (TDM) program. A TDM program would support and promote transportation options through programs and policies that encourage non-auto modes of travel (transit, walking, biking) through a variety of strategies. Some improve the transportation options available to the public, while others provide an incentive to choose more efficient travel patterns. Some reduce the need for physical travel through mobility substitutes or more efficient land use. TDM strategies can change travel timing, route, destination, or mode.

Implementation of the Innovation District Master Plan presents an opportunity to establish an integrated TDM program for the entire campus which takes full advantage of the multi-modal options available, consistent with the guiding framework outlined in the GMU 2011 Transportation Master Plan. Any TDM program that is developed should incorporate the following:

- Establishment of campus-wide transportation sustainability and non-auto (i.e., trip reduction) goals and the means to measure success
- Enhancement of transportation education/communication programs
- Promotion of innovative transportation management techniques, including parking management systems and real-time transit information
- Incentivizing the use of non-auto modes of transportation through parking pricing or other restrictions

### CUE (City-University Energysaver) Service

The CUE service operates as a partnership between GMU and the City of Fairfax and provides local bus service between the GMU campus and the Vienna-Fairfax/GMU Metrorail station with stops located at key destinations within the City north of campus. The sole CUE bus stop on campus is currently located along Rappahannock River Lane north of Patriot Circle.

The Conceptual Transit Plan recommends augmenting the CUE bus service by extending the routes within the campus including the Innovation District. This additional coverage would support campus growth and encourage transit usage between campus and the surrounding region thus reducing reliance on automobile travel. Bus stops should be located within concentrated nodes of buildings and activity areas to maximize coverage efficiency.



### Mason Shuttle Service

GMU's Mason Shuttle service currently provides free transportation for students, faculty, staff, and contracted services employees. The shuttle routes circulate within the campus providing for internal transportation between major locations on the campus as well as providing service to off-campus destinations. The off-site destinations include the Vienna-Fairfax/GMU Metrorail station, the Burke Centre Virginia Railway Express (VRE) station, the GMU Science and Technology (Prince William) campus, and other business/commercial areas in the vicinity.

As shown on the Conceptual Transit Plan, the Mason Shuttle system currently serves locations within the West Campus, including the existing Field House, athletic fields, and satellite parking facilities. Service to/from the Innovation District should be provided to enable connectivity to the remainder of the campus core and off-campus locations. Within the Innovation District, shuttle stops should be co-located with the CUE bus stops to promote transit options and provide ease of connecting services.





**CONCEPTUAL TRANSIT PLAN**

- EXISTING CUE ROUTE
- PROPOSED EXPANDED CUE ROUTE
- EXISTING MASON SHUTTLE ROUTE
- PROPOSED MASON SHUTTLE ROUTE
- PROPOSED BUS STOP/SHELTER



# / Multi-modal Network Bicycle Plan

As part of the multi-modal transportation element of GMU's Innovation District Master Plan, a draft network of on-road bike lanes, shared use paths, and shared on-campus roadways (bike routes) has been prepared to support the Master Plan and complement the university's ongoing efforts to improve bicycling on the main (east) campus including connections to off-campus activity centers and the City of Fairfax.

## Bicycle Parking

One key element to encouraging bicycling is providing safe, secure, and convenient bicycle parking. The "Fairfax County Bicycle Parking Guidelines, February 14, 2017" and the Association of Pedestrian and Bicycle Professionals (APBP) "Bicycle Parking Guidelines, 2nd. Edition" provide guidance on the type of equipment to use, proper placement/installation, and the amount of bicycle parking spaces by land use.

The master plan should address both short-term and long-term bicycle parking needs. As defined by the APBP, short-term parking addresses the needs of visitors and students and typically lasts for two hours or less. This would include trips between student housing, classrooms, and on-campus activity centers (recreation centers, athletic fields, libraries/labs). Short term bike parking should be visible from and close to the main entrance it serves. Ideally, these areas should be protected from weather by either enclosing or covering the bicycle racks.

Long-term bicycle parking is designed to meet the needs of university employees, commuter students, and on-campus residents. Bicycles are normally parked for a longer duration of time. Long-term bicycle parking usually provides a higher level of security and normally is protected from weather. Bicycle lockers, enclosed bike rooms, or secure areas located within parking structures or campus housing are all design concepts addressing long-term bicycle parking.

## Bicycle Parking – Additional Amenities/Design Elements

Many universities and municipalities are enhancing their bicycle parking with convenience elements. These include bicycle maintenance (fix it) stations with air pumps and water bottle filling fountains. In addition to these, long-term parking amenities can include seating benches, bicycle supply vending machines, cargo bike and trailer storage area, e-bike charging stations, and storage lockers. An enclosed secure bike room can even provide a full service bike maintenance/parts sales shop, many managed and operated by student bike clubs.

## Bikeshare

The Washington DC Metropolitan Area has a well-established bikeshare system (Capital Bikeshare or CaBi) which continues to expand into the nearby suburbs including Fairfax County. Bikeshare is ideal for short quick trips across campus or connecting to other

modes of transportation including bus, Metrorail, and even carpools. It traditionally has served as the first and last mile of a person's trip.

There has been continued interest expressed by GMU, the City of Fairfax, Fairfax County and the Town of Vienna to expand the CaBi system to include these areas. Ongoing improvements to the bicycle infrastructure (connectivity both on and off campus, to activity centers within the City of Fairfax and destinations such as the Vienna Metrorail Station) make bicycling and bikeshare a viable transportation option. Possible bikeshare station locations for the west campus are shown in the Appendix

The District of Columbia Department of Transportation is evaluating several "dockless" bikeshare vendors including e-bikes and e-scooters. It is highly feasible that dockless systems could be integrated into a campus environment if adequate infrastructure is provided (e.g. parking, storage, maintenance and operation).

## Refer to the Appendix for Precedent Examples

### Shared Bicycle Path Trail / Parallel Facility:

Shared use paths include paved paths and trails that are to be used by both pedestrians and bicyclists. These include off-road trails although they may parallel major roadways.



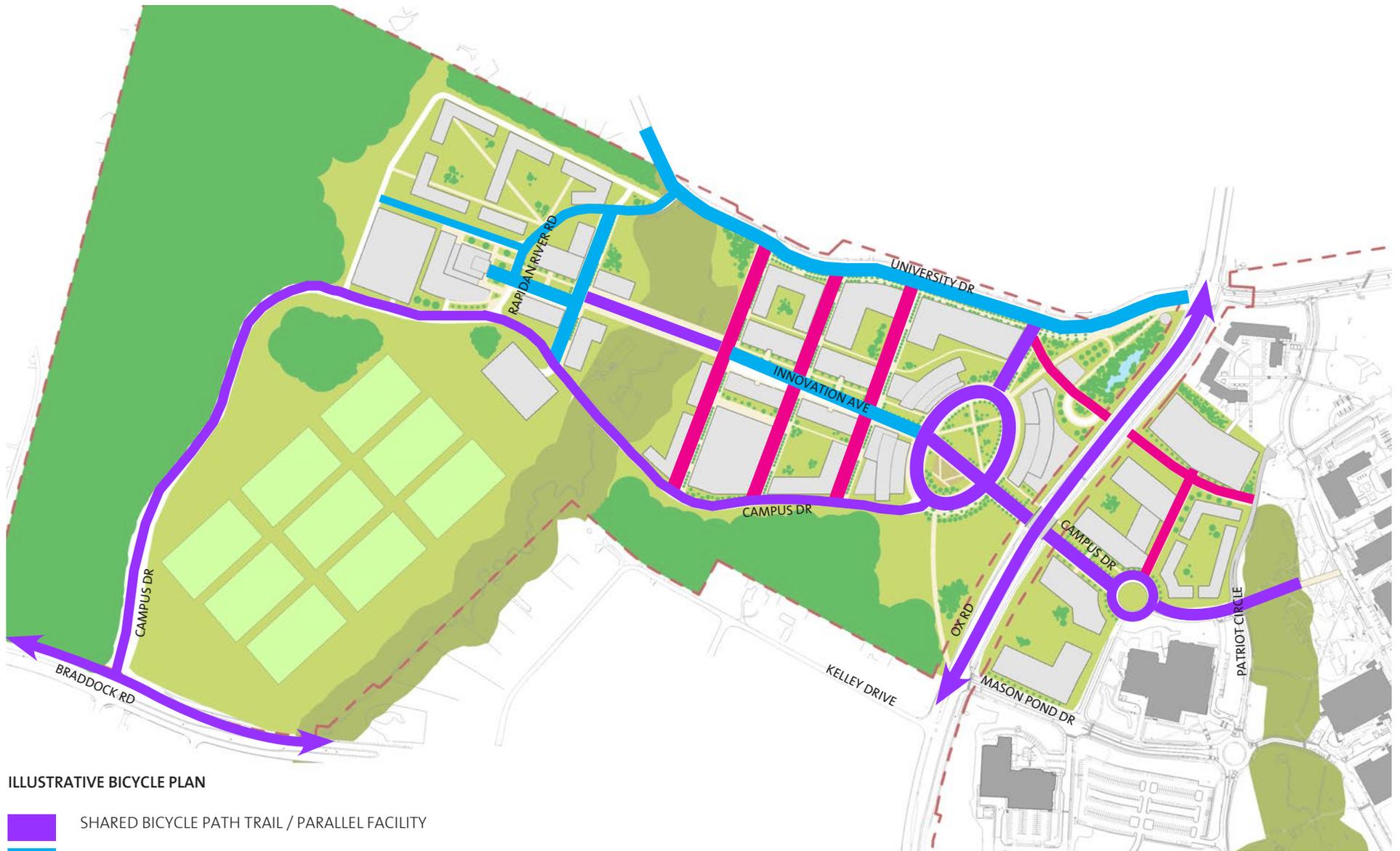
**On-road Bicycle Lanes:** Bicycle lanes are pavement markings (lane stripes, directional arrow, and symbol) that designate a portion of the roadway for the exclusive use of bicycles.



### Bicycles in Shared Lanes (sharrows)

:Shared lane markings ("Sharrows") are pavement markings that help position bicyclists in the most appropriate location to ride in order to safely share the travel lane with motor vehicles. The markings also provide a visual cue to motorists that bicyclists have a right to use the street.





**ILLUSTRATIVE BICYCLE PLAN**

- SHARED BICYCLE PATH TRAIL / PARALLEL FACILITY
- ON-ROAD BICYCLE LANES
- BICYCLES IN SHARED LANES (SHARROWS)



## / Transportation Plan - Parking

Based on analysis of the required parking for the planned building program, it was determined 7,000 new and replacement parking spaces are required to serve the Innovation District and will be provided by the following:

- 1) Street parking to be permitted in selected locations.
- 2) Surface parking will only be used for the athletics program being relocated to the Shirley Gate property.
- 3) Multi-story garages will be limited to a maximum of five levels.
- 4) Underground parking will be provided for the hotel/conference center with two levels likely.
- 5) Refer to Minimum Parking Requirement Summary in Appendix for more information.

### Suggested Parking by Phase

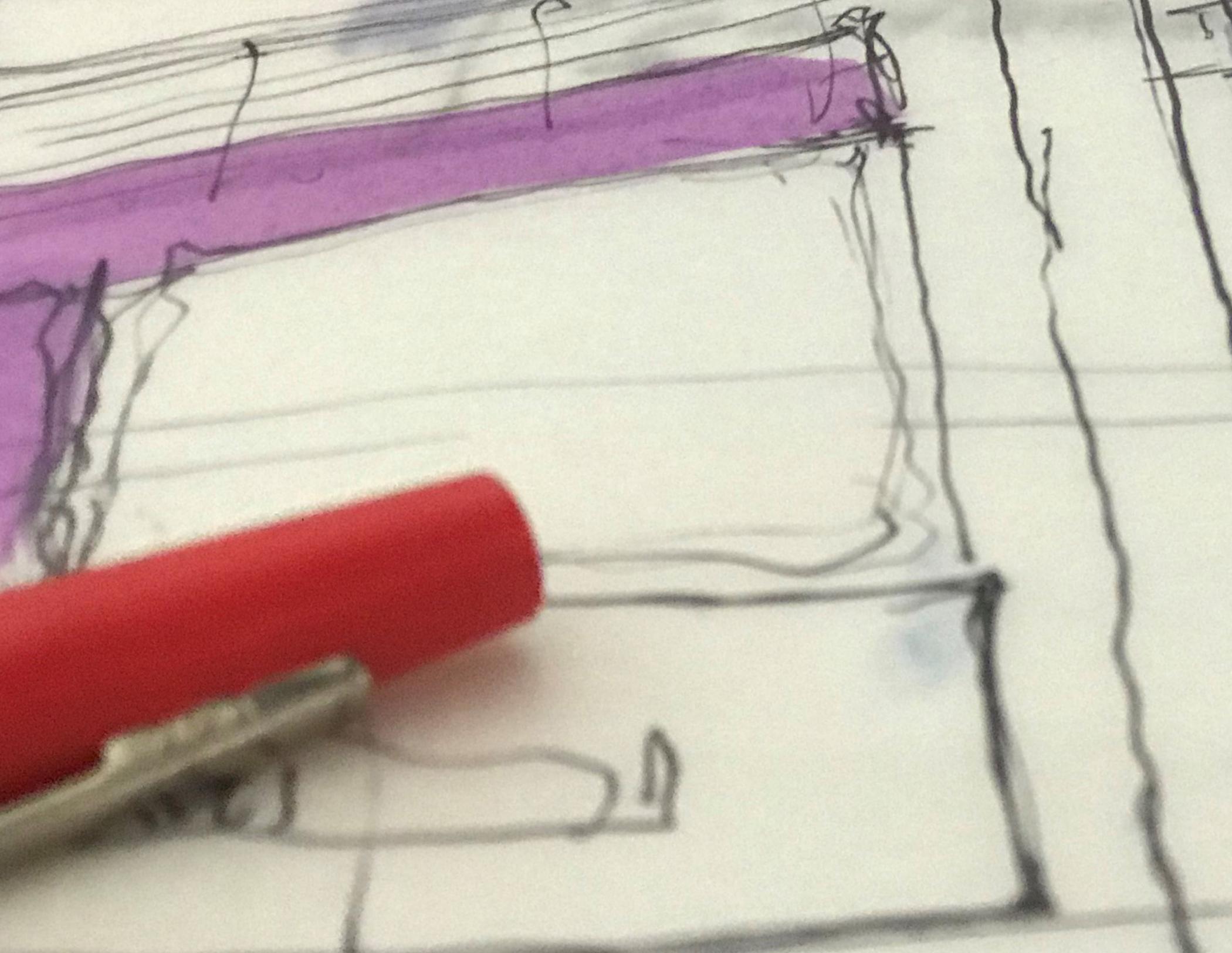
Phase	Total Spaces	In Garage	On Street/Surface
Phase 1	1,350	1,350	Not recommended
Phase 2	1,390	1,350	40 (Street)
Phase 3 (at Shirley Gate)	1,050		1,050 (Surface)
Phase 4	1,790	1,570	220 (Street)
TBD Phase	1,460	1,460	
<b>TOTAL</b>	<b>7,000</b>		



**ILLUSTRATIVE PARKING PLAN**

-  STREET PARKING
-  PARKING GARAGE
-  PARKING UNDER BUILDINGS







# INFRASTRUCTURE



## / Storm Water & Surface Management

The BMP (Best Management Practices) areas proposed are based on the phasing and the Virginia Runoff Reduction Method (VRRM) Redevelopment worksheet. BMPs have been rough-sized for each of the four phases. Based on the overall site area and development anticipated approximately 22 acres for BMPs are estimated.

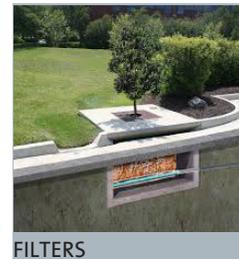
The best approach for meeting the phosphorus reduction requirements and treatment of stormwater is typically to catch and treat it starting upstream as close to the source as possible, rather than fewer but larger facilities as an afterthought at the downstream end of the watershed. This helps to reduce the runoff volume and therefore the pollutant load and peak flow from the development. Site plans for individual development projects will be required to provide and meet BMP and Stormwater Management (SWM) at the time of approval.

The BMPs will be coordinated with the landscape, open spaces, and street layouts to maintain the University's character within quadrangles, streetscapes, and other green spaces. Recommended BMPs include permeable pavement, bioretention basins, and filter facilities.

Permeable pavement sections contain underdrain systems that will either daylight or enter into an adjacent storm pipe network. Permeable pavement, possibly cobblestones, is indicated along the Innovation Spine and in plaza areas. Permeable pavement has one of the higher phosphorus removal rates and is a BMP that 'hides'; most people don't realize they are walking or driving on a stormwater BMP. Permeable pavement is also shown under seven of the nine recreational fields as artificial turf.

Bioretention facilities contain a mulch surface and are planted with grasses, herbaceous vegetation, shrubs, and/or trees. Plantings will be chosen such that a surface area coverage of at least 90% is achieved within two years. Bioretention facilities are shown mainly between structures and along streets to receive drainage from the buildings and sidewalks. Positive drainage from the buildings and sidewalks will flow into and through the bioretention areas and enter into an underdrain system which in turn connects and discharges into the main storm system.

Filters are recommended due to their small footprint and because they can be incorporated into the storm system via curb inlets located at low points. Phosphorus removal rates vary depending on the type of filter system selected. There are various filter systems available; some can be hidden completely underground, others can be planted, some look like manholes, and for the master plan filters containing tree plantings are recommended.





 PERMEABLE PAVEMENT /TURF FIELDS

 BIORETENTION

 FILTERS



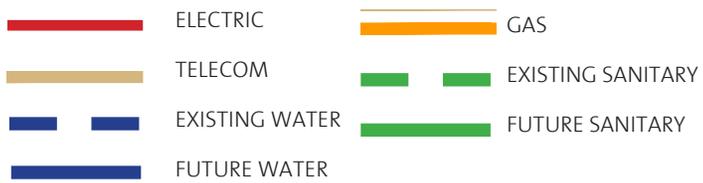
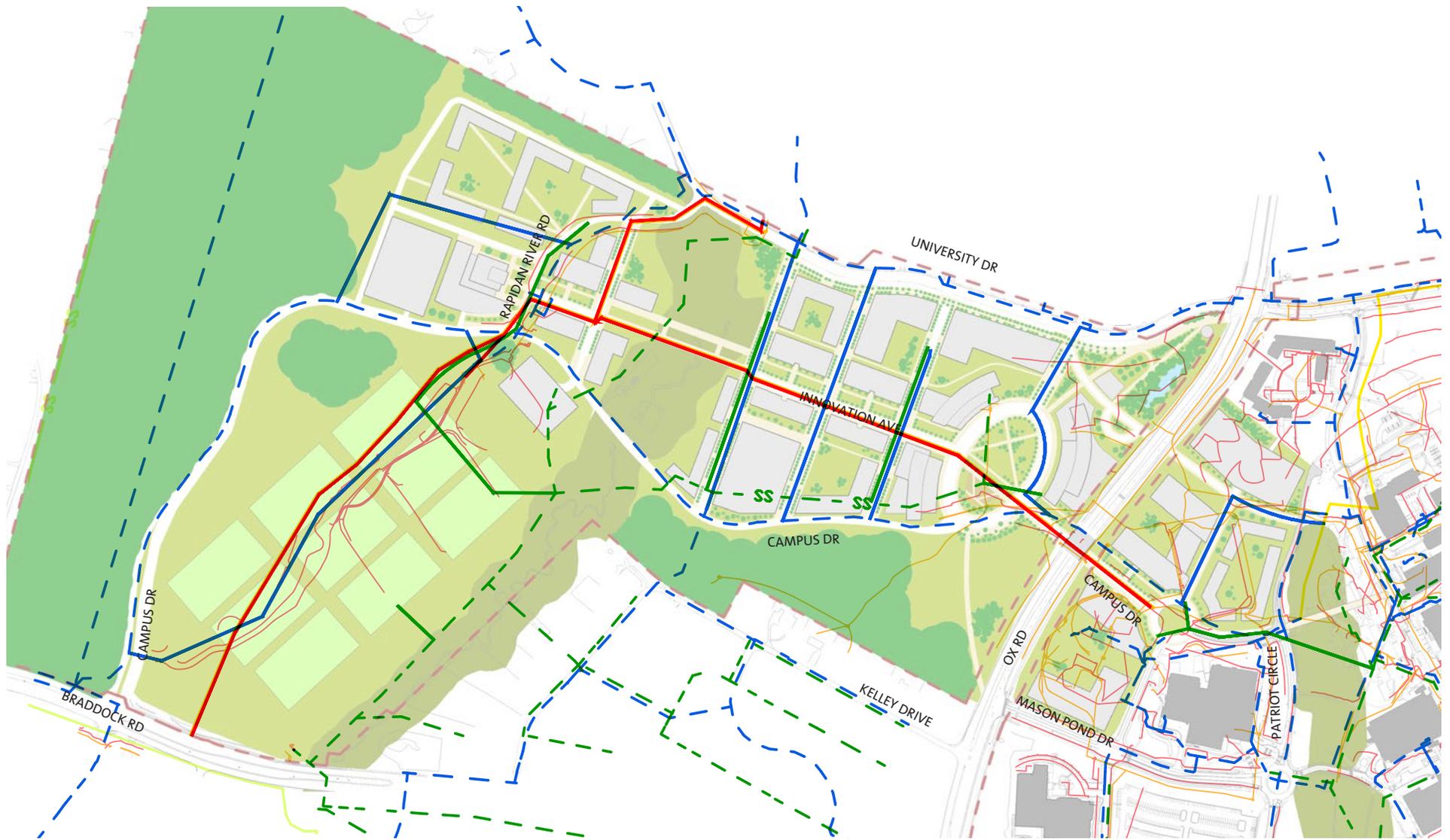
## / Sanitary Sewer System Upgrades

The existing water and sewer systems are generally adequate to handle the additional capacity to be constructed in the Innovation District. Fairfax Water has installed a new 24" transmission main along Campus Drive that will extend into East Campus and ultimately connect to a new water storage tank on the East Campus. This presents several opportunities to create loops between this new transmission main and existing water service to the north to serve the new development on the West Campus. There are a few small upgrades that will be required to the sanitary system in order to provide adequate capacity for the development.

An as-built of the sanitary outfall for the East Campus was conducted and indicated that the downstream most segment of 10" sewer is currently over capacity and will need to be upsized to handle the existing flow as well as the future flow from the development on the east side of Ox Road. The pipe can be upsized to 15" to match the next pipe downstream and provide the necessary capacity. The existing sanitary mains on the west campus range in size from 10" to 12". The 12" mains should be adequate to handle the projected flow from the future development in addition to the existing flow coming from the City of Fairfax. A few segments of 10" pipe may be required to be upsized to 12" and should be more closely analyzed at the time of development. Pump station capacity is not a concern, as the sanitary sewer flows to the Noman M. Cole Treatment Plant via gravity without the use of the Braddock Road pump station. This pump station only handles overflow to be pumped to the AlexRenew Treatment Plant in the future.

## / Utility Corridors

GMU is surrounded by established existing utilities, including water, sewer, gas, telecommunications, and electric. These utilities exist beneath Braddock Road, Ox Road, and University Drive, and there is also a large power utility running along Rapidan River Road. The goal is to extend these utilities to the Innovation District in a way that makes the most sense for phasing, distribution, efficiency and redundancy. The future spine road at the center of the West Campus development presents an opportunity to organize the utility mains in a central location with potential to branch along the future collector streets to extend to new development. Existing Campus Drive and Rapidan River Road also present opportunities to bring in utilities from existing sources on Braddock Road and University Drive to serve Phases 2 and 3. This will require coordination with the private utility providers who will finalize their alignments, as well as the new central plants. New central plants are recommended to be constructed with each phase of the development in order to provide a location from which to extend utilities, particularly the HTHW system. Without additional plant locations in the Innovation District, GMU would need to extend the HTHW system from the existing East Campus network, which may require upgrades and will require construction through Phase 4 in order to serve Phase 2, or consider an alternate system.



## / Central Plant Locations

Currently, GMU uses central plants for most of its buildings. Although alternatives to central plants may be more feasible in the future, the master plan includes suggested locations if they are warranted. One central plant site is included in each of Phases 1, 2, and 4; none for Phase 3.

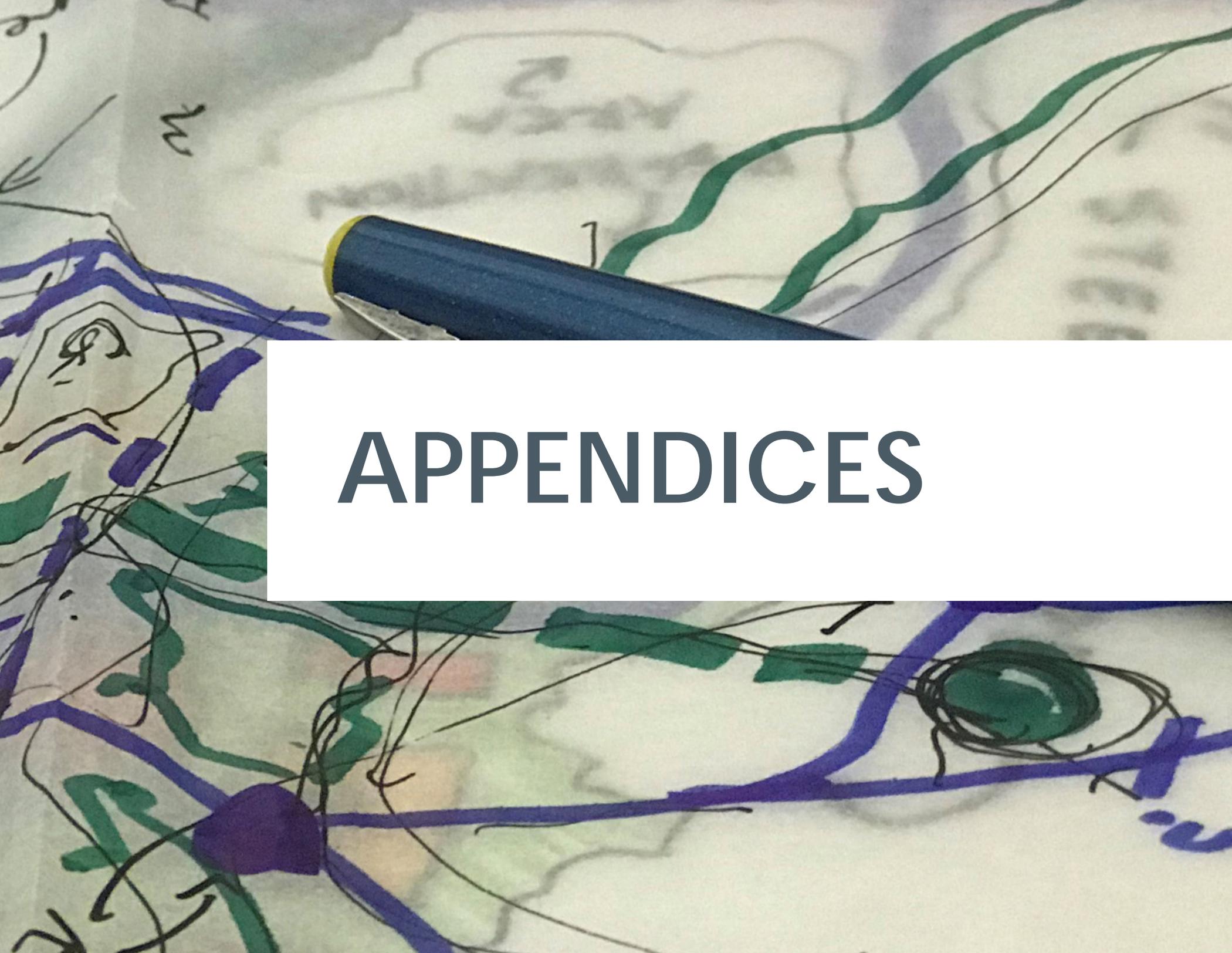
To reduce the amount of land utilized and to minimize the visibility of the central plants, it is recommended that they be located on the lowest level of the parking garages with cooling towers are assumed to be on the top floor.



- CENTRAL PLANT UNDER PARKING
- BUILDINGS





A blue pen with a yellow tip lies horizontally across the middle of the page. The background is a piece of paper covered in colorful, abstract scribbles in purple, green, and black. The word "APPENDICES" is written in a bold, dark blue font on a white rectangular background that is centered over the pen and the scribbles.

# APPENDICES

# / Minimum Parking Requirement Summary

Table 1  
GMU West Campus Plan  
Minimum Parking Requirement Summary

6.21.2018

Use	Size	Unit	Parking Rates or Notes		Required
			Min. Requirement Rate		
University/College	10,000	Students	0.24	spaces/student <b>(1)</b>	2,400.0
Research and Development	1,000,000	GSF	1.5	spaces/1,000 GSF <b>(2)</b>	1,500.0
Business Hotel/Conference Space	200	Rooms		<b>(3)</b>	221.0
Shopping Center Retail	75,000	GSF	4.0	spaces/1,000 GSF <b>(4)</b> 50% reduction or 2.8/1,000 GSF <b>(4)</b> Subtotal	300.0 <del>(150.0)</del> 150.0
Athletic Fields <b>(5)</b>	3,500	seats	0.3	spaces/seat <b>(6)</b>	1,050.0
Replacement for existing spaces that would be removed <b>(7)</b>	---	---	---	---	1,655.0
<b>Total Required Parking</b>					<b>6,976</b>

Note(s):

- (1) The University/College parking rate based on the current effective GMU parking rate that includes the parking needed for faculty.
- (2) The project team in consultation with GMU established an agreed to mid-point parking requirement when initially reviewing the following rates: 1.2 spaces/1,000 GSF (or 1,200 spaces) versus 1 space/1.5 employees when assuming 1 employee/300 GSF (or 2,222 spaces).
- (3) The proposed hotel/conference parking based on the parking supply currently serving "The Mason Inn" which has a similar room count and conference space as the proposed hotel.
- (4) The retail parking rate of 4.0 spaces/1,000 GSF was obtained from Article 11 of Fairfax County's zoning ordinance for shopping center retail. An assumed 50% reduction reflects the retail is predominately site serving and not destination retail.
- (5) Number of seats based on the soccer stadium which is the largest governing sports venue with 3,500 permanent seats. The concept to expand to 5,000 seats in the future would be supported via shuttles or other programs for those additional seats.
- (6) The stadium parking rate reflects Fairfax County's assembly parking rate of 0.3 spaces/seat as obtained from Article 11 of Fairfax County's zoning ordinance.
- (7) Accounts for the replacement of the existing 1,655 spaces that would be displaced with the project.

# / Bicycle Parking Precedent Examples

## Photographic Examples of Various Bicycle Parking Options and Accessories under Consideration



**Location: Stringfellow Road Park and Ride Lot Bike Room-** this is one of Fairfax County's secure bike rooms located at a park and ride facility. The site provides secure, enclosed parking for approximately 80 bicycle and parking for an additional 36 bikes adjacent to the secure facility. Access to the secure room is by paid membership. This type of facility could be considered for the student parking lot near Braddock Road and facilitate commuting students and faculty driving to the lot and then completing their commute by bicycle. The Braddock Road lot would also be an ideal location for a bikeshare station.



Bike Shelter - Arlington Model, Arlington County, Courtesy Photo, Arlington, VA

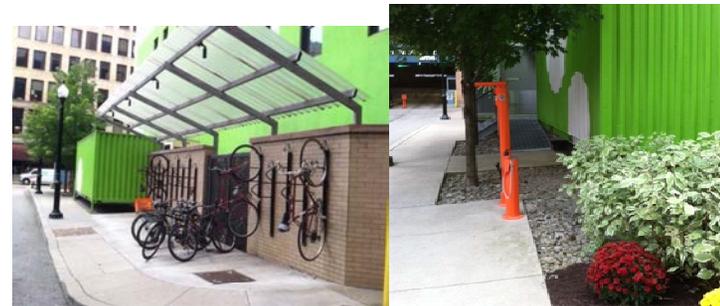
**Location: Arlington, VA (Clarendon Metrorail Station)-** This free standing structure provides weather protection for bikes. This type of installation could be adapted to campus use and located near university buildings or open areas with high bicycle usage.



**Location: Wiehle-Reston East Metrorail Station Bike Room-** this is another example of one of Fairfax County's secure bike rooms. This enclosed, secure facility can accommodate over 300 bicycles and includes two fix-it stations. This type of facility can be located within or adjacent to a parking structure or university buildings and dormitories.



**Location: College Park Metrorail Station Bike & Ride-** WMATA's first enclosed, secure bike room. The space was created by retrofitting a ground floor area of an existing parking structure.



**Location: Pittsburgh, PA. Retrofitted covered bike parking with fix-it station-** secure enclosed bicycle parking is provided in an adjacent modified shipping container. Outside covered (non-member) bicycle parking is provided utilizing space-saver vertical racks. A fix-it station is located outside for all users.



**Location: Kenmore Middle School, Arlington, VA.** a series of inverted "U" racks located adjacent to the main school entrance. This is an example of well-designed short term bicycle parking. This design would be appropriate for university buildings/classrooms providing short-term parking for students, faculty, and visitors.



**Three examples of a bikeshare system utilizing docks.** The image on the upper left is a Capital Bikeshare station while the image on the upper right shows Savannah Georgia's B-Cycle system station. The bottom image is Guadalajara, Mexico's bikeshare system. These three systems represent a typical dock style bikeshare station. Station sizes can range from seven (minimum) bicycles to stations providing 29 bicycles or more.



**Limebike-** is one of several dockless bikeshare systems operating in major cities and campuses



**This is a typical example of how un-used areas of structured parking garages can be retrofitted to accommodate bicycle parking.** This layout can park 16 bicycles.



**Location unavailable-** a re-purposed shipping container now providing enclosed, secure bicycle parking.

# UNIVERSITY TOWN CENTERS BENCHMARKING



Though of varying in age and character, university town centers (UTC) are mixed-use or multi-use real estate developments associated in some fashion with a university campus, some by formal agreements and others merely by proximity. The Urban Land Institute (ULI) defines a *town center* as follows:

“A town center is an enduring, walkable and integrated open-air, multi-use development that is organized around a clearly identifiable and energized public realm where citizens can gather and strengthen their community bonds. It is anchored by retail, dining, and leisure uses, as well as by vertical and horizontal residential uses. At least one other type of development is included in a town center, such as office, hospitality, civic, and cultural uses. Over time, a town center should evolve into the densest, most compact, and most diverse part of a community, with strong connections to its surroundings.”

Based on this definition, a *university town center* would have “strong connections” with its host university, both programmatically and physically. The examples incorporated in this benchmarking report range from very connected; e.g., University of Southern California (USC) and University of Connecticut - Storrs; to not very connected; e.g., UC San Diego and University

of Washington. The former engage the university community along with its neighbors and have enlisted local government as a full partner. The latter examples are regional shopping centers that capitalize on being close to a major university campus. ULI lists ten principles for the development and maintenance of successful town centers, which are very applicable to the best of the university variety.

These principles are the following:

- 1) Create an enduring and memorable public realm.
- 2) Respect market realities.
- 3) Share the risk, share the reward.
- 4) Plan for development and financial complexity.
- 5) Integrate multiple uses.
- 6) Balance flexibility with long-term vision.
- 7) Capture the benefits that density offers.
- 8) Connect to the community.
- 9) Invest for sustainability.
- 10) Commit to intensive on-site management and programming.

When planning for a university town center, it is imperative that these principles be incorporated as closely as possible for the long-term well-being of all entities involved in this partnership.

# UNIVERSITY TOWN CENTERS BENCHMARKING

	<p><b>North Kentucky University</b> Highland Heights, KY</p>	<p><b>NKU Town Center   Planning / Construction</b> At full buildout, the site is expected to feature new restaurants, retail space, market-rate apartments, a hotel, structured parking and public gathering spaces at the main entrance to the NKU campus.</p>
	<p><b>Notre Dame</b> Notre Dame, IN</p>	<p><b>Eddy Street Commons   Planning / Construction</b> A joint effort by the University and Kite Realty, the project features 8,500 square feet of restaurant space, 17 "flex" units, 433 apartment units, 22 single-family homes, a new Robinson Community Learning Center and a stand-alone grocery store.</p>
	<p><b>San Diego State University</b> San Diego, CA</p>	<p><b>South Campus Plaza   2017</b> South Campus Plaza is located on the San Diego State University (SDSU) campus. This new \$142.7 million mixed use project features housing for more than 600 students, along with retail designed both to serve students and meet existing demand from the surrounding neighborhoods.</p>
	<p><b>The College of New Jersey</b> Ewing Township, NJ</p>	<p><b>Campus Town   2015</b> Privately owned and operated student housing and retail located on leased land the main campus of TCNJ. - collaborative living, private sleeping rooms, a state-of-the-art fitness center, shopping, dining and gated parking.</p>
	<p><b>UC Irvine</b> Irvine, CA</p>	<p><b>University Town Center   1980s</b> University Town Center is directly connected by a pedestrian bridge to the University of California, Irvine and boasts a dynamic mixed-use center with easy access to shopping and dining, and professional centers. UTC offers pedestrian walkways connecting retail centers and adjacent neighborhoods and a large regional park.</p>
	<p><b>UC San Diego</b> San Diego, CA</p>	<p><b>Westfield UTC   1977</b> Formerly known as University Towne Centre, Westfield UTC is a one-million square-foot, three-level outdoor shopping center in the University City community of San Diego, California, near UC San Diego.</p>

# UNIVERSITY TOWN CENTERS BENCHMARKING

	<p><b>University of Connecticut</b> Storrs, CT</p>	<p><b>Storrs Center   2011</b> A mixed-use development adjacent to the University of Connecticut. It houses rental apartments, retail and office space and for-sale townhouses and condominiums. Retailers, such as a supermarket, restaurants, medical clinic, and bookstore, create an eclectic college-town atmosphere, while a half-acre town square and 20 acres of nature preserves provide places for gathering and recreation.</p>
	<p><b>University of Maryland</b> College Park, MD</p>	<p><b>Southern Gateway Redevelopment   Planning / Construction</b> The project, slated to break ground in 2018, will create a town-center atmosphere within steps of the campus, complete with 300 luxury apartments. The residential community, restaurants, retail spaces and grocery store will anchor new, dynamic district in downtown College Park.</p>
	<p><b>UC, Santa Cruz</b> Santa Cruz, CA</p>	<p><b>University Town Center   2000</b> A mixed residential/commercial space in downtown Santa Cruz that houses continuing, transfer, and re-entry students. The residential units are part of UCSC Housing. UTC was built to replace the buildings that once housed J.C. Penney and Ford's department store, which were demolished after the 1989 Loma Prieta Earthquake. The building has five floors and features 86,000 SF total of residential, retail, and office space.</p>
	<p><b>Univ. of Southern California</b> Los Angeles, CA</p>	<p><b>USC Village   2017</b> USC Village is a \$750M student living and learning complex located within a community-facing retail town center. It is the culmination of partnership between university leaders, academic faculty, student affairs professionals, civic and community leaders, and made possible with the generous philanthropic support from "pillars of The Trojan Family".</p>
	<p><b>University of Washington</b> Seattle, WA</p>	<p><b>University Village   1956</b> An open-air lifestyle shopping center adjacent to the University of Washington campus. Anchor tenants include restaurants, locally owned boutiques, and signature national retailers. Many of the business offer discounts exclusive to UW students.</p>

# UNIVERSITY INNOVATION DISTRICTS BENCHMARKING



While innovation can be defined simply by Merriam-Webster as “the art or process of introducing new ideas, devices, or methods”, it can also be used to describe the use of improved, existing capabilities to resolve new problems. When innovation is combined with an established research institution; e.g., a university, and a specific physical environment; i.e., district, it leads to a definition by the Brookings Institute (Katz & Wagner) in 2014 as follows:

“(University) innovation districts constitute the ultimate mash up of entrepreneurs and educational institutions, start-ups and schools, mixed-use development and medical institutions, bike-sharing and bankable investments - all connected by transit, powered by clean energy, wired for digital technology, and fueled by caffeine.”

Successful university innovation districts involve close collaboration with three types of partners: a) research and development private sector companies, b) risk-taking non-governmental organizations (NGO), and c) public agencies, local, state and/or federal

The first of these partners, private corporations, seek to capitalize on the research prowess of the host university, ranging from engineering to health care. They can invest in facilities and equipment, which would be out of reach of the university's budget; and offer to share these with faculty and students in common pursuit of discovery; i.e., innovation. They can also directly fund similar research in the university's own facilities in return for licensing agreements. The second of these potential partners, NGO's;

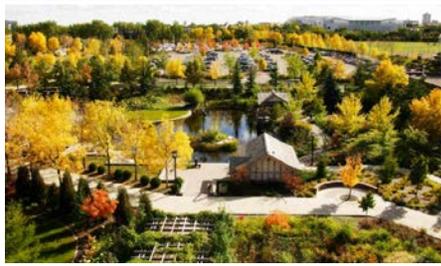
e.g., American Cancer Society, Environmental Defense Fund, etc., have similar university collaborations in mind, but without the financial return requirement. The third group of prospective partners, public agencies, may have broad public welfare objectives in supporting innovation, but more likely, their interest relates to jobs creation and economic improvements at the local or regional level. The agencies can often bring funding for general infrastructure needs from utilities to circulation improvements.

When planning for a university innovation district, the 2014 Brookings treatise recommends viewing the requirements for success as follows:

- 1) Economic assets: the firms, institutions and organizations that drive, cultivate or support an innovation-rich environment;
- 2) Physical assets: the public and privately-owned spaces - buildings, open spaces, streets, and other infrastructure - designed and organized to stimulate new and higher levels of connectivity, collaboration and innovation.
- 3) Networking assets: the relationships between actors - such as between individuals, firms, and institutions -that have the potential to generate, sharpen, and/or accelerate the advancement of ideas.

The benchmarking examples that follow have all accounted for this mix of assets in their own unique settings; and manage the balance of them all for continued success.

# UNIVERSITY INNOVATION DISTRICTS BENCHMARKING

	<p><b>MIT</b> <i>Cambridge, MA</i></p>	<p><b>Kendall Square   1950s</b></p> <p>A landmark innovation district, Kendall Square began to develop in the 1950s when MIT first offered university-owned land to innovative private sector companies and developed partnerships with local organizations to support the commercialization of ideas stemming from the university. In the ensuing decades, life sciences and pharmaceutical companies began to cluster in the area. Today, Kendall Square houses over 150 biotech, IT, technology and clean energy companies as well significant real estate development.</p>
	<p><b>University of Saskatchewan</b> <i>Saskatoon, SK, Canada</i></p>	<p><b>Innovation Place   1980s</b></p> <p>Innovation Place specializes in agriculture, information technology, and environmental and life sciences. The facility includes 20 buildings and offers shared workspace for the tech development community as well as and Co.Labs, Saskatchewan's first technology incubator. Additionally, the tenants are able to draw on the strengths of nearby federal and provincial agencies.</p>
	<p><b>Georgia Tech</b> <i>Atlanta, GA</i></p>	<p><b>Tech Square   2003</b></p> <p>Covering eight city blocks in midtown Atlanta, Tech Square is an urban mixed-use development located on land that the Georgia Tech Foundation purchased from the the City of Atlanta. It encompasses education, research, hospitality, office, retail and residential areas and serves as a destination for startup firms, incubators, established technology firms, major corporate offices, corporate innovation centers, venture capital investors, and business service providers.</p>
	<p><b>University of Florida</b> <i>Gainesville, FL</i></p>	<p><b>UF Innovation Square   2011</b></p> <p>UF Innovation Square, situated between the University of Florida campus and downtown Gainesville, is a collaboration between research and high-tech business. Each year more than 4,000 scientists and scholars at the university conduct nearly \$700 million in research. Additionally, over eighty biotechnology companies have emerged from UF research initiatives. Designed as a sustainable live, work, and play research community, it has all the elements to empower companies and entrepreneurs to create, develop, and commercialize discoveries as well as integrate business, science, and academia with residential amenities for a holistic lifestyle.</p>

# UNIVERSITY INNOVATION DISTRICTS BENCHMARKING

	<p><b>University of South Carolina</b> Columbia, SC</p>	<p><b>Innovista Research District   2016</b></p> <p>The Innovista Research District is a partnership between USC and private developers to offer office and laboratory space for innovation-focused businesses and startup companies. The 500-acre district is located in the heart of South Carolina's capital city, bringing the state's governmental, educational and cultural elements together in one location. IBM was the first tenant and the district is still developing.</p>
	<p><b>University of Nebraska-Lincoln</b> Lincoln, NE</p>	<p><b>Nebraska Innovation Campus (NIC)   2018</b></p> <p>NIC is designed to facilitate partnerships between the University of Nebraska and private sector businesses. At full build-out, NIC will be a 2.2-million square-foot campus designed to inspire creative activity, engagement and innovation. Sustainability and zero-waste is a priority and all buildings are LEED certified. The campus sectors include BioTech Connect, the Food Innovation Center, Innovation Commons and Greenhouse Innovation Center.</p>
	<p><b>Arizona State University</b> Tempe, AZ</p>	<p><b>Innovation Zones   2019</b></p> <p>ASU has developed a 'zones' approach to innovation areas on and around campus. The different zones include a business and technology research park; spaces dedicated to project-based learning and advanced laboratory for interdisciplinary sciences, engineering, management, technology, and education; an innovation center with over 60 established and new companies in technology-driven markets; and an innovation corridor with mixed-use development sites including office, multi-family residential, hospitality and retail spaces.</p>
	<p><b>UC Davis</b> Davis, CA</p>	<p><b>AggieSquare   2019</b></p> <p>UC Davis partnered with the city of Sacramento to develop AggieSquare which will serve as a collaborative technology and innovation campus leveraging the university's strengths and improving economic vitality in the surrounding neighborhoods and the broader Sacramento region. Aggie Square is planned to be a state-of-the-art live/learn/work/play environment that promotes collaboration across academic, corporate and community platforms.</p>