Columbia Heights/Skyline Village Neighborhood Revitalization Plan

Winston-Salem, North Carolina

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❖ EXECUTIVE SUMMARY

During multiple community workshops and stakeholder meetings, from August 2020 to July 2021, Columbia Heights Extension residents and business stakeholders recognized that redevelopment and revitalization for Columbia Heights Extension would require a bold approach. North Carolina Agriculture and Technical State University (NCATSU) received approval from Columbia Heights Extension residents and business stakeholders to re-design the entire community and incorporate a mixed-use/income net-zero energy efficient sustainable residential community design approach. This plan is to provide all residents, regardless of income and status, affordable, marketplace, and energy-efficient housing for an enriched quality of life. The recommendation is to green hard surface areas with sustainable materials, use solar technology for energy independence, incorporate mixed-use housing strategies, incorporate mixed-middle housing type strategies, and promote walkable community strategies. There are no plans for Skyline Village. There will be street design recommendations to improve traffic flow egress for Skyline Village residents.

The area defined as Columbia Heights Extension consists of fifteen (15) sections with middle housing types, passive greenspaces, and mixed-use buildings. This mixture of housing types will accommodate current residents, encourage stay-in-place single-family homeownership, add passive greenspaces, and provide a pedestrian-friendly streetscape with retail and food accommodations. The suggested middle housing are twenty bungalow/cottage court housing types, nine duplex housing types, sixteen triplex housing types, eight quadruplex housing types, twenty-five multiplex housing types, one-hundred townhome housing types, and twenty affordable single-family housing types. A green and sustainable initiative emphasizes repurposing the existing asphalt parking lot with a grass-parking surface, installing solar panel-covered parking spaces that will provide electricity to housing and businesses, and installing electric vehicle (EV) charging stations. All facilities will incorporate solar technology such as solar panels/shingles, power walls, and EV charging capacity. Recommended construction is a structural insulated panel (SIP) instead of traditional stick framing.

Create a Pedestrian Mall along Diggs Boulevard and Vargrave Street by creating a pedestrian-friendly walkable pathway, with mixed-use buildings consisting of retail spaces for outside eating and sitting areas with pet-friendly areas that promote social interest and include features such as water fountains, bird and native plants, and art sculptures. A major initiative is to repurpose the concrete sound barrier into a memorial wall. Artists will repurpose the concrete sound barrier into a memorial wall with acknowledgment of African American founders and other contributors to Columbia Heights Extension, such as John Francis Shaffner, Jacob Lott Ludlow, Simon Greene Atkins, E. P. Mayo, and George H. Willis who built a boarding house that became the Slater Industrial School, which became Winston Salem State University. NCATSU recommends the city offer a design competition to local artists, architects, landscape firms, and public schools for the design and construction of the Memorial Wall.

Pedestrian access to recreation facilities is critical to residents. Residents do not have a safe walking path across Research Parkway. NCATSU's recommendation is to provide a pedestrian crosswalk or over-pass from the neighborhood at Research Parkway.
Summary of Total Estimated Costs* $59,955.000.00.

❖ INTRODUCTION

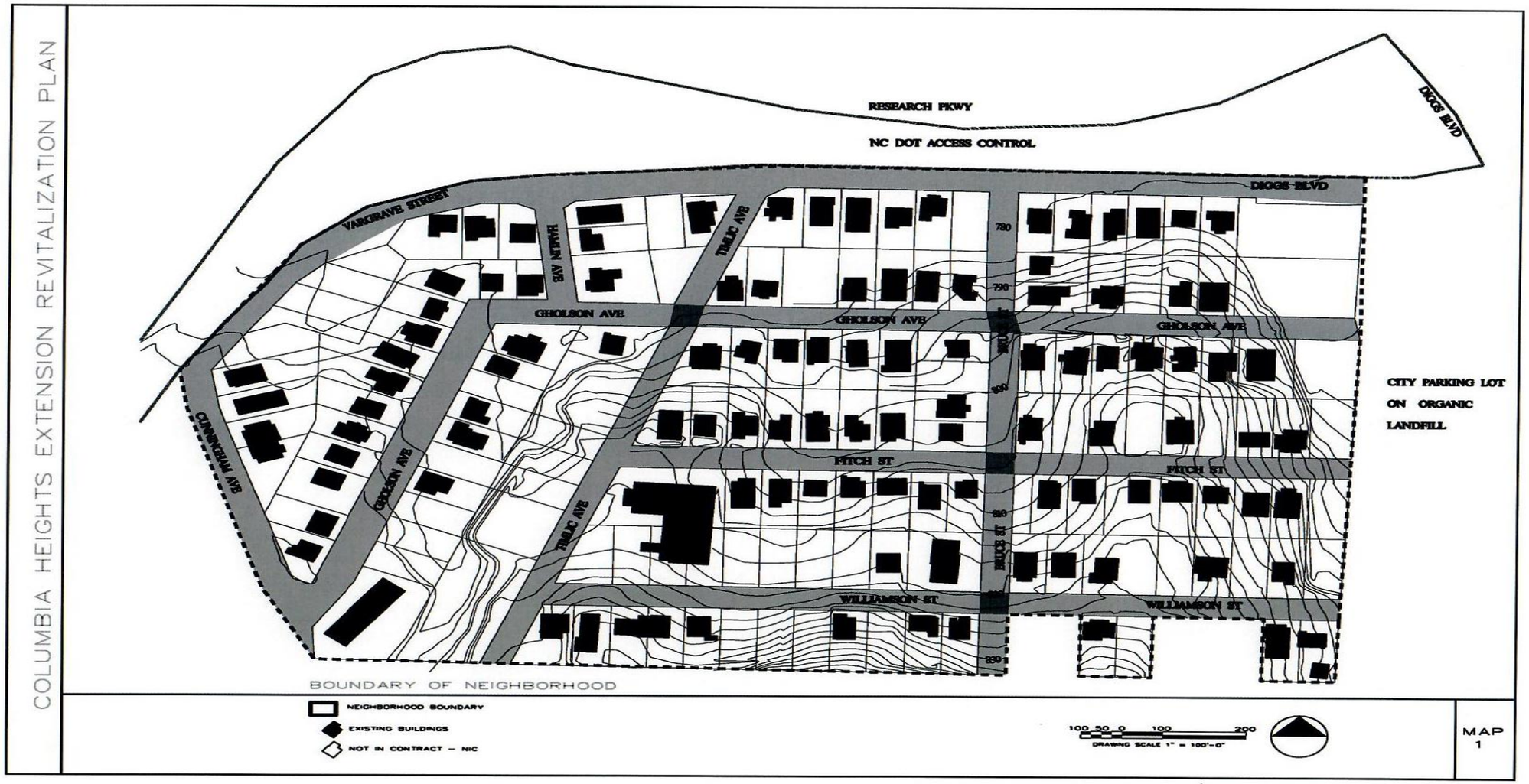
The Columbia Heights Extension Revitalization Plan presented in this document addresses the development objectives/recommendations from the following chapters in the Legacy 2030 Update Plan https://www.cityofws. org/295/Legacy-2030-Comprehensive-Plan.These chapters recognize the importance of incorporating achievable objectives with intentional design efforts. North Carolina A&T State University (NCATSU) recommends individuals not familiar with the Legacy 2030 Update Plan review these chapters for a better understanding of NCATSU's approach to its revitalization strategy. These objectives will be achieved through a combination of rehabilitation of the existinghousing stock, the introduction of new single-family and multi-family housing, and the development of complimentary neighborhood retail/office space with the construction of a pedestrian mall, neighborhood gateway, and streetscape elements throughout the neighborhood.

In addition to the Legacy 2030 Update Plan, the *Southeast Winston Area Plan* *https:www.cityofws.org /Document Center/View/2351/Southeast-Area-Plan-Update-PDF* and streetscape designs are offered as supplemental elements of this plan to provide more context and background material for this area:

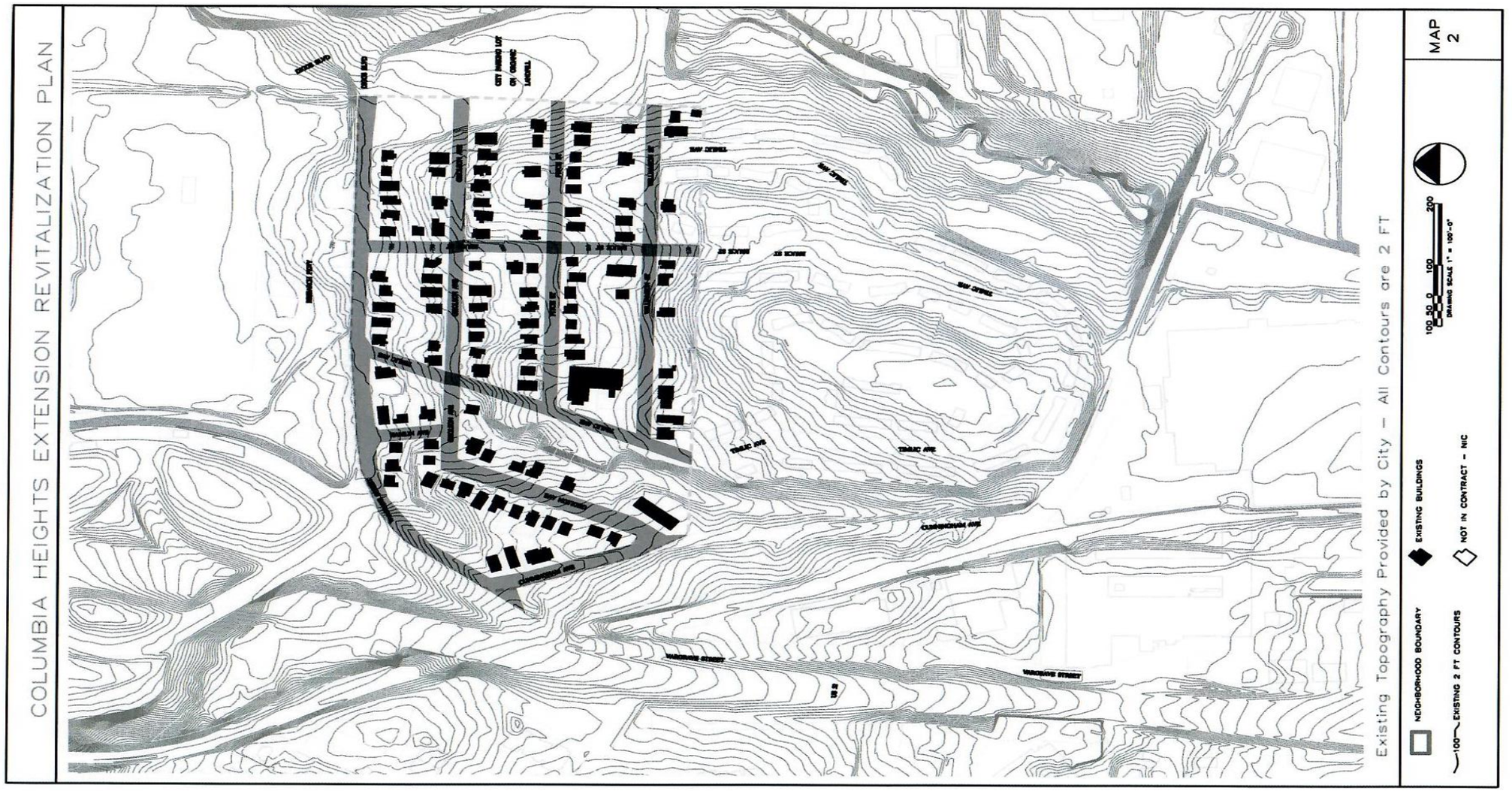
Legacy 2030 Update Plan Chapters

- Chapter 5: Transportation Objective 3: Street Design, Objective 4: Bicycle and Pedestrian Transportation, Objective 13: Protection of the Environment, Objective 14: Healthy, Active Transportation Support, Objective 15: Identify and address the needs of minority and low-income populations in making transportation decisions.
- Chapter 6. Economic Development Goal - Objective 1: Economic Vitality and High-Technology, Objective 2: Education, Objective 3: Business Sites, and Objective 4: Revitalization of Older Business Sites.
- Chapter 7. Environmental Quality and Sustainability Goal, Objective 1: Land Preservation, Open Space, Objective 3: Environmentally Sensitive and Sustainable Development, Objective 4: Air Quality, Objective 5: Energy Conservation, Efficiency, and Alternatives, Objective 6: Light and Noise Pollution, and Objective 9: Environmental Sustainability Awareness.
- Chapter 8. Healthy, Complete, and Equitable Communities Goal, Objective 1: Promote and Protect Health and Equity, Objective 2: Design for Active and Healthy Living Design, Objective 3: Health Equity, Objective 4: Age-Friendly Communities, Creating a Child-Friendly Community, and Creating a Senior-Friendly Community, Objective 5: Food Access, Objective 6: Parks, Recreational Facilities, and Open Space, Objective 7: Greenways, and Objective 9: Safety and Security.
- Chapter 9. Community Character Goal, Revitalizing Urban Commercial Areas, Local Demolition-by-Neglect Ordinance, Preserve the Natural Environment and Tree Canopy, Planned Residential Development, and Residential and Commercial Infill Ordinances. Chapter 9 Objective 1 Design and Development, Attractive Landscaped Entry, Quality Design of Roadways, Objective 2: Public Art, Objective 3: Community Pride and Appearance, Tourism, Community Appearance Commission, Local Heritage, Building Design, and Stewardship.
- Chapter 11. Neighborhoods and Towns Goal, Objective 1: Urban Neighborhoods – Complete Neighborhoods, Objective 2: Urban Neighborhoods – Preservation, Revitalization, and Adaptive Reuse, Code Enforcement, and Operation Impact, Objective 3: Urban Neighborhoods - Urban Infill and Redevelopment, and Gentle Density.
- Chapter 14. Key Public Investments Goal, Objective 3: Overall Quality of Life and Chapter 13. Area Plans Goal.

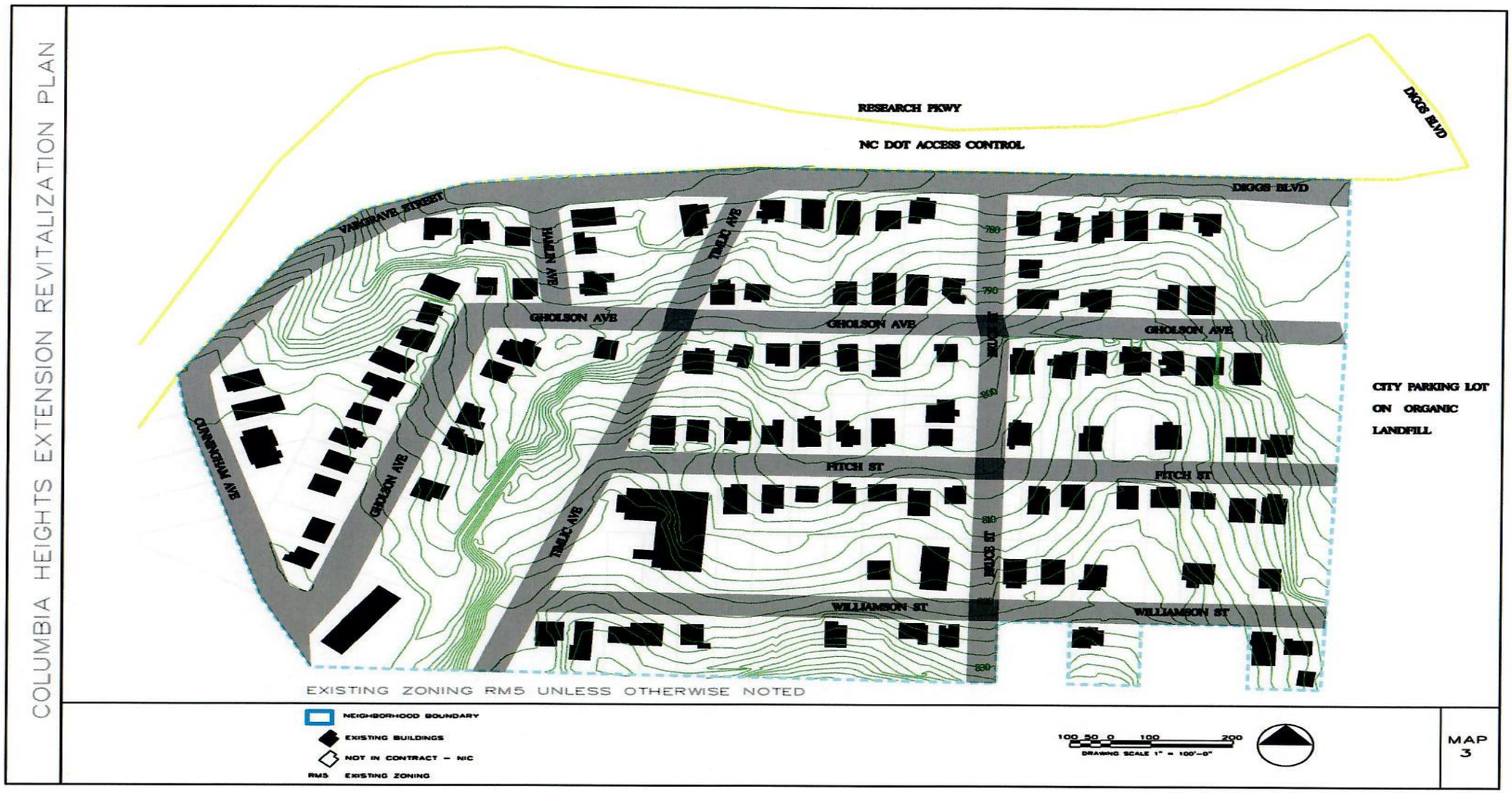
Map 1. *Boundary of Columbia Heights Extension/Skyline Neighborhood*



Map 2. *Topography of Columbia Heights Extension/Skyline Village*



Map 3. *Existing Zoning Columbia Heights Extension*



❖ PROPOSED ZONING COLUMBIA HEIGHTS EXTENSION

During multiple community workshops and stakeholder meetings from August 2020 to July 2021, Columbia Heights Extension residents and business stakeholders recognized that redevelopment and revitalization for Columbia Heights Extension would require a bold approach. NCATSU received approval from Columbia Heights Extension residents and business stakeholders to re-design the entire community and incorporate a Middle Housing and Green Community design approach which does require re-zoning from RM5 to MU-S Mixed Use – Special Use District Zoning per the WSFC UDO Code 2019.

There are no plans for Skyline Village. Skyline Village is owned and operated independently by a private firm. There will be street design recommendations that impact traffic flow egress for Skyline Village residents.

Columbia Heights Extension Neighborhood Plan Approach (A Mixed-Use/Income Net-Zero Energy Efficient Sustainable Residential Community)

This plan is to provide all residents, regardless of income and status, affordable, marketplace, and energy-efficient housing for an enriched quality of life. The recommendation is to:

1. Green all hard surface areas with sustainable materials
2. Deploy solar technology for energy independence
3. Incorporate mixed-use housing strategies
4. Deploy solar technology for energy independence
5. Incorporate mixed-use housing strategies
6. Incorporate mixed middle housing type strategies
7. Promote walkable community strategies

NCATSU proposes the following approaches to achieve this plan:

I. Approach One: Re-imagine the concrete sound barrier along Diggs Blvd and Vargrave Street – Pedestrian Mall

a. Close Diggs Blvd and Vargrave Street
b. Re-design Diggs Blvd and Vargrave Street
c. Create a new pedestrian walking mall along Diggs Blvd and Vargrave Street
d. Incorporate mixed-use housing along Diggs Blvd and Vargrave Street
e. Create a pedestrian-friendly walkable pathway (mall)
f. Introduce outside eating and sitting areas

g. Incorporate pet-friendly areas
h. Promote social interest features such as water fountains, bird and native plants, and art sculptures
i. Repurpose the concrete sound barrier into a Memorial Wall with acknowledgment of African American founders and other contributors to Columbia Heights Extension, such as John Francis Shaffner, Jacob Lott Ludlow, Simon Greene Atkins, E. P. Mayo, and George H. Willis who built a boarding house that became the Slater Industrial School, which became Winston Salem State University.

II. Approach Two: Green and Sustainable Initiative

a. Repurpose the two existing asphalt parking lots with a grass-parking surface
b. Provide solar panel covered parking spaces in both parking lots
c. Solar panels will provide energy to housing and business
d. Install electric vehicle (EV) charging stations
e. Install Tesla solar shingles and power walls in all housing and other buildings

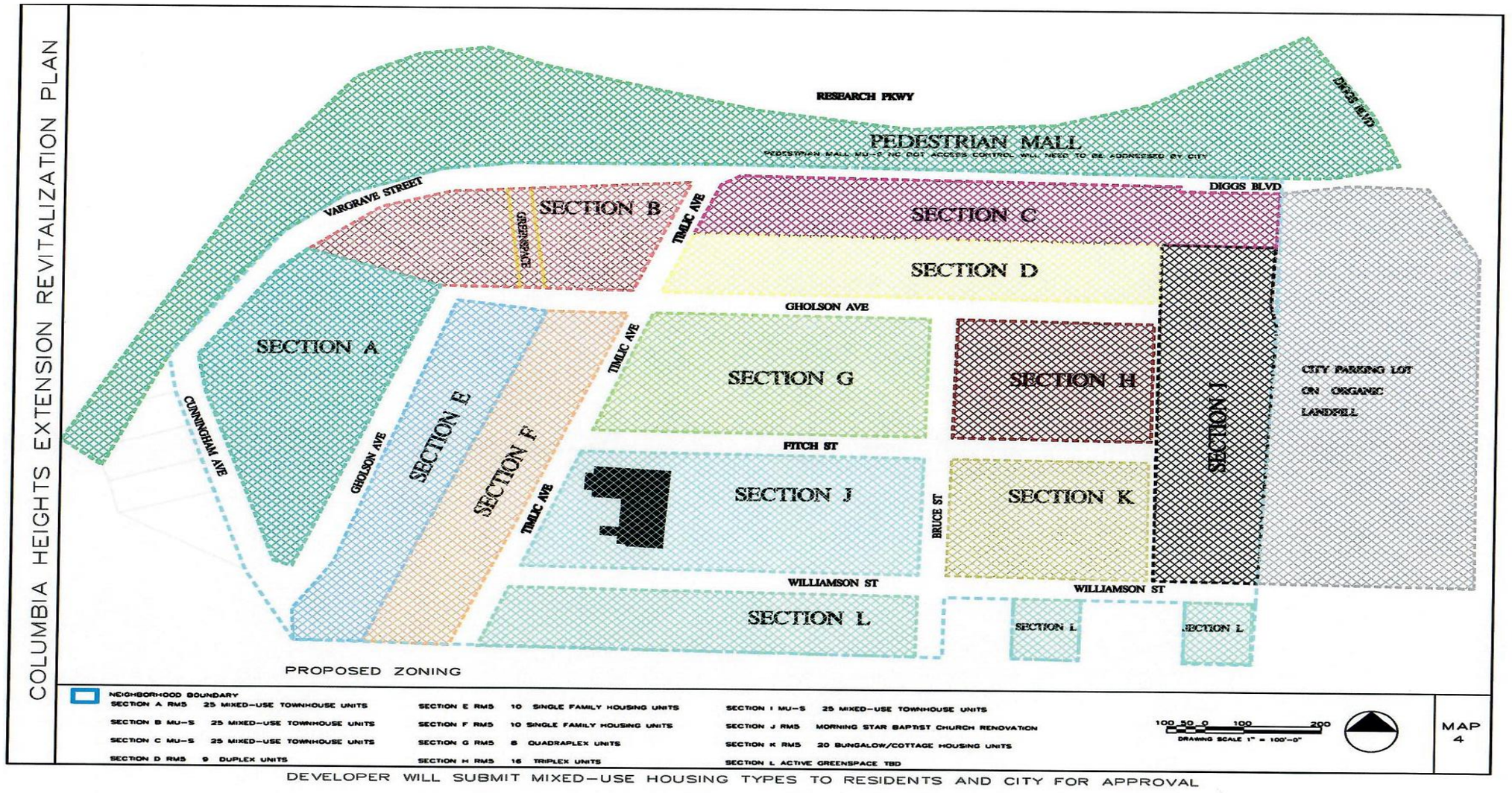
III. Approach Three: Neighborhood Amenities

a. Create neighborhood shopping through mixed-use buildings
b. Attract local pharmacy chains to locate
c. Attract local eateries such as Starbucks, Jimmy Johns, Ben and Jerry Ice Cream, etc.
d. Attract local eateries such as African American, Jamaican, Hispanic, Asian, and Italian

IV. Approach Four: Business Stakeholders

a. Partner with the National Association for Stock Car Auto Racing stakeholders.
b. Collaborate/partner with the Pinilis racing family to promote weekend accommodations and shopping for their local, national and international racing fans. Racing fans require sleeping and eating facilities that currently do not exist in this area
c. Partner with Wake Forest and Innovation Quarters for housing researchers and graduate students and graduate faculty
d. Collaborate/partner with WSSU for housing researchers and graduate students and graduate faculty

Map 4. *Proposed Zoning Columbia Heights Extension*



V. Approach Five: Kid Friendly Neighborhood

a. Repurpose the existing City-owned Bowman Gray parking lot into a multi-purpose green space with a green surface for use by residents on weekdays and weekends
b. Residents can play soccer, or football, or have picnics and reunions on the grass surface. Residents can also use the solar panel shelters for shade and electrical outlets for music
c. Establish multiple kid play zones throughout the neighborhood that have playground equipment
d. Create covered basketball courts
e. Incorporate a community clubhouse and swimming pool

VI. Approach Six: Neighborhood Security

a. Provide entrance gates into Skyline Village for Skyline residents
b. Introduce neighborhood calming traffic circles to slow down traffic
c. Provide streetlamp pole lights throughout
d. Provide sidewalks and bike paths on all streets
e. Provide emergency call stations throughout

VII. Approach Seven: Middle Housing Types

Create the following middle housing type options for residents within WSFC UDO Chapter 4, Section 4.4.10 RSQ Residential-Single Family Quadraplex District as follows:

a. Provide Bungalow/Cottage Court housing
b. Provide Duplex housing
c. Provide Triplex housing
d. Provide Fourplex housing
e. Provide Multiplex housing
f. Provide Courtyard multi-family housing
g. Provide Townhouse housing
h. Provide Single Family housing

VIII. Approach Eight: Green Building Standards for Middle Housing Types

a. Require all development housing and mixed-use units comply with green building principles and best practices
b. Incorporate solar panel/shingle/ power wall technology throughout every unit

Columbia Heights Extension Neighborhood Plan Opportunities

Implementation of each of the new construction in Columbia Heights Extension requires consideration of several questions including the following:

- What is the scope of work for each aspect of the neighborhood revitalization?
- What are the associated costs?
- What are the associated schedule requirements?
- What phasing might be suggested among the various elements?
- What might the City of Winston-Salem's role be?
- What partners are needed to implement each aspect of the neighborhood revitalization?
- What will the ongoing role of the Columbia Heights Extension Neighborhood residents be?

Columbia Heights Extension Neighborhood Plan Scope of Work

Columbia Heights Extension consists of fifteen (15) middle-housing and mixed-use sections shown on Map 5.

Section A - RM5 Zoning (111,453 SF)* 25 Mixed-use Townhouse units @ 1800Sf/unit @ $150/SF = $ 6.7M

This section includes *two-story Townhouses with a front porch, entry, living room, dining room, kitchen, half-bath, and rear patio on the ground level. A first level with a balcony, two bedrooms, a full bath, a master bedroom with a full bath, and a walk-in closet. Common green space in the rear. Parking in the rear. Alternatively, three-story Townhouses with a front porch, entry, two-car garage, and rear patio on the ground level, a living room, dining room, kitchen, half bath, and balcony on the first level. A second level with a balcony, two bedrooms, a full bath, a master bedroom with a full bath, and a walk-in closet. Common green space in the rear.* A typical townhouse layout is provided as an example and is not to be used as a final design. The developer is required to provide the site plan and number of units to the City for final approval. All facilities will incorporate Solar technology such as Solar panels/shingles, power walls, and EV charging capacity. Recommended construction is a Structural Insulated Panel (SIP) instead of traditional stick framing.
**SF is estimated and will be determined by the successful developer*

.**Map 5**. Columbia Heights Extension Housing Sections

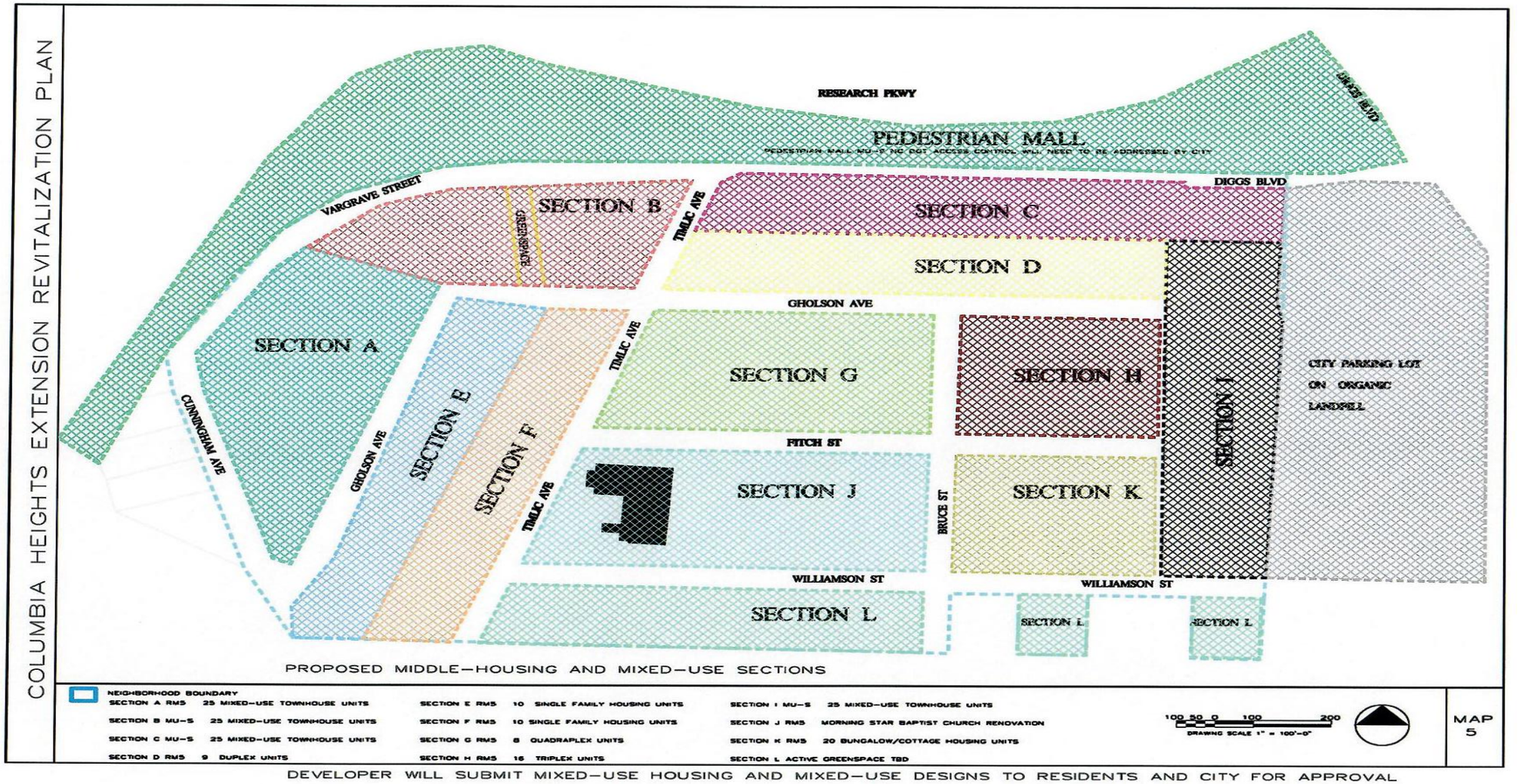
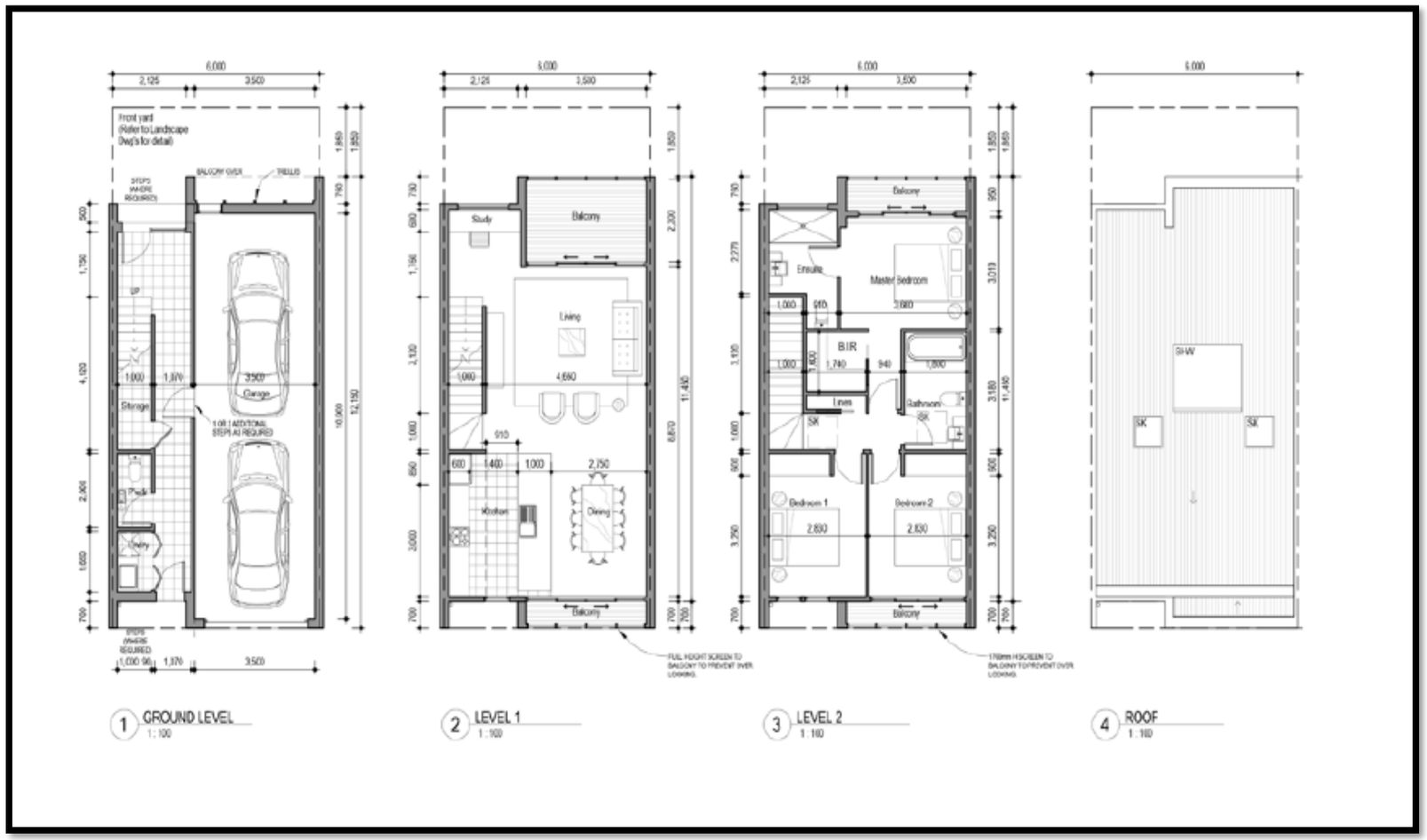


Figure 1. *A Typical 18FT x 60FT Townhouse Layout Example*



Section B Re-zone from RM5 to MU-S (79,692 SF)* 25 Mixed-use Townhouse units @ 1800Sf/unit @ $150/SF = $ 6.7M

This section is intended to serve as the *retail/food focal point*. This section will have units facing the street with *rear parking*. The development program for this site includes a *four-story, mixed-use structure including a ground floor neighborhood-scale retail center, with offices on the second floor*. This effect can also be achieved by the introduction of a mixture of *Townhouses* and "live-work units". The townhouses can be two or three stories. Live-work units are defined as those units that have commercial or office use on the first floor with two stories, and residential units on the second and third floors. (Two-story single unit per live-work unit). This site should also serve as a connector for the proposed Pedestrian Mall and retail/food courtyard. The developer is required to provide the site plan and number of units to the city for final approval. All facilities will incorporate Solar technology such as Solar panels/shingles, power walls, and EV charging capacity. Recommended construction is a Structural Insulated Panel (SIP) instead of traditional stick framing.
**SF are estimates and will be determined by the successful developer.*

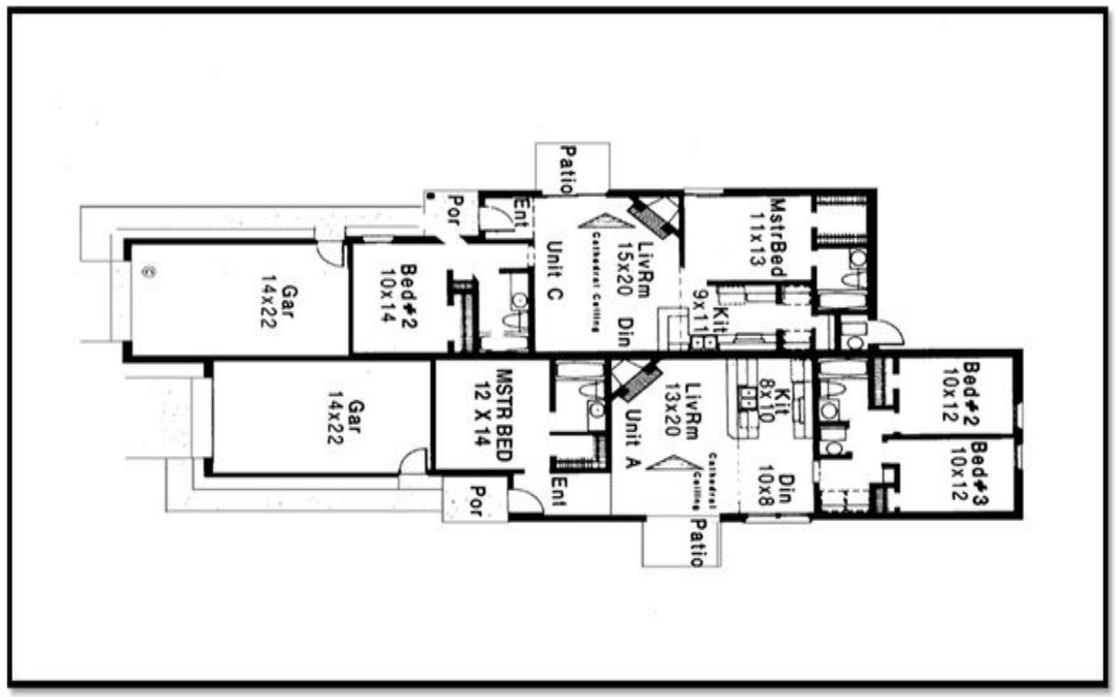
Section C Re-zone from RM5 to MU-S (89,012 SF)* 25 Mixed-use Townhouse units @ 1800Sf/unit @ $150/SF = $ 6.7M

This section will have units facing the street with *rear parking*. This section is intended to serve as the *retail/food focal point*. The development program for this site includes a *four-story, mixed-use structure including a ground floor neighborhood-scale retail/food center, with offices on the second floor*. This effect can also be achieved by the introduction of a mixture of *Townhouses* and "live-work units". The townhouses can be two or three stories. Live-work units are defined as those units that have commercial or office use on the first floor with two-story, residential units on the second and third floors. (Two-story single unit per live-work unit). This site should also serve as a connector for the proposed Pedestrian Mall and retail/food courtyard. The developer is required to provide the site plan and number of units to the city for final approval. All facilities will incorporate Solar technology such as Solar panels/shingles, power walls, and EV charging capacity. Recommended construction is a Structural Insulated Panel (SIP) instead of traditional stick framing.
**SF are estimates and will be determined by the successful developer.*

Section D - RM5 Zoning (77,133 SF)* 9 Duplex bldgs. @ 2 units/bldg. = 18 units @ 900Sf/unit @$150/SF = $2.4M

This section will have *Duplex* units facing the street with *rear parking*. The developer is required to provide the site plan and number of units to the city for final approval. All facilities will incorporate Solar technology such as Solar panels/shingles, power walls, and EV charging capacity. Recommended construction is a Structural Insulated Panel (SIP) instead of traditional stick framing.
**SF are estimates and will be determined by the successful developer.*

Figure 2. *A Typical Duplex Layout Example*



Section E - RM5 Zoning (75,851 SF)* 10 SFH @ 1500 SF @ $150.00/SF = $ 2.3M

The Columbia Heights Extension Plan recommends that this section be developed for *Single-Family* housing units. Another recommendation is to add a *Neighborhood Common Greenspace and Playground* for children. This section's topography is steep with a creek. The developer is required to provide the site plan and number of units to the city for final approval. All facilities will incorporate Solar technology such as Solar panels/shingles, power walls, and EV charging capacity. Recommended construction is a Structural Insulated Panel (SIP) instead of traditional stick framing.
**SF are estimates and will be determined by the successful developer.*

Section F - RM5 Zoning (77,300 SF)* 10 SFH @ 1500 SF/unit @ $150.00/SF = $ 2.3M.

The Columbia Heights Extension Plan recommends that this section be developed for *Single-Family* housing units. Another recommendation is to add a *Neighborhood Common Greenspace and Playground* for children. This section's topography is steep with a creek. This section fronts Morning Star Baptist Church. The developer is required to provide the site plan and number of units to the city for final approval. All facilities will incorporate Solar technology such as Solar panels/shingles, power walls, and EV charging capacity. Recommended construction is a Structural Insulated Panel (SIP) instead of traditional stick framing.
**SF are estimates and will be determined by the successful developer.*

Section G - RM5 Zoning (97,839 SF) 8 Quadraplex bldgs. @ 4 units/bldg. = 32 units @ $86,000.00/unit = $2.7M.

The proposed development character for this section is to recreate, within the realm of today's real estate market, the charm, and character of a turn of the century urban neighborhood. To do this successfully will require the construction of new *Quadraplex* homes with designs, which are sympathetic to the historic character of the neighborhood. Parking will be off-street. Use of a courtyard is preferred. New construction units are to be built within the development standards and design guidelines associated with UDO. All facilities will incorporate Solar technology such as Solar panels/shingles, power walls, and EV charging capacity. Recommended construction is a Structural Insulated Panel (SIP) instead of traditional stick framing.
**SF are estimates and will be determined by the successful developer.*

Section H - RM5 Zoning (64,924 SF)* 16 Triplex bldgs. @ *$200,000.00/bldg. = $3.2M

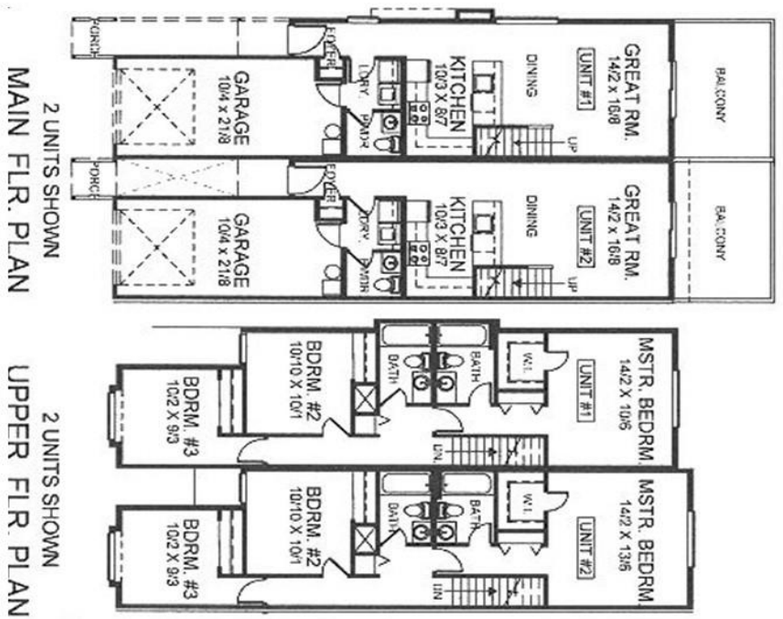
The proposed development character for this section is to recreate, within the realm of today's real estate market, the charm, and character of a turn of the century urban neighborhood. To do this successfully will require the construction of new *Triplex* homes with designs, which are sympathetic to the historic character of the neighborhood. Parking will be off-street. Use of a courtyard is preferred. New construction units are to be built within the development standards and design guidelines associated with UDO. All facilities will incorporate Solar technology such as Solar panels/shingles, power walls, and EV charging capacity. Recommended construction is a Structural Insulated Panel (SIP) instead of traditional stick framing.
**SF are estimates and will be determined by the successful developer.*

Section I - Re-zone from RM5 to MU-S (101,902 SF)* 25 Mixed-use Townhouse units @ 1800Sf/unit @ $150/SF = $ 6.7M

This section is intended to serve as the leased housing focal point. It is to serve visitors attending sporting events and racing events. It is to serve Wake Forest, WSSU, and Salem College research faculty, graduate faculty, and graduate students. The development program for this site includes *four-story, mixed-use structures including a ground floor neighborhood-scale retail/food center, with offices on the second floor*. This effect can also be achieved by the introduction of a mixture of *Townhouses and "live-work units"*. The townhouses can be two or three stories. Live-work units are defined as those units that have commercial or office use on the first floor with a two-story, residential unit on the second and third floors. (Two-story single unit per live-work unit). This site should also serve as a connector for the proposed Pedestrian Mall and retail/food courtyard. *Parking will be off-street. Use of a courtyard is preferred*. The developer is required to provide the site plan and number of units to the city for final approval. All facilities will incorporate Solar technology such as Solar panels/ shingles, power walls, and EV charging capacity.

Recommended construction is a Structural Insulated Panel (SIP) instead of traditional stick framing.
**SF are estimates and will be determined by the successful developer.*

Figure 3. A Typical Quadraplex Layout Example



Section J - RM5 Zoning (49,375 SF) *$1M

This site currently houses Morning Star Baptist Church. This church has the potential to be a powerful anchor to attract investment in Columbia Heights Extension. This church site can continue to be an important player in the development strategy and process. It is recommended to develop with input from the Church for the use of this site that will benefit both Church and community such as Church-owned/operated *Duplexes, a Community Center, and a Community Garden*. Parking will be off-street. Use of a courtyard is preferred. The developer is required to provide a site plan for this section to the city for final approval. All facilities will incorporate Solar technology such as Solar panels/shingles, power walls, and EV charging capacity. Recommended construction is a Structural Insulated Panel (SIP) instead of traditional stick framing.
**SF are estimates and will be determined by the successful developer.*

Section K - RM5 Zoning (66,431 SF)* 20 Bungalow/Cottage Courtyard homes @ 1500SF/unit @ $150/SF = $4.5M

The proposed development character for this section is to recreate, within the realm of today's real estate market, the charm, and character of a turn of the century urban neighborhood. To do this successfully will require the construction of new *Bungalow/Cottage Courtyard* homes with designs, which are sympathetic to the historic character of the neighborhood. Parking will be off-street. Use of a courtyard is preferred. New construction units are to be built within the development standards and design guidelines associated with UDO. All facilities will incorporate Solar technology such as Solar panels/shingles, power walls, and EV charging capacity. Recommended construction is a Structural Insulated Panel (SIP) instead of traditional stick framing.
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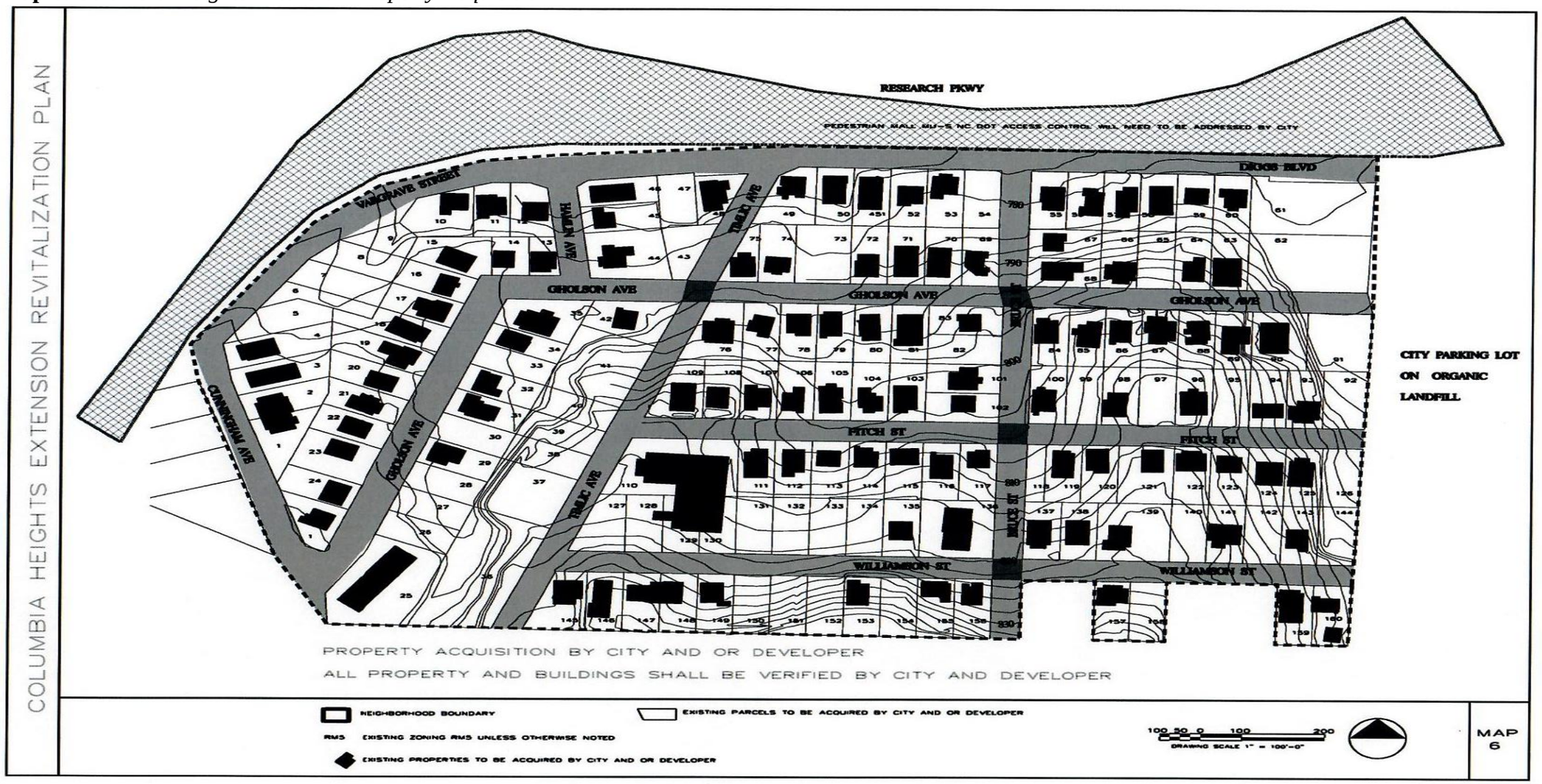
Section L – RM5 Zoning (93,857 SF)* Passive Greenspaces $250,000.00

Because this section is most convenient to the neighborhood, the Columbia Heights Extension Plan recommends that this section be developed as a *Neighborhood Common Greenspace with a Playground for children and a Community Swimming Pool with a Clubhouse*. This section's topography is steep. The developer is required to provide the site plan to the city for final approval. All facilities will incorporate Solar technology such as Solar panels/shingles, power walls, and EV charging capacity. Recommended construction is Structural Insulated Panel (SIP) https://www.sips.org/ instead of traditional stick framing.
**SF are estimates and will be determined by the successful developer.*

Property Acquisition approximately 152 lots* @ $50,000.00/ property = $7,600.000.00
The Columbia Heights Extension Neighborhood Plan will require acquiring approximately one hundred and fifty-two lots and property, clearing all blighted properties, acquiring private properties, and remediating environmental conditions. As a whole, the property being acquired represents a substantial portion of the

planning area for which rezoning will be requested. NCATSU is not responsible for identifying the actual number of properties.

Map 6. *Columbia Heights Extension Property Acquisition*



Pedestrian Mall -zone from RM5 to MU-S (320,114 SF)* $2M

Close Hamlin Ave, Diggs Blvd, and Vargrave Street, to create a new *Pedestrian Living/Walking/Retail/Food Court Mall* along Diggs Blvd and Vargrave Street. Hamlin Ave will become a common greenspace. The Mall will incorporate *Mixed-use Townhouses* along Diggs Blvd and Vargrave Street. The Mall will introduce *Outside Eating and Sitting* areas. The Mall will incorporate *Pet-friendly* areas. The Mall will promote social interest features such as *water fountains, bird and native plants, and art sculptures*. Artists will repurpose the concrete sound barrier into a *Memorial Wall* with acknowledgment of African American founders and other contributors to Columbia Heights Extension, such as John Francis Shaffner, Jacob Lott Ludlow, Simon Greene Atkins, E. P. Mayo, and George H. Willis who built a boarding house that became the Slater Industrial School, which became Winston Salem State University. NCATSU recommends the City offer a design competition to local artists, architects, landscape firms, and public schools for the design and construction of the Memorial Wall.
**SF are estimates and will be determined by the successful developer.*

Figure 4. *Pedestrian Mall Concept*

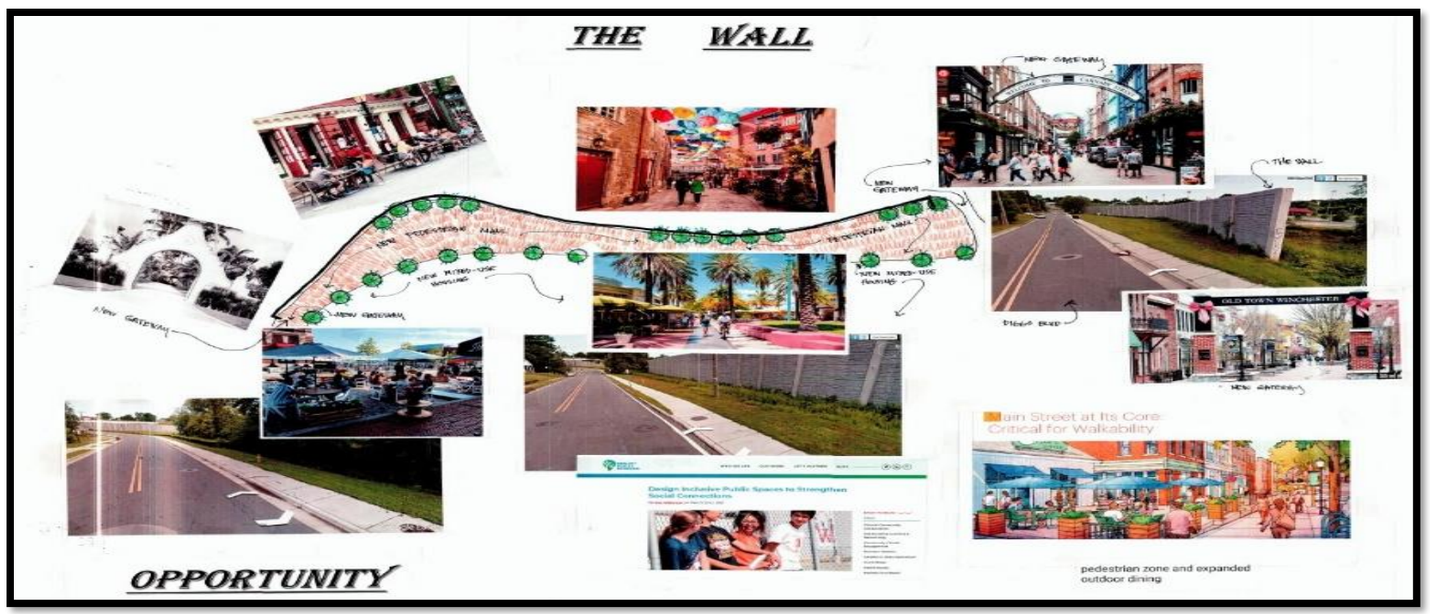


Figure 5. *Pedestrian Mall Concept Mixed-Use Townhouses Outside Eating and Sitting*

Figure 6. *Pedestrian Mall Concept Townhouses Pet Friendly*

Figure 7. *Pedestrian Mall Concept Townhouses*

Sustainable Green and Solar Parking Lot (280,000 SF)* $1.3M

NCATSU recommends greening the seven hundred-vehicle parking lot adjacent to the Columbia Heights Extension neighborhood with a green parking surface and Solar technology. Solar energy will provide electricity to Columbia Heights Extension residents.

The first condition is to address the enormous amount of paved asphalt surfaces surrounding the neighborhood. In particular, the two Bowman Gray parking lots directly adjacent to the housing stock. Researchers are now studying heat index temperature's effect on the health and quality of living within African American and other minority neighborhoods for asthma, respiratory illness, skin cancer, life span, etc. affected by asphalt and concrete surfaces.

There is a multi-use sports complex, Bowman Gray Stadium, owned by the City of Winston-Salem and leased to a private family racing team, Bowman Racing Team, which operates automobile racing events, and Winston-Salem State University uses Bowman Gray Stadium and its parking lots for its sporting events.

Air Quality and Noise Pollution

The second condition is air pollution, heat index, and noise pollution. To assist in improving the quality of living within Columbia Heights Extension NCATSU recommend surrounding the existing stadium parking lot with multiple layers of thick evergreen trees. Tree sound barriers are environmentally better for the overall quality of living, the planet, and are cost-effective. NCATSU recommends to re-design the asphalt parking lot such that trees are incorporated into the parking stalls to reduce the heat index.

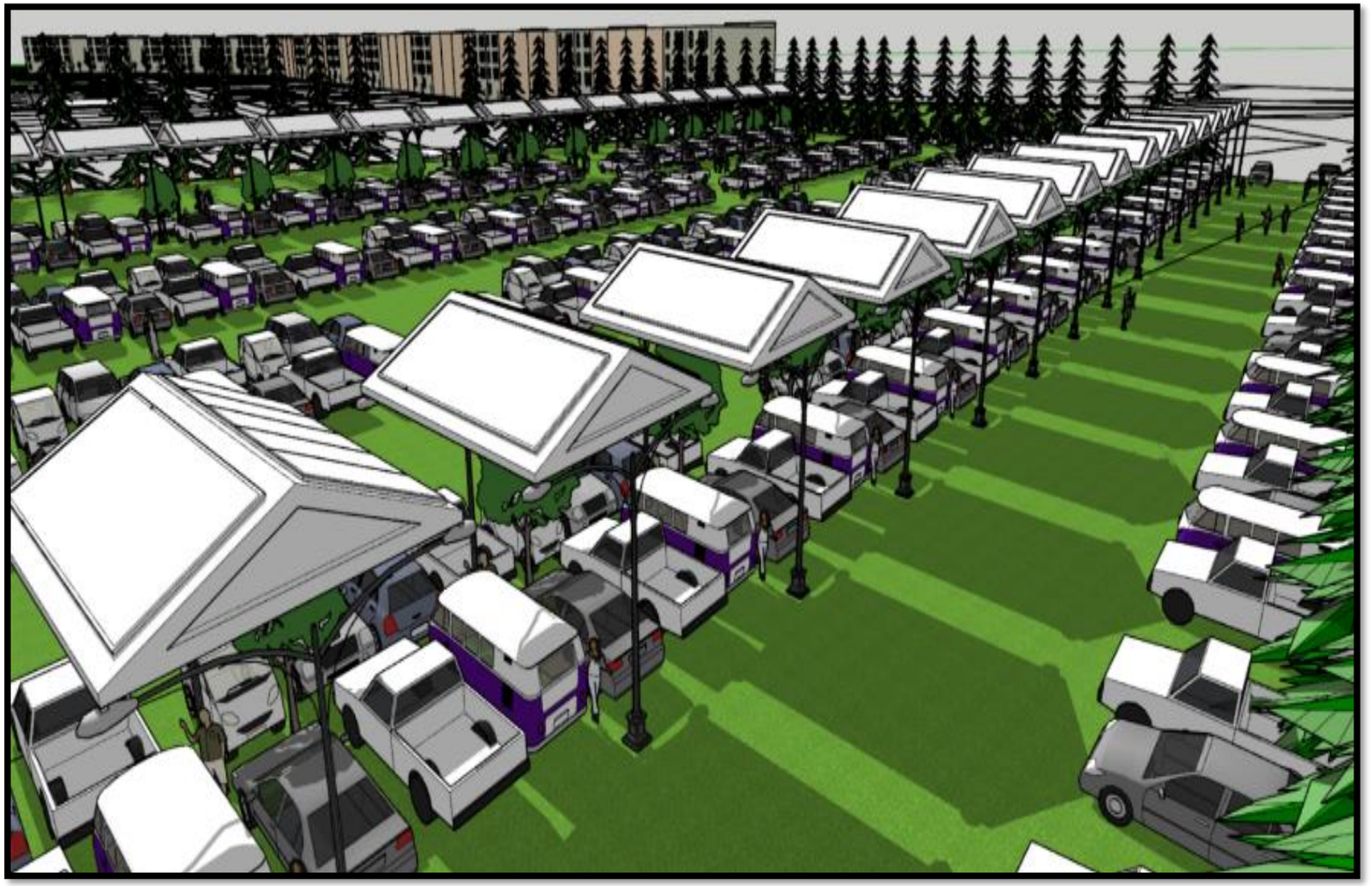
Multi-purpose Greenspace/Parking Lot

This neighborhood does not have common walkable green areas for outside activities for children, pets, and social gatherings. By greening the stadium parking lot and installing solar stations and lighting features, the asphalt parking is transformed into the first multipurpose green parking lot/recreation space used by the stadium participants and neighborhood residents. Residents can have picnics, birthday parties, family reunions, block party activities, a farmers' market, heritage and culture celebrations, soccer, and basketball, to name a few. The stadium will continue to use green spaces for parking.

Figure 8. *Green Parking Lot*

Figure 9a. Green Parking Lot and Solar Technology

Figure 9b. *Green Parking Lot and Solar Technology*



❖ CENTER FOR ENERGY RESEARCH AND TECHNOLOGY

NCATSU Center for Energy Research and Technology (CERT) has provided research into the greening of our cities and towns. https://www.ncat.edu/ research/ centers /cert/index.php

In addition, municipalities across the country are implementing sustainable green parking lots best practices as more municipalities join the federal and local governments in reducing global warming by re-designing existing parking lots from asphalt and concrete surfaces into sustainable green parking lot surfaces. Green parking lot design and construction technology is now economically available and is widely used at football stadium parking lots around the country and there are several manufacturers available. NCATSU evaluated several and for this example evaluated TrueGrid https://www.truegridpaver.com/green-parking-lot/. The developer is required to provide the site plan to the city for final approval. Solar technology will provide power to Columbia Heights Extension facilities and residents. It is recommended to green the other Bowman Gray Stadium parking lot with the same approach (not in the scope of this project).

Street Re-Design (10,100 LF)* $1.5M including grading

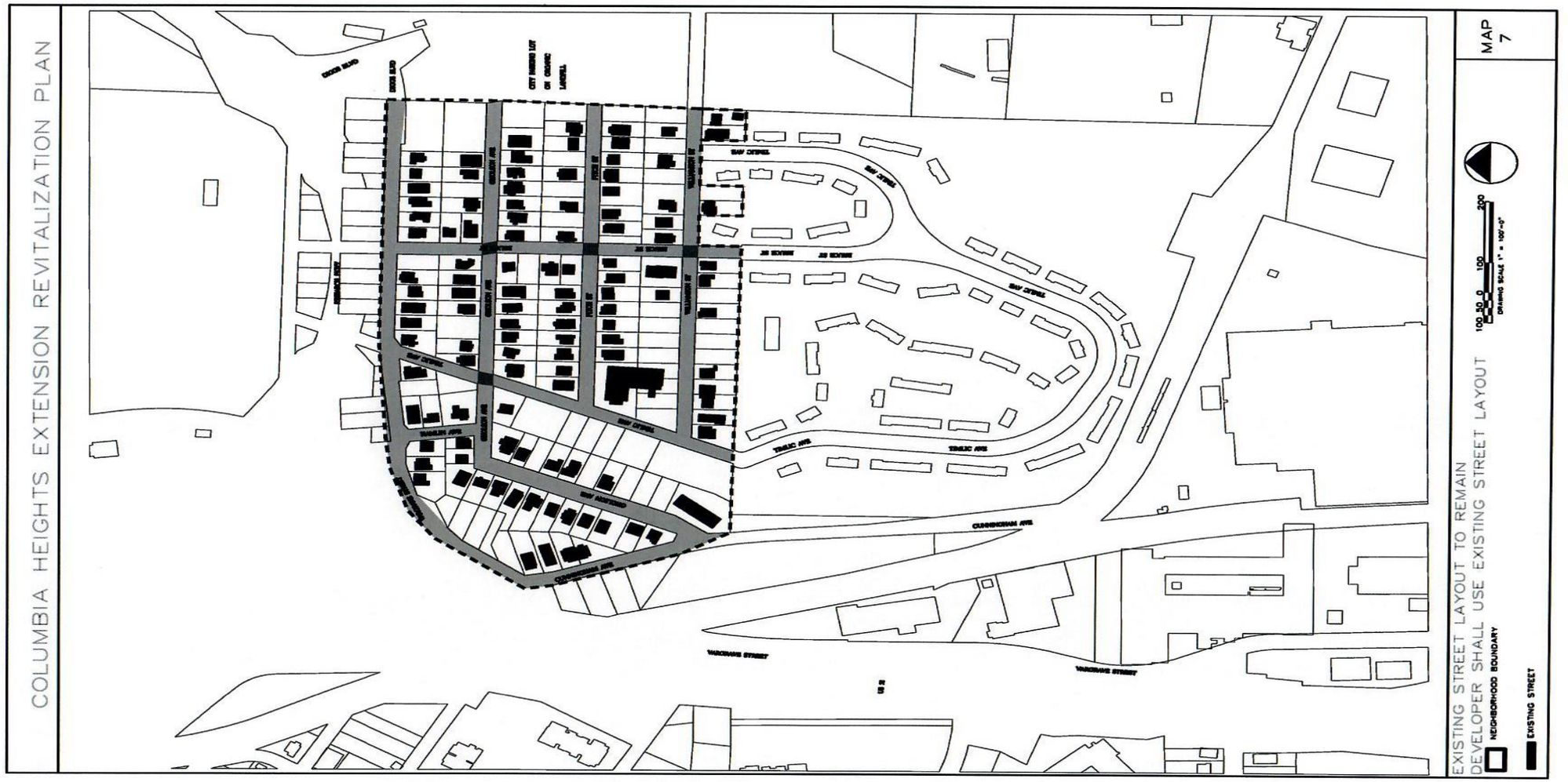
*There is approximately 10,100 LF of asphalt street area. Street infrastructure is severely impacted when both sporting events and normal residential traffic is in use simultaneously. There are only three access points to enter and exit the neighborhood during sporting events, Research Parkway on the South, ML King Blvd on the East, and Waughtown Road on the North. When sporting events occur, the resident population must use S. ML King Boulevard to the East, as Research Parkway is restricted to sporting event traffic. Skyline Village residential traffic is further impacted, due to the street infrastructure designed with a U-loop design on the North. This U-loop design forces Skyline residential traffic onto Williamson Street to exit out of the neighborhood unless Skyline Village residents use Timlic Avenue to Diggs Boulevard to Research Parkway.

To address this issue existing streets will be retained and re-designed, (in accordance with the UDO), which includes street-calming devices, sidewalks, lights, trees, bike paths, and parking. The developer is required to provide the site plan to the city for final approval.
**SF are estimates and will be determined by the successful developer*.

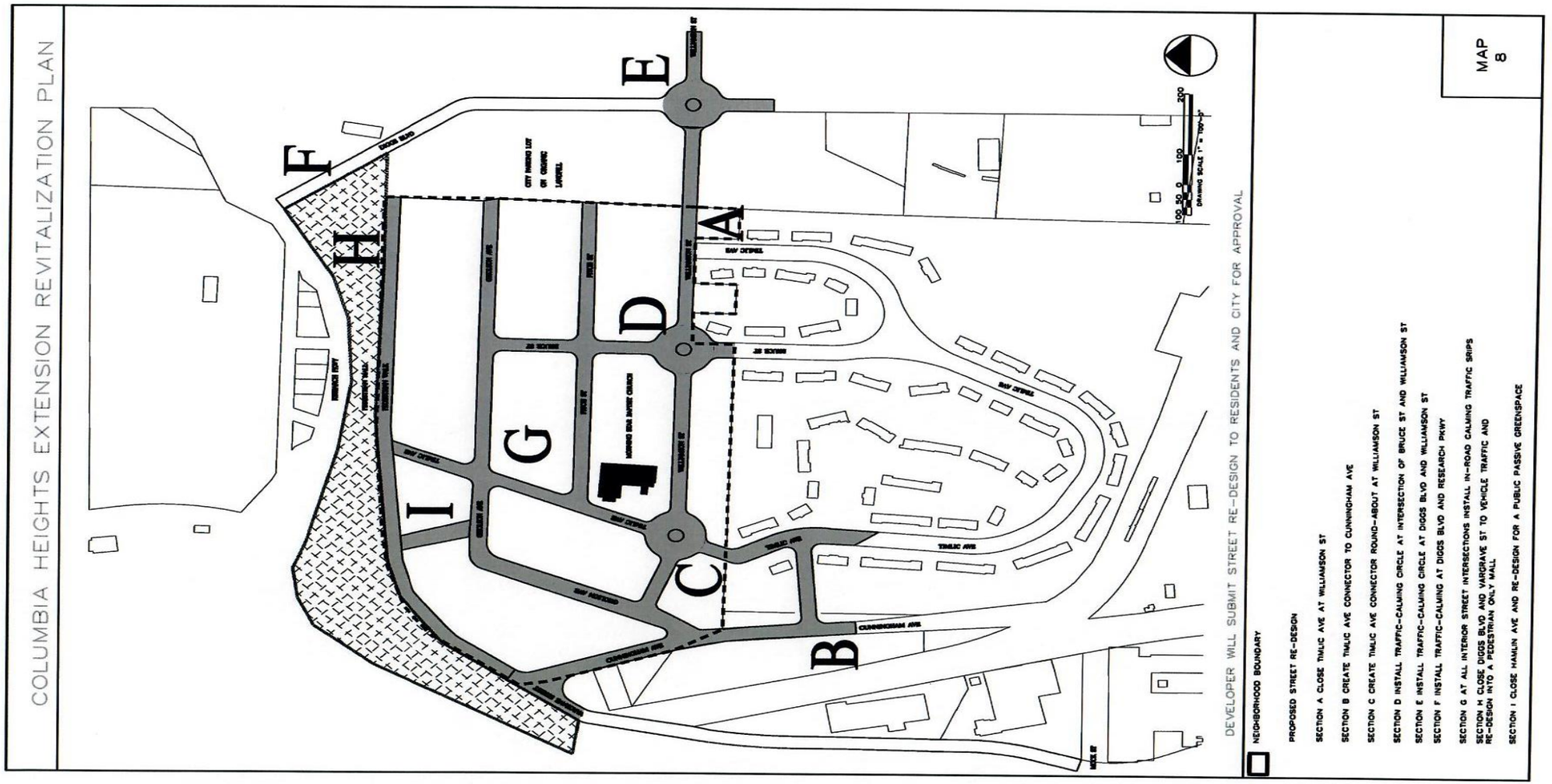
Figure 10. *Traffic Calming Circle*

Skyline Village Apartments has approximately one-hundred and sixty-nine rental units. These units have added traffic flow stress onto the existing street pattern network within Columbia Heights Extension. With sporting events adding additional traffic flow stress and congestion nine months out of the year, the existing street pattern network can no longer adequately address the traffic flow.

Map 7. *Existing Street Layout*



Map 8. *Proposed Street Re-Design*



A. Skyline Village Timlic Ave Loop has two exits onto Williamson Street. On the East, close Timlic Ave at Williamson Street and create a cul-de-sac turn-around. $50,000.00.
B. On the West, at the area where Timlic Ave curves to the right there appear to be an area large enough between two existing Skyline Village apartments for creating a new Timlic street connector for residents to use that will connect to Cunningham Ave where Cunningham Ave ends at the plant. $200,000.00
C. Timlic Ave also extends down the West side of Skyline Village and connects back to Williamson Street. There is an area in the right bend of Timlic Ave that appears to be large enough to construct another new Williamson Street extension connector across onto Cunningham Ave. At this new street extension connector, install a traffic-calming circle. $300,000.00.
D. The other street from Skyline Village is Bruce Street which intersects Williamson Street. Install a new traffic-calming circle at the intersection of Bruce Street and Williamson Street. $50,000.00.
E. Install a traffic-calming circle at Diggs and Williamson Street. $50,000.00.
F. Research Parkway and Diggs traffic flow is severely restricted during sporting events for traffic entering and exiting the parking lots at Bowman Gray Stadium. Install a traffic-calming circle. $50,000.00.
G. At intersections within the neighborhood, install in-road traffic calming strips. $5,000.00.
H. Close Diggs and Vargrave and re-design into a pedestrian walking mall. $200,000.00.
I. Close Hamlin Ave and re-design it into a public green space. $50,000.00.

**Estimates and will be determined by the successful developer.*

Streetscape Design* $ 100,000.00

In accordance with WSFC UDO, Legacy 2030, and Southeast Winston Area Plan NCATSU recommends re-design the existing street network and adding required trees, bicycle path, lights, and signage, and removing excessive overhead power lines that require trimming or removing trees. NCATSU estimates that 253 trees and 100 streetlamps are needed in the new plan.

**Streetscape features are estimates and will be determined by the successful developer*

Neighborhood Gateway

Entry Gateway Design*$50,000.00

Columbia Heights Extension/Skyline Village does not have neighborhood recognition such as Gateway entrance signage. NCATSU recommends a design competition from local artists for the design of Gateway signage. Place a Columbia Heights Extension gateway entrance at Diggs/Research Pkwy and Diggs/Williamson Street (See **Figure 11**). $20,000.00.

**Gateway are estimates and will be determined by the successful developer.*

Figure 11. *Examples of Columbia Heights Extension Gateway Entrance*.

Place a Skyline Village gateway entrance at new Timlic/Williamson, at new Timlic/Cunningham, and at Bruce/Williamson Street (See **Figure 12**). $30,000.00.

Figure 12. *Example of Skyline Village Gateway Entrance*

Summary of total estimated costs*$59,955.000.00

Middle housing total estimated costs* $45,200,000.00
Section A - 25 Mixed-use townhouse units estimated to cost $6.7M
Section B - 25 Mixed-use townhouse units estimated costs $6.7M
Section C - 25 Mixed-use townhouse units estimated to cost $6.7M
Section D - 9 Duplexes estimated costs $2.4M
Section E - 10 Single-family housing estimated costs $ 2.3M
Section F - 10 Single-family housing estimated costs $ 2.3M
Section G - 8 Quadraplex estimated costs $2.7M
Section H - 16 Triplex estimated costs $3.2M
Section I - 25 Mixed-use townhouse units estimated to cost $ 6.7M
Section J - Morning Star Baptist Church estimated costs $1M
Section K - 20 Bungalow/Cottage courtyard homes estimated costs $4.5M

Summary of other estimated costs*$14,755,000.00

Passive greenspace estimated costs $250,000.00
Streetscape estimated costs $100,000.00
Streets/sidewalks estimated costs $1,500,000.00
Green parking Lot estimated costs $1,300,000.00
Street re-design and calming devices are estimated to cost $955,000.00
Gateway signage is estimated to cost $50,000.00
Pedestrian mall estimated costs $2,000,000.00
Pedestrian crosswalk or over-pass estimated to cost $1,000,000.00

Property acquisition $7,600.000.00
** Estimates will be determined by the successful developer.*

❖ IMPLEMENTATION STRATEGY

Plan Development

The Columbia Heights Extension Neighborhood Plan has been prepared in accordance with the *Legacy 2030 Update Comprehensive Plan* and *Southeast Winston Area Plan*, which incorporates the land-use and implementation recommendations. *The Legacy 2030 Update Comprehensive Plan* and *Southeast Winston Area* Plan provided site analysis, market research, and community input factors related to future improvements in Columbia Heights Extension/Skyline Village, as well as a specific plan of action to achieve those future improvements. The Columbia Heights Extension Neighborhood Plan includes recommendations from the *Legacy 2030 Update Comprehensive Plan* and *Southeast Winston Area Plan* concerning land use, zoning, street layout, and opportunity sites. This implementation strategy remains true to the adopted *Legacy 2030 Update Comprehensive Plan* and *Southeast Winston Area Plan*.

Rezoning

Rezoning is required on Diggs Blvd and Vargrave St for Mixed-Use. RM5 zoning allows for Duplex, Single Family, Cottage Court, and Twin Homes.

The UDO anticipates, in fact, encourages a mix of uses within the neighborhood that help to reinforce the walkable nature of the community. The developer is required to provide the site plan to the city for final approval.

Wherever it is possible to remain true to the objectives and fundamental concepts of a traditional neighborhood, this plan will use the standards set in the UDO. However, it may be anticipated that some deviation from the UDO general standards or enhancements may be necessary. Unless otherwise indicated the UDO will remain the default.

In lieu of using a predetermined set of landscape standards, the developer will be required to submit a detailed unified landscape plan for the entire neighborhood area.

Property Acquisition

The Columbia Heights Extension Neighborhood Plan will require acquiring approximately one-hundred and fifty-two lots and property, clearing all blighted properties, acquiring private properties, and remediating environmental conditions. As a whole, the property being acquired represents a substantial portion of the planning area for which rezoning will be requested. NCATSU is not responsible for identifying the actual number of properties.

Design Standards

Design standards and streetscape plans will be required in accordance with the UDO for streets within this planning area, Existing Street networks will be maintained, and re-designed to meet UDO standards. The developer will be required to submit a street network plan with new entrances into and out of the neighborhood for residents per the NCATSU street re-design recommendation.

Developer Recruitment

The Columbia Heights Extension Neighborhood Plan is intended to foster a traditional mixed-use neighborhood, characterized by homeownership of residential properties, support businesses, neighborhood institutions, and attractive open spaces. This Plan recognizes that private developers have the greatest ability to address the needs of market-rate home development and support commercial uses. As such, this implementation strategy will rely on leveraging public investment to encourage private development interest. A development prospectus and request for proposals for the implementation of the Columbia Heights Extension Neighborhood Plan will be required and will be distributed to outstanding, qualified developers. Interested developers will be able to submit a proposal for all or part of the Columbia Heights Extension Neighborhood Plan based on the sections into which the Plan has been divided.

Housing Rehabilitation

Considerable value in the traditional homes which remain in Columbia Heights Extension will strengthen the ultimate neighborhood. The City will assist existing homeowners in the substantial rehabilitation of existing homes or will seek homeowner/partners to rehab these homes. The City has financial assistance programs to encourage citizen and private sector participation. Such programs may offer property acquisition assistance and less than market-rate financing for eligible rehab projects in the Columbia Heights Extension neighborhood. This assistance will be primarily aimed at encouraging homeownership by existing neighborhood residents and stimulating the rehabilitation and appropriate reuse of existing structures within the neighborhood.

Other Redevelopment Activities

In addition to the strategies detailed above, the City has other redevelopment activities to ensure and support a healthy community environment upon implementation of the plan. The suggested activities included home buying counseling, code enforcement, law enforcement and community policing, maintained and enhanced public transit service, and church involvement and action. Also suggested are neighborhood-based programs and services to promote neighborhood unity, such as a neighborhood association, community green common areas, and street festivals.

Project Schedule and Phasing

The project schedule for new construction in Columbia Heights Extension calls for the infrastructure work to be completed first. This includes the lot acquisition, site grading, installation of utilities, and new road construction. Following this new housing can be constructed.

There are several options for phasing this work.
Phase 1. Solicit and award the design contract
Phase 2. Green Parking Lot and road infrastructure
Phase 3. Mixed-use housing and Pedestrian Mall (Sections A, B, C, D, and I)
Phase 4. Sections J (Morning Star Baptist Church)
Phase 5. Sections G, H, and K
Phase 6. Sections E, F, and L **(see Map 9)**

The Role of the City of Winston-Salem

As noted above the development of Columbia Heights Extension is a major undertaking with an estimated cost of over $50 million. However it is phased, this work will require resources from the City of Winston-Salem. A Bond referendum is recommended. These resources may include providing city financial support, finding financial support from foundations and corporations, and establishing a public-private partnership to implement this project. Pulling together the team or teams required for the many aspects of this work may be the most challenging task for the City.

Implementation Partnerships

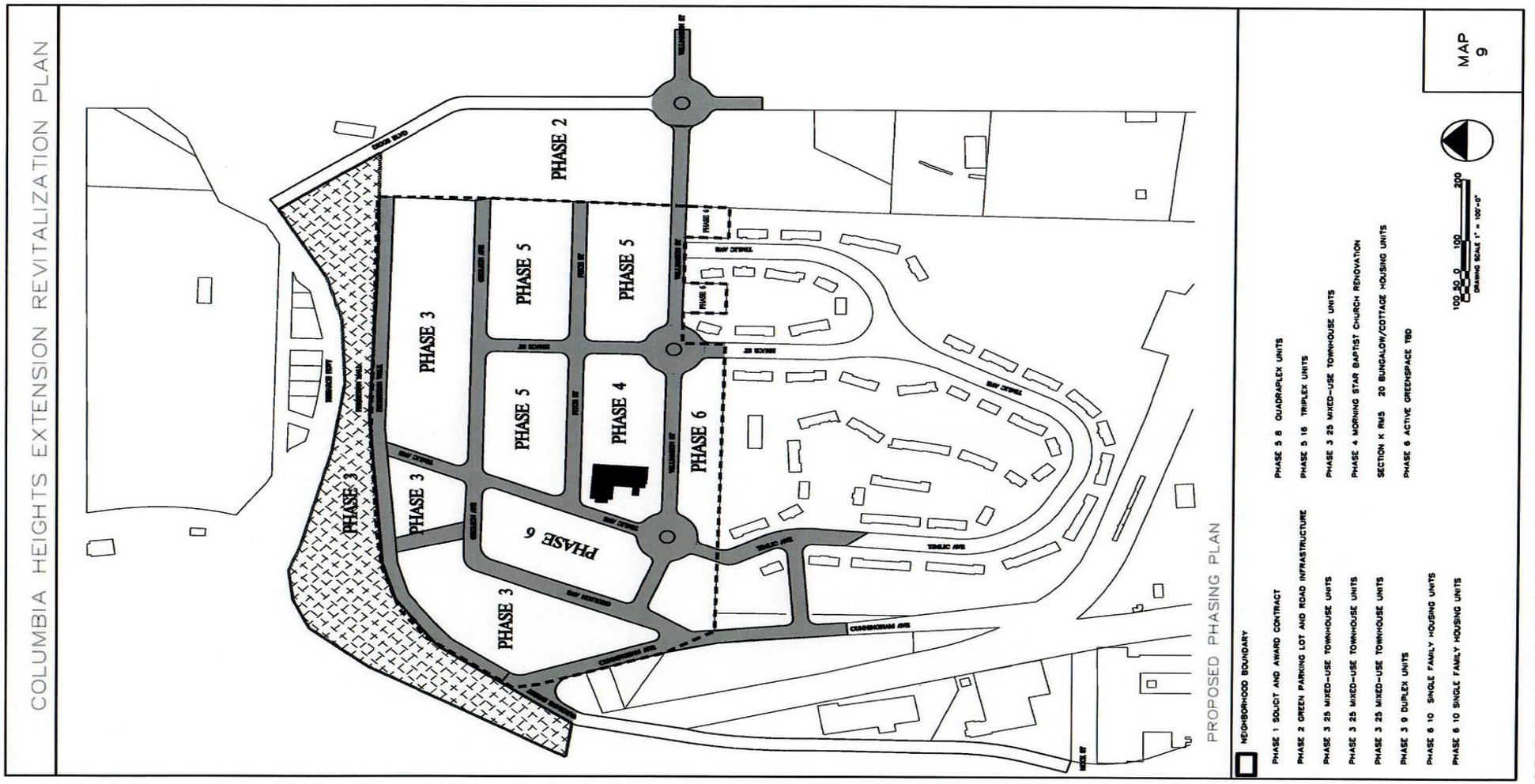
A development project of this scale requires:

- Sources of financing for construction and permanent mortgages for the homes
- A development company (or companies) to manage the project(s)
- Architectural, engineering, and landscape architecture designers to prepare construction documents, and
- Contractors for the site work, houses, and associated community greenspace projects.

Additional skills and expertise required to conduct and manage this project include:

- Identifying funding sources from federal and state programs
- Identifying funding sources from local, regional, state, and national foundations and corporations
- Applying for funds from these sources, and
- Establishing a Columbia Heights Extension Neighborhood Association to maintain their voice in the discussions and decisions made throughout the project.

Map 9. *Columbia Heights Extension Phase Plan*



A key decision will be to determine who and how this project will be managed. As a public-private partnership, this project will require significant staff time and resources from several City departments. Representatives of the Community Development Department and the Comprehensive Planning and Design Department have been part of this process from the beginning.

NCATSU recommendation is that a consulting group be hired to manage several aspects of this project listed above. This group would be responsible to develop and administer an integrated plan for this project including but not limited to the following:

- Work with City staff to determine what City funds are available to support the infrastructure costs for this project.
- Identify potential sources of construction and permanent financing for the project. Local representatives of Truist Bank have expressed interest in the project. The NC Housing Finance Agency has ongoing programs for affordable housing construction.
- Discussions with these groups and others will examine ways to structure financing for the various alternatives to develop this project.
- Work with City staff to identify and pursue grants and/or loans from the government, foundation, and corporate sources.
- Solicit proposals and contract with design teams of architects, engineers, and land planners to develop the concepts in this plan. Determine the qualifications for the designers based on their past work and their understanding of this plan.
- Solicit bids and contract with general contractors for site work and the green space project. Determine the qualifications for the general contractors based on their past work, their financial capacity to complete the work in a timely manner, and their understanding of this plan.
- Solicit bids and contract with homebuilders for the construction of new homes. Determine the qualifications for the homebuilders based on their past work, their financial capacity to complete the work in a timely manner, and their understanding of this plan.
- Communicate and coordinate with the Winston-Salem City staff on the progress, planning, and upcoming milestones for the project.
- Communicate with Don Flow Chairman and CEO of Flow Automotive Companies. He is chair of the Winston-Salem Open, chair of the Winston-Salem Alliance, vice-chair of the Golden Leaf Foundation, and a member of the Executive Committee of Piedmont Triad Partnership.
- Communicate with Bowman Gray Racing Family, as they are very interested in becoming an economic sponsor with NASCAR.
- Communicate with NASCAR, as they are very interested in promoting NASCAR within African American communities.
- Communicate with Wake Forest, WSSU, and Salem College, as they would be economic sponsors.
- Communicate with Brian Kingston, CEO of Brookfield' Real Estate - Brookfield Asset Management; Inc. a leading global alternative asset management with over US $600 billion of assets under management across real estate, infrastructure, and renewable power.
- Communicate with Craig Robins, CEO of Dacra; a real estate development company developing commercial, residential and mixed-use communities.
- Communicate with The City of Austin, Texas, Mayor Steve Adler.
- Communicate with Elon Musk, CEO Tesla.

An important responsibility of the implementation project manager will be to institute the Sustainable Imperative components of this plan. This design concept has recommended the use of energy efficiency and the use of solar energy technologies in the home designs.

NCATSU recommends the use of SystemVision™ by Advanced Energy to achieve energy efficiency for all new home construction. This program provides training and certification for builders and the homes they build to meet stringent energy efficiency standards. When houses are built to these standards, Advanced Energy will guarantee the heating and cooling costs for the homes will not exceed a certain amount. Habitat for Humanity in Forsyth County as well as many Habitat for Humanity groups across the state has adopted these standards in response to initiatives from the NC Housing Finance Agency. For more information refer to https://systemvision.org/.

NCATSU recommends the use of homebuilders that are certified as Energy Star Builders by the Environmental Protection Agency. The list for Winston-Salem does include several companies that are not local, however, it also references several local companies that may be well known to the City Staff. For more information refer to https://www.energystar.gov/partner_resources/partner_locator.

NCATSU recommend contacting Duke Energy to identify incentive programs they have for energy-efficient and green new home construction. For more information refer to Duke Energy Smart $aver Program, https://www.duke-energy.com/home/products/smart-saver.

NCATSU recommends the implementation manager track programs provide photovoltaic (PV) panels for low to moderate households in North Carolina. The use of PV panels to provide a renewable energy source of electricity is not well known among many homeowners. This is particularly true among low-income families. The cost of these systems can range from $15,000 to $20,000 for a residential scale system while providing between $700 and $1,000 per year in energy savings. There are groups in Greensboro who have demonstration projects to do this. The current efforts provide for full funding for these systems by private sources. Contact with Advanced Energy and the pending NC Clean Energy Fund will provide updates on the progress of these programs.

NCATSU identified a case study of a similar revitalization project funded by private investment firms, developers, and solar/electric energy companies. This case study should be reviewed by City officials as an alternative funding/partnership to incorporate energy technology for marginalized communities.

Tesla Energy, Brookfield Asset Management Inc., and Dacra announced a new initiative with the City of Austin, Texas to build the first Tesla Solar neighborhood and the nation's most sustainable residential community by combining state-of-the-art sustainable features such as Tesla Power Walls and Tesla Solar Shingles. "Neighborhood solar installations across all housing types and income will reshape how people live," said Elon Musk, CEO of Tesla. Tesla will collaborate with Dacra and Brookfield Real Estate business. "Combining Teslar's solar technology with Brookfield's real estate and renewables development capabilities will help us meet the demand for environmentally responsible communities of the future," said Brian Kingston, CEO of Brookfield's Real Estate business. "Our goal is to establish that fully-sustainable

neighborhoods are not only viable but the best practical and economic choice," said Craig Robins, CEO of Dacra. "Together with Brookfield and Tesla, we are trying to change the world by creating technology-driven, energy-independent communities that make the world a better place." Columbia Heights Extension's concept design is based on this paradigm shift. The City of Austin and Travis County have both announced commitments to sustainable development. In addition, Brookfield, Dacra, and Tesla will work together to incorporate transportation, technology, and energy solutions to create this new paradigm shift for residential community development. *"The City of Austin is excited for the arrival of these affordable options to housing powered by renewable energy," said Austin Mayor Steve Adler. "I am excited for the Tesla, Brookfield, and Dacra partnership's approach to sustainable energy and housing as an example of out-of-the-box thinking that continues to make our community a beacon of innovation for the rest of the country and world." Brookfield Asset Management, Inc. is a leading global alternative asset management with over US $600 billion of assets under management across real estate, infrastructure, and renewable power. Dacra is a real estate development company developing commercial, residential and mixed-use communities.*