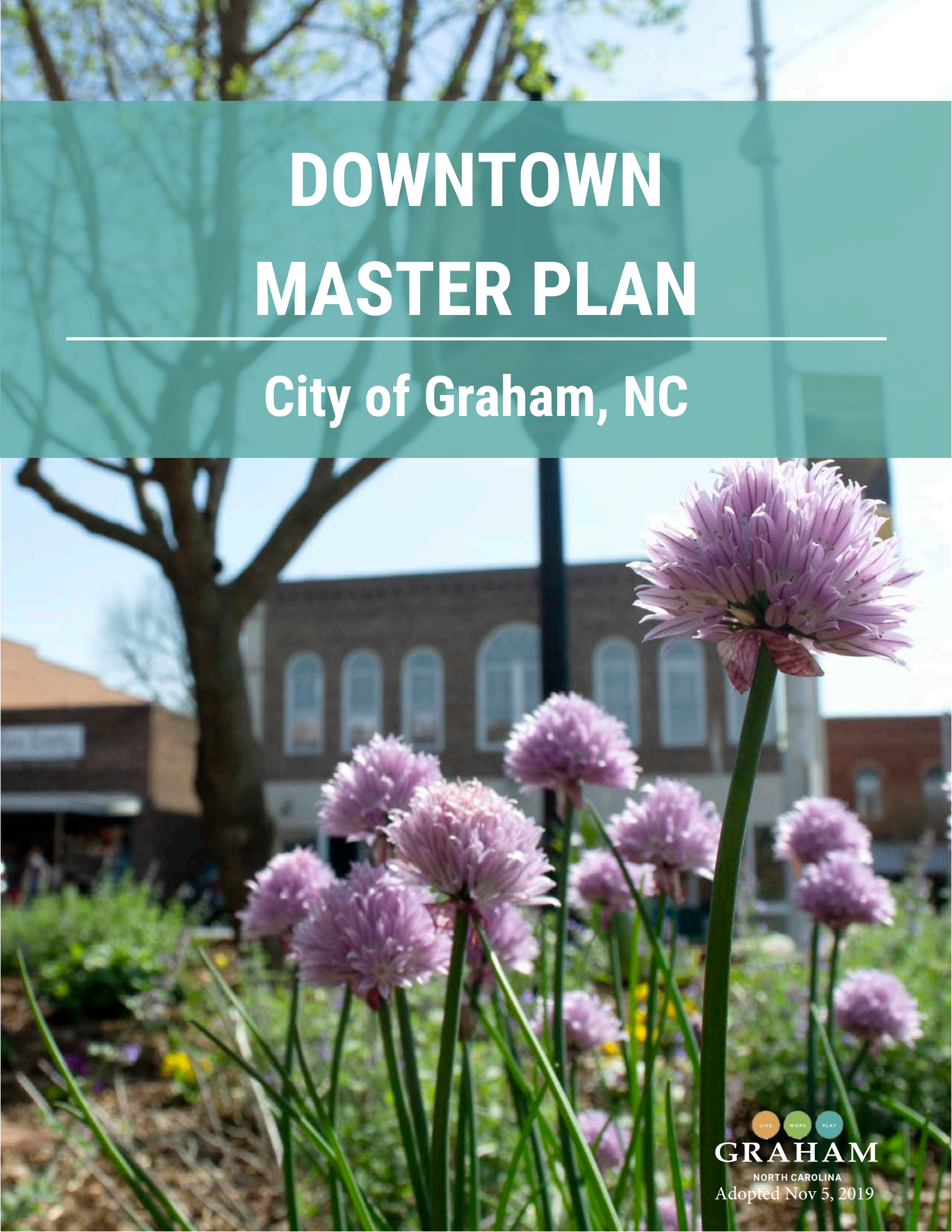

DOWNTOWN MASTER PLAN

City of Graham, NC

LIVE WORK PLAY

GRAHAM

NORTH CAROLINA

Adopted Nov 5, 2019

ACKNOWLEDGMENTS

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Purpose of the Plan

The Graham Downtown Master Plan is a planning document that will help guide the redevelopment of Downtown Graham. This plan reviews the process of developing recommendations and illustrates concepts of how recommendations could be implemented. There are a variety of existing conditions within Downtown Graham that elevate the need for a downtown master plan, including but not limited to:

- **Aging stormwater and other underground infrastructure;**
- **North Carolina Department of Transportation's (NCDOT) scheduled repaving/resurfacing of NC 87, including Court Square;**
- **Safety for all users and the desire for more public gathering space; and**
- **Large volumes of tractor trailer trucks – specifically log trucks – in the heart of downtown.**

Each of these factors are worthy of developing a plan to move forward; however, the presence of all of them reinforces the need for an action-oriented planning document that not only provides recommendations but establishes a path forward for the City of Graham to leave a legacy for generations to come.

Updating and upsizing aging infrastructure is a critical need for Downtown Graham. To keep up with new development, redevelopment, and provide opportunities for growth, significant improvements must be considered. These improvements will require tearing up larger portions of the street in Downtown Graham and present an opportunity for a new streetscape that can increase the amount of public gathering space and promote safety for all users. The vision established throughout the Downtown Graham Master Plan will assist the City with NCDOT coordination on funding and a potential new route for trucks that will allow underground utility and above ground streetscape projects to be implemented concurrently.

It is essential that the Graham Downtown Master Plan be used as a planning resource and not as a design document. The concepts that are recommended should be further developed if and when the City decides to move forward. Details such as parking (type and number), active and passive amenities, street materials, landscaping, and many more elements described in the plan are put forth as best practice and can be refined or altered during the design phase of each project.

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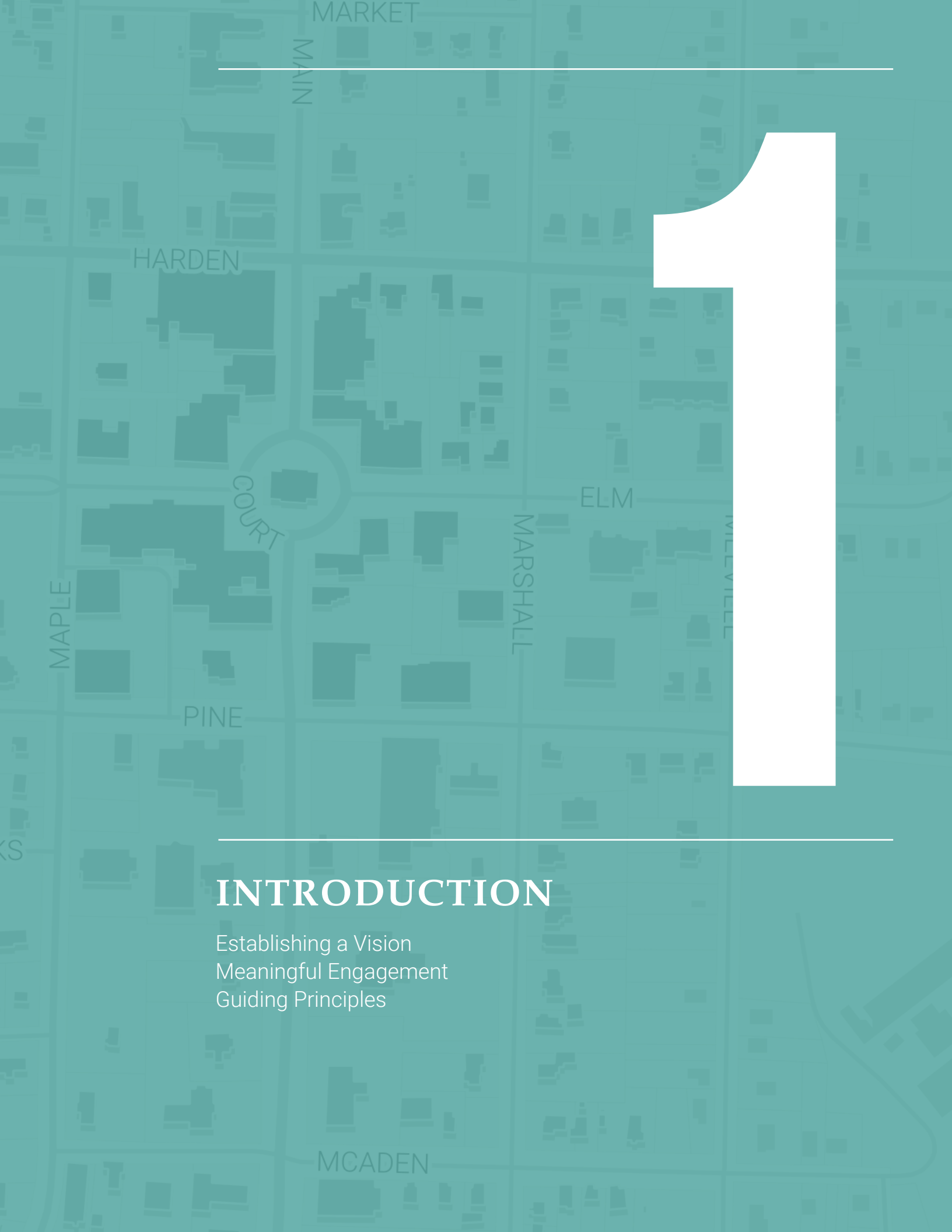

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INTRODUCTION

Establishing a Vision
Meaningful Engagement
Guiding Principles


GRATAM
LIFETIME

INTRODUCTION

The City of Graham is embarking on a journey to continue revitalizing the community through transforming downtown. Graham understands that the heart of downtown must serve several civic and commercial functions; it must be the central gathering space, center of commerce, and inviting and comfortable for residents and visitors. The City can accomplish this by focusing on the public realm – the space from building face to building face – that the City can control and influence. As public dollars are invested into the community's public realm, investors notice and will follow suit. As projects that reimagine the public realm unfold, the fabric of the community is stitched together leaving a lasting legacy for generations.

Transformation cannot happen overnight and must start with a sound, implementable plan. The road to success takes perseverance, a steadfast staff, leadership from mayor and council, and community support standing behind the same principle foundation – to reestablish the heart of the community in downtown. This chapter seeks to introduce the City of Graham Downtown Master Plan and review how solutions have been developed. The following are key components and will be described in more detail on the following pages.

Key Components of the Plan

Establishing a Vision:

The purpose of the Graham Downtown Master Plan is to reestablish the heart of the community – Court Square and approaching 100 blocks – through reallocation of space within the public realm to better accommodate people (people who drive, walk, and bicycle within the community). Reallocation of space within the public realm will serve as an economic catalyst within Graham attracting developers from across the region.

Meaningful Engagement:

A plan of this nature must start with one simple word – LISTEN. Three workshops, stakeholder meetings, and hundreds of personal interactions allowed the community's voice to be heard throughout the process.

Guiding Principles:

The Plan seeks to bring the community closer together. It is only fitting that our guiding principles for Graham were crafted through meaningful engagement with the community.

Establishing a Vision

The City of Graham Downtown Master Plan establishes a vision for creating a thriving destination around the Court Square and gateways into the community. This vision is focused on people. Investing in changes in downtown must consider the safety, comfort, and mobility of people of all ages and abilities.

With direct access to the Interstate 40/85 corridor and proximity to larger cities, including Greensboro, Durham, and Raleigh, a vibrant and attractive downtown can establish Graham as a regional destination where local businesses can prosper, and the community will thrive. This Plan recommends changes to Graham's public gathering spaces, streetscaping, stormwater and utility design, traffic patterns, bicycle and pedestrian facilities, parking, and much more. While the plan focuses on Downtown Graham — including Court Square, the streets leading to and from it, and the mixture of land uses one to two blocks away from it — a comprehensive review of the larger transportation network is also included. Recognizing that access to downtown is critical, the project team reviewed the Main Street corridor entry sequence from Interstate 40/85 to Albright Avenue, identifying opportunities for multimodal connections throughout the community. The results are recommendations that will create multimodal connections throughout Graham, transforming not only the downtown area but also the most direct artery into the heart of the community.

In developing the Plan, data collection and technical analyses were balanced with public input and comments from local stakeholders—this led to recommendations that will prepare Downtown Graham for future investments without compromising the desires of the public. While a variety of factors were considered, the following goals were paramount during the planning process and development of recommendations:

Project Goals

Safety in Design

Safety for all users can be viewed in three ways: in terms of fatalities or crashes, or in terms of user comfort. More active transportation users and well-designed infrastructure can help reduce fatalities and crashes and increasing pedestrian and bicyclist comfort [Jacobsen, P. L. (2003). "Safety in numbers: more walkers and bicyclists, safer walking and bicycling."].

Economic Development

Walkable neighborhoods typically have lively, populated streets and promote commercial exchanges. Having spaces that are enjoyable to walk or bicycle to can encourage more interaction at storefronts and attract more potential buyers [Litman, Todd (2018). "Economic Value of Walkability"]. Active transportation infrastructure, especially for bicycles, are powerful draws for highly-skilled employees and for younger people [Love, L. L., & Crompton, J. L. (1999). The Role of Quality of Life inBusiness (Re)Location Decisions."). Investing in active transportation now can encourage community growth a diverse industry development for years to come.

Public Health

The World Health Organization identified that inactivity is one of the leading risk factors around the world [World Health Organization (2018). "Physical Inactivity"]. People who use active transportation generally add to their daily activity by adding their travel time, and in some cases, those who commute by bike spend more time exercising in other capacities (like recreation or fitness reasons) than those who do not [Panik, Morris, Voulgaris (2019). "Does walking and bicycling more mean exercising less? Evidence from the US and the Netherlands"]

Meaningful Engagement

Listening to the community is essential to develop cohesive recommendations for Downtown Graham. Multi-day workshops allowed the project team to collect data, interview stakeholders, facilitate open house meetings, and reach out to people that live and/or work in Graham. This led to several individuals and groups offering feedback, and while comments and feedback varied, everyone's voice influenced how concepts were developed and refined.

VISIONING AND DISCOVERY WORKSHOP

In February 2019, the project team and City staff conducted a Visioning and Discovery Workshop with community stakeholders, the project advisory committee, and the general public. The workshop allowed leaders in the community to collaborate with design experts to discuss the vision for Downtown Graham. The workshop used tools such as visual preference surveys and semi-structured interviews to encourage leaders to think about what they want their community to look like in five to ten years.

The team met with several community stakeholders, including:

- **Business Owners**
- **City Staff**
- **Advisory Committee**
- **Middle School Students**
- **Members of the General Public**
- **Property Owners**
- **Local Church Leaders**
- **City Council**

During the workshops, the project team created inventories of existing conditions, including parking counts and roadway dimensions; the team also reviewed the overall character of downtown. This data shaped the Plan's recommendations, ensuring that the vision created is both realistic and contextually sensitive.

The project team and the City hosted an Open House on February 26th at Beer Co., on West Elm Street. The event was a drop-in style meeting, with everyone in Graham invited to learn about the scope and purpose of the project and the process. Listening to the community was the main objective of this meeting. Community members were given the opportunity to express ideas, barriers, parking preferences, and development priorities through interactive activities. Participants were asked to describe their vision for Graham in a single word, and to highlight roadway segments that made them feel unsafe or uncomfortable. Findings from the Open House are illustrated in the followng pages.

February 25th to 27th

Balancing Priorities for the Local User

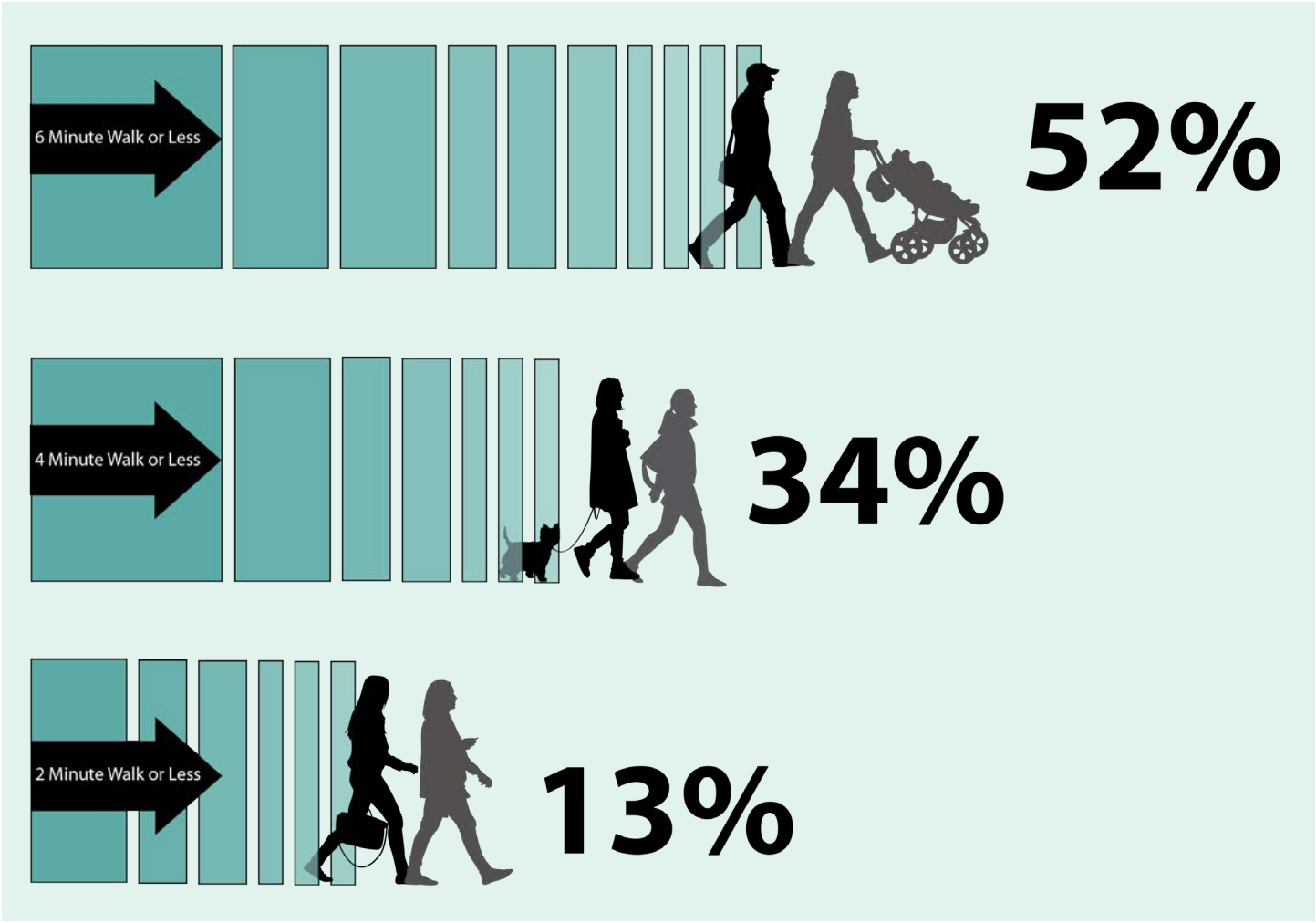
Balancing Priorities for the Streetscape

Balancing Priorities for Mobility Choice

What do you love about downtown Graham?

What amenities do you want in downtown?

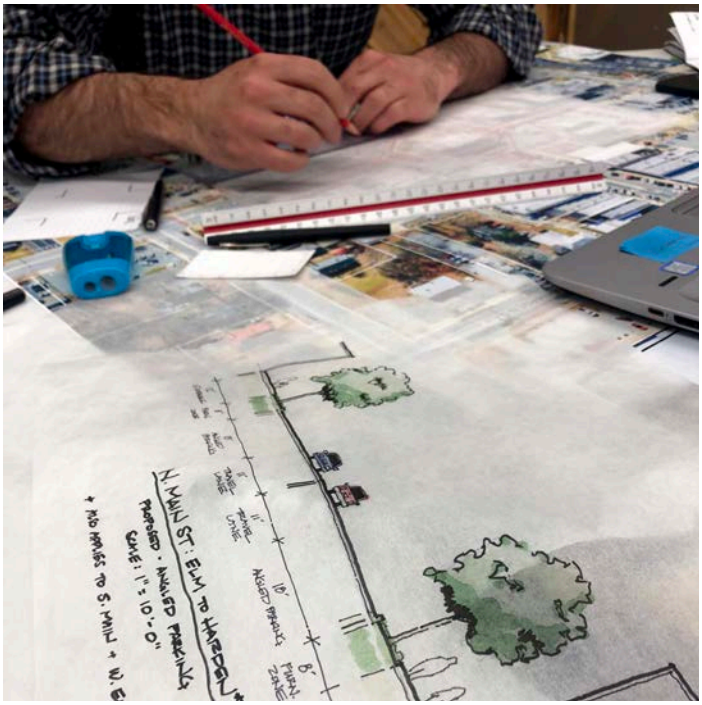
How far would you walk to your destination?

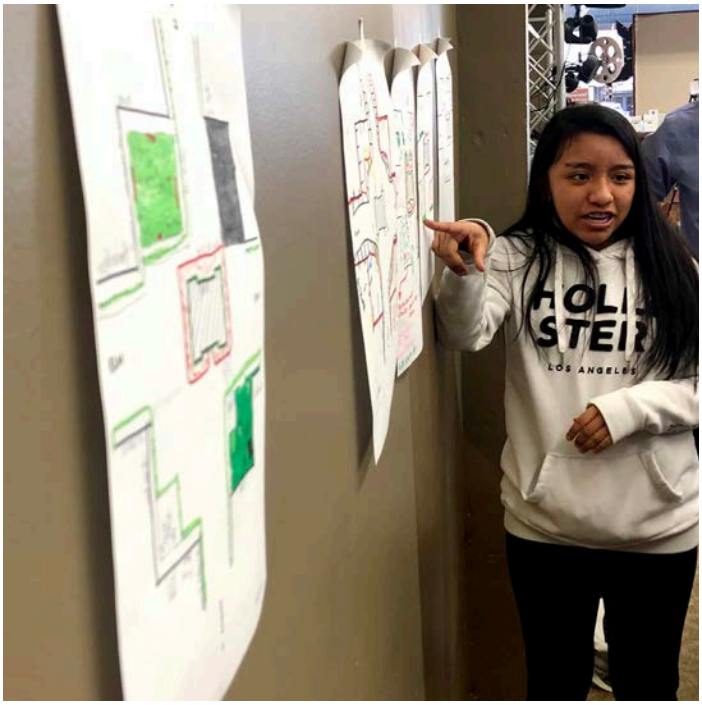


DESIGN WORKSHOP

Following February's Visioning and Discovery Workshop, the project team hosted a Design Workshop in early April. During this event, the team created hand-drawn concepts for downtown Graham while both answering community members' questions about the design process and incorporating their thoughts and feedback in real time. The Design Workshop engaged several stakeholders that were a part of initial discussions during the Visioning and Discovery Workshop including middle school students from Graham Middle School.

April 1st to 4th





RECOMMENDATIONS REVEAL

Through a meaningful engagement process, the project team turned the community's desires into conceptual designs that build on Graham's character. At the start of the evening, the project team presented residents with the project's guiding principles that were derived from the two prior public workshops, design strategies that shaped the project, and conceptual plans that illustrate the potential for Graham to transform into a regional destination. At the conclusion of the presentation, an interactive open house allowed more than 80 members of the community to review and comment on the direction of the plan and have one-on-one conversations with the project team and City staff

July 11th

Guiding Principles

After listening to the community, the project team reviewed the notes, comments, and other forms of feedback to determine a set of guiding principles for developing concept designs and other recommendations for the City of Graham. The guiding principles included both themes heard from the community as well as key design principles that responded to the themes.

THEMES

Although a diverse group of community members participated in the Visioning and Discovery Workshop, it is clear that Downtown Graham is important to them all. Graham is significant to everyone in their own special way and everyone said they are excited to see what the future holds. The following are themes that capture the community's input for revitalizing downtown:

Graham Residents Want...

- **To protect Downtown's historic character.**
- **Visitors to feel drawn to Court Square, which is the heart of downtown.**
- **To support small business and arts in downtown.**
- **Downtown to be a welcoming destination for both locals and regional visitors.**
- **People to feel safe downtown after dark.**
- **To design spaces for people of all ages.**
- **To retain the small-town charm.**
- **To build a vibrant community.**

Design Principles

The themes that emerged from the public meetings and workshops shaped the City of Graham Downtown Master Plan's design principles. These principles respond to the themes expressed by the public and anchor the plan and the community to a set of common goals. Recommendations and concept design created through these design principles keep the plan focused on what Graham's residents believe is most important.

What's most important:

Intuitive access to downtown destinations

The stores, restaurants, parks, and bars in Downtown Graham are what make the area vibrant. Accessing those destinations should feel easy and natural.

Multimodal connections between places

While many places in Graham may be accessible by automobile, the recommendations in this plan will help connect places for people who are walking, biking, and wheeling.

Retain small-town aesthetics and charm

Graham's historic small-town charm gives residents a strong sense of pride and visitors a reason to make downtown a top destination.

Safety and enjoyment for all ages and abilities

From toddlers to grandparents, everyone should feel that there is something for them in Downtown Graham.

Community placemaking that brings people together

Downtown Graham should be not only a central geographic location, but also a place where the community can gather to live, work, and play.

Streets that place people first

Streets are Graham's lifeblood, and they need to be designed for the people that use them.

Design for the health and wellbeing of Graham

As Downtown Graham thrives, residents will become more active and engaged with their community.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MCBRIDE
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BANK

2

MULTIMODAL NETWORK

Network Philosophy
Existing Conditions
User Comfort
Proposed Network


ONE WORD
Welcoming
Thriving
FOOT-TRAFFIC
THRIVING
Young Professional

MULTIMODAL NETWORK

How residents and visitors travel to and from destinations within Graham is equally important as the destination itself. The heart of Graham, situated just under a mile from Interstate 40/85, contains the intersection of two primary state routes NC 87 and NC 54. While this may draw patrons to downtown it also contributes to heavy tractor trailer, vehicle, and pedestrian conflicts - a less than ideal environment within any downtown. Residents and visitors seek mobility options to arrive at their destination that make the trip as enjoyable as the destination. Graham is fortunate to have been established on a relatively compact grid system, allowing vehicular traffic to be spread onto other roadways and short block structure for pedestrians to navigate within downtown.

Through reallocation of space along the streets of Graham, modal options can be developed that increase walkability and bikeability while improving safety for all modes of transportation within downtown. This chapter will evaluate the existing modal network and establish recommended improvements for a successful and inclusive network.

Chapter Components

Network Philosophy:

A multimodal network must be intuitive for residents and visitors, provide modal options, alleviate dependency on motor vehicles, and contribute to the overall health and wellbeing of Graham.

Existing Conditions:

In order to understand what Graham needs we must evaluate its existing modal conditions. Average vehicles per day, origins and destinations, network gaps, truck traffic, and points of interest help establish a baseline for recommendations.

User Comfort:

A network is only as good as its perceived comfort. Is design self-enforcing of speed? Are sidewalks wide enough and separated by street trees and/or on-street parking? Are bicycle facilities appropriate for people of all ages and abilities and designed for the adjacent roadway speed? The answers to these questions and many more dictate the basic principles that must be established to facilitate user comfort for all future public and private projects.

Proposed Network:

The proposed network is a community wide connectivity plan that establishes Graham as a connected, engaged, and active community.

Network Philosophy

The Graham Downtown Master Plan's recommendations largely address Court Square in Downtown Graham. While vehicle movement is an important aspect for all communities, a connected transportation network can not be complete without modal options to reach a desired destination. These are listed first among all recommendations because the concept designs were shaped by the desire to restore Court Square's original intent - to prioritize commerce and people within Downtown Graham.

As Downtown Graham invests in the public realm, becoming a more inviting place for residents and visitors, the Court Square and connected network of streets must provide safe, comfortable and intuitive infrastructure for people to walk, bike, and drive. The recommendations in the City of Graham Downtown Master Plan are formed to satisfy today's demand for a more vibrant community in a way that still accommodates its long-term potential. Once implemented, recommendations from this plan will encourage more trips to Downtown Graham. These trips can be completed on a variety of transportation modes, each providing appropriate infrastructure that emphasizes that downtown is a place to go to and not merely travel through.

WHAT MAKES A GOOD MULTIMODAL NETWORK?

A well-designed multimodal network must consider and address the safety and comfort of all users while providing appropriate access to destinations within a community. The transportation system should provide mobility options and accommodate and/or prioritize more vulnerable users such as pedestrians and people riding bicycles along travel corridors and intersections. Safety should be prioritized over saving a few seconds per trip and the downtown multimodal network should be a place where all users are welcome. While the street network is connected for motorized vehicles, other modes of travel have fragmented or limited infrastructure. While installing a single bicycle or pedestrian facility might support and encourage active travel in one specific place, it is unlikely to have a greater impact on how community members travel. The more effective approach to encouraging bicycling and walking is through developing a network of interconnected facilities that run between key destinations.

Complete networks promote the following elements for all modes of transportation with specific attention to the needs of pedestrians and people on bicycles:

SAFETY

The frequency and severity of crashes are minimized and conflicts with motor vehicles are limited.

COMFORT

Conditions do not deter bicycles due to stress, anxiety, or concerns over safety.

CONNECTIVITY

All destinations can be accessed using a complete bicycle and pedestrian network with no gaps or missing links.

DIRECTNESS

Bicycling distances and trip times are minimized.

COHESION

Distances between parallel and intersecting bike routes are minimized.

ATTRACTIVENESS

Routes direct bicyclists and pedestrians through lively areas and personal safety is prioritized.

UNBROKEN FLOW

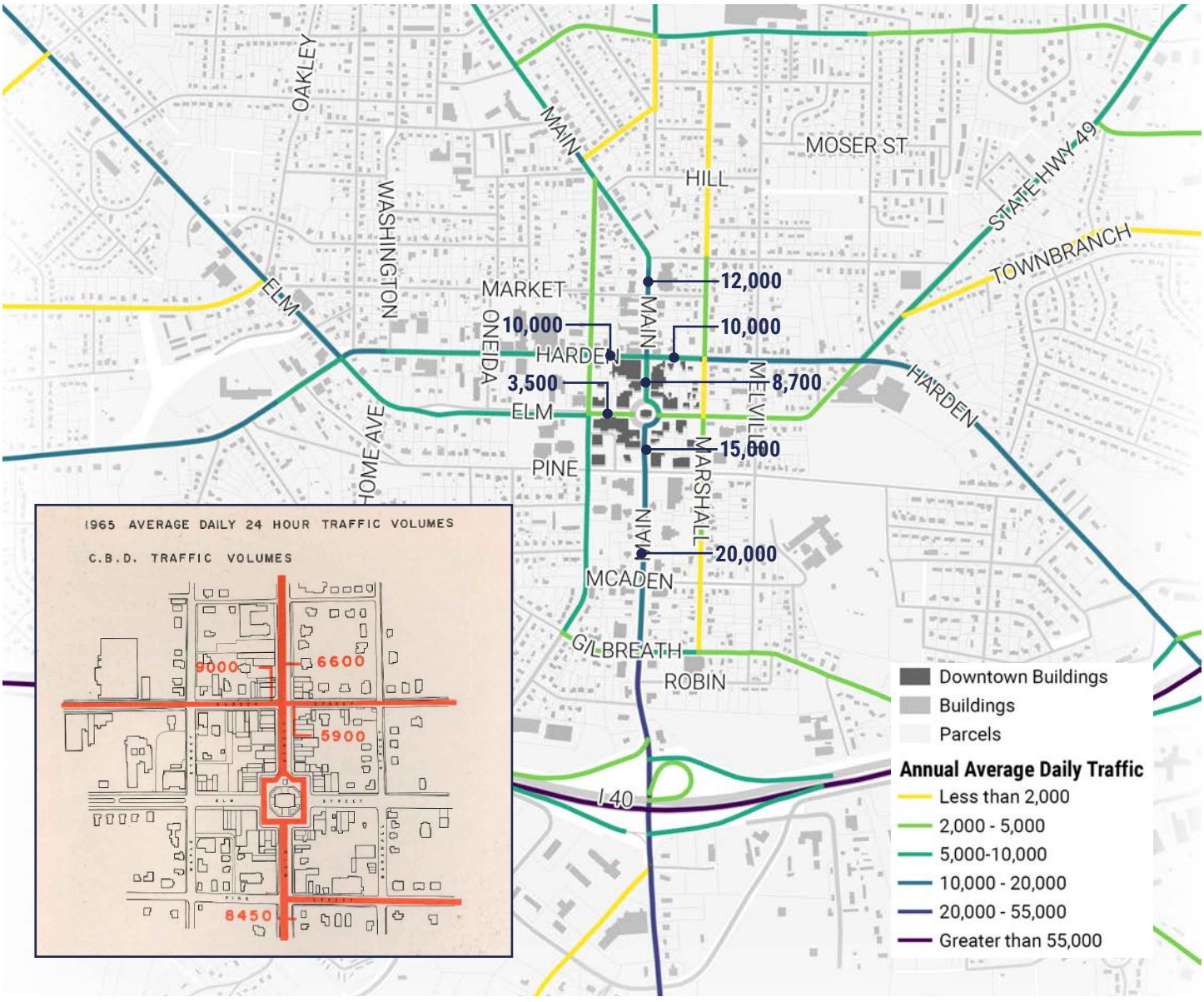
Stops, such as long waits at traffic lights, are limited and street lighting is consistent.

Existing Conditions

The project team reviewed the existing conditions throughout the community to understand the overall circulation and movement of people. Downtown Graham includes several short and walkable street blocks surrounding the Court Square. While some infrastructure exists (i.e., sidewalks, crosswalks, etc.) that would allow people to move to and around downtown Graham, most of the street network is designed to move vehicles and reduce delay. Decisions made in the past to designate Main Street as NC 87 continues to bring people to Graham but has limited the ability to reclaim the street as public space for all users. Several of the streets in and approaching Downtown Graham are lacking sidewalks on one or both sides. At present, there are no bicycle facilities within a quarter mile of Downtown Graham. A bike lane is planned for Pine Street that will provide connection east and west across the community.

Traffic volumes across the community have remained consistent for several years. In fact, volumes are similar to counts recorded in 1965 as seen below. Although there are a large number of tractor trailer trucks that use NC 87 to travel north and south of Interstate 40/85, the network of parallel routes has the capacity to accommodate additional vehicular traffic. The following map illustrates the traffic counts on the street network in and around Downtown Graham.

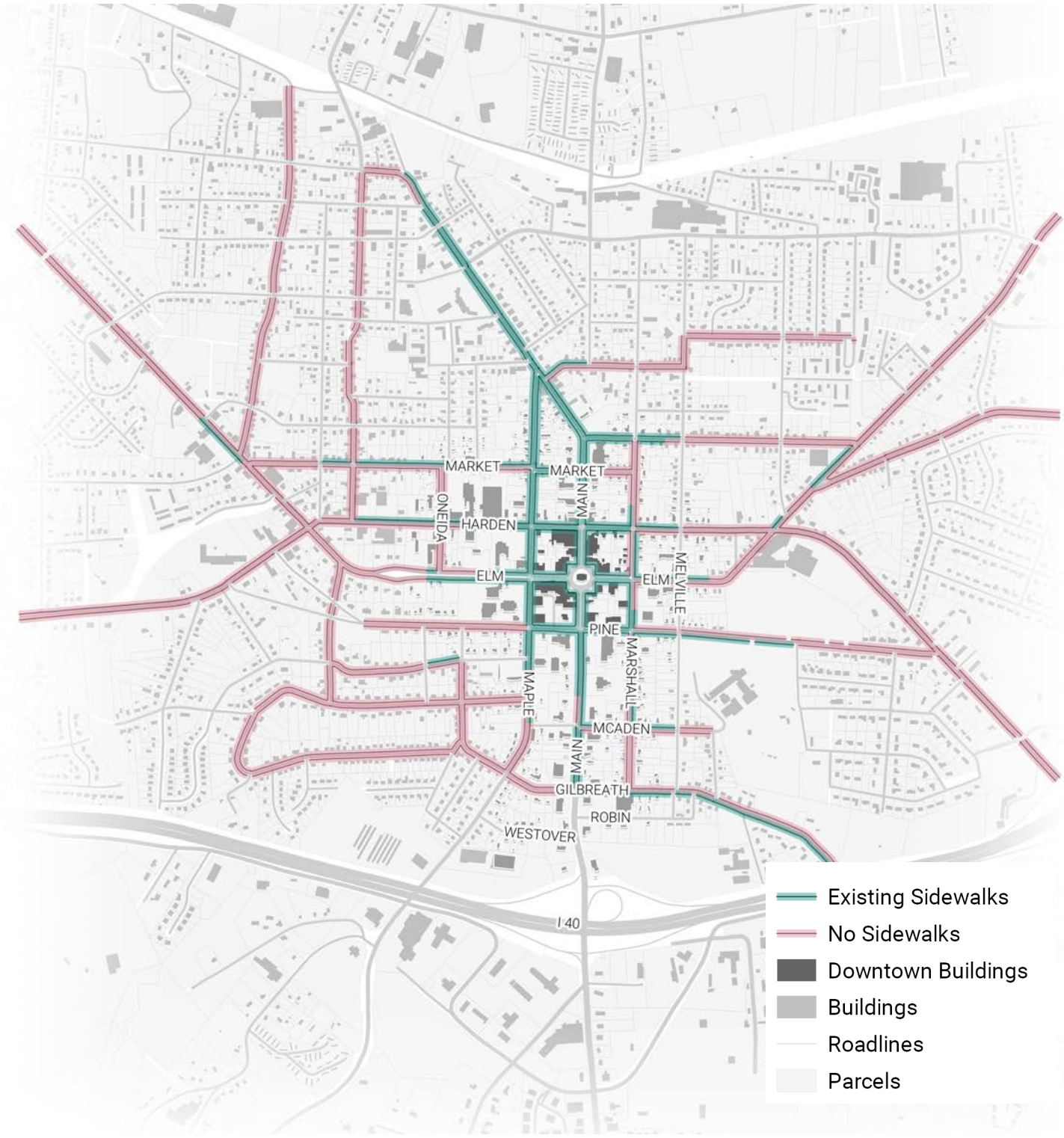
City of Graham Traffic Volumes



SIDEWALK INVENTORY

Sidewalks provide basic mobility for people walking and wheeling. In order for people to feel comfortable walking and wheeling for trips, they must be separated from fast-moving traffic from the beginning to the end of their trip. Disconnects in a sidewalk network reduce safety by requiring people to walk in the street to reach their destination, and limiting accessibility for those with physical disabilities. The map below shows the existing sidewalks and gaps along much of the transportation system in the City of Graham.

Proposed Elm Street Cross Section



User Comfort

A network is only as good as its perceived comfort. Is design self-enforcing of speed? Are sidewalks wide enough and separated by street trees and/or on-street parking? Are bicycle facilities appropriate for people of all ages and abilities and designed for the adjacent roadway speed? The answers to these questions and many more dictate the basic principles that must be established to facilitate user comfort for all future public and private projects.

Reimagining Downtown Graham starts with the comfort of all users. As the project team listened to the public through the Vision and Discovery Workshop, it was clear that although aesthetics, parking, and design character for downtown are important, the desire for a comfortable and safe infrastructure network to travel to and from downtown is critical. When considering new design concepts for Court Square and corridors approaching Downtown Graham, the project team focused on prioritizing safety for all users and incorporating gathering spaces for people, while designing for 20 mph traffic through Downtown Graham.

Pedestrian comfort is paramount for the City of Graham Downtown Master Plan. Downtown is accessible for several nearby neighborhoods as well as Graham Middle School. Separation from vehicular traffic is prioritized to promote safety but also provide opportunity for streetscape enhancements along several corridors. Increasing space for people to gather and streetscapes recommendations are fully discussed for Court Square, Elm Street, and Main Street in Chapter 3.

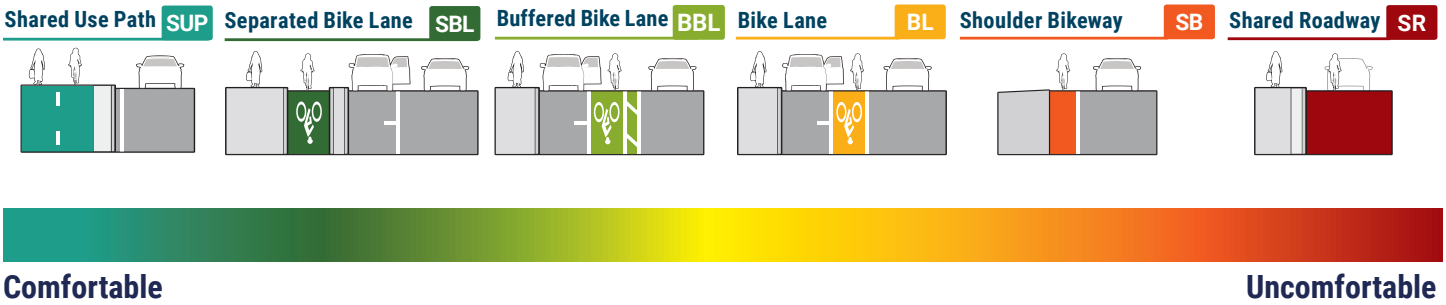
The project team assessed the existing network to identify connections for a network of bikeway facilities to connect Downtown Graham with other nearby destinations and/or residential areas. Bikeway facility recommendations consider specific criteria that impact the comfort of bicycle users. Designating appropriate facilities for people to travel on bicycles provides another mobility option for residents and visitors to explore Downtown Graham.

Bicyclist Comfort

Many people in the United States may not feel comfortable bicycling in mixed traffic scenarios; they may feel like traffic moves to fast, they may be less confident in their abilities, or they may be traveling with children or less-experienced family members and do not feel that bicycling is safe for the people joining them. The most effective networks--i.e., those that serve the most people—cater to the needs of those who make up this majority. Studies have found correlations between a user's perceived safety and their actual safety on the roadway.

To make these potential users feel safer, bicycle facilities must be separated from vehicular travel by horizontal distance and/or vertical separations. Horizontal distance moves the bicyclists away from motorized traffic into travel space that is delineated for them, and vertical separation creates visual and physical barriers between faster motorized travel and bicyclists.

Bicyclist Comfort According to Facility Type



Proposed Network

This Plan's recommendations for a multimodal network were based on the goals, existing conditions, guiding principles listed in Chapter 1, and best design practices from successful installations across the United States. A variety of recommendations were developed for the overall network including:

Recommendations

Gateways
Key intersections that serve as an entry into Downtown Graham. Although some of these intersections are proposed outside of the core of what many consider downtown, they are locations that should signify a transition into a more downtown environment where people move in a variety of modes and vehicular traffic speeds are low;

Gateway Corridors
Streets that bring residents and visitors directly into the downtown environment. Not all gateway corridors begin/end at the aforementioned Gateways, but each corridor connects the community directly to the Court Square;

Secondary Routes
Connecting and parallel streets that allow for travelers in Graham to go around downtown but also provide access to a variety of other businesses and residences; and

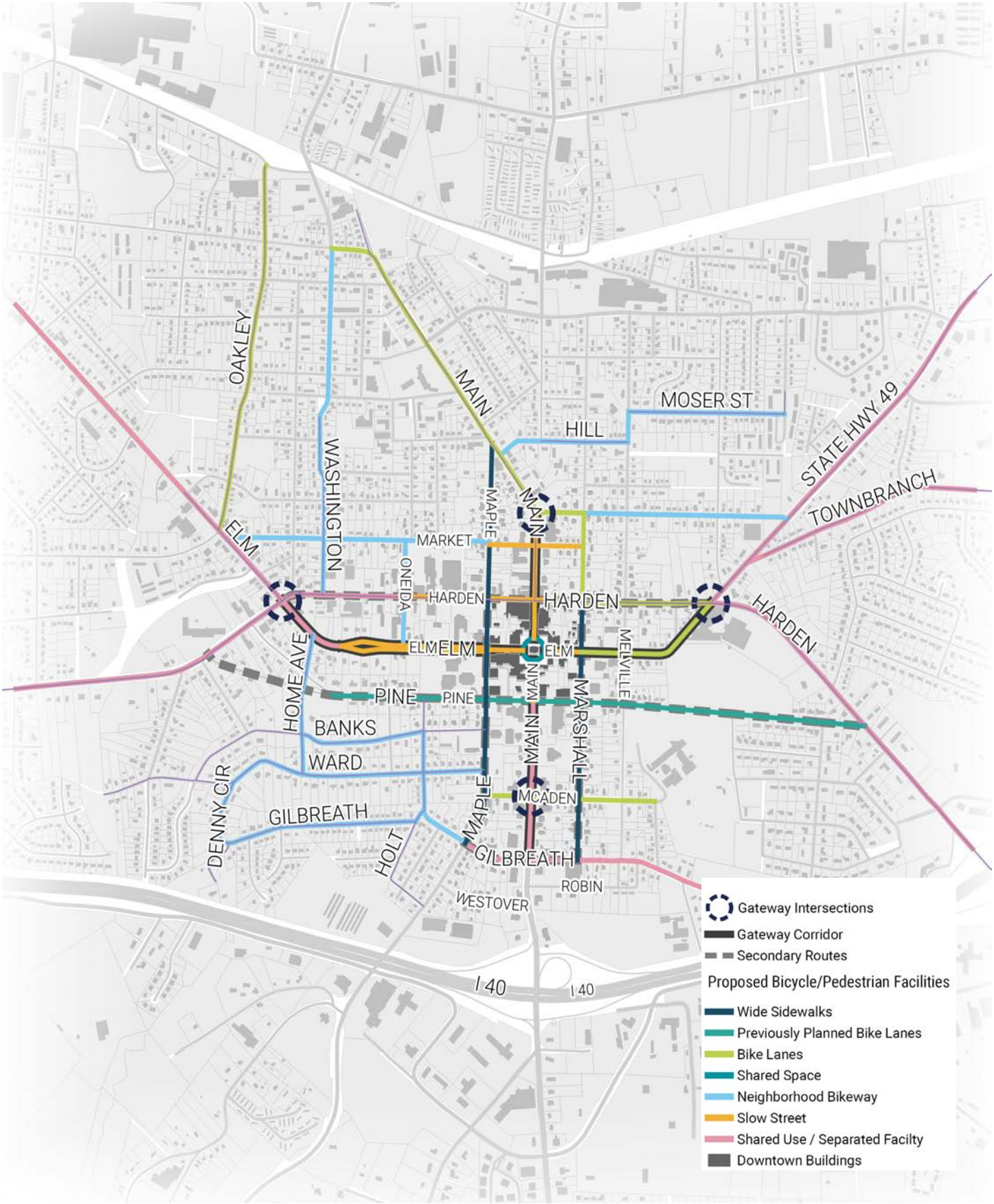
Bicycle and Pedestrian Facilities
A network of proposed facilities that provide designated space for bicycle users and pedestrians to not only access Downtown Graham but to explore the entire community.

GATEWAYS AND SECONDARY ROUTES

The map on the followng page illustrates the proposed network of Gateway Corridors and Secondary Routes along with locations for Gateway features and proposed street segments for reallocating existing right-of-way to provide new street cross sections.

NCDOT coordination is a critical component of these recommendations. The City should discuss the opportunity to re-route NC 87 off Main Street to remove heavy truck traffic in Downtown Graham. The City should also discuss the opportunity to take over the ownership of Main Street from NCDOT through a road swap of Marshall Street.

Proposed Network: Gateway Corridors and Secondary Routes

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3

STREETSCAPE + PUBLIC SPACE

Gateways
Court Square
Elm Street
Main Street
Green Space/Adaptive Reuse
Parking

N. MAIN ST: ELM TO HARDY*

PROPOSED - ANGLED PARKING

SCALE: 1" = 10'-0"

* ALSO APPLIES TO S. MAIN + W. ELM

18' ANGLED PARKING

8' PARK. ZONE

12' SIDEWALK

11' TRAVEL LANE

11' TRAVEL LANE

8' ANGLED PARKING

5' SIDEWALK

STREETSCAPE + PUBLIC SPACE

A community's greatest potential for change is within its public realm. Streets make up the largest portion of the public realm. The character and allocation of space on a street plays a key role in user experience. Streets should be attractive, inviting, accessible, safe, and comfortable for all users. Often, this space is underutilized and not serving all users and/or needs in the community. Graham is embracing its potential for creating a vibrant place and taking a great streets approach to revitalization. Great streets place people first – people that drive a car, ride a bicycle, walk, shop, live in, or visit downtown. A people first design approach celebrates life, creates inviting and vibrant public spaces, and provides opportunity for community growth. Investment in the public realm will stimulate private investment. Emphasis on restoring and revitalizing the public realm is woven through success stories in communities across the country. Graham is ready for a catalytic change in downtown that once again establishes the heart of the community.

This chapter provides key insight into the reallocation of space along downtown streets, establishes gateways into the community, and emphasizes opportunities for public gathering spaces. This chapter briefly reviews existing conditions and describes recommendations for each of the following elements:

Project Elements

Gateways:
Gateways serve as transitions and demarcate an entrance to a community. Graham currently has four primary entry points into downtown. Single lane roundabouts will serve as Graham's gateways filled with welcoming landscape, art, and directional wayfinding.

Court Square:
Communities across the country are searching for their postcard photo. For Graham, Court Square is that photo and should be celebrated as the heart of the community. This space must be transformative, iconic, vibrant, and inclusive to all.

Elm Street:
Elm street should serve as a continuation of Court Square and be established as Graham's festival street. Outdoor dining, lush landscape, traditional materials, and catenary lighting will set the stage for weekly farmers markets, concerts, and events.

Main Street:
Main Street can set the stage for Court Square funneling residents and visitors into the heart of downtown through a vibrant tree lined streetscape framing the view of Court Square and providing multimodal connections along this gateway corridor.

Green Space/Adaptive Reuse:
Gathering space is fundamental to life. This is where community is built, children play, and nature is enjoyed. Adaptive reuse of raised buildings turned into fine dining or green spaces establish the tone of Graham's revitalization.

Parking:
On arrival to a destination, parking must be adequate, easily accessible, and connected to the heart of downtown. Parking accessibility, capacity, and wayfinding signage are critical to success.

Please note this plan is conceptual in nature and all recommendations should be done in cooperating with property owners.

Gateways

Four gateways are proposed for the City of Graham Downtown Master Plan. Roundabouts are proposed as the intersection treatment at each of the gateways to reflect the circulation around Court Square and to provide opportunity for public art, branding, or monumentation in the center of each feature. The concept design for the Main Street corridor are discussed in more detail later in this chapter. The following illustrate the concept designs for the four gateway roundabouts approaching Downtown Graham.

Through the planning and design for each gateway rounabout, every effort will be made to minimize the impacts to adjacent property owners.

HARDEN AT EAST ELM

Harden Street and East Elm Street is a skewed intersection with poor sight lines. Currently signalized, the intersection is struggling to accomadate the needs of pedestrians, vehicles, and heavy vehicles that frequest it daily. At one location pedestrians are asked to cross over 130 feet without protection and tractor trailers can not make an eastbound turn onto Harden without the fear of cliping a vehicle in the left turn lane. Due to the configuration of the existing intersection and skew of the roadway, a roundabout is recommended. A roundabout resolves the geometric issues and reduces speeds. While this solution may reduce the risk of crashes and property damage, it also provides a visual gateway upon entering Downtown Graham from the east. The roundabout marks the east entrance into Downtown Graham.

HARDEN AT WEST ELM

The intersection of Harden Street and West Elm Street is a sea of asphalt with numerous curb cuts contributing to driver confusion. Currently signalized, the intersection prioritizes motorists continuing along NC 87 and struggles to provide adequate pedestrian facilities. Due to the configuration of the existing intersection and lack of clarity, a roundabout is recommended. A roundabout resolves the geometric issues, reduces turning speeds, and improves traffic flow. Similar to the roundabout at Harden and East Elm, Harden and West Elm provides a visual gateway marking the west entrance into Downtown Graham.

INTERSTATE BRIDGES

The first visual of the City of Graham that users will encounter are the interstate overpasses. Decorative treatments to the facades will signal to drivers that they are entering the city.

Roundabouts:

Roundabouts are proven to improve safety and mobility for all users, including multimodal, while also maintaining the capacity of the existing intersection. Design includes larger central islands that can be landscaped or hardscaped, splitter islands (similar to pedestrian refuge islands), on the approaches to provide safe crossing locations for pedestrians and bicyclists, and provide a transition of speed through deflection. On average, roundabouts:

- Improve traffic flow
- Reduce overall collisions by 37%
- Reduce injury collisions by 75%
- Reduce fatal collisions by 90%
- Reduce pedestrian collisions by 40%
- Decrease average pedestrian and vehicle conflict points from 16 at a traditional signalized intersection to 8.

(WDOT, IIHS, FHWA, NCHRP 672)

Harden at East Elm

Harden at West Elm

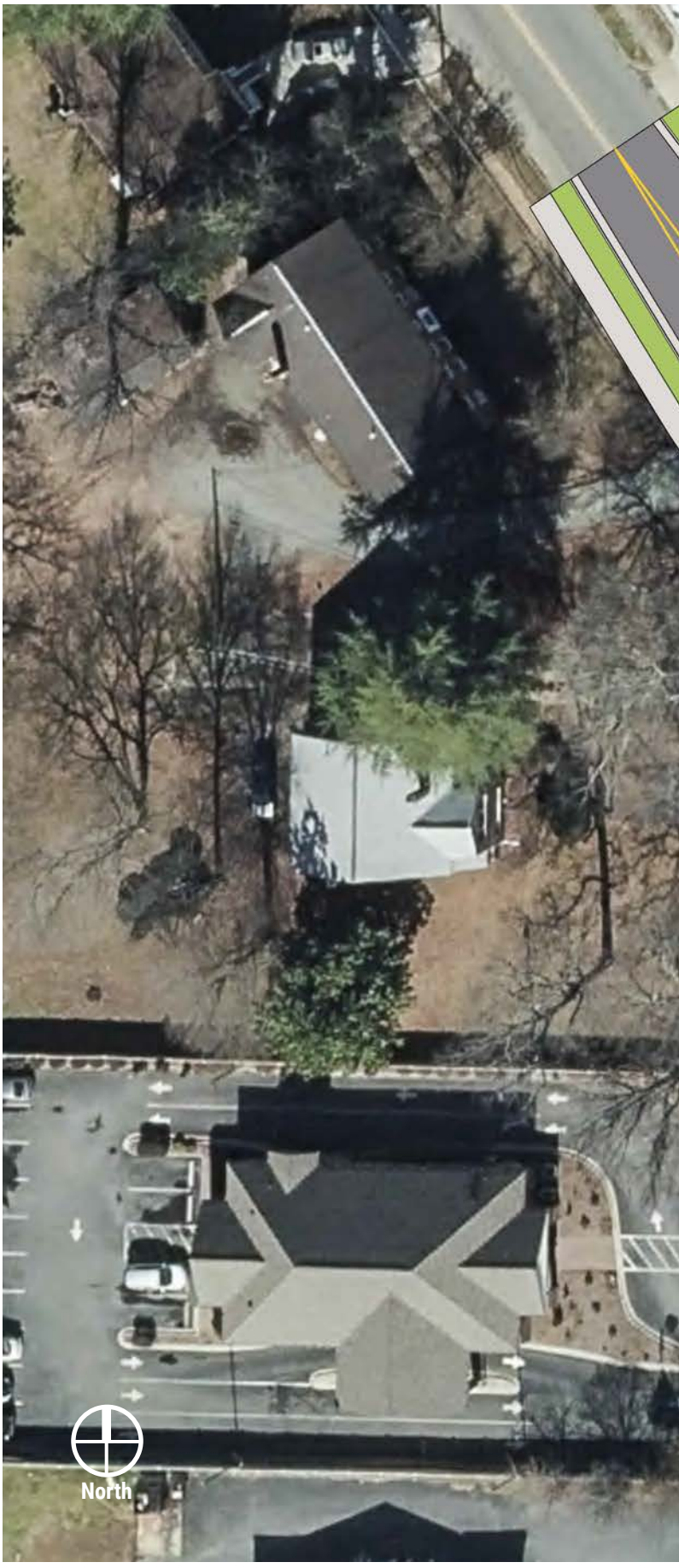
SOUTH MAIN AND MCADEN

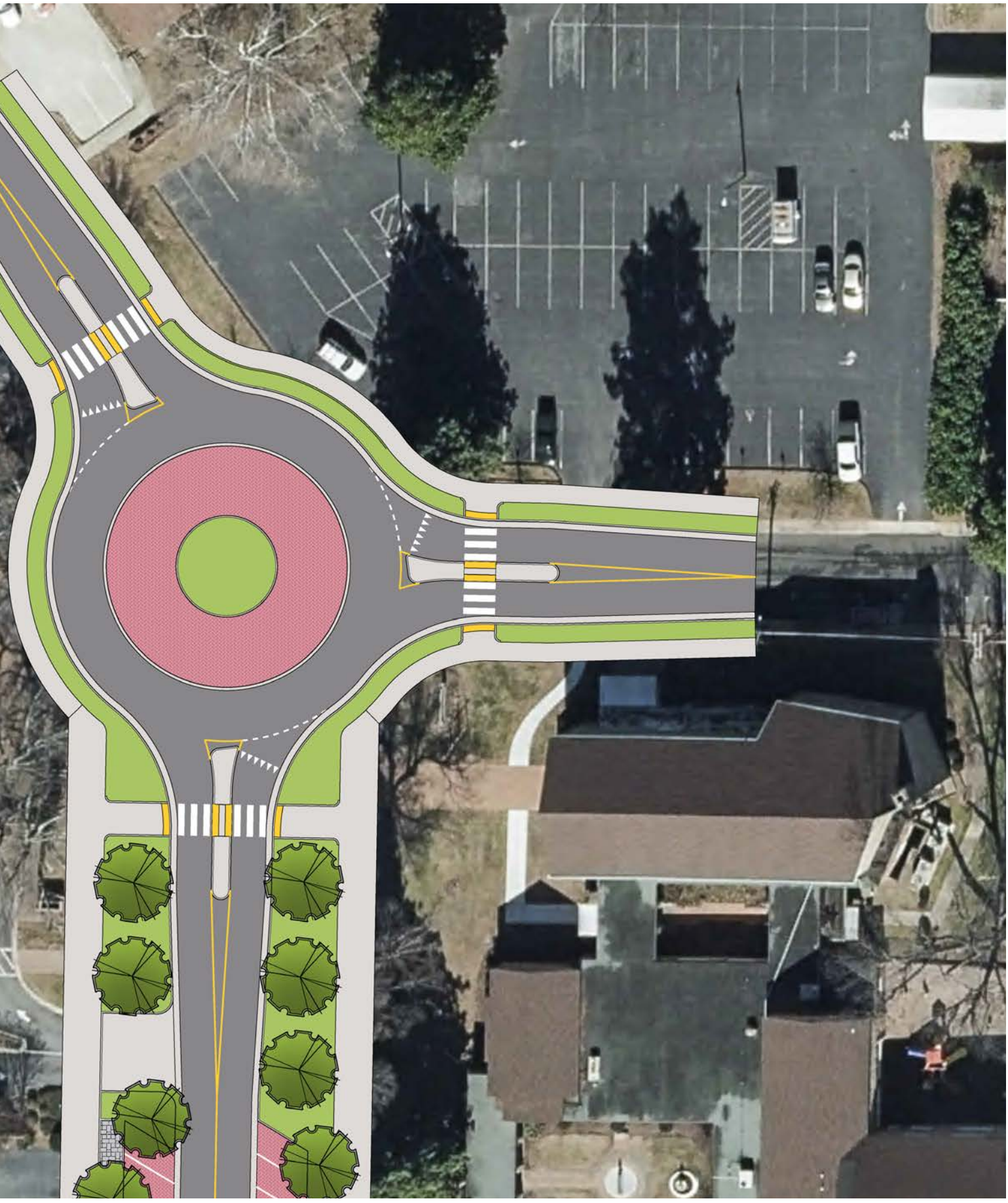
A roundabout is recommended at the intersection of Main Street at McAden Street to require residents and visitors to slow down prior to entering the Downtown area and serve as the southern gateway into Downtown Graham. This 120 foot single lane roundabout (60-foot inscribed radius) will be equipped with a truck apron to allow for three-quarter turning movements of the design vehicle (WB-67). The large center island can accommodate a lush landscape and sculptural elements to frame the view of Court Square. A shared use path proposed along both sides of Main Street is proposed to continue through the intersection to promote active transportation for local trips. Splitter islands on all approaches of the intersection allow pedestrians to cross one lane and direction of travel at a time and provide protected pedestrian refuge within the islands.


Roundabout Not Advised
NOT FOR CONSTRUC

NORTH MAIN AND ALBRIGHT

Albright Avenue at North Main Street is a skewed intersection that is currently stop controlled for the westbound approach. Main Street is free-flow and introduces an abrupt veer on the street just north of Albright Avenue. Based on city staff review and public comment, vehicular speeds and geometry contribute to an increase in crashes – resulting in a high number of property damage crashes. Main Street transitions from commercial to residential land uses at the intersection of Albright Avenue. Due to the configuration of the existing intersection and skew of the roadway, a roundabout is recommended. A roundabout resolves the geometric issues and reduces speeds. While this solution will reduce the risk of crashes and property damage, it also provides a visual gateway upon entering Downtown Graham from the north. Similar to the roundabout at McAden Street, Albright Avenue marks the north entrance into Downtown Graham.





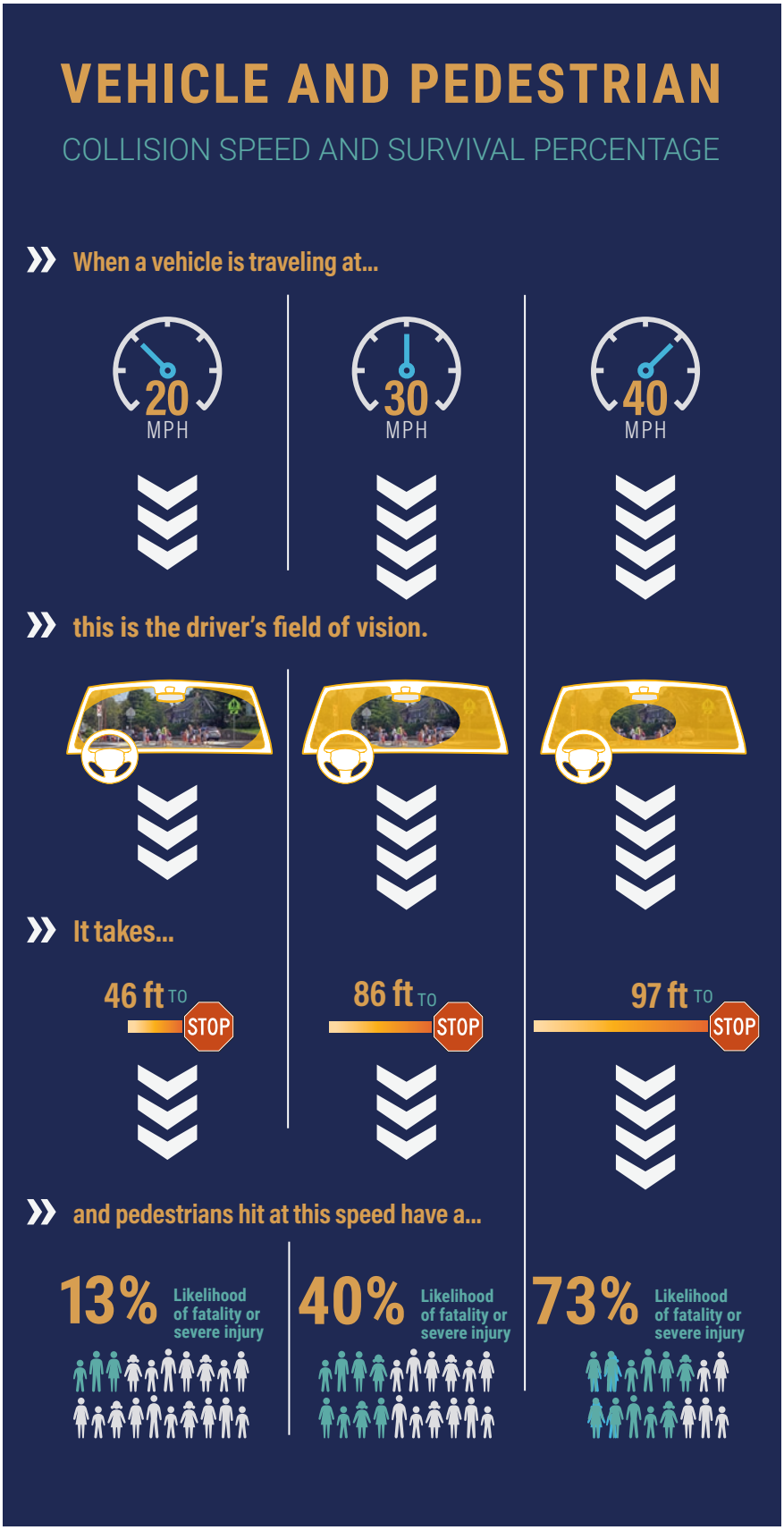
Court Square

Court Square is a paradox of downtown Graham. The Neoclassical quality of the Alamance County Historic Courthouse is a major contributor to Graham's character and naturally attracts residents and visitors to the Square. However, the current street design and allocation of space makes Court Square an inhospitable place to experience as a pedestrian, bicyclist, or motorist. For Court Square to fully realize its potential as a welcoming destination, the safety, accessibility, and infrastructure issues outlined below should be addressed.

SAFETY

Motorists traveling at excessive speeds makes navigating Court Square dangerous for people of all ages. Public comments at the February 2019 workshop identified pedestrian safety throughout downtown as a theme that needed attention, with multiple comments focused on Court Square. Vehicular speed is a critical factor that affects user comfort and safety. If struck by a vehicle, a pedestrian has a 95% chance of surviving if the vehicle is traveling 20 mph. The chances for survival drop to 10% if the vehicle is traveling at 40 mph.

The lack of street design within Court Square contributes to an unsafe environment for all modes particularly pedestrians. Motorists, including large log trucks, are largely unrestrained by poorly defined and excessively wide travel lanes. Pedestrians hoping to cross Main or Elm Street are facing a nearly 70-foot crosswalk and have little time to judge whether a driver is going to yield, continue through the Square, or turn off onto Main or Elm. The wedge shaped "refuge islands" located at the midpoint of the stamped brick crosswalks offer no physical separation for pedestrians from the adjacent traffic. Bicyclists traveling through Court Square must contend with the high speed, volume of motorist, parked cars on both sides of the Square, and the uncertainty of turning movements onto Main or Elm at high speed.



ACCESSIBILITY

Accessible Crosswalks and Ramps

The lack of up-to-date accessible facilities in Court Square discourage the most vulnerable members of the population from safely accessing and enjoying Downtown Graham. The curb ramps located in Court Square lack required detectable warning surfaces that help visually impaired persons transition between the sidewalk and street. The crosswalks in Court Square are skewed, which require pedestrians to travel longer distances than if the crosswalks were aligned perpendicular to the street. Uncontrolled crossing distances should ideally be no more than 22 feet. Currently the crossings in Court Square are more than three times that distance.

AGING INFRASTRUCTURE

Skewed Intersection

The aging infrastructure in and beneath Court Square is a key driver of this plan and should be addressed to allow for future growth and expansion of Downtown Graham. Fire hydrants located in the Square rely on water lines that are more than 100 years old. Court Square lacks methods for stormwater control, which puts businesses along the Square at risk of flooding during heavy storm events. Shared sewer services run beneath buildings, which is problematic for the existing building foundations and for any future modifications or new buildings.

RECOMMENDATIONS

The redesign of Court Square begins with creating a shared street. A shared street, also known as a woonerf, prioritizes pedestrian and bicycle movements by slowing vehicular speeds and design features that clearly communicate that motorists must yield to all other users (FHWA 2017). Shared streets allow for pedestrians, bicyclists, and motor vehicles to mix within the same space. This is accomplished by a design that encourages low motor vehicle volumes and speeds, is void of elements such as vertical curbs, signs, and pavement markings that separate modes, uses material color and texture changes to define clear zones for pedestrians, and establishes uncertainty of pedestrian and bicyclist movements. This encourages caution by all users, slowing motorist speeds and indicating pedestrian priority. As motorist enter the square, they will be greeted by a ramp to elevate them six-inches to pedestrian level.

The proposed design reduces the width of the circulatory travel lane to 15 feet wide and clearly delineates the roadway through the use of brick pavers. Brick pavers provide a necessary visual que to motorist that they are entering a shared environment. Through the reduction in width and change in street surface material, lower speeds and more predictable vehicular movements will be achieved.

Through reallocation of space additional gathering spaces can be obtained along with opportunities for weekly markets, recreational space, stormwater control measures, outdoor dining, and place making to contribute to the establishment of Downtown Graham as a regional destination. The redesign will provide more direct and efficient pedestrian routes through Court Square. High visibility crosswalks perpendicular to the street will replace the current at-grade, skewed crosswalks. Proper splitter islands will provide pedestrian refuge space, beautification, and aid in the reduction of speed and deflection of motorist entering the Square. Pedestrians will cross one 11-foot travel lane to reach a refuge of the raised splitter island, and the total crossing distance will be approximately 30 feet, rather than the unprotected 70 feet that exists in Court Square today and will still permit access to local trucks and fire engines.

Street trees will enhance the comfort and safety of pedestrians in the Square. Trees provide shelter from the sweltering summer heat, a physical and psychological barrier between pedestrians and motorist, and contribute to the reduction of vehicular speed through ocular narrowing – the narrowing of field of vision. Street trees will help define and reinforce the oval form of the roundabout and will frame views of the historic courthouse from Main and Elm Streets. Planting areas interspersed throughout the Square's four corners will soften the ground plane and add beauty to the landscape. A lush landscape palette will complement the beauty of the historic courthouse and downtown storefronts.

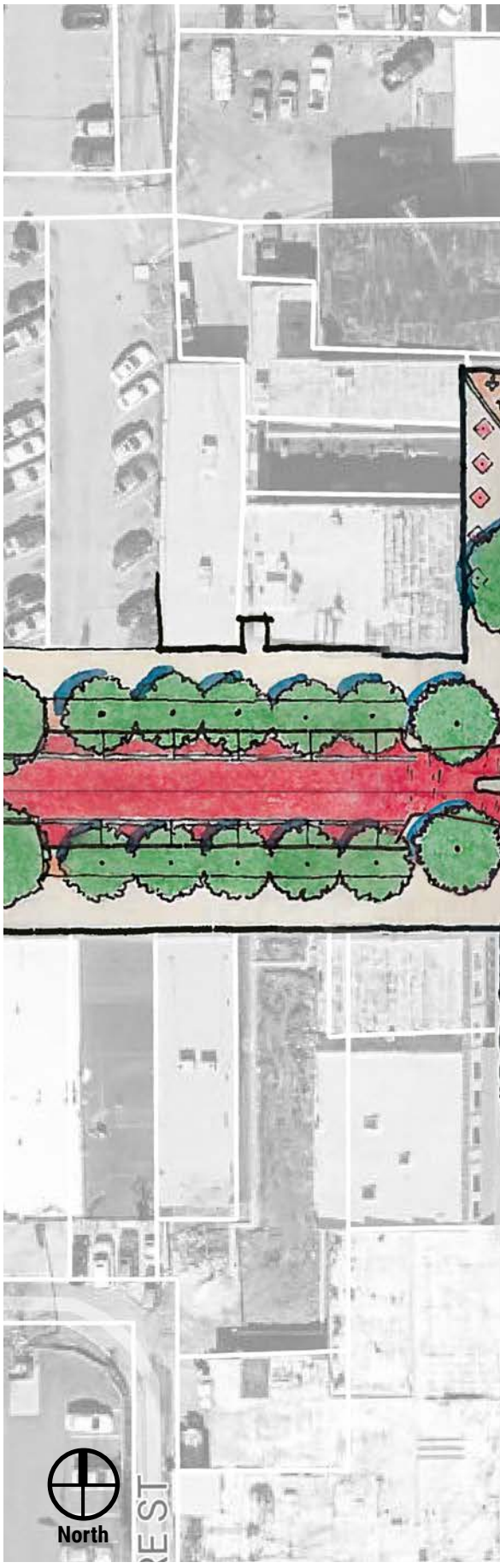
The proposed redesign of Court Square:

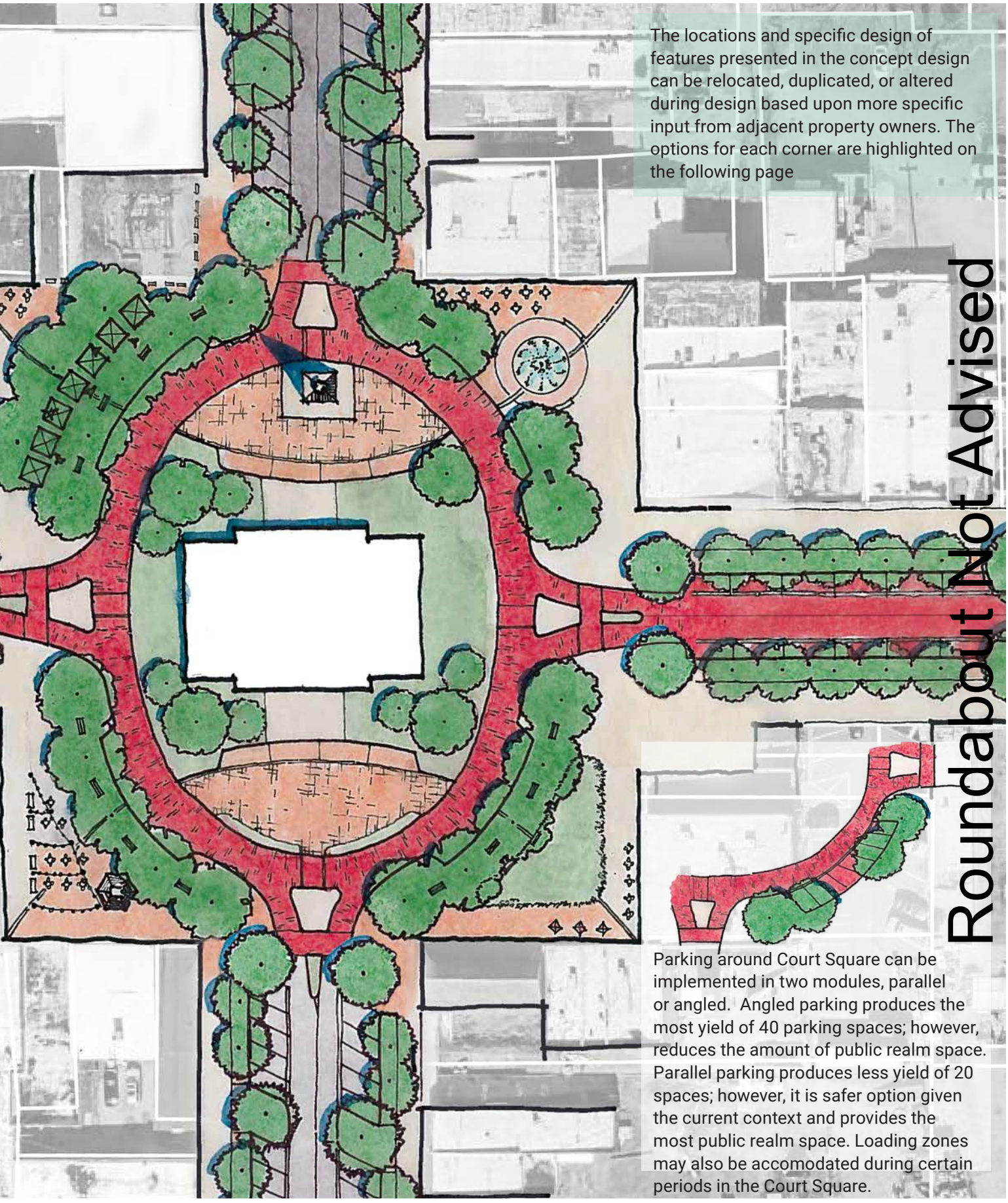
- Enhances the comfort and safety of the built environment for people of all ages and abilities who may be walking, biking, or driving.
- Provides more space for community placemaking where residents and visitors can come together to live, work, and play.
- Better compliments the aesthetic quality of the historic Alamance County Courthouse and downtown storefronts, which defines the small-town character of Downtown Graham.

Overall, the proposed Court Square design will create a more hospitable environment for people who walk, bike, and drive. The roadway design is consistent with FHWA's best practices for roundabout design, shared streets, and multimodal design. Moreover, the Court Square design is predicated on the assumption that log trucks and other heavy vehicular traffic will be diverted onto alternative routes. NCDOT has signaled their approval of this approach and more discussions will need to be made as the plan moves forward.

Placemaking opportunities include:

- Ample space for cafe seating.
- Opportunities for interactive water features such as splash pads that attract children and provide relief from the summer heat.
- Space for open-air community events that could include farmer's markets, art, and music festivals.
- Park space that provides opportunities for sitting, resting, and quiet contemplation while enjoying nature.





The locations and specific design of features presented in the concept design can be relocated, duplicated, or altered during design based upon more specific input from adjacent property owners. The options for each corner are highlighted on the following page

Roundabout Not Advised

Parking around Court Square can be implemented in two modules, parallel or angled. Angled parking produces the most yield of 40 parking spaces; however, reduces the amount of public realm space. Parallel parking produces less yield of 20 spaces; however, it is safer option given the current context and provides the most public realm space. Loading zones may also be accomodated during certain periods in the Court Square.

An open air market is the centerpice of the northwest corner of Court Square. Ample seating, both bench and cafe, is situated underneath a dense canopy of legacy shade trees.

Water naturally attracts people and is essential to life. A splash pad is recommended in the vicinity of the downtown to have an activity space for children. This water feature will need to be located such that nearby businesses are complementary to the use. At night, the fountain will come to life with integrated LED lights.

European outdoor dinning is featured in the southwest corner of Court Square. Catenary lights, legacy shade trees, and outdoor pavillion add contribute to the user experiance within the square.

The option of passive recreation takes the stage in the southeast corner of Court Square with an open lawn. Yoga, dance, kick ball, frisbee, etc. can all take place on the lawn. Surrounding the lawn visitors can find amble seating and shade.

Elm Street

EXISTING CONDITIONS

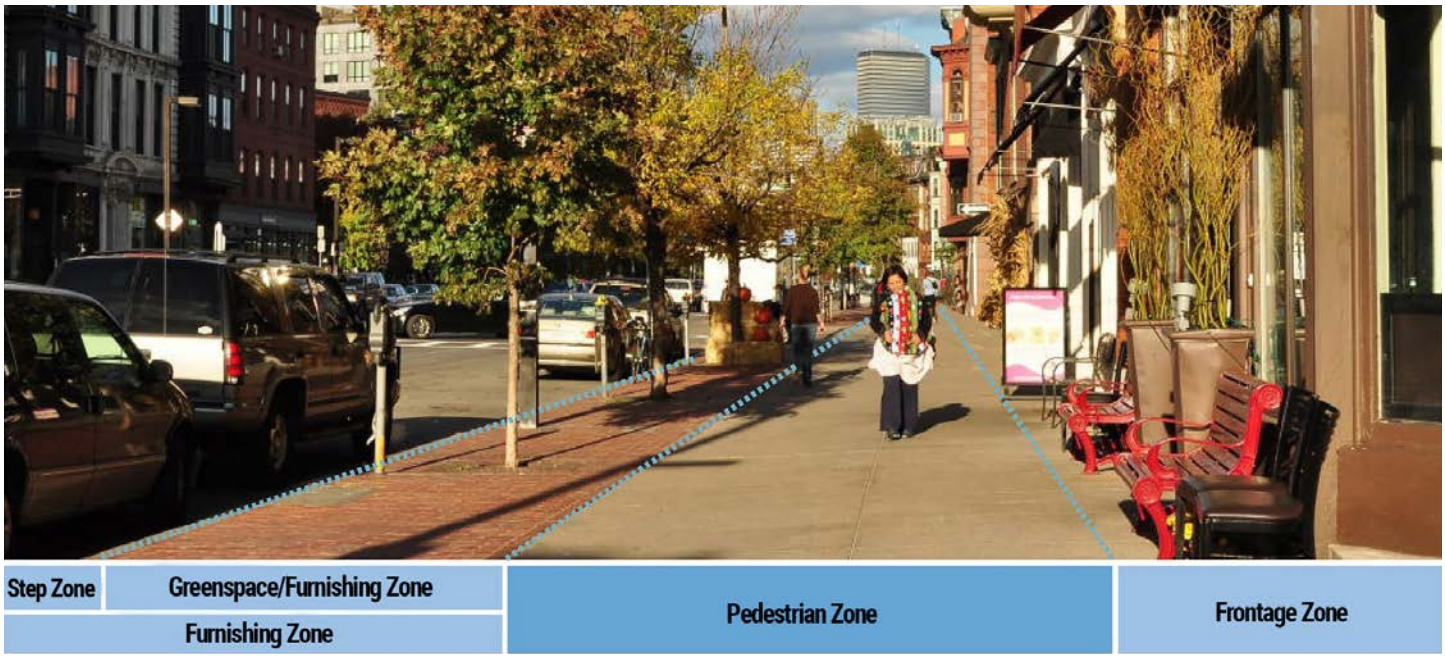
The current West Elm Street cross section includes approximately a 94-foot right-of-way, with angled on-street parking, 20-foot-wide sidewalks, and a single travel lane in each direction. The wide sidewalks are less generous than they appear at first glance, as the presence of raised tree planters, utility poles, furnishings, and other obstructions reduce the pedestrian clear zone width. Two parking lots on the north side interrupt the urban fabric and introduce conflicts between pedestrians and vehicles.

On the block immediately east of the courthouse, Elm Street appears disjointed because the north and south sides of the street have noticeably different characteristics. On the north side of the street, two curb cuts introduce pedestrian-vehicular conflicts, and the presence of parking lots interrupts the urban fabric established elsewhere in Square and on Main Street. Angled parking is available on the north side, which fits the dominant pattern seen throughout the rest of Downtown Graham. On the south side of East Elm Street, several elements detract from the block's character, including a narrow sidewalk, several jogs in the sidewalk, wide curb cuts, and parking lots. This block features both angled and parallel parking. An unconventional loading zone for delivery trucks is located in the middle of the roadway near the Square, and a left turn lane is provided for motorists who want to head north on Marshall Street.

Sidewalk Zones:

Sidewalks are not simply the space between the travel lane and storefronts. They are a critical component of the street and public realm comprised of three distinct usage zones each performing specific tasks.

- **Frontage Zone**
  The frontage zone is the area that immediately abuts a storefront. This zone may include outdoor retail displays, café seating, awnings, and sandwich signs.
- **Pedestrian Zone**
  Also known as the "walking zone", this zone is the portion of the sidewalk that is used for active travel. It must be clear of obstacles, accommodate anticipated volume of users and users with disabilities, and be a smooth clean surface.
- **Furnishing Zone**
  Also known as the "landscape zone", is the area between the curb and the pedestrian zone. This zone may include landscaping, street furniture, utilities, and street lights.



RECOMMENDATIONS

The proposed design of Elm Street reimagines a street focused on ensuring safety for all modes of transportation, providing pedestrian amenities, and creating an attractive corridor that invites new development and highlights existing businesses. These key elements will be achieved through a cross section that allocates more space to pedestrians and provides opportunities for Elm Street to serve as Graham's "festival street."

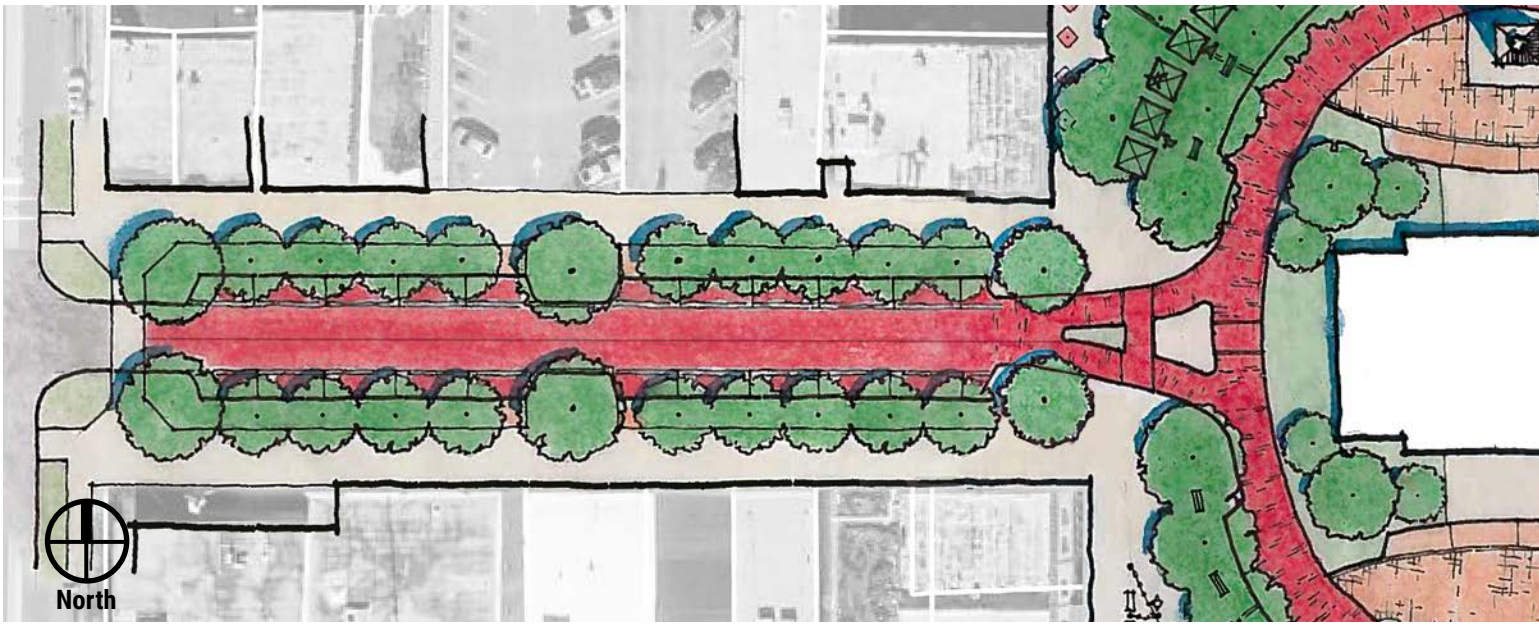
Curb extensions will bookend Elm Street at its intersections with Maple Street, Marshall Street, and Court Square. Curb extensions for tree islands and stormwater management are also proposed at midblock locations. The curb extensions will narrow the street width and promote lower vehicular speeds as motorists enter the heart of downtown. Brick pavers will be used as the roadway surface material, which will help identify the 100 blocks of Elm Street and Court Square as the heart of Downtown Graham. In addition to contributing positively to Graham's aesthetic character, the visual contrast and textural differences of brick pavers will signal to motorists that lower speeds are intended.

Sidewalks will be concrete to provide a comfortable and safe walking surface, and the overall sidewalk width will be widened to 28 feet. Street tree plantings will consist of larger, legacy trees and medium-sized ornamental trees located in the furnishing zone. Legacy trees are envisioned to be trees that speak to Graham's natural or cultural heritage. They will be located in the expanded soil volume provided by curb extensions. Ornamental trees will be located between each curb extension and will contribute an attractive seasonal quality, such as spring blooms or fall color.

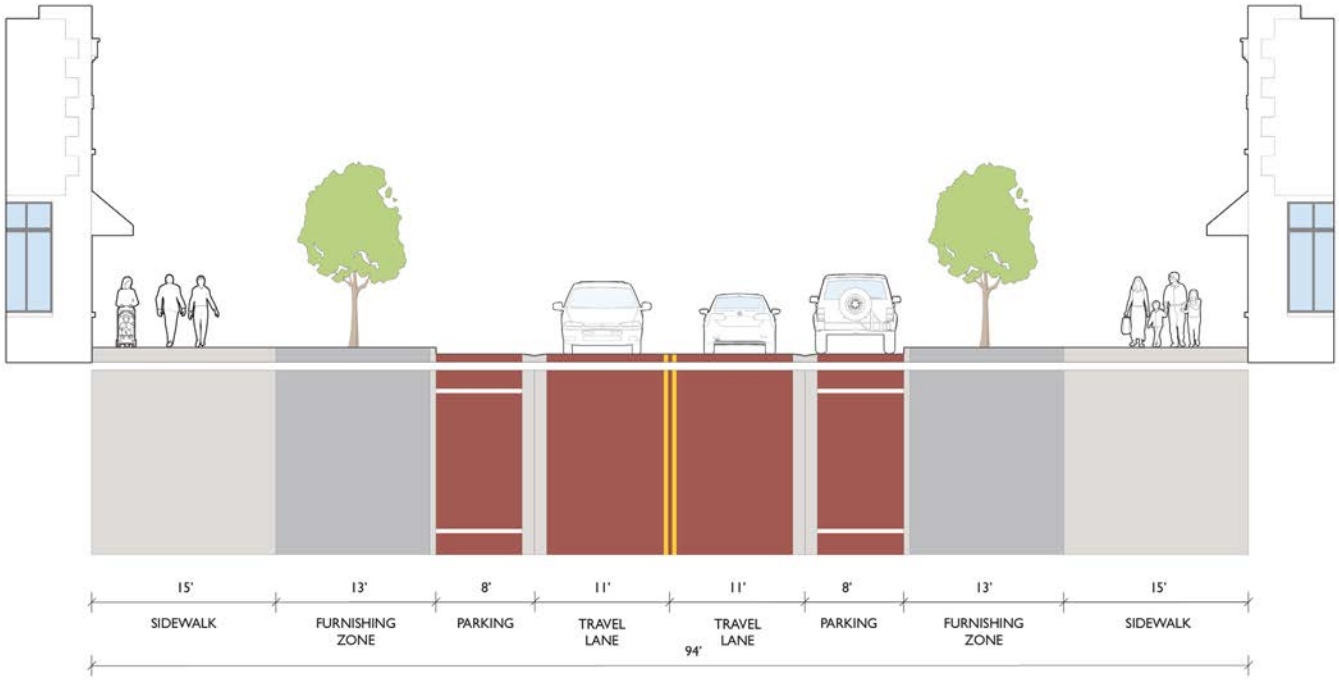
Elm Street is envisioned as Downtown Graham's festival street. The City currently owns the street and can close the street to vehicular traffic during festivals and events without additional agency approval. Through travelers during festivals have two alternative east west routes, Harden Street, which is one block north of Elm, serves as the primary arterial and pass-through for motorists traveling east-west through Graham. If the City desired to keep vehicular traffic open during events, the generous width of the pedestrian realm would allow Elm Street to function as a festival street.

Parallel parking should replace the angled parking that currently dominates the 100 block of Elm Street. The additional real estate gained will allocate more space to pedestrians and the resulting sidewalk width will allow Elm Street to function as a festival space regardless of whether the street is closed to vehicular traffic during events. A more comprehensive discussion of the proposed parking strategy for downtown Graham is located with in this chapter.

Proposed Elm Street Conecpt



Proposed Elm Street Cross Section



- An 4-foot-wide frontage zone, which will allow businesses to provide café seating along the face of their buildings,
- An 11-foot-wide pedestrian clear zone, which is an appropriate width for a downtown setting,
- A 13-foot-wide furnishing zone, which will accommodate street trees, utilities such as street lights, sign posts, and utility poles, and temporary sidewalk signs

WEST ELM - BEFORE

WEST ELM - AFTER

Main Street

Main Street (NC 87) is a primary route into Downtown Graham. It is the direct connection between Interstate 40/85 and Court Square and is home to the commercial center of Graham. Traffic volumes vary along Main Street as the street transitions from the interstate into the heart of the community. The corridor is home to a variety of land uses, including commercial, mixed-use, and residential. It is important that recommendations mitigate impacts to property owners along the corridor while planning for future growth and redevelopment in downtown. Main Street is currently owned and maintained by NCDOT, a valuable stakeholder throughout the planning process for the City of Graham Downtown Master Plan. Additional analysis and coordination will be required prior to implementation of the recommendations that follow.

This chapter provides brief descriptions of the recommendations along Main Street to aid in the creation of gateway corridors into Court Square. Through reallocation of space, prioritization of all users, and reimagination of the existing street, this chapter further explains how the concepts can transform Downtown Graham.

Design Elements

Gateways:

Gateways highlight key features that already exist in the City. By providing an aesthetically pleasing and consistent treatment upon entry to downtown, users will be pleasantly reminded of where they are headed, what to expect ahead of them, and why they chose this route through Graham. .

Main Street Corridor:

Main Street currently services through traffic in Graham. Through a reimagined streetscape people will be drawn to the heart of downtown. Tree lined streetscapes, multimodal considerations, and prioritizing the local user provide the perfect frame for the historic Court Square.

Approaching the Court Square:

North and South Main Streets converge at the Court Square. The final block for theses streets are critical in setting the tone of for a vibrant downtown. Great streets are designed to be inviting for all users – the driver on an afternoon cruise, the family bicycling for an ice cream cone, and the resident on a walk after a long day at work.

GATEWAYS

Two of the four gateways for Downtown Graham are along the Main Street corridor. While each gateway is described in more detail in a previous section of this chapter, it is important to emphasize that these features along Main Street visually and physically mark transitions into the core of the community. The proposed roundabouts provide for more than just traffic calming but offer space for public art or monumentation that has the potential to be viewed from the interstate for the South Main Street and McAden Street gateway.

MAIN STREET CORRIDOR

In tandem with the recommendations to Court Square and the gateway intersection improvements, it is important to provide a vibrant streetscape for Main Street from the gateways at McAden Street and Albright Avenue. Drivers and users should be informed that they are entering a shared, people-focused space and that speeds should reduce. One way to accomplish this is through visual and physical cues as part of the streetscape design. The additional width gained through reallocating space on the street can be used for shared use paths, additional parking, staging areas for visitors, and gathering spaces. The following section will take a closer look at the recommended changes along Main Street as well as Pine Street.

Existing Conditions

As it stands today, Main Street has multiple travel lanes and often wide outside lanes. Public and city comments regarding Main Street were consistent throughout the engagement process – vehicle speeds are in excess to speed limits, logging trucks make movements unsafe, and the current conditions encourage through traffic. Through the reallocation of existing lanes and asphalt width, the view to the courthouse can be further emphasized, vehicular traffic can be slowed, and the focus can be on the local user.

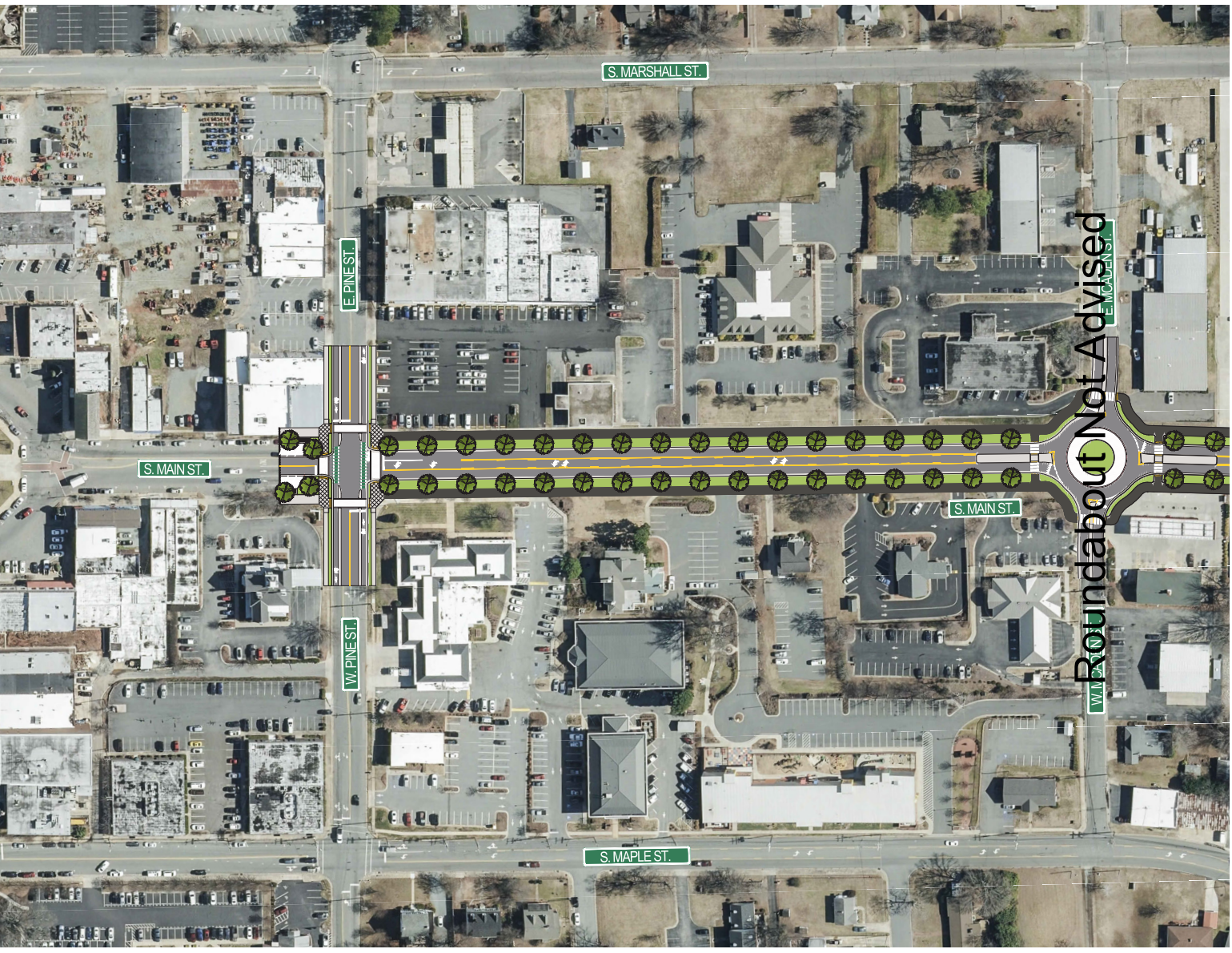
Proposed Main Street Corridor

Recommendations

Through strategic narrowing and lane reductions, addressing the public's comments can be achieved. The reclaimed width can be planted with large canopy trees providing visual cues to slow vehicle speeds while providing an attractive streetscape. A shared use path is recommended along both sides of Main Street, from Interstate 40/85 to Pine Street, to provide multimodal options while redefining Main Street's focus on all users. From Gilbreath Avenue to McAden, Main Street will taper from a five-lane section to a three-lane section. North of the proposed roundabout at McAden, the three-lane section is maintained and eventually drops the left turn lane at Pine Street. Maintaining fewer travel lanes reduces the distance for pedestrian crossings at intersections and allow ample space for landscaping. The corridor would also have the opportunity for angled parking if designred.

A two-lane section is then maintained through Court Square eventually transitioning at the Albright Avenue roundabout. Parking along North Main will be consistent throughout and continue to provide access to nearby businesses and properties.

It is important to note that through the reallocation of travel lanes and existing width, the land-use context north and south of Court Square will also begin to change. Through the provision of multimodal connections, safe walking routes, and reduced traffic speeds, the existing footprint becomes more inviting for future investment and growth outside of the historic 100 blocks. The City should consider updating landuse regulations along the approaches to the Court Square to reflect the downtown character in conjunction with the design and implementation of the gateway corridors.

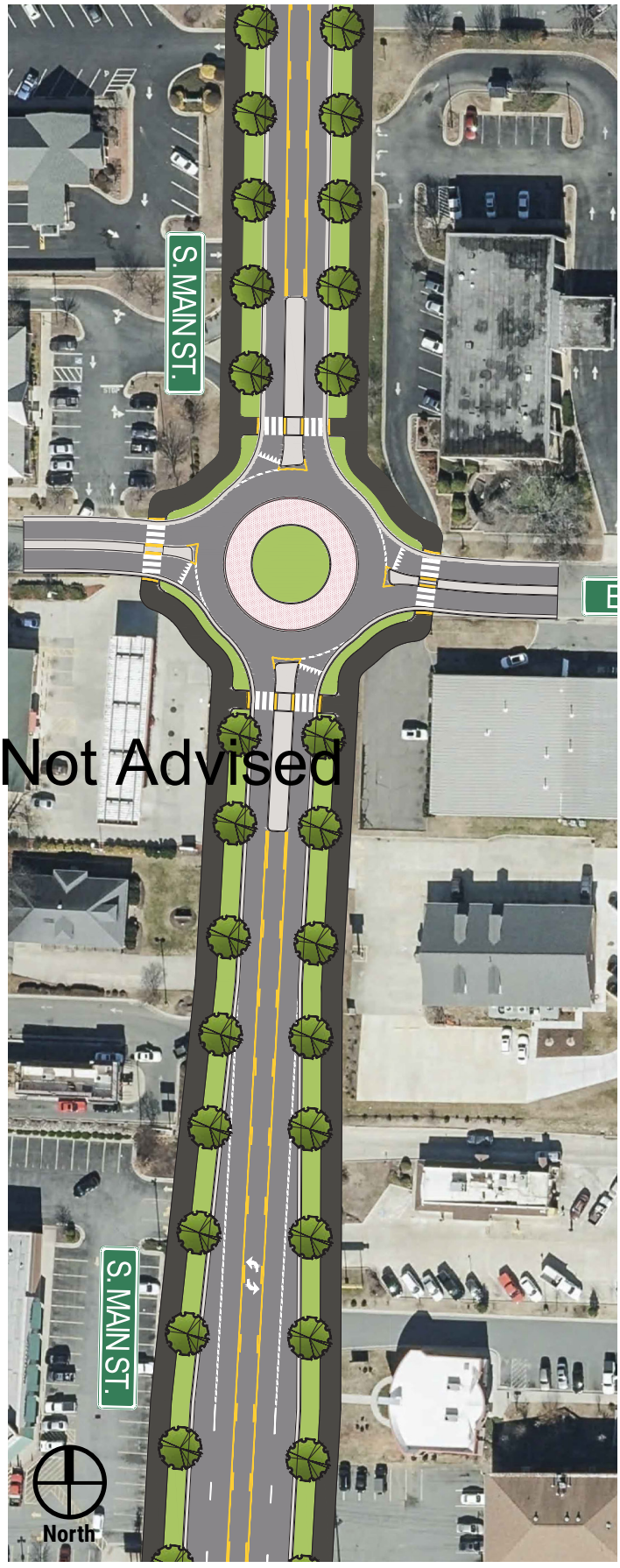


Gilbreath Street to McAden Street

Residents or visitors approaching Downtown Graham from the south may first realize how close they are to the Court Square as they approach the Gilbreath Street and S. Main Street intersection. Encircled by retail and commercial development, this intersection collectively sees approximately 30,000 vehicles per day from all approaches. Gilbreath serves as the first east west connector to Graham's grid network and provides access to residential development on both sides of Main Street. This intersection also gives a first glimpse of the historic courthouse and should serve as a transition from the interstate context along the street toward a more urban and small-town context.

The intersection of Gilbreath should be designed to allow for several vehicular movements and create a decision point for automobile drivers on whether they desire to go to or around Downtown Graham. A truck bypass is proposed to begin at this intersection directing tractor trailers around Downtown Graham. North of the Gilbreath Street intersection, it is recommended that S. Main Street narrows to a three-lane section with shared use paths on both sides as it approaches the gateway roundabout intersection at McAden Street. North of McAden the three-lane cross section continues with wide landscape areas for street trees that frame the view to the courthouse. The "Before" and "After" images to the right illustrate how the Main Street and McAden intersection is visualized with the proposed concept design.

Proposed South Main Street



SOUTH MAIN STREET GATEWAY - BEFORE

Roundabout Not Advised

SOUTH MAIN STREET GATEWAY - AFTER

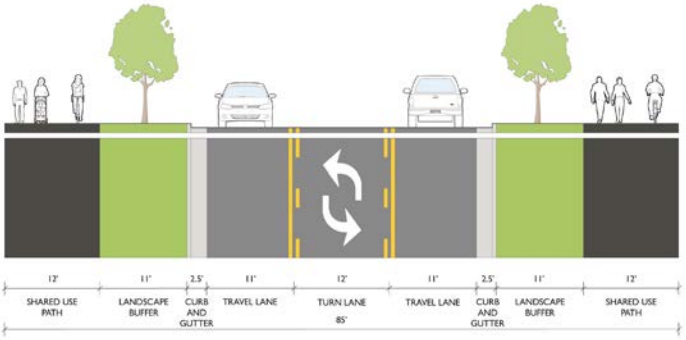
McAden Street to Pine Street

Pine Street is an east-west connecter south of the 100 block of downtown, acting as an alternative route across downtown and a local connector to neighborhoods and Graham Middle School. The roadway cross section varies between two- and three-lanes of travel expanding in pavement width between Maple Street and Marshall Street as it approaches Main Street.

A bicycle striping project is currently planned along Pine Street. To increase safety for all bicycle users, it is recommended that between Maple Street and Marshall Street the bicycle facility is upgraded to a separated bike lane. Separated bike lanes provide both a vertical and horizontal component between the bike lane and the adjacent vehicular travel lane. Working within the existing curbed limits, the provision of a 4-foot raised buffer and a 6-foot bicycle lane can be accommodated. Updates to the intersection at Main Street include removing left turn lanes along Pine Street, continuing shared-use paths along Main Street, high visibility crosswalks, and conflict markings for bicycle connections. Conflict marking are also recommended at all driveways along Pine Street where the raised buffer is disconnected for vehicle access. It is recommended that Pine Street remain a signalized intersection.

The “Before” and “After” images to the right illustrate how the South Main Street and Pine Street intersection is visualized with the proposed concept design.

Proposed S. Main Street Cross Section



Proposed Main Street Intersection

MAIN STREET/PINE STREET - BEFORE

Safety should be priority when designing the streetscape. Additional considerations for storefront access/visibility may be important when laying out streetscape elements (i.e., trees, lighting, and furnishings).

MAIN STREET/PINE STREET - AFTER

Albright Avenue to Harden

The gateway roundabout at Albright Avenue and N. Main Street presents an opportunity to establish an attractive streetscape that invites users into downtown from the northern part of the community. Proposed changes increase the number of street trees along North Main Street as it approaches Harden Street and updates on-street parking striping to ensure that each stall is adequate width and depth. On-street parking is proposed to be angled parking and the two travel lanes are maintained between Albright Avenue and Harden Street. Curb extensions are proposed at the Harden Street intersection to shorten pedestrian crossing distances and lower turning speeds for vehicles.

Proposed N. Main Street Concept Section

APPROACHING COURT SQUARE

The limits of this section are along Main Street, from Pine Street to Harden Street. These blocks mark another transition into Court Square from both North and South Main Street.

Existing Conditions

The current Main Street right-of-way from Pine Street to Harden Street is consistently 98 feet, with angled on-street parking north of Court Square and parallel parking to the south, variable width sidewalks, and a center turn lane. In the section between Court Square and Harden Street, the center lane acts as a loading zone for local businesses. Sidewalk width is often impeded by existing light poles, refuse bins, and other furnishings. Travel lanes consistently exceed standard widths and are a byproduct of the heavy truck traffic, especially logging trucks, that passes through downtown. Pedestrian crossings are limited to the intersections at Pine Street, Harden Street, and the traffic circle at Court Square. Due to the existing pavement width of approximately 68 feet, pedestrian crossing distances are long and often unsafe. Mid-block crossings movements are also occurring, using the turn lane/loading zone as a place of refuge.

Recommendations

The proposed design of Main Street for the approaches to the Court Square provides a street that is grounded in increasing the safety of all modes of transportation, re-igniting the vibrancy of the historic square, and maintaining routes as they are today. No through travel lanes in approach to Court Square are recommended for removal. The existing three-lane section will be reduced to a two-lane section, removing the center turn lane and loading zone, and the reclaimed width will be utilized to further promote public gather space, pedestrian walkways, and new streetscape approaching the square. Loading zone areas can be accomodated through regulation of on-street parking areas to ensure businesses are adequately served.

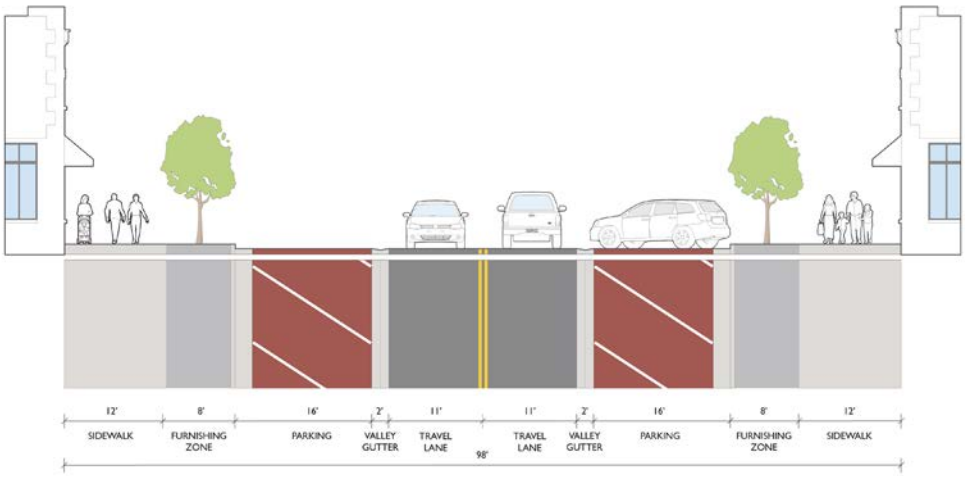
The intersections at Pine Street and Harden Street will be reduced in size. This reduction will translate to shorter pedestrian crossing distances, reduced vehicular speeds, and will elevate awareness of motorists of the presence of pedestrians. Proposed crosswalks should be inlayed with brick to further emphasize slow speeds in the downtown area. Unlike Elm Street, the two travel lanes of Main Street will remain asphalt. Identification of entering the 100 blocks of Main Street will be achieved through human-scale furnishings, improved crosswalks, and an overall reduction in pavement width.

Sidewalks will remain concrete. Sidewalks are recommended to maintain a width of 12 feet abutting store fronts on each side of Main Street but the effective width will feel much larger due to additional streetscape elements that include:

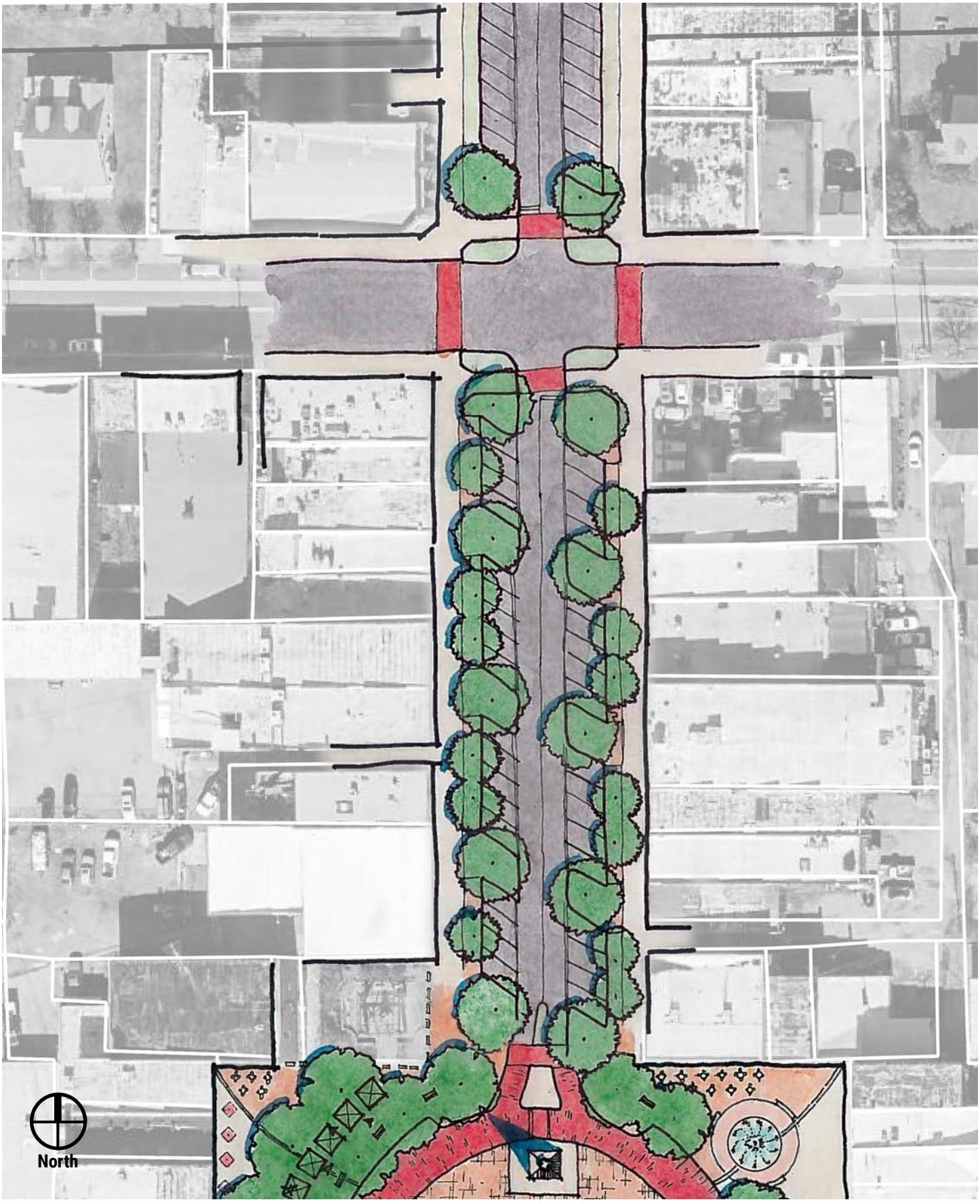
- An 8-foot-wide furnishing zone, accommodating street trees and furnishings, and through use of pavers will visually separate the pedestrian realm from parking, and
- An 18-foot-depth angled parking adjacent to the travel lanes.

During the public engagement process, angled parking was the selected parking recommendation along Main Street. Parking for the entire downtown area is discussed in more detail in the following section.

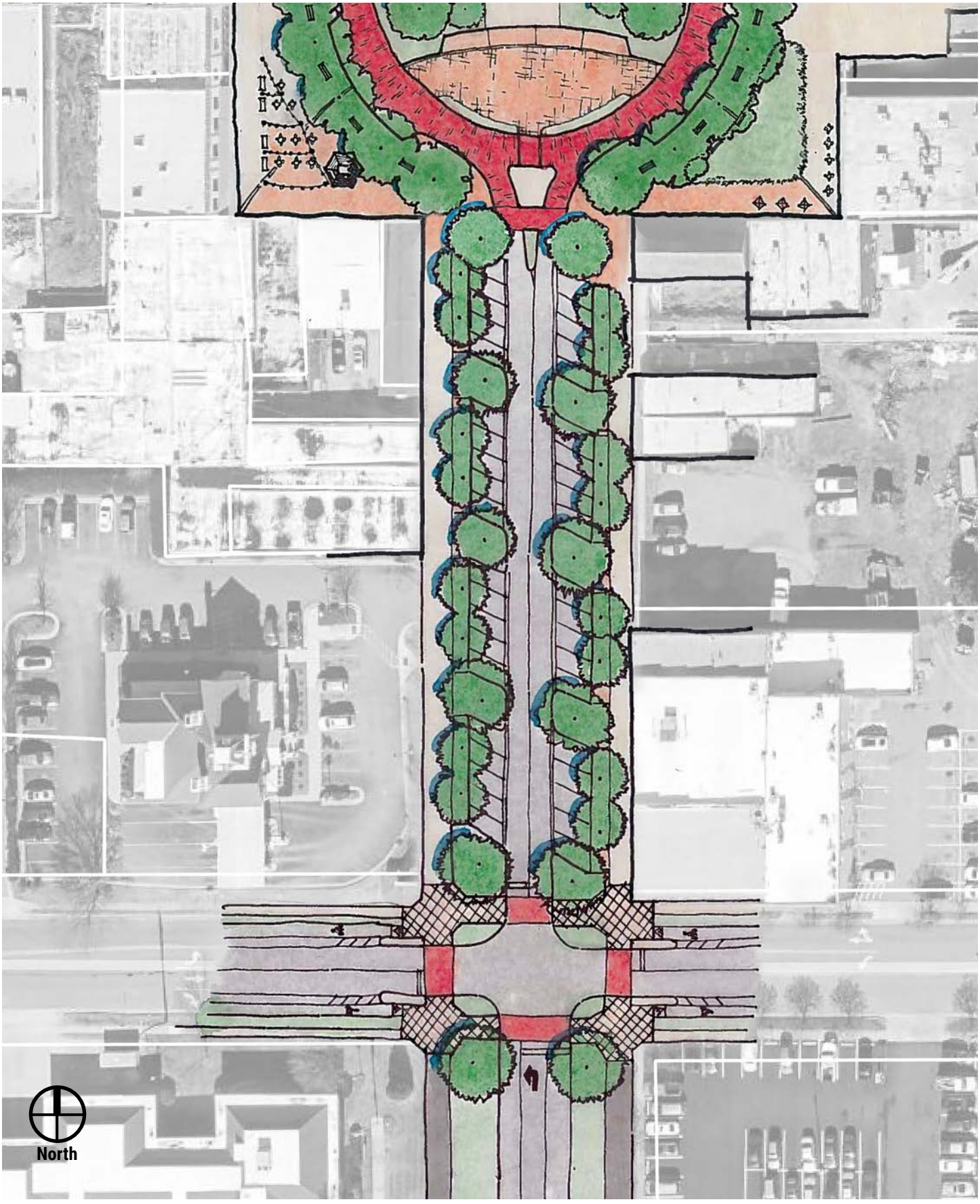
Proposed Main Street Cross Section (Albright to Pine)



NORTH MAIN STREET CONCEPT (100 BLOCK)



SOUTH MAIN STREET CONCEPT (100 BLOCK)



Green Space/Adaptive Reuse

Throughout the public engagement process, community members and city leaders cited a need for more green space in downtown. Citizens and visitors desire active engagement outdoors in green spaces, long to experience nature, and need a reprieve from the built environment. Graham's downtown is full of possibilities outside of Court Square to provide these gathering spaces through adaptive reuse of vacant parcels or surface parking lots. Green Space will help support local economies, attract business investments and tourism, reduce crime, and improve pedestrian safety and public health. Public gathering spaces can provide a sense of character and identity to downtown Graham.

Community members and city leaders also identified a need for a boutique hotel and event center within downtown. Currently, there are limited hotel accommodations within the City of Graham. Visitors are forced to find accommodations in the neighboring communities of Burlington and Mebane. Graham is missing out on this economic opportunity to capture visitors looking for weekend destination full of entertainment and dining experience in a welcoming downtown environment. A boutique hotel will attract a higher clientele to Graham, compliment the existing architecture, and not detract from the character that is Graham. Additionally, an event venue capable of accommodating up to 500 attendees should be located within a 5-minute walk to Court Square.

During the design workshop and public engagement processes, the design team analyzed parcels of land to determine possible locations for green space, a boutique hotel, and event venue. The following criteria were used to assess how suitable various parcels were for being transformed:

Suitability Criteria

01 Proximity to downtown: To be a cohesive part of the community's downtown fabric, parcels should be close to downtown (i.e., within a quarter mile of the Court Square).

02 Access to pedestrian or planned bicycle pathways: Facilities should be easily accessed from downtown by connected sidewalks and bicycle infrastructure.

03 Vacant vs occupied parcel: It is often easier and more financially feasible to transform vacant, underdeveloped, or undeveloped parcels into greenspace or buildings than it is to do so with existing structures and denser development. While parcels with existing structures were considered, they would ultimately be more challenging to implement and must maintain their historical character.

04 Parcel size: The parcel must meet the needs of its desired use and fit the desired context of Graham.

05 Parcel orientation: Some parcels may not be suitable due to their orientation; if the parcel is not facing the street, is irregularly shaped, or contains challenging natural features, it may not be feasible for development.

06 Parcel assembly: In certain cases, a desired parcel size may be achieved through the assembly of small parts of several existing parcels. This can result in a more customized size and orientation, but the process of assembling parcels can also be long and difficult.

07 Opportunity cost: As with any public use, there is an opportunity cost for developing a parcel in a place where another use could be. It is helpful to consider the existing zoning and communicate with community members and city staff to determine what costs are important to consider during the planning phase.

Green Space and Adaptive Reuse Map

The Green Space and Adaptive Reuse presented on this page are suggestions of alternative use. City should work with property owners or look at incentives for redevelopment.

1. Underdeveloped lot and tractor parking lot: On the southeast 100 block, there is a partially vacant parcel between Mary's Hair Salon and Covenant of Love Christian Church. This parcel has potential to be integrated with the aforementioned boutique hotel. Its Main Street-facing orientation provides great opportunity for further activating the pedestrian realm in downtown, and there would be an opportunity to connect this parcel to destinations to the east by consolidating parts of other parcels as needed.

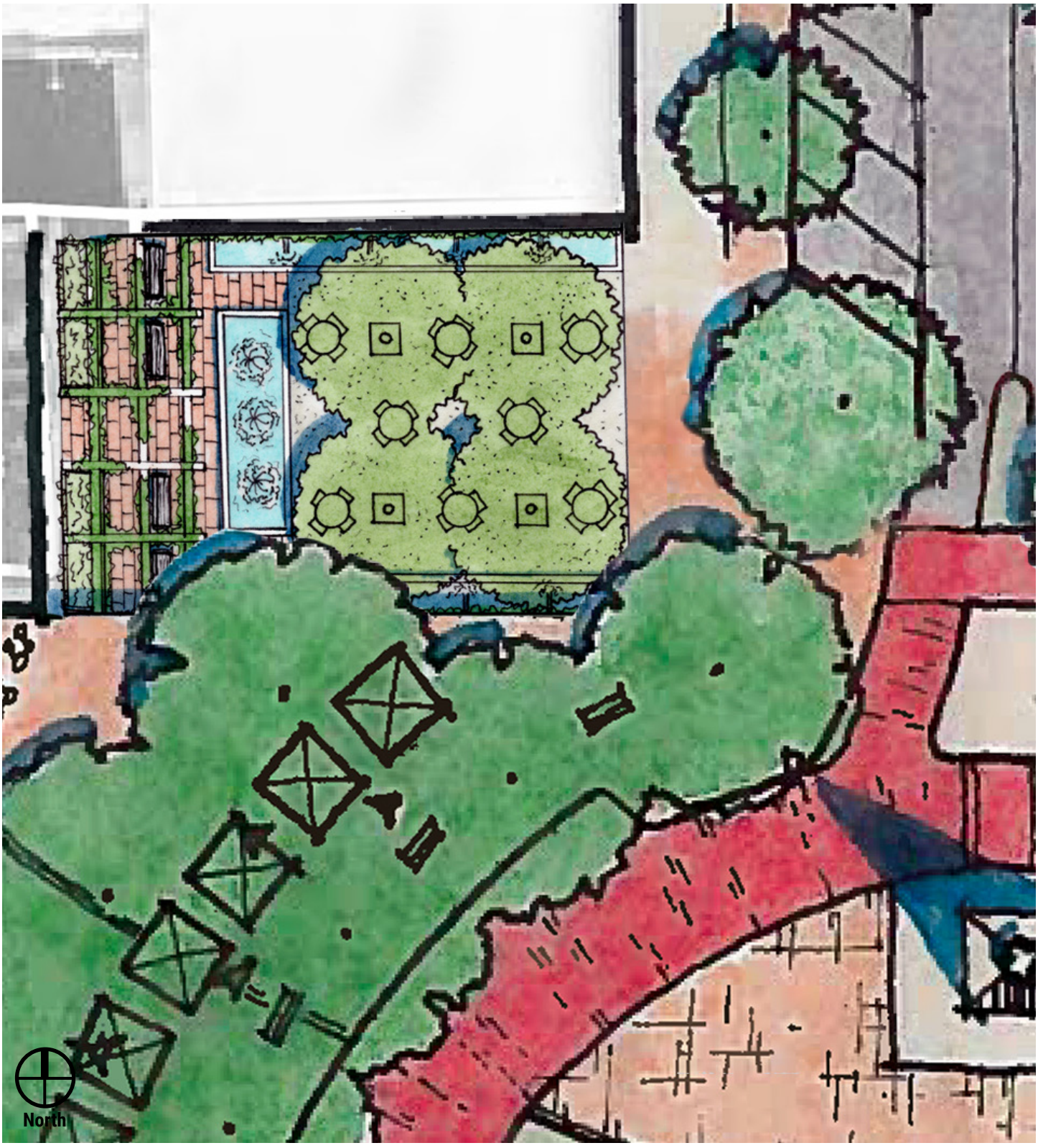
2. Repurposed parking lot on West Elm Street: Between the Roasted Coffee Depot and an attorney's office are two parcels that are street-facing parking lot entrances today. Parking lots placed along a festival street is not the highest and best use of such valuable downtown property. A public-private partnership should be considered to develop the property to add to the downtown appeal. These parcels are attractive due their proximity to Court Square and because there are presently no structures on these lots. Removing these entrances to parking behind the buildings may require additional parking to be accomodated in the overall site design behind the potential structure.

3. Corner of East Elm and Marshall: On either side of East Elm and Marshal Street intersection within the 100 block, corner properties may have opportunities for additional development. Currently they are being used for display of tractor and farm supply on the South and a vacant building to the north. Determine the space requirements for the existing business, and work with property owners to encourage private development.

4. Property Redevelopment: The City of Graham should work with the property owner of two banks, SunTrust and BB&T, on the properties at 220 or 236 Main Street. The City should assist with the redevelopment of these key gateway properties.

Conceptual Park Design

Small urban parks help create a more inclusive downtown, providing opportunities for exploration and reprieve from busy streets. An opportunity should be considered to redesign of Sesquicentennial Park in the Court Square. Optional water features providing audible and visual interest could flank the building walls, shade trees are centered over ample café seating, a central water feature provides a since of enclosure, and a pergola with swings demarcates a connection to a parking lot behind.



Concept Park Perspective and Inspiration Imagery

Parking

Parking is a critical component of providing access to downtown's amenities, and accessible parking should be provided for users of each amenity or business. Convenient parking for Downtown Graham can be satisfied in a variety of ways and has been considered carefully in this plan. Successful parking programs that support vibrant downtowns must be balanced; parking stalls and lots must provide enough capacity to meet the demand for parking, but not exceed demand so much that it degrades city character or perpetuates unsafe conditions in the public realm. Parking design, location, and quantity should be integrated into the streetscape and public realm without dominating these spaces. The recommended concepts for Downtown Graham may attract several new users, both locally and regionally, and adequate parking should be ready for new visitors. Finally, parking lots and on-street stalls should also be easy to find, accessible, and safe for people driving, walking, and bicycling.

Using this approach to parking programming and design, the Graham Downtown Master Plan gives an overview of existing parking capacities, provides recommendations for new parking structures and location, and details changes to parking based on the recommendations for downtown.

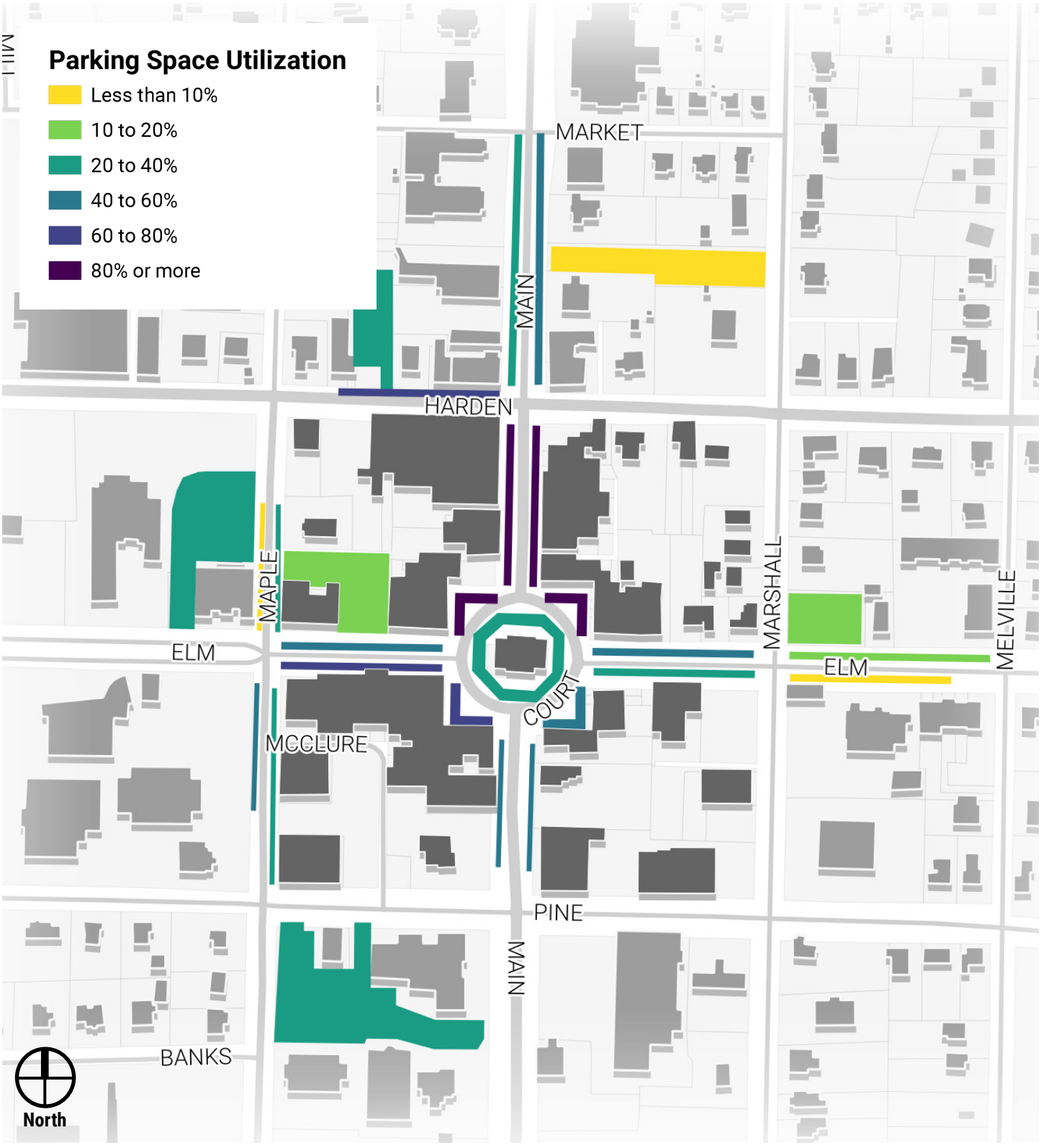
PARKING INVENTORY

As a part of both the discovery workshop and the design workshop, the project team created a detailed inventory of existing parking in downtown. Today, there are over 600 parking spaces that provide convenient access to Downtown Graham. The map below shows parking locations within a quarter-mile from Court Square.

Existing Public Parking Locations

An existing parking study conducted by the City of Graham staff found that there is presently more parking availability than demand for parking in downtown. The study showed that average parking utilization for all of the parking in and around Downtown Graham is below 40% as shown in the map below, and that even during peak hours, the maximum parking utilization is below 55%. With the revitalization of Court Square and the approaches to downtown, parking utlization is likely to increase and may warrant additional parking for patrons of downtown.

Existing Public Parking Space Utilization



PARKING RECOMMENDATIONS

The proposed design for Downtown Graham prioritizes the public realm for pedestrians through the creation of gathering spaces, wide sidewalks, and storefront activity areas. Through a people-focused approach to downtown, the City of Graham and the community is investing in a future of vibrancy and growth for years to come. High-quality gathering spaces for people intentionally maximize pedestrian space and alternative transportation accommodations while ensuring enough capacity for vehicular parking and travel. The following describes recommendations for parking changes in and around Downtown Graham, beginning with restoring the historic alleyways. These recommendations should be considered comprehensively; not forgetting the existing inventory of public parking available in close proximity along the streets and public lots. Traditional head-in angled parking is perferred by the City of Graham along with parallel parking.

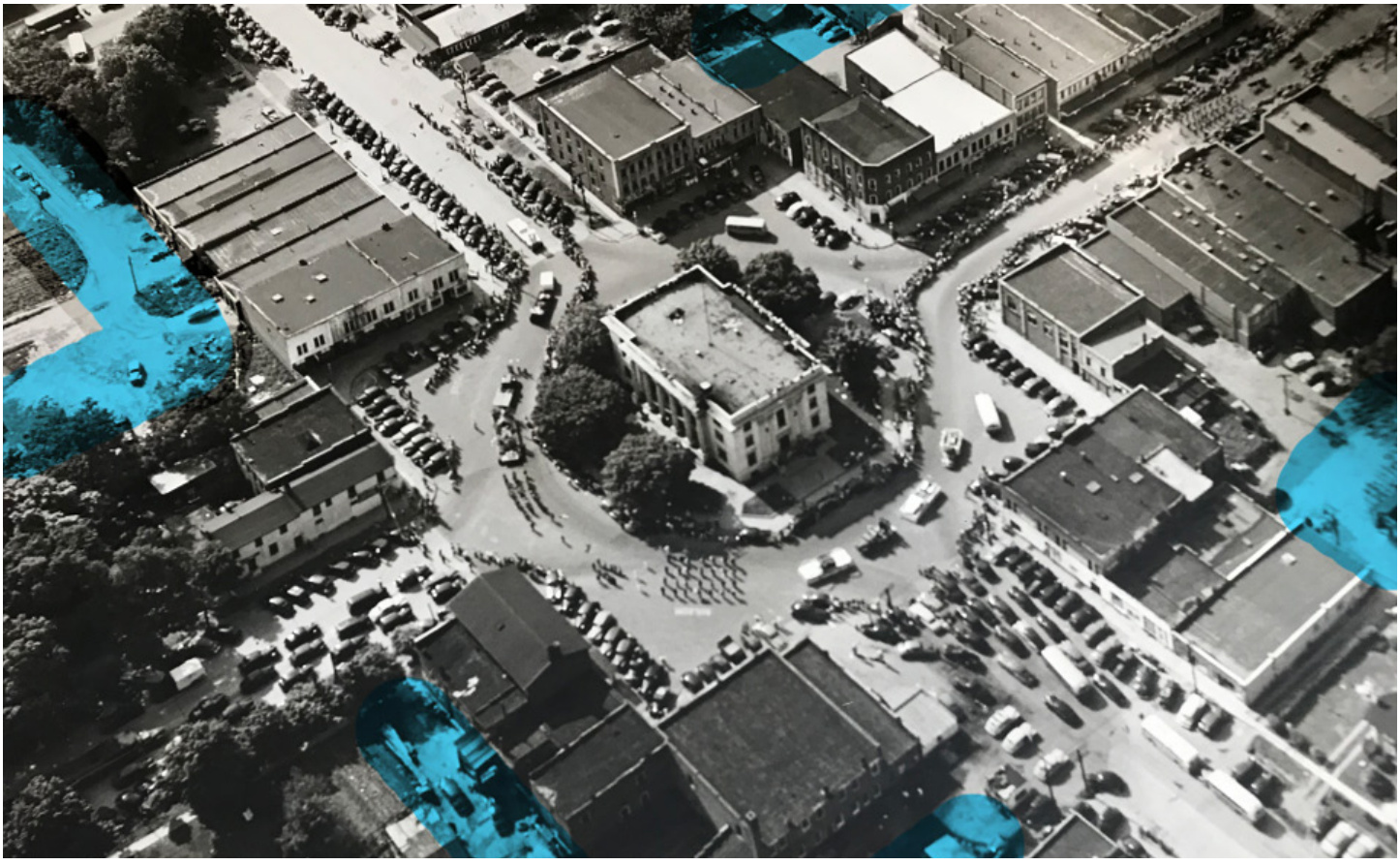
Restore Historic Alleys

Downtown Graham has a historical character that has been preserved in a manner that adds to the sense of place for the community. Remnants of historical alleys still exist within downtown but have been repurposed or reduced over time. A key recommendation of this plan is the assessment of the opportunity to restore the historical alleys in the heart of Downtown Graham to serve back-of-house functions for deliveries, trash and recycling pick-up, and additional parking.

Reestablishment of alleys should occur where possible through public-private partnerships with the cooperation of existing property owners.

Alleys should be retrofitted to ensure vehicle circulation and delivery truck movements are accommodated. The City should explore the options for alley alignments similar to the historic alleys that Graham developed earlier in the community's history.

Existing parking utilization in Downtown Graham and surrounding lots suggests that relocating existing parking would still serve residents and visitors in Graham. However, changes to the streetscapes impact more than just the parking around the Court Square but also loading and unloading of delivery vehicles for several businesses. Alley restoration does not neglect these functions but establishes clear loading and unloading zones for business that front the 100 blocks of Main Street and Elm Street.



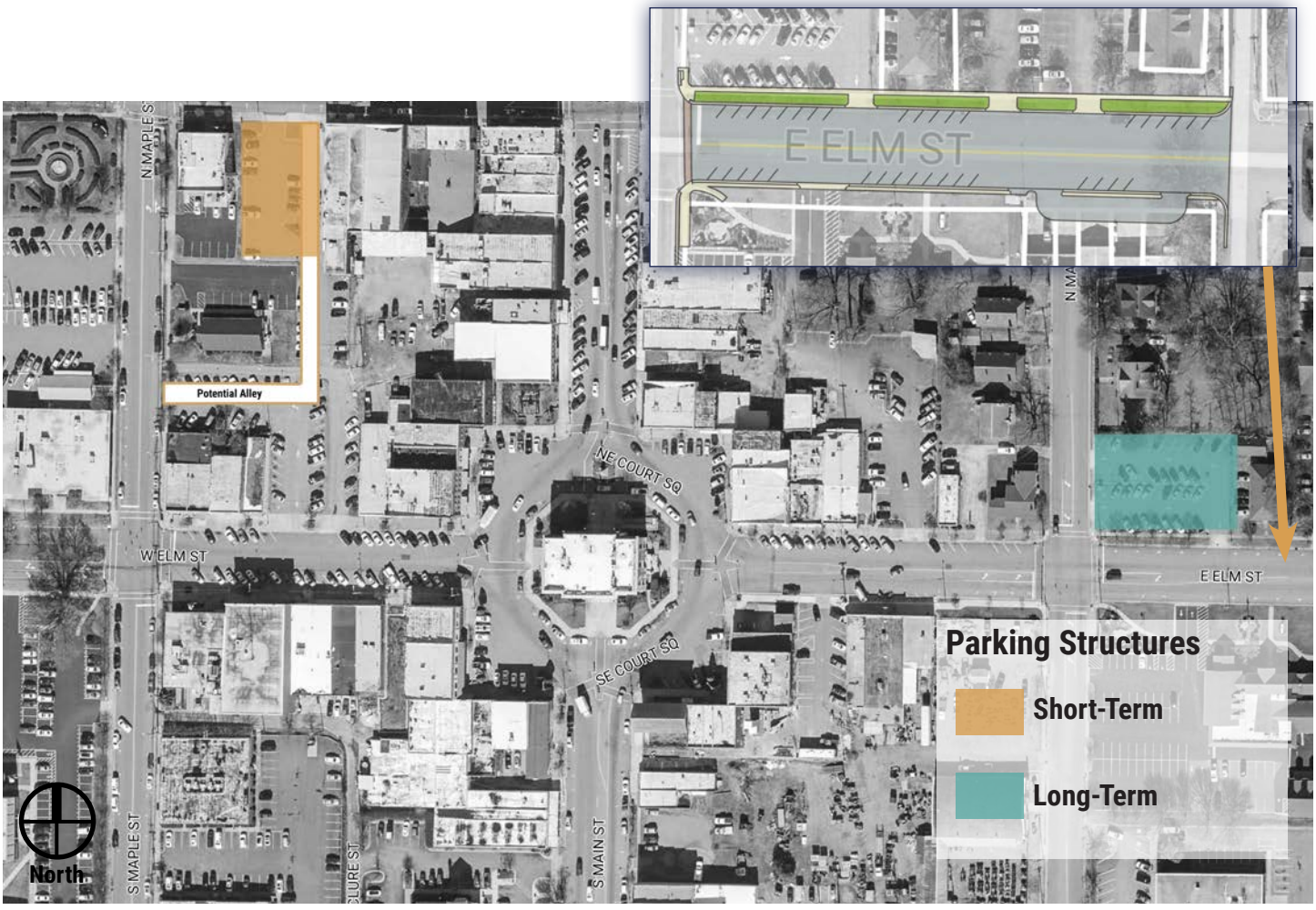
Additional Parking and Capacity Assessments

The City of Graham Downtown Master Plan proposes significant changes to downtown that will ultimately attract more visitors, commerce, and trips to downtown. As Downtown Graham gains momentum, routine evaluation of the parking utilization should be conducted by City staff to track parking needs and changes in parking demand.

Short-term, a parking structure should be considered along Harden Street to accomodate 50 or more new parking stalls and to provide an overall net gain in parking in the core of Downtown Graham. All parking structures should fit the character of downtown and should use high-quality materials and focus on a street-facing façade that is attractive and could even provide ground floor retail. An alley should also be considered adjacent to the parking structure to provide additional circulation and opportunities for back-of-house functions. Both the proposed parking structure and alley in this location are on property owned and maintained by either the City of Graham or Alamance County. Additional parking capacity is also available through re-striping existing on-street stalls along East Elm Street between Marshall and Melville street.

Long-term, there may be a need for an additional parking structure to accommodate daily users of Downtown Graham. Daily parking utilization throughout the downtown area should be consistently above 80-85% before the need for an additional parking structure is evaluated. Redeveloping an existing public surface parking lot could provide a net gain of 50 or more parking stalls.

Success for downtown is contingent upon planning for the future. Some parking demand may be addressed by future private development due to the market pressures. The map below illustrates the short-term parking structure recommended along with the proposed alley on City/ County property. Future parking structure location and a graphic illustrating a potential re-stripe of East Elm Street are also included.



Court Square and 100 Blocks

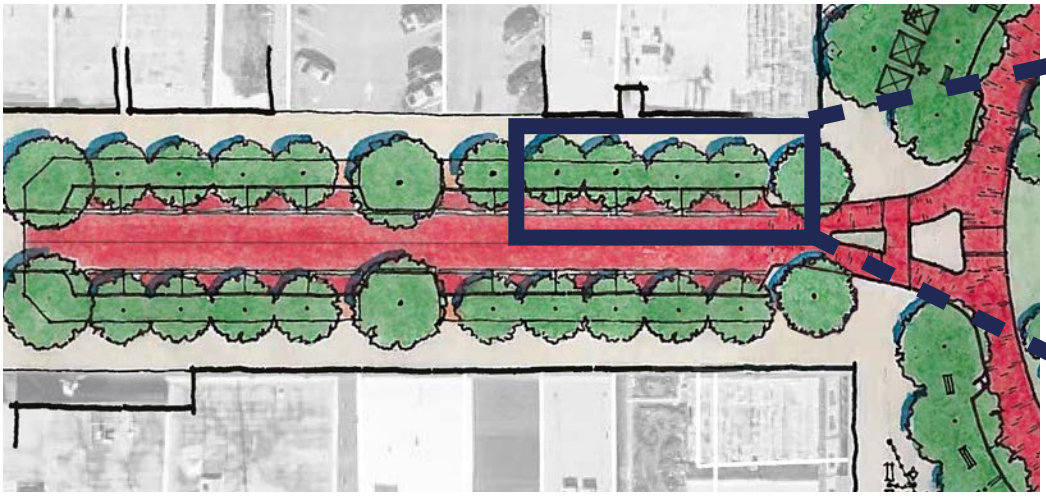
Reimagining Downtown Graham increases the amount of useable public space in the Court Square and surrounding 100 blocks of Elm Street and Main Street. The proposed concept for Downtown Graham provides options of parking in Court Square with the opportunity for up to 40 parking stalls. Additionally, angled parking on both North and South Main Street blocks is recommended. Parking along East/West Elm Street is envisioned to be parallel parking to increase pedestrian space on each approach to Court Square.

Maintaining adequate parking for Downtown Graham is essential to provide balance for residents, visitors, and business owners. Current utilization of parking in Downtown Graham provides some flexibility with regards to parking; however, the vision for revitalization is expected to increase demand for access to Downtown Graham. With this in mind, the project team has identified several areas where additional parking may be gained in and around downtown including through the restoration of alleys (through public/private partnerships), and re-striping existing public parking areas. Parking stalls that are ADA compliant should be placed toward the middle of each block to ensure easy access and short trips for residents and visitors with disabilities.

> **Mention was made that there still is a hope alive in the commission that parking on the Court Square be discontinued, not only to upgrade the looks of the square but to cut down on the danger to pedestrians and passing cars.**
>
> **Graham Beautification Commission (1979)**

Loading Zones

Merchandise, supplies, and food are all essential for retail establishments to succeed. Deliveries must be made quickly and efficiently on a routine basis. In a downtown, these functions are better served through alleyways with rear access to businesses. While Graham explores the possibility to reestablish its historic alleys, loading zones should be considered. A standard sign pictured below will mark designated spaces and hours for loading on Elm Street and Main Street during a one-hour window, both am and pm, at the consensus of Graham's merchants. Delivery companies across the country are accustomed to this approach and are willing to accommodate needs. The loading zones are for large tractor trailer style delivery vehicles. Smaller parcel delivery will simply park in a parking spot or on a surface lot nearby to deliver parcels.



PROGRAM RECOMMENDATIONS

Signage and Wayfinding

Throughout the public engagement process, several participants said that they were not aware of nearby public parking lots outside of on-street parking spots on Main Street and Court Square despite existing parking wayfinding signage. This is also reflected in the City of Graham's parking study, which found that the most heavily utilized spaces are those on Main Street and within the Court Square. Existing public parking lots are in close proximity to Court Square and many are routinely underutilized or even empty.

This likely indicates a need for a more robust signage and wayfinding program. Parking lots and on-street parking should be easy to find from anywhere in downtown, and signage should be consistent and clear for residents or first-time visitors alike. Signage connecting parking areas to downtown should accomplish three goals:

- Signs should be clearly visible signs at all entrances and exits of parking areas, and they should point users towards major destinations;
- If there are multiple routes to a destination, signage should help users easily choose routes into downtown Graham from each of the parking location; and
- Parking signage must be visually pleasing and distinct to Graham, contributing to the city's overall sense of place.

Pedestrian Wayfinding in Omaha, NE

Activated Alleys

Potential alleys in Downtown Graham present an opportunity to not only serve the back-of-house, but to give people a sense of discovery as they approach Court Square. Walkways into downtown, including alleys and sidewalks from nearby parking lots, should be well lit, clearly defined, and inviting. The alleyway additions in the proposed concept provide an ideal opportunity to invite people to walk towards downtown from other parking spaces. Activated alleyways use street art, festive lighting, and high-quality landscaping to serve as destinations in and of themselves. They can provide a fun and engaging space for pedestrians while still maintaining functionality for deliveries and services when needed.

Outdoor Dining in Alleys


ONEIDA
ELM
MCBRIDE
HOLT
BANK

4

STORMWATER + UTILITIES

Existing Conditions
Proposed Treatment


GREEN & McCLURE
FURNITURE
Green & McClure
SKIDS II
WRIKE
DRUGS
Coca-Cola
SOUTH
87

STORMWATER + UTILITIES

Revitalization of Downtown Graham is not solely dependent on a vibrant streetscape or vertical construction. At its very foundation is the infrastructure needed to support growth. Stormwater and utilities must adequately serve the current infrastructure but allow for future growth and demand. Graham has experienced inadequacies in their system first hand through flooding in Court Square, sewer capacity issues with new construction, and system failure with age. Without adequate utilities in place development cannot and will not occur. As capital improvement projects begin these systems must be overhauled and included as part of every project.

This chapter will identify the existing conditions within Downtown Graham. It will provide both short- and long-term solutions for infrastructure needs that are traditional and non-traditional using today's best practices. Recommendations will prepare Graham for the next 100 years and will help create a more self-sustaining and adaptable system over time.

Chapter Components

Existing Conditions:

Understanding existing utility conditions starts with a good survey, gis, research, and analysis. An in-depth look at downtown's current infrastructure shows numerous issues and inadequacy.

Proposed Treatment:

Industry standards and best practices are highlighted to provide Graham with a menu of treatment options both above and below ground.

Existing Conditions

Over time, parts of Downtown Graham's network of stormwater and utilitiy facilities have typically been replaced due to associated roadway work or for critical repairs. The nature of these improvements have created a system with uneven capacity and an incongruous layout. This project presents a great opportunity to lay the groundwork for improvements that will allow for easier maintenance and more regular repair cycles while also providing relief to the downstream conditions for a greater range of storm events.

A stormwater network is commonly comprised of collection and conveyance facilities such as inlets, manholes, and pipes that collect stormwater runoff from the roadway surface and corridors and then convey it to flood control and/or stormwater quality facilities or directly to local outfalls. Outfalls can be minor or major drainageways such as streams, creeks, wetlands, or rivers. For stormwater networks along roadways, stormwater is collected by inlets and conveyed in pipes until outfall. The main conveyance pipes are typically called trunk lines. This conveyance and stormwater network can also be described as hydraulics. Hydrology encompasses stormwater catchments or the area draining to a source such as inlet, water quality feature, or detention facility. A minor catchment describes the area draining to a specific inlet and the major catchment, a specific outfall. Detention facilities are used to reduce peak flows, defined for this project by the 10-year and 100-year design storms, and are placed at points along or at the end of the conveyance facilities.

EXISTING CATCHMENTS

Two main catchments in Downtown Graham run to the east and to the west of Court Square. Each of the catchments around Court Square primarily include impervious area and roof drainage from adjacent buildings.

Stormwater from the western watershed makes its way to the stormwater trunk line starting on West Elm Street. In general, the overland flow paths follow the stormwater network and are consistent with surface grading. The system outlets into the Bowden Branch which merges into the Little Alamance Creek before connecting to the Haw River.

There are three minor catchments to the east that ultimately outlet into Town Branch, a tributary to the Haw River. Flows from the southeast and Northeast catchments ultimately converge in the ditch just north of the intersection of East Harden Street and Oakwood Drive, near the Linwood Cemetery. Runoff along North and South Main Street is kept to a minimum with a system of inlets and trunk lines. The Main Street catchments are divided between roadway high points and collected runoff flows to the east just north of East Harden Street and at the intersection with East Pine St.

The Haw River watershed, including the Bowden Branch and Town Branch Creeeks, is classified as Water Supply V (WS-V) and Nutrient Sensitive Water (NSW). NSW rivers need nutrient management due to excessive microscopic or macroscopic vegetation.

EXISTING CONVEYANCE AND WATER QUALITY

Currently there are limited water quality facilities in Graham, however some systems outlet into grass channels that may offer some treatment during small events. Most of the pipe network at or adjacent to Court Square is undersized for the current levels of impervious surface that discharges into the system.

Graham needs better drainage and collection in between buildings, in alleys, and at intersections surrounding Court Square. There are corners where, after storm events, water forms surface ponding or pools. The depth of the systems that collect drainage from the square are typically between 4- and 5-foot deep. There is an existing valley gutter collecting parking lot and roof runoff in the northeast quadrant of the square. The most common collection structures are grated inlets. Many are dated or broken and should be replaced with more pedestrian-friendly grates.

Along Main Street there are systems that collect water in inlets and into trunk lines that flow east to the Haw River tributaries. The main branches from Main Street are at the public parking lot 300 feet north of the Harden Street intersection and at the East Pine Street intersection. At the time of this report NCDOT is currently installing additional catch basins in Court Square to tie into the main branch located at the Pine Street intersection

UTILITIES

There are several utilities serving Court Square that are

known to need an upgrade if they are to comply with current standards. There are also abandoned utilities that need removal, such as the water main surrounding the square. Alternately, it may be more economical to plug and fill abandoned lines with flowable fill. With the existing utility layout, there is an opportunity during roadway changes to upgrade sewer and water services to a best practice layout and to remove obsolete utilities. Any proposed work adjacent to existing utilities will require examining existing conditions and service agreements with the City of Graham. In addition to upgrade needs, power and telecom lines are typically overhead once outside the downtown area. In some cases, roadway work that impacts poles may require incorporating the utility and funding its undergrounding. Utilities should be upgraded once roadway design is initiated to avoid future patchwork repairs.

The following are the known utility providers in the project vicinity:

Water & Sewer: City of Graham

Telecommunication: AT&T, Century Link, and Time Warner Cable

Gas: Piedmont Natural Gas and Public Service Company of NC

Power: Duke Energy

Proposed Treatment

The goal for stormwater in the City is to collect stormwater and treat all areas where the City makes improvements, however that will likely be a step-by-step process. In the interim, the detention of stormwater is as essential as collecting and treating it due to the undersized pipe network downstream from the project area.

Water quality and detention facilities shall meet North Carolina Department of Environmental Quality (NC DEQ) standards for post-construction as well as the City of Graham's Stormwater Ordinance and permit requirements. The current ordinance describes many parameters for water quality and quantity facilities that shall be met or exceeded. It also describes measures for Nutrient Sensitive Waters, water quality, and other stormwater system requirements. If needed, the ordinance should be amended or adapted upon installation of the proposed design features.

GREEN INFRASTRUCTURE

Green infrastructure uses vegetation, soils, and other elements and practices to reduce runoff and treat stormwater at its source. It seeks to mimic the response of the natural catchment and its surfaces. With management and control structures, green infrastructure can drain and treat surface water in a more sustainable approach.

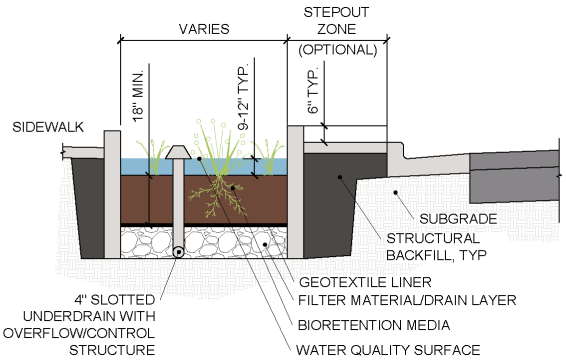
The vision for sustainable stormwater management in Graham is to evolve the green stormwater treatment over time to fit with the unique characteristics of the region. Typically for Graham the facility type should be a bioretention planter or swale with additional opportunities for tree well treatment devices or manufactured devices in very constrained situations. Green infrastructure, also known as structural Best Management Practices (BMPs), will help infiltrate stormwater, reducing runoff and alleviating pressure on a failing system. With each improvement, green infrastructure can be an increasingly integral piece to improving aesthetics and water quality while providing detention for minor storm events. Substituting a traditional pipe and inlet system with a green infrastructure facility provides an opportunity for both natural and artificial stormwater runoff and peak flow reduction.

Green infrastructure will serve to stimulate plant diversity, provide shade, and help create a visually pleasing Court Square and Main Street corridor. Rain water from nearby roofs will be directed into bio-retention planters and tree wells. To ensure a low-maintenance landscape, native planting will be incorporated into the design of each planted facility. Green infrastructure can be adapted to a wide range of soil types, catchment pavement types, and stormwater system connection depths.

Bioretention Planters

Bioretention planters are typically placed between the street and building or right-of- way. The planters are located within the furnishing zone and face the street, with curb openings serving as inlets, and can be integrated into a variety of adjacent street and pavement types. Runoff is collected, spreads across the planting media, infiltrates into the media, and flows into an underdrain that connects to a pipe network. The treatment process includes filtration, plant uptake, heavy metal reduction, and absorption. Depending on the existing soil type, filtration can have a large impact on performance and need for an underdrain. The image below shows a typical planter section that allows flexibility and can function in a variety of settings around downtown.

Typical Bioretention Planter Section



To allow for planting of trees along with shrubs, grasses, and other native groundcover, the minimum inside planting media width should be five feet. The proposed planters should maximize the width to allow for flexibility and adaptability of the planting over time. Where a planter is adjacent to parking, a step-out zone should be provided where space permits.

For situations like the existing valley gutter at Court Square, a minimum width planter (sometimes referred to as a green gutter), can be retrofitted in place to provide treatment. The minimum width for a green gutter is three feet for maintenance and planting feasibility.

Tree Wells

Tree wells have emerged as a popular device for integrating treatment and detention with a maintainable

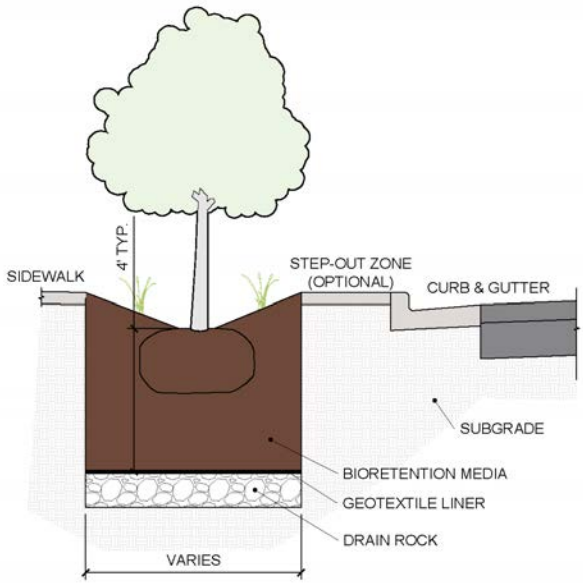
tree area. They can be successful in even the most urban settings, as they provide great flexibility in size, efficiency, and connection to existing stormwater systems. Since tree placement will be a significant part of the proposed downtown design, tree wells can be a beneficial utility for meeting the City's stormwater needs.

A tree well is a type of bioretention facility that provides treatment from street or sidewalk runoff. Runoff typically enters from a curb opening or trench drain inlet and flows through filter material before being collected in a perforated underdrain. Tree wells are configured to allow infiltration into the existing ground while still prioritizing uptake by the tree roots.

Since the treatment is contained underground, tree wells can be used in constrained locations or where a paved surface is preferred. They work well in plaza spaces or other areas with a lot of pedestrian activity because they keep the treatment function hidden from view.

The image below shows a typical cross section and components of a tree well:

Typical Tree Well Section



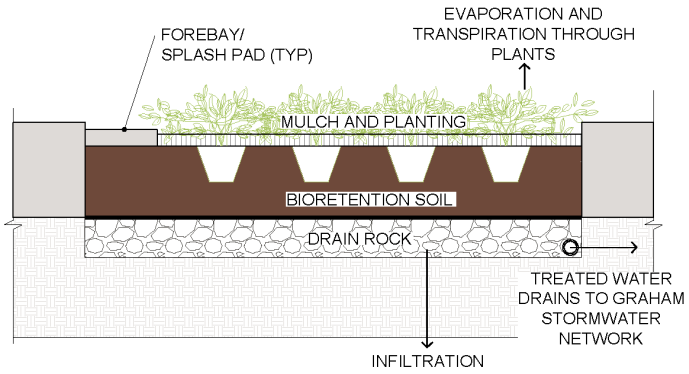
The City can either develop its own tree well design or use a proprietary device. Selecting a common design or device will allow for future ease of construction and maintenance needs. With either option, multiple trees can be included in each tree well, as can added space for detention. If using a proprietary tree well, the design should meet recommendations contained in the NCDOT Stormwater Manual. Common proprietary tree wells include Deeproot's Silva Cell and Imbrium Systems' Filterra Biofiltration system.

MANUFACTURED TREATMENT DEVICES

Manufactured devices are being used around the country in a variety of contexts, and the current best practice is to use them where there are spatial constraints and ongoing maintenance isn't a major concern. The central benefit to manufactured devices is that they are contained underground while offering good treatment efficiency. They can be selected based on site-specific issues or to target certain pollutants. From a low-impact development standpoint, these devices are a secondary option for this project. In addition, some devices can have relatively high initial and ongoing maintenance costs compared to more natural treatment features.

Only devices that are verified by NC DEQ should be installed. Contech's StormFIlter is an example of a certified manufactured device that works in place of street-side inlets. A StormFilter is a good example of a device that can be used around the City and that will work in most roadway contexts. Imbrium Systems' Stormceptor is an example of a device that works in place of a manhole and is a separator designed to remove total suspended solids, oils, heavy metals, and nutrients. A typical Stormceptor is represented in the following figure.

Typical Stormceptor Section



Source: Imbrium Systems – Stormceptor

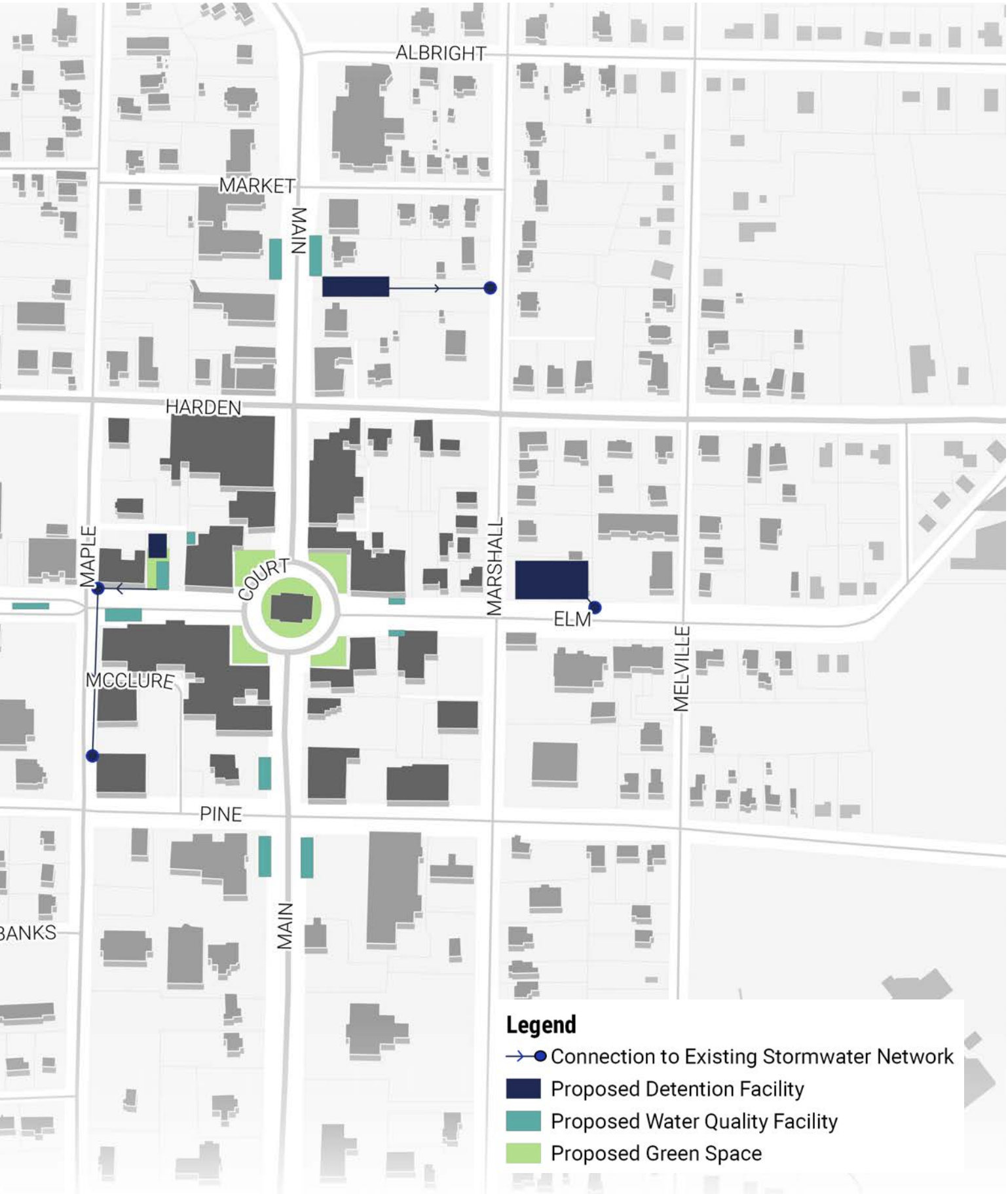
NCDOT's Stormwater Design Manual also specifies minimum design criteria and recommendations for new stormwater technologies. Any devices utilized should meet or exceed these recommendations.

UNDERGROUND DETENTION

With the proposed roadway layout and limited public open space surrounding Court Square, underground detention will be the best way to detain water and reduce the load on the existing drainage system. The proposed roadway design will reduce peak flow by reducing the impervious area. Providing detention will bring the added benefit of relieving the downstream system and reducing the need to pay the high cost of upsizing long drainage trunk lines in the future.

Multiple city-owned parking lots located near the existing conveyance from the square have adequate space to provide a significant delay in peak discharge. With the layout of the existing catchments, multiple facilities will be required to have the maximum impact. The proposed roadway design will allow implementation of new conveyance and detention facilities without introducing interbasin transfer or significant City system stormwater transfer issues.

Please note: Other potential locations for greenspace should also be evaluated and created in cooperation with downtown property owners.


ALBRIGHT
MARKET
MAIN
HARDEN
MAPLE
COURT
MARSHALL
ELM
MELVILLE
MCCLURE
PINE
MAIN
BANKS
Legend
Connection to Existing Stormwater Network
Proposed Detention Facility
Proposed Water Quality Facility
Proposed Green Space

STORMWATER + UTILITIES RECOMMENDATIONS

The proposed improvements to the water quality and storage network can be phased in line with the overall project timeline described in Chapter Five.

Water Quality Facility Recommendations

An incremental approach is recommended for stormwater quality improvements. At each location of roadway reconstruction, water quality facilities should be placed and included in the design for maximum treatment benefit. Where space and budget permit, alternative facility details should be developed to increase detention for large storm events.

Recently completed green infrastruction in Saint Paul designed by Toole Design

Bioretention planters are proposed at or near low points along Main Street and should connect to the main east-west conveyance systems. The planters should be sized to treat the water quality event for the impervious surface of the proposed roadway layout to the maximum extent possible. Tree wells are proposed in and around the square where there is reduced ground space for planters.

In future phases of the proposed projects where planters or tree wells aren't feasible, the City should look for opportunities to bank the equivalent impervious area for treatment. Ideally the treatment could occur along the same conveyance system and serve the same function upstream or downstream. There may be circumstances where bioretention is better served at another location with more available space.

A short term, low-cost solution, is to simplify the planter design to closely resemble a grassed swale. If the facility can be arranged in a way that minimizes concrete walls and simplifies the planting to native grasses overall costs will be greatly reduced. The challenge for the low-cost facility is finding adequate landscape space to provide effective treatment. Ideally, trees will be included in the swale. The swale design should follow NC DEQ guidance for a Treatment Swale and have flexibility to be upgraded to a planter in the future.

Stormwater Detention Recommendations

Typically, an analysis of pre- vs post-construction runoff would provide a starting guideline for goals. For this project, because the catchment areas are made up primarily of impervious surfaces, the goal is to provide the maximum water detention feasible once roadway design is initiated. Water quality facilities should be included in detention calculations for a fully representative model and should be part of the overall strategy to reduce peak runoff. Graham's Stormwater Ordinance specifies post construction treatment requirements but measures above those are needed for the future projects to provide a benefit.

The OPCC could vary based on location but may be similar of site of comparable size and scale.

There are three proposed locations for detention facilities; each is a City-owned parking lot near a conveyance system collecting runoff from Main Street and surrounding Court Square.

Two options are proposed for the design of the facilities:

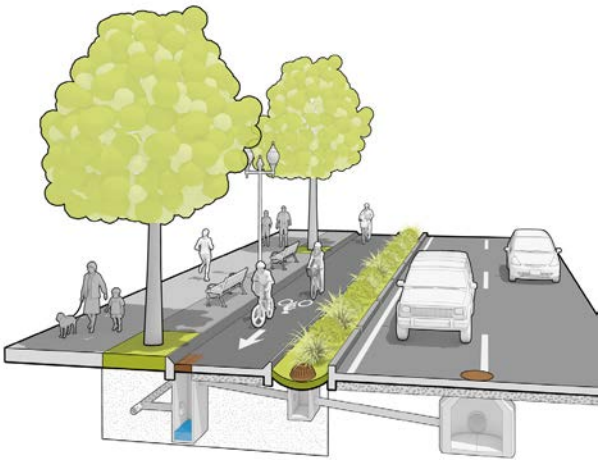
1) Non-Proprietary

2) Proprietary

The non-proprietary option involves developing a project-specific design using pipes aligned in a row, maximizing the funds available. This design could be built up over time and maintained by City staff. The proprietary system is a device such as a StormTech Chamber, which may require more physical infrastructure but will likely yield more controlled results and better performance. Both systems can be designed to include infiltration and sediment control, and to control the water quality volume and initial surface runoff.

The proposed detention facility at Main Street should be constructed when the roadway is re-constructed in line with the overall project phasing. Priority between the two locations collecting runoff around the square should go toward maximizing the runoff reduction impact while considering existing capacities downstream.

Example of a green infrastructure facility



The proposed stormwater model should provide a comprehensive analysis of water quality facilities, paving surfaces, and optimization of runoff routing.

Stormwater Network Upgrades

While stormwater network upgrades will occur along sections of future roadway work, there are some drainage lines that need to be replaced to allow the proposed detention and water quality device locations. Stormwater pipes downstream of identified detention and treatment should be replaced if it will assist with the facilities function.

The line along Maple Street between Elm Street and Pine Street must be lowered at Elm Street to allow depth in both detention and water quality facilities in the City-owned parking lot. There is adequate grade difference to allow the drop with approximately 400-ft of new pipe required. Making this upgrade in an early phase will allow flexibility to make future system improvements and variation in treatment facility types.

Maintenance Requirements

Non-traditional stormwater systems are not inexpensive and require additional maintenance from qualified personnel. It is essential that water quality and detention facilities are maintainable by City forces and financially sustainable as more are added. Installing a more uniform and consistent system will help ease maintenance needs, especially from a planting perspective. Green infrastructure should be included in each phase to meet water quality requirements to the maximum extent possible while still being viable long-term solutions. The maintenance of these facilities will be crucial to the overall performance of each element. Additional trained personnel will be needed to ensure each facility continues to function after the implementation is complete.

If needed, the City should amend the stormwater ordinance to help with long-term maintenance of the water quality and detention facilities designed as part of future roadway works. Consideration of more stringent water quality and quantity controls will help reduce the amount of future runoff.

Proposed Treatment (Water quality and quantity)

- Underground detention areas identified
- Bioretention or other water quality areas to be explored (including facility types)
- Reduction in impervious area along corridors
- Future development policy to be explored

Implementation and Phasing

- Phased so that the City of Graham can implement in small stages
- Short-term lower cost solutions (water quality & quantity)
- Long-Term system wide solutions (water quality & quantity)
- Plan for next 100 years with high-level costs for each stage


ONEIDA
ELM
MCBRIDE
HOLT
BANK

5

PHASING + IMPLEMENTATION

Phasing
Implementation
Funding


WRIKE
DRUGS
Sutton's
114
NO BICYCLES OR SKATEBOARDS ON SIDEWALK
NO PARKING IN DRIVEWAY
HOURS
Sutton's

PHASING + IMPLEMENTATION

A plan that is not ground in truth is a plan that will sit on a shelf. The Downtown Graham Master Plan will not be realized overnight. Careful planning, negotiating, design, funding, and construction can take several years to materialize. Understanding this, attention must be given to a succinct and well thought out phasing and implementation plan.

This chapter seeks to guide the City through the proposed phasing, implementation, and funding process, outlining a clear path forward to a lasting legacy in downtown.

Chapter Components

Phasing:
The downtown master plan will be implemented over the course of several years. Logical sequence of construction is established to guide Graham over the next 10 years.

Implementation:
How does Graham move forward with the recommendations presented throughout the preceding plan? Strategies and solutions to implement a successful multimodal network, provide and inviting streetscape and public space, and establish sufficient stormwater and utilities will be discussed.

Funding:
Funding is the lifeblood of implementation. Identification of potential funding mechanisms is critical.

Phasing

Implementation of a downtown masterplan without a clear path forward can feel like a daunting task. A phasing plan establishes a clear path forward breaking up projects into manageable and achievable projects. The diagram on the following pages represents prioritized projects and the recommended sequence of implementation based on community feedback and existing capital improvement projects.

PHASING

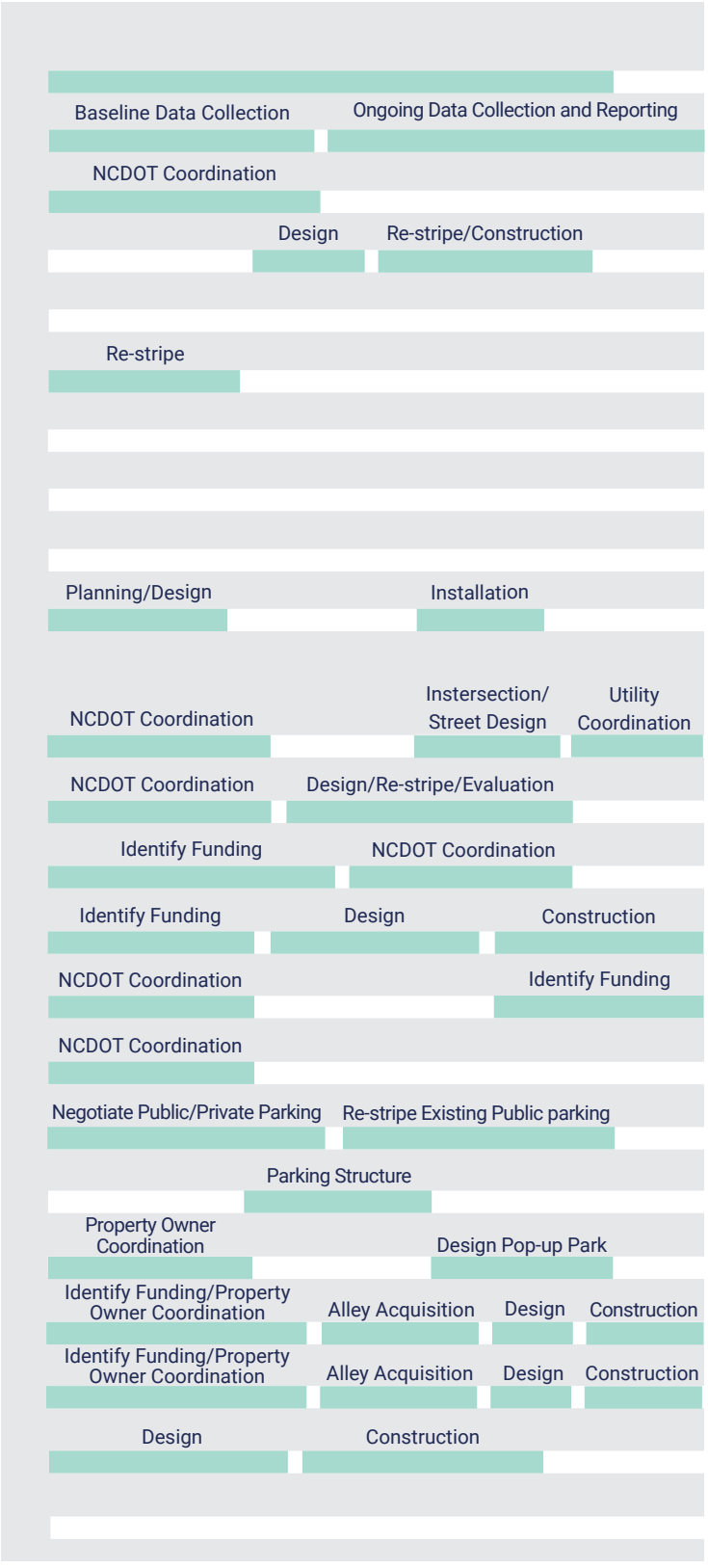
01
NOW

MULTIMODAL NETWORK

- Policies and Programs
- Data Collection
- Complete Sidewalks along Maple and Marshall (Elm to Gilbreath)
- W. Market Street - Neighborhood Bikeway (W. Elm to Maple)
- W. Market Street - Slow Street (Maple St. to N. Main)
- Pine Street Bike Lanes
- Oneida Street - Neighborhood Bikeway (Market St. to W. Elm)
- N. Main Street Bike Lanes
- McAden Street Bike Lanes
- Branding/Wayfinding

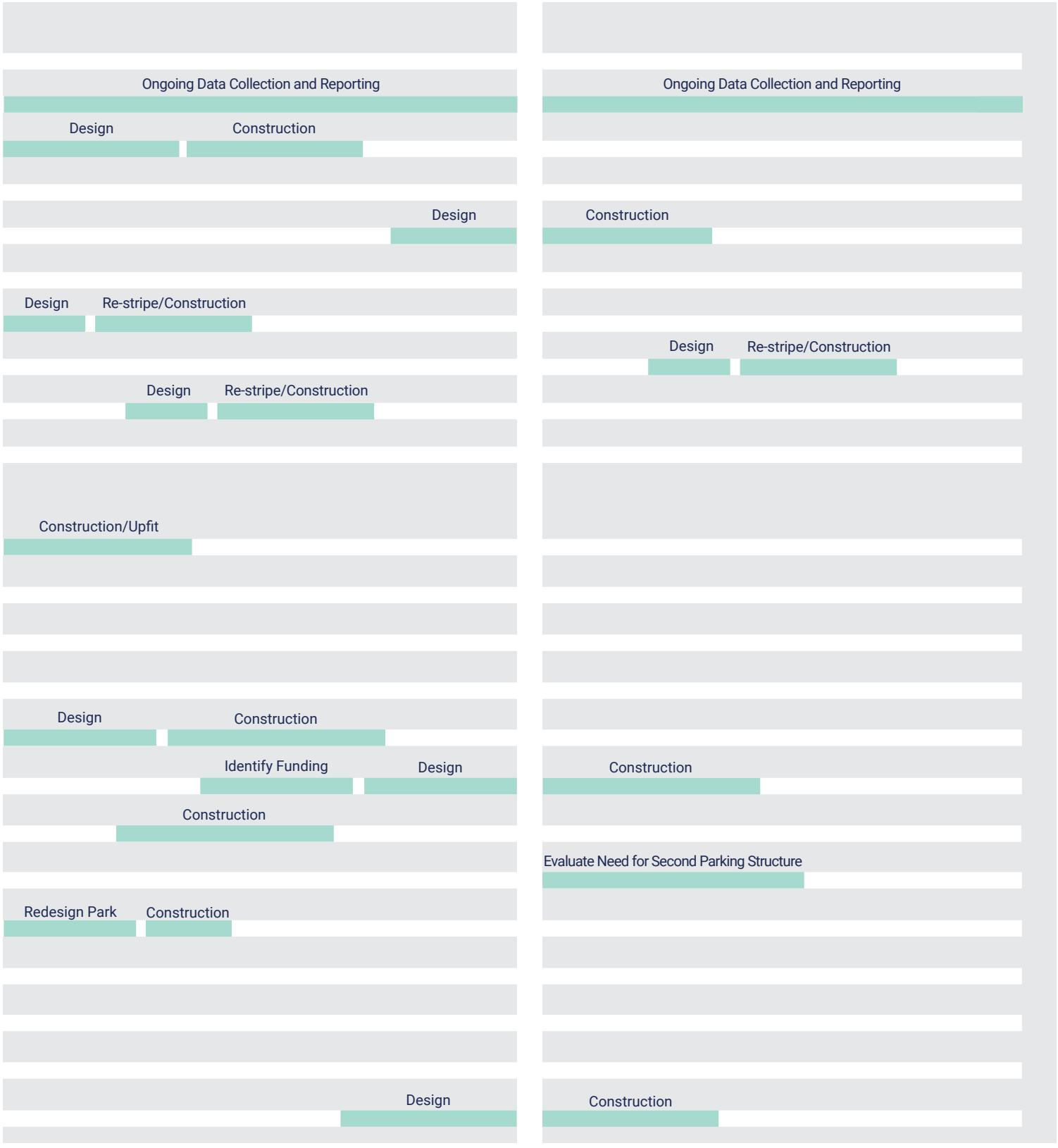
STREETSCAPES & PUBLIC SPACES

- Alternative Truck Route
- Court Square - Pilot Project
- Court Square - Reconstruction
- Elm Street (100 Blocks)
- Main Street - South Main (McAden to Court Square)
- Main Street - North Main (Court Square to Albright)
- Parking
- Parking Structure
- Green Space/Adaptive Reuse
- Restore Historic Alleys - NW Block
- Restore Historic Alleys - SW Block
- Eastern Gateway - E. Harden/E. Elm (already in design)
- Western Gateway - W. Harden/W. Elm



02
3-5 YEARS

03
6-10 YEARS



Implementation

The visioning process for Downtown Graham has brought the community closer together than ever before. There is excitement and a hint of skepticism across the community. Will the City move forward with recommendations? The plan itself is just the beginning of the process and stirs up momentum for change. The momentum gained during the process must be continued. Now that a clear vision and Concept Plan has been established, complete with an understanding of community desires and guidance on key design features, it is time to advance the plan to reality.

Recommendations go beyond the physical design of the public realm and include program and policy changes that can increase safety and health for people enjoying Downtown Graham.

Graham should start with the following:

Consistency Statement:

-Ensure all future actions and funding lead to a better Graham and point back to the 2019 Downtown Master Plan.

Complete Streets Policy:

-Language exists in the current development ordinance but does not carry enough weight and leaves to much up for interpretation.

-Provide guidance and assistance with NCDOT projects that impact downtown Graham.

Evaluate Potential Return on Investment:

-Return on investment is not simply economics, while this is a valuable aspect several other factors contribute to the return:

- -Health
- -Quality of Life
- -Environment
- -Safety

-Graham must ask itself when every project is evaluated for inclusion in the fiscal year budget, is what we are about to approve going to contribute to the potential return on investment established in this plan?

MULTIMODAL NETWORK

As Graham grows its bicycle and pedestrian network, it will become a more vibrant and more accessible community. Implementing multimodal facilities can be challenging but provides mobility options for residents and visitors. While not exhaustive, the following list outlines some of the most important steps for creating a successful network of bicycle and pedestrian facilities:

01. Create policies that support the implementation of bicycle and pedestrian infrastructure and the growth of active transportation culture

Sidewalk gap programs, bicycle/pedestrian counting programs, bicycle and pedestrian safety curriculums in schools, and Complete Street ordinances can create frameworks for successful implementation and use of a network for years to come.

02. Prioritize projects

While all projects are essential to creating a connected community in which to bicycle, walk, and wheel, some projects will create larger impacts. This could be because they connect more people to key destinations, or it could be because the community is particularly excited about certain projects. These projects should receive more immediate planning and implementation efforts. The City of Graham can identify which projects are the highest priority by creating a prioritization scoring mechanism and/or through public engagement.

03. Create metrics for success

Before implementation, Graham should have a clear picture of what "success" in its active transportation network looks like. Creating measurable goals and clearly defining desired outcomes will help staff identify priority projects and set a strategic direction.

04. Implement "low hanging fruit" projects

Some parts of the network may be easier to implement than others due to the project type, community support, or specific funding mechanisms. These projects should be identified and slated for implementation as soon as is feasible.

05. Identify funding mechanisms that are suitable for the project and community

Not all funding mechanisms work in all communities. The City of Graham should assess the feasibility of municipal bonds, impact fees, voter-approved sales taxes, state/federal funding grants such as BUILD grants, and partnerships with state organizations like the North Carolina DOT and Department of Environmental Quality.

06. Over time, add higher priority projects to the Capital Improvement Plan

As is appropriate, add the highest priority projects to the city's capital improvement plan.

07. Identify community partners and champions

Some community members will be "champions" of infrastructure improvements that support better bicycling, walking, and wheeling. This could include local advocacy groups, community leaders, school students and teachers, and members of religious congregations. Additionally, NCDOT should be a partner throughout the process. The creation of a health advocacy committee to review proposals and make recommendations will help Council to make decisions and create budgets.

The Downtown Graham Master Plan identifies several recommendations that increase mobility options and expand the safety and connectivity for pedestrians and people that desire to ride a bicycle. The following provides additional detail on implementation for several recommendations that have been included in the phasing plan.

Policies and Programs

Transportation and streetscape recommendations are critical to establishing Downtown Graham as a vibrant and safe place for user; however, local policies and programs should be updated and developed to ensure consistency with the vision and goals of downtown. Policy updates often include local resolutions or revisions of development ordinances that can guide private development to contribute to the sense of place approaching the Court Square and throughout downtown. In addition to policies, programs should be considered to celebrate the changing public realm and encourage users to experience Downtown Graham in a new way. Programs for data-collection should also be considered and are described in the following section.

Project Phase: One

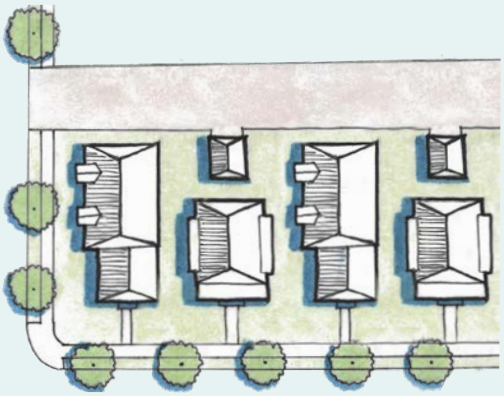
Policy and Program updates should consider:

- Updated to development regulations and zoning ordinances that may include but are not limited to:
  - » Reducing the minimum lot size for commercial and residential properties within the downtown area to encourage more dense development.
  - » Establish build-to requirements for all development along the gateway corridors and within the Court Square. This may include a zero-foot setback for any new development in the Court Square or in the 100 blocks of Main Street or Elm Street.
  - » Update off-street parking regulations to require vehicular parking to be located behind buildings along Main Street and Elm Street. Consider parking maximums for downtown residences and design enhancements to reduce parking provided per site.
  - » Ensure that development ordinances require bicycle parking for commercial development for properties along Main Street and Elm Street.
- Bike to Work/school day - an annual event to encourage local residents that work or go to school in Graham to ride a bicycle for commuting.
- PARKing Day – an opportunity annually for business owners and community members to temporarily transform on-street parking stalls into attractive, creative, and functional public spaces. This annual event allows for the public to imagine and build “parks” in a fun yet temporary way throughout downtown.

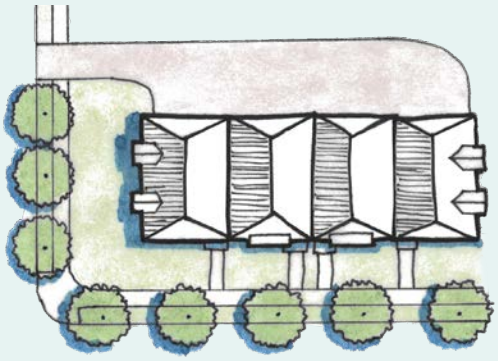
Residential Density Study – Marshall Street

Residential density can be achieved through creative site planning and design. The existing site along Marshall Street is representative of the typical housing stock locate on the periphery of downtown Graham. Through a simple redesign of two parcels, several residential units can be accommodated and maintain the desired character of Graham.

Existing Site



Compact Single Family: 3 Units

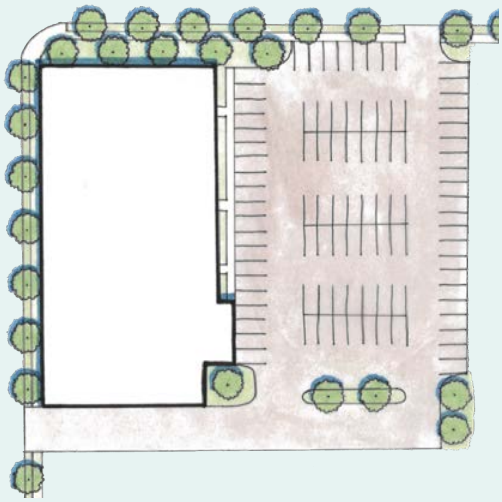


Townhouses: 4 Units

Gateway Corridor Development

Gateways Corridors are meant to welcome people as they enter a community and should appear visually different than surrounding areas. Buildings should address the street, all parking should be hidden from view unless on-street, inner-parcel connectivity and shared parking areas should be the norm, infill development should match the fabric of downtown, street trees should form an allee, and pedestrian facilities should be provided between the allee and building fronts. Through strong design, people are provided with a visual que of arrival to downtown, slow down, and places people first. To achieve the Gateway Corridor for all new development within the Main Street Corridor new development regulations and zoning ordinances must be adopted to fit Graham's desired character.

Existing Site



Commercial

Data Collection

Transforming Downtown Graham will be incremental and collecting important data as a baseline and as projects are implemented will help to tell the story of how changes are impacting the community. Data collection should start in Phase 1 but is an on-going process that should continue through all recommended phases and beyond.

Project Phase: On-going

Data collection should include, but is not limited to the following:

- Routine bicycle and pedestrian counts throughout the downtown area
  - » Parking capacity and utilization counts for both vehicle and bicycle parking
- Residential activity in Downtown Graham
- New businesses and new industries in downtown
- Crash data for all transportation modes that includes but is not limited to:
  - » Type of crash
  - » Crash severity
  - » Modes of travel involved
  - » Location of crash (i.e., on-street vs. off-street, intersection vs. non-intersection)
  - » Street/intersection characteristics for on-street crashes
- Vacancies
- Annual evaluation of property values

Complete Sidewalks along Maple and Marshall (Elm to Gilbreath)

A completed sidewalk network approaching Downtown Graham will increase access from the surrounding neighborhoods and properties. Filling sidewalk gaps along Maple Street and Marshall Street are critical to the long-term success of Downtown Graham. NCDOT coordination on these sidewalks should be conducted concurrently with changes to Main Street, Court Square, and alternative truck routes.

Project Phase: Two

W. Market Street - Neighborhood Bikeway (W. Elm to Maple)

A neighborhood bikeway, sometimes referred to as a bicycle boulevard, along W. Market Street provides a low-stress connection for people on bicycles traveling from W. Elm Street or E. Webb Street toward Downtown Graham. Neighborhood bikeways should be designed to minimize vehicle operating speeds and reduce cut through traffic.

Project Phase: One

The W. Market Street neighborhood bikeway should consider the following:

- Intermittent curb extensions/bulb outs to narrow the travel way and slow turning speeds near intersections.
- Striping stop bars at the following stop-controlled intersections:
  - » North Street
  - » Washington Street
  - » Maple Street
- Formalizing parking areas where there is adequate width.
- Shared lane pavement markings and bicycle wayfinding signage.

W. Market Street - Slow Street (Maple to N. Main)

The continuation of the W. Market Street neighborhood bikeway is a one block slow street between Maple Street and N. Main Street. A slow street design removes barriers and allow for all users to move freely through and across the street. The slow street design and construction should be coordinated with the N. Main Street project to increase efficiency in construction.

Project Phase: Two - Three

Implementing the W. Market slow street should include:

- Consideration of a flush street based upon assessment of Court Square redesign.
- Options for decorative street materials such as brick or pavers.
- Wayfinding signage for all users.
- Street furnishings and lighting.
- Opportunities for public art.

Pine Street Bike Lanes

Bike lanes on Pine Street provide a clear east/west bikeway connection that currently does not exist in the City of Graham. Additionally, striping bike lanes reduces the existing outside lane width and could assist in reducing vehicular speeds. This project has already been in progress and should be implemented in the immediate-term.

Project Phase: One

As part of the S. Main Street project, a modified protected intersection should be considered to provide separation for people on bicycles as they approach S. Main Street along Pine Street.

Oneida Street - Neighborhood Bikeway (W. Market to W. Elm)

Much like W. Market Street neighborhood bikeway, this two-block section of Oneida Street should be designed to reduce cut through traffic and lower vehicle operating speeds. Linking W. Market Street to W. Elm Street via the Oneida Street neighborhood bikeway offers convenient access to Downtown Graham.

Project Phase: Two

The Oneida Street neighborhood bikeway should include:

- Curb extensions at Oneida Street and W. Market Street to slow turning vehicles and narrow travel lanes.
- Tighter curb radii at the intersection with W. Harden Street.
- Striped stop bars for Oneida Street at W. Harden Street.
- Shared lane pavement markings and bicycle wayfinding signage.
- Rectangular Rapid Flashing Beacon (RRFB) for crossing W. Harden Street.

N. Main Street Bike Lanes (Albright to Washington)

After the completion of the N. Main Street gateway roundabout at the intersection of Albright, bike lanes are recommended to connect residential areas to Downtown Graham by bicycle along the most direct route. Designating operation space for people riding bicycles will increase comfort along with narrowing travel lanes. The current width from curb to curb is approximately 32-feet. Reallocating space along this street would allow for up to 6-foot direction bike lanes along with 10-foot travel lanes.

Project Phase: Three

The N. Main Street bike lanes should consider:

- Conflict markings for all driveways and property curb cuts.
- Intersection treatments to prioritize bicycles and pedestrian at Washington Street
- Wayfinding and signage bicycles

McAden Street Bike Lanes

In conjunction with the implementation of the S. Main Street gateway roundabout and streetscape changes, bike lanes along McAden Street are recommended. Connecting Maple Street to Graham Middles School, bike lanes along McAden also intersect the proposed shared use paths along S. Main Street with direct access into the Court Square.

Project Phase: Two

Bike lanes on McAden Street should include:

- Clear wayfinding signage to local destinations including Court Square and Graham Middle School.
- Ramps from the bike lanes to separated shared use crossings of the roundabout at S. Main Street.
- Conflict markings for all driveways and property curb cuts.
- Considerations for arrival and dismissal of students at Graham Middle School by bicycle to mitigate conflicts with vehicles.

Branding/Wayfinding

The City of Graham should clearly define a brand for the downtown area along with wayfinding signage for all modes of transportation. The brand for the City of Graham should be incorporated into the streetscape improvements, wayfinding, and Court Square design. Branded wayfinding should be intuitive and direct users to a variety of destinations within Downtown Graham, including local attractions, institutional uses, and local parking. Signage should be applied consistently throughout Downtown Graham to ensure that residents and visitors can find their anticipated destination or discover something new in downtown.

Project Phase: One

STREETSCAPE + PUBLIC SPACE

Implementation Considerations

The Graham Downtown Master Plan provides a clear vision for the future of Graham. While conceptual designs have been developed, many details must be further explored before and during design and construction of each project. Additional attention must be given to the following as implementation progresses. These are outlined below.

NCDOT Coordination

With three major state routes converging in Downtown Graham; NC 87, NC 54, and NC 49, NCDOTs partnership is critical for successful implementation of this plan. NCDOT has been engaged throughout the life of the Graham Downtown Master Plan as alternative concepts were created, traffic studies discussed, and final recommendations revealed.

While the City and NCDOT have made great strides toward implementation and the betterment of Graham, many discussions and decisions still must be made. Critical discussions include:

- Alternative Truck Route – Currently semi-trucks are routed through Court Square, the heart of Graham. In order to create a vibrant destination within downtown, semi's need to be limited to delivery only not through traffic in the Square. An alternative truck route must be identified before Court Square can realize its full potential.
- Road Diet – Conceptually Main Street, North of Gilbreath to Pine Street will move to a three-lane cross section from a five-lane cross section. This will provide a gateway into downtown and multimodal facilities creating a complete street in Graham. NCDOT legislation states that a roadway over 18,000 vehicles per day is not an eligible candidate for a road diet. The current average annual daily traffic count is just over 19,000 vehicles per day. An updated traffic count and further traffic engineering must be performed. Alternatively, Graham established a tight grid network of streets with three north south connectors (Maple Street, Main Street, and Marshall Street). The combined capacity of three three-lane streets will hold approximately 54,900 vehicles per day. Utilizing it's grid network, Graham has capacity to almost triple the number of vehicles it serves per day.
- Road Swap – The City and NCDOT have discussed the possibility of a road swap, Main Street from north of Gilbreath Avenue to Harden Street for Marshal Street. This swap has the potential to become an alternative truck route and provides the City with control of Main Street as it enters downtown.
- NC 87 Designation – Main Street's designation as NC 87 has both a positive and negative impact on downtown. The route brings commuters, visitors, and residents alike through the heart of downtown and potential revenue for downtown merchants. NC 87 is a major north south regional connector for the State of North Carolina that must be maintained; however, Main Street does not have to serve as its designation. An alternative designation has the potential to create an inviting and engaging downtown, free of commuters and semi-trucks. Currently, alternative designations are being looked at to include but not limited to; Maple Street to Harden Street, NC 54, and neighboring communities. Further exploration and discussion with NCDOT must take place.

Stormwater + Utilities

Stormwater conveyance and utilities are necessities of every community in the country yet are often overlooked. Graham has a number of utilities within the study area, including electrical, water, sewer, storm sewer, gas, telephone, and cable. Coordination with all franchise utilities will be necessary and should begin to take place in the immediate future.

Green infrastructure should be considered in every project as we think about creating resilient cities and landscapes. Daylighting traditionally hidden systems provides environmental, social, and economic benefits in addition to alleviating pressure on an aging or failing system. Stormwater conveyance, storage, and filtration must be given special attention during the design and construction of every project in Graham, not just downtown, for collective watershed management.

All stormwater and utility improvements should be made in concert with construction improvements in Graham to eliminate the need for later tearing up of the newly built street or public amenity and minimize taxpayer expense for

having to repeat a construction proejct. At the ribbon cutting of every project, Graham should have an inclusive system, street, utilities, and stormwater, with a minimum life span of 25 years before improvements are necessary.

Staffing + Maintenance

Graham is fortunate to have a public works department with the ability to perform minor repairs to major construction projects for the size of its community. The public works department, under its current leadership, has the knowledge and capability to construct each streetscape project presented in this plan, including Court Square. With proper funding and an increase in staff, Graham has the ability to utilize its public works department for construction and drastically reduce the cost of implementation.

Once constructed, Graham will need dedicated staff for routine maintenance of downtown. Routine maintenance may include landscaping, street sweeping, watering hanging baskets, refuse collection, banner hanging, and festival/ market setup, breakdown, and clean up. At full build out of downtown a dedicated three-man crew with equipment must be established to keep Graham beautiful. This will require an increased fiscal year budget for public works but is a necessity to create a vibrant destination.

Court Square - Pilot Project

Court Square is the most underutilized public realm space within Graham. The concept plan presented at the recommendations reveal sparked excitement with the community of the potential the Square has. To continue the momentum a pilot restripe project has been identified as a Catalyst project. Through the implementation of a pilot restripe project the community will temporarily be able to experience the vision for Court Square while NCDOT coordination and funding take place to permanently construct Graham's post card. The concept plan will need to be turned into a temporary striping plan for rapid implementation. A pop-up gathering space will also need to be planned for a minimum of one-week installation. The City should hire a full-service engineering consultant firm with experience designing pilot projects for rapid implementation to walk the City through the process.

Project Phase: One

The pilot project should include the following:

- Coordination: The City must continue open communication with NCDOT and Alamance County and embrace its partnership as a symbiotic relationship.
- Design: The pilot project design will be a striping plan using temporary paint, landscape, and flexible delineators based on the conceptual plan for Court Square. The 15-foot circulatory route for motorists will clearly be defined and the new parking layout will be established. New splitter islands (pedestrian refuge islands) will be identified using striping and flexible delineators or planters.
  - » Landscape: Large street trees and planters should be brought in at the beginning of the pilot project to help the community realize the visions. The street trees will help define vehicle and pedestrian spaces, slow motorist to maintain safe motoist speeds, and define the public realm. The landscape should be present for a minimum of one-week.
  - » Water Quality/Stormwater: Court Square has four low spots, one in each corner. Currently each of the four corners have a triangular raised brick planter. During the pilot project, each corner should be reconstructed into bioretention stormwater facilities. Each corner will have a simple landscape palette and large street tree. This will be a permanent installation until the full reconstruction project begins.
  - » Pop up Park: During the pilot project, the City should choose one corner and establish a pop-up park with café seating, lighting, and landscape for a minimum of one week.
- Evaluation: The City must collect data on travel behavior before the pilot project begins and while the project is still in place. Relevant data includes speed, percentage of drivers yielding to pedestrians, traffic volumes, number of heavy vehicles, crash rate, etc. The data gathered and evaluated will help provide substantial evidence for the need of the full reconstruction project.
- Duration: The community will need time to adjust to the new traffic pattern and design. For this reason, the pilot project must remain in place for a minimum of 30 days. Longer durations are encouraged for additional evaluation data to be collected.
- Funding: The City has received a better block grant and should use the funding to complete the pilot project and evaluation.
- Planning Level Opinion of Probable Construction Cost: See appendix

Court Square - Reconstruction

Riding on the momentum gained during the pilot restripe project for Court Square, Graham should take the next step and embark on the full reconstruction project. In order for Court Square to be realized, the City will need to formalize a maintenance agreement or road swap with NCDOT, relocate semi-truck through traffic to an adjacent route, and create a partnership with Alamance County. A full-service engineering consultant firm with experience designing shared streets should be hired to walk the City through the design and construction process. The design firm should have experience working within right-of-way, designing public realm spaces, and understand the design intent. Currently the concept plan is hand graphics over aerial. A conceptual plan in CAD over survey should be completed first to ensure all desired elements can be accomplished within the given right-of-way. Once complete, Graham's most valuable asset will once again become the heart of Graham and a regional destination for residents and visitors alike.

Project Phase: Two

The reconstruction project should include the following:

- Coordination/Evaluation: The City must continue open communication with NCDOT and embrace its partnership as a symbiotic relationship. Results from the pilot restripe project must be evaluated to inform decision making and the design process. Graham and Alamance County partnership must be solidified. The City should proactively engage merchants and property owners throughout the life cycle of design to prepare them for construction. Success stories from the Elm Street Construction project should be shared.
- Funding: At the completion of the restripe project, the City should identify funding sources and revenue streams for full reconstruction. If pursuing a competitive grant, analysis and results from the restripe project will provide Graham a leg up on the competition as grantors look highly on pilot projects being implemented prior to application.
- Design: Court Square will become a flush street, void of curbs, making it inclusive for all ages and abilities and reestablish the heart of Graham. Brick pavers will make up the 15-foot circulatory route for motorist and on-street parking as well as utilized in the pedestrian crosswalks. Each of the four corners that currently serve cars will be reallocated to the public realm. The northwest corner could include a permanent market space and update park design of Sesquicentennial Park, the northeast corner could have gather space with active or passive amenities, the southwest corner will become an outdoor dining venue with catenary lighting, and the south east corner will have an open lawn for passive recreation. The Historic Courthouse grounds will receive an updated landscape and drop-off plaza to the north and south.
  - » Material Palette:
    - Landscape: A lush landscape palette of legacy street trees and sweeping masses of flowering shrubs, ornamental grasses, perennials, and groundcover should fill Court Square. A landscape palette has been established for Graham in the appendix.
    - Hardscape: Three primary materials should be used in Court Square for all hardscape surfaces; brick, granite, and concrete. A hardscape material palette has been established for Graham in the proceeding appendix.
  - » Water Quality/Stormwater: A new above and below ground drainage system will be constructed to include bioretention cells, underground storage tanks, and traditional stormwater controls. Permeable brick pavers may be used in the parking spaces around the Square and in the Courthouse drop-off plazas to aid in the infiltration of stormwater.
  - » Utility: A full reconstruct of all utilities in Court Square including undergrounding all overhead lines should be constructed. By upgrading all utilities during construction, Graham will be ready for an influx of new businesses and better serve its current merchants.

Elm Street

Elm Street, both west and east 100 blocks, will serve as Graham's primary festival street. The project will focus on public realm improvements along the street and at both Maple and Marshall Street intersections. The City currently owns and maintains Elm Street and already utilizes the street for festivals. A full-service engineering consultant firm with experience designing festival streets should be hired to walk the City through the design and construction process. The design firm should have experience working within right-of-way, designing public realm spaces, and understand the design intent. Currently the concept plan is hand graphics over aerial. A conceptual plan in CAD over survey should be completed first to ensure all desired elements can be accomplished within the given right-of-way. Once complete residence and visitors will be greeted with a vibrant brick street overflowing with life along the sidewalks shaded by legacy street trees.

Project Phase: One

The Elm Street project should include:

- Coordination: Graham owns and maintains Elm Street and does not need prior approval for construction. The City must proactively engage merchants and property owners throughout the life cycle of design to prepare them for construction.
- Funding: Capital improvement money is currently allocated for utility improvements for both West and East Elm Street. The streetscape project should happen in concert with the utility improvements as the street will be torn up during this time. Graham should allocate general funds, seek a bond, or look for grants to complete the project.

- Design: Elm street will become a brick street with 11-foot travel lanes and parallel parking. This reallocation of space will allow for 15-foot sidewalks and a 13-foot furnishing/landscape zone resulting in an unparalleled and flexible public realm space.
  - » Material Palette:
    - Landscape: A lush landscape palette of legacy street trees and sweeping masses of flowering shrubs, ornamental grasses, perennials, and groundcover should fill Elm Street. A landscape palette has been established for Graham in the appendix.
    - Hardscape: Three primary materials should be used on Elm Street for all hardscape surfaces; brick, granite, and concrete. A hardscape material palette has been established for Graham in the proceeding appendix.
  - » Water Quality/Stormwater: A new above and below ground drainage system will be constructed to include bioretention cells, tree bump outs, and traditional stormwater controls. Valley gutters will be installed between parallel parking spaces and the street to further the distance of water confluence from storefronts. The Elm Street trunk line will be reconstructed and the Maple Street trunk line will be evaluated for need of replacement.
  - » Utility: A full reconstruct of all utilities on the 100 blocks of Elm Street including undergrounding all overhead lines should be constructed. By upgrading all utilities during the streetscape project, Graham will be ready for an influx of new businesses and better serve its current merchants and ensures the street will not be torn up to make repairs in the near future.
- Planning Level Opinion of Probable Construction Cost: See appendix

Main Street - South

South Main Street is the southern gateway into Graham from Interstate 40/85 to Court Square. Currently this uninviting corridor features a wide five-lane roadway, high speeds, and a lack luster landscape. A new single lane roundabout at McAden Street will serve as a gateway to Graham as well as aid in slowing traffic speeds. A road diet to three-lanes will provide for a 12-foot shared use path on each side of the road and a lush tree lined street that funnels attention to Court Square. For this to become a reality additional traffic analysis will need to be performed with up to date traffic counts and presented to NCDOT. The City should hire a full-service engineering consultant firm with experience transforming corridors to walk the City through the design and construction process of South Main Street. The design firm should have experience working within right-of-way, designing multimodal facilities, and understand the design intent. While the concept plan was designed using a new survey additional items need to be explored such as center landscape medians, driveway consolidation, and inner-parcel connectivity to ensure.

Project Phase: Two

The Main Street project should include:

- Coordination: At this stage, negotiations for a road diet and or ownership for Main Street should be complete. The City and NCDOT should have successfully negotiated the desired outcomes for Main Street. The City and NCDOT partnership should continue. The City should proactively engage merchants and property owners along the corridor throughout the life cycle of design to prepare them for construction. Success stories from the Elm Street Construction project should be shared.
- Funding: During negotiations of Main Street with NCDOT, Graham should seek construction capital from NCDOT to make all improvements and couple Interstate on- and off- ramp improvements using Spot 6.0 money. Graham should also apply for federal grant money from the MPO and allocate general funds.
- Design: South Main Street will become the southern gateway for Graham beginning with a single lane roundabout at McAden Street, a road diet transforms the street into 11-foot travel lanes, 12-foot turn lane, a 12-foot landscape buffer, and 12’ shared use path. At Pine Street, the street narrows to 11-foot travel lanes with angled parking. This reallocation of space will allow for 12-foot sidewalks and an 8-foot furnishing/ landscape zone resulting in an unparalleled and flexible public realm space.
  - » Material Palette:
    - Landscape: A lush landscape palette of legacy street trees and sweeping masses of flowering shrubs, ornamental grasses, perennials, and groundcover should fill Main Street. A landscape palette has been established for Graham in the proceeding appendix.

- Hardscape: Four primary materials should be used on Main Street for all hardscape surfaces; asphalt, brick, granite, and concrete. A hardscape material palette has been established for Graham in the proceeding appendix.

» Water Quality/Stormwater: Prior to construction the Main Street trunk line should be evaluated for need of replacement and conveyance capacity from upstream drainage. Tree island bump outs should be installed in areas with angled parking, bioretention facilities should be constructed along the shared use path, and new catch basins installed throughout the corridor. Valley gutters should be installed between parallel parking spaces and the street to further the distance of water confluence from storefronts.

» Utility: A full reconstruct of all utilities along the corridor should be constructed including undergrounding all overhead utility lines on the 100 blocks. By upgrading all utilities during the streetscape project, Graham will be ready for an influx of new businesses and better serve its current merchants and ensures the street will not be torn up to make repairs in the near future.

Main Street - North

North Main Street is the northern gateway into Graham from Albright Avenue to Court Square. Currently this corridor features an extremely wide two-lane roadway with on-street parking, high speeds, and a lack luster landscape. A new single lane roundabout at Albright Street will serve as a gateway to Graham as well as aid in slowing traffic speeds and fixing geometry issues at the intersection. Excess street width will provide additional sidewalk width and an 8-foot furnishing/landscape zone. The City should hire a full-service engineering consultant firm with experience transforming corridors to walk the City through the design and construction process of North Main Street. The firm should have experience working within right-of-way to reallocate space in the public realm to accommodate all modes and understand the design intent. While a concept was designed using a new survey additional items need to be explored such as driveway consolidation and inter-parcel connectivity.

Project Phase: Three

The Main Street project should include:

• Coordination: The City and NCDOT should have successfully negotiated the desired outcomes for Main Street. The City and NCDOT partnership should continue. A recommended outcome or coordination would be that Graham would begin to own and maintain North Main Street from Harden Street to Albright Avenue and would not need prior approval for construction. The City should proactively engage merchants and property owners along the corridor throughout the life cycle of design to prepare them for construction. Success stories from the South Main Street Construction project should be shared.

• Funding: During negotiations of Main Street with NCDOT, Graham should seek construction capital from NCDOT to make all improvements. Graham should also apply for federal grant money from the MPO and allocate general funds.

• Design: North Main Street will become the northern gateway for Graham beginning with a single lane roundabout at Albright Avenue, a reallocation of street space will provide 11-foot travel lanes, angled parking, an 8-foot landscape buffer, and 12' sidewalk. This reallocation of space will complete the unparalleled and flexible public realm space along Main Street.

» Material Palette:

- Landscape: A lush landscape palette of legacy street trees and sweeping masses of flowering shrubs, ornamental grasses, perennials, and groundcover should fill Main Street. A landscape palette has been established for Graham in the proceeding appendix.
- Hardscape: Four primary materials should be used on Main Street for all hardscape surfaces; brick, granite, concrete, and asphalt. A hardscape material palette has been established for Graham in the proceeding appendix.

» Water Quality/Stormwater: Prior to construction the Main Street trunk line will be evaluated for need of replacement and conveyance capacity of upstream needs. Tree island bump outs will be installed in areas with angled parking. Valley gutters will be installed between parallel parking spaces and the street to further the distance of water confluence from storefronts.

» Utility: A full reconstruct of all utilities along the corridor will be constructed including undergrounding all overhead utility lines on the 100 blocks. By upgrading all utilities during the streetscape project, Graham will be ready for an influx of new businesses and better serve its current merchants and ensures the street will not be torn up to make repairs in the near future.

Funding

Funding is a critical element for successful implementation of any project. While Graham is a financially healthy community, it is not financially able to implement the Downtown Master Plan in its entirety on its own. Key partnerships and resources will need to be made, identified, and applied for to leverage existing dollars for more construction funds. Outlined below are key partnerships and potential funding opportunities for Graham to take advantage of, many of which already are.

Partnerships

Alamance Arts

Graham is home to Alamance Arts whose mission is to shape the cultural identity of Alamance County by making art a tangible presence in the lives of its citizens. We strive to enhance the quality of life by engaging people in a diverse array of art through the delivery of programming and education and through the provision of facilities, advocacy, promotion and funding. Local and world-renowned artists (painters, musicians, sculptors, etc.) are showcased throughout Graham on a daily basis. Graham can work with Alamance Arts to commission custom art pieces in the gateway roundabouts, within Court Square, and murals on surrounding business downtown.

New Leaf Society

A partnership with the New Leaf Society can help create a greener Graham. The New Leaf Society was formed in 2007 as a private non-profit organization, designed to work through partnerships to enhance the quality of life and economic prosperity in Alamance County by planting trees and creating landscaping projects. Modeled after the Noble Tree Society in Spartanburg, SC, New Leaf Society's purpose is to generate private funds to support city/community beautification programs. Through in-kind landscape installations by the Society, Graham's gateway corridors can become an iconic allee of legacy street trees.

Alamance-Burlington School System

The Graham Downtown Master Plan is a legacy building project for the next generation. To fully realize this plan, it may take ten to fifteen years of diligent work. Students, especially those in Graham City Schools, must be engaged throughout the life of the project. Graham has a desire for graduates to come back and become employed in the City. Graham must give graduates a reason to come back. Students should be provided the opportunity to participate in additional visioning workshops, during design reviews, and help implement the pilot restripe of Court Square. By allowing students voice to be heard, Graham will bring up the next generation with civic pride for their community.

Possible Funding Resources

Below are some of the possible funding sources that may help Graham move the plan to reality:

Transportations Funds

Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grant:

The program provides a unique opportunity for the DOT to invest in road, rail, transit and port projects that promise to achieve national objectives. Previously known as Transportation Investment Generating Economic Recovery, or TIGER Discretionary Grants, Congress appropriated $900 million for FY 2019 to be awarded by the Department of Transportation for national infrastructure investments through September 30, 2021. Like the FY 2017 TIGER program, the FY 2019 BUILD program will also give special consideration to projects which emphasize improved access to reliable, safe, and affordable transportation for both rural and urban communities, such as projects that improve infrastructure condition, address public health and safety, provide innovative multi-modal facilities, and promote regional connectivity or facilitate economic growth. If awarded, this highly competitive grant can provide a maximum of $25 million toward infrastructure. Communities can apply in successive years for additional phases of a project. Applicants must detail the benefits their project would deliver for five outcomes: safety, state of good repair, economic competitiveness, environmental sustainability, and quality of life.

Strategic Transportation Prioritization (SPOT):

The Strategic Transportation Prioritization Process is the methodology that NCDOT uses to develop the State Transportation Improvement Program (STIP). The process involves scoring all roadway, public transportation, bicycle, pedestrian, rail, and aviation projects on a number of criteria. Metropolitan Planning Organizations (MPOs), Rural Planning Organizations (RPOs), and the NCDOT

Division offices also contribute to the final project score by assigning local priority points to projects. The deadline to submit a project to the Burlington-Graham MPO for review is December 20, 2019.

NCDOT Statewide Contingency Fund:

The Statewide Contingency Fund is a $12 million fund administered by the Secretary of Transportation. Funding was established for statewide rural or small urban highway improvements related to transportation enhancements to public roads/public facilities and spot safety projects. Request should be submitted to the Division Engineer providing technical information such as location, improvements being requested, timing, justification, etc. for thorough review. If approved, the Division Engineer will present to the Project Review Committee which makes recommendations for funding to the Secretary.

NCDOT High Impact/Low Cost Funds:

Established in 2017 to provide funds to complete low cost projects with high impacts to the transportation system including intersection improvement projects, minor widening projects, and operational improvement projects. Funds are allocated equally to each of the 14 NCDOT Divisions. Each division is allowed to create their own scoring formula; however, at a minimum it must consider the average daily traffic and proposed additional traffic, safety issues, condition of existing roadway, and distance and radius of intersecting roadways. Projects have a maximum cost of $1.5 million unless otherwise approved from the Secretary of Transportation. Request should be submitted to the Division Engineer providing technical information such as location, improvements being requested, timing, justification, opinion of probable cost, etc. for thorough review. If approved, the Division Engineer will present to the Chief Engineer for review and presentation to the Project Review Committee which makes recommendations for funding to the Secretary.

NCDOT Economic Development Funds:

Established to expedite transportation projects that promote commercial growth as well as either job creation or job retention. Funding is allocated based on the amount of new & retained jobs that will be created by the construction of a facility. Each job provides $2,500 with a maximum of $400,000 per project unless otherwise approved by the Secretary of Transportation. Request should be submitted to the Division Engineer providing technical information such as location, improvements being requested, timing, justification, etc. for thorough review. If approved, the Division Engineer will present to the Project Review Committee which makes recommendations for funding to the Secretary.

NCDOT Small Construction Funds:

Established in 1985, each NCDOT Division administers $2 million of funds for small-scale improvement projects in urban areas. Projects have a maximum cost of $250,000 unless otherwise approved from the Secretary of Transportation. Requests for small urban funds may be made by municipalities, counties, businesses, schools, and industrial entities. Request should be submitted to the Division Engineer providing technical information such as location, improvements being requested, timing, justification, etc. for thorough review.

NCDOT Spot Improvement Program:

The Division of Bicycle and Pedestrian Transportation (DBPT) budgets $500,000 per year for “spot” safety improvements throughout North Carolina. Eligible improvements include drain grate replacement, bicycle loop detectors, pedestrian signals and other small-scale improvements. These funds are used for small-scale projects not substantial enough to be included in the STIP. Proposals should be submitted directly to the Division of Bicycle and Pedestrian Transportation.

Main Street Solutions Fund:

The Main Street Solutions Fund supports small businesses in designated micropolitans located in Tier 2 and Tier 3 counties or designated North Carolina Main Street communities. The grants assist planning agencies and small businesses with efforts to revitalize downtowns by creating jobs, funding infrastructure improvements, and rehabilitating buildings.

Stormwater + Utility Funds

USDA Community Facilities Direct Loan & Grant Program:

This program provides affordable funding to develop essential community facilities in rural areas. An essential community facility is defined as a facility that provides an essential service to the local community for the orderly development of the community in a primarily rural area, and does not include private, commercial or business undertakings. Communities with a population of 20,000 people or less are encouraged to apply. The loan/grant can be used for public facilities such as town halls, courthouses, airport hangars, or street improvements (especially those with green infrastructure) and public safety services such as fire departments, police stations, prisons, police vehicles, fire trucks, public works vehicles or equipment. Contact a local USDA department for more details.

Clean Water State Revolving Fund (CWSRF):

Established in 1987, these funds are administered by the N.C. Department of Environment Quality Division of Water Infrastructure. The program provides up to $30 million in funding for wastewater treatment, wastewater collection, reclaimed water, stormwater BMPs, stream restoration, and energy efficiency upgrades at treatment or collection systems. Local governments are encouraged to apply for low-interest loans, generally half of market interest rates. In some cases, 0% interest loads are available for Green Projects. Construction must start within 24 months of letter of intent to fund.

Community Development Block Grant (CDBG) Infrastructure:

Established in 2013, these funds are administered by the N.C. Department of Environment Quality Division of Water Infrastructure. The program provides up to $2 million in funding over a 3-year period to provide/upgrade drinking water and wastewater infrastructure project that meet the HUD Low and Moderate Income (LMI) threshold.

Building Funds

CDBG Economic Development Building Reuse Grants:

These funds are administered for renovation and up-fitting of vacant industrial and commercial buildings for economic development purposes. The building reuse program is designed to return vacant industrial/ commercial buildings to economic use for new and/ or expanding business and industry. The ultimate goal of the Building Reuse program is to provide jobs for low and moderate-income persons (LMI). Each job provides $12,500 with a maximum of $500,000 per award depending on company statistics. A local government applicant must propose a project in conjunction with a private for-profit business that proposes to restore a vacant building to economic use resulting in the creation of permanent, full-time jobs by the project company. A job is considered full-time if the employee works at least 1600 hours per year. To be eligible, documentation must be provided showing the building has been vacant thirty (30) consecutive days or more prior to the date of the pre-application conference. CDBG funds for this category are limited to a maximum of $750,000 per unit of government. The grant amount is calculated based on $20,000 per job for eligible businesses and $12,000 per job for all other businesses.

North Carolina State Building Reuse Grant:

Established under the North Carolina Department of Commerce, this program provides grants to local governments for the renovation of vacant buildings within their community to attract new businesses. Grants are available to support the renovation of buildings that have been vacant for a minimum of three months prior to application deadlines. Each job provides $12,500 with a maximum of $500,000 per award depending on company statistics.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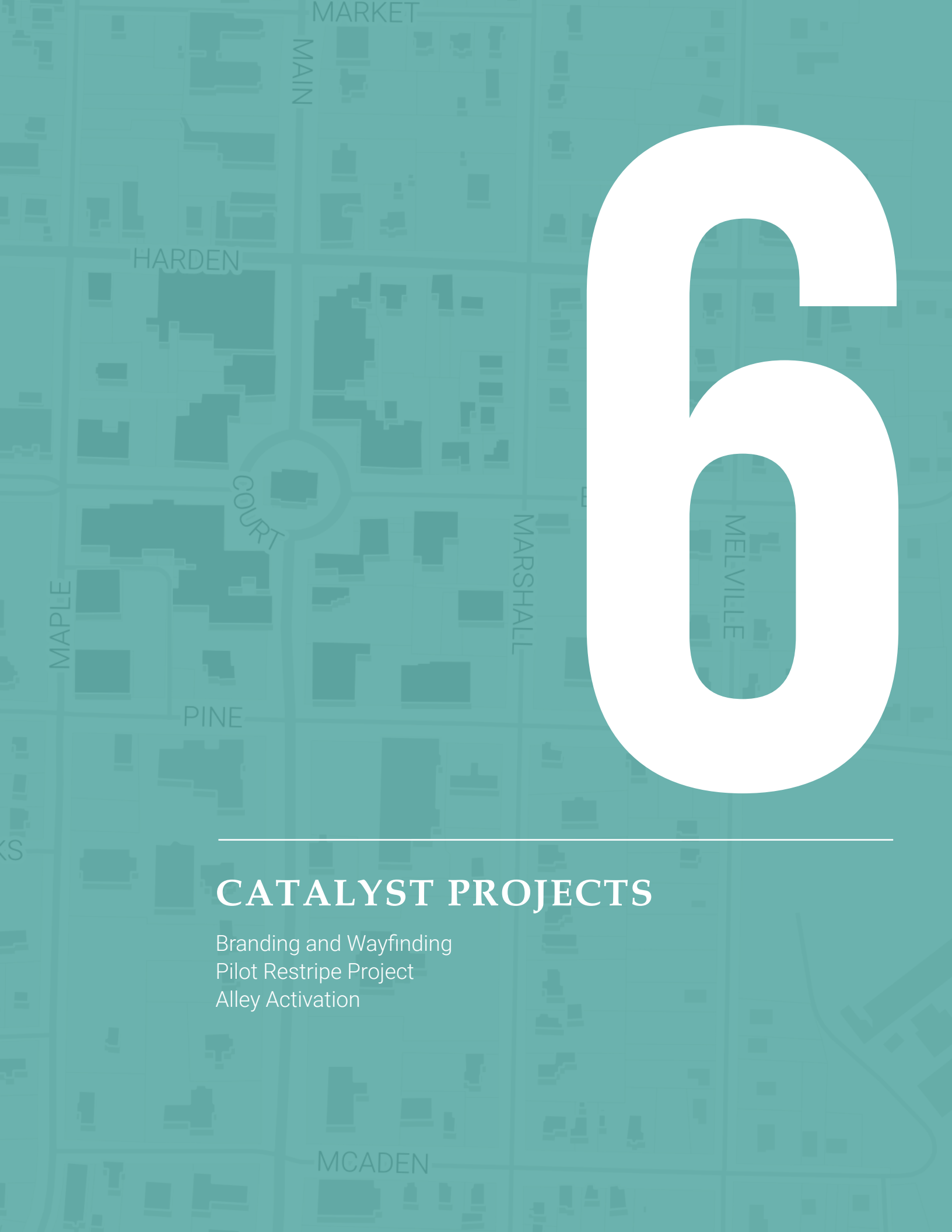

6

CATALYST PROJECTS

Branding and Wayfinding
Pilot Restripe Project
Alley Activation


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CATALYST PROJECTS

The City of Graham Downtown Master Plan is an important step in revitalizing Downtown Graham. This document creates a vision for the future, and it outlines a roadmap of initiatives and projects that will guide the city to a better future.

There is not a single project that will transform downtown. To fulfill the vision laid out in this plan, a collection of projects, programs, and community support will move Graham closer to maximizing its potential. The City of Graham can, however, kickstart development by implementing “catalyst” projects, which are projects that will quickly make a significant impact with little investment. Catalyst projects outlined in this section have the greatest potential to enliven downtown while being cognizant of available funding. They will generate energy and enthusiasm in the community, continue the movement gained from the development of the plan, and will stimulate the market to ripen for future development.

In most cases, catalysts projects are not final stages of a design or program and should be implemented concurrently or before the first phase of recommendations. In general catalyst projects are just the beginning of larger-scale capital improvement projects. In some cases, the catalyst project may not achieve all goals of the final project but rather offer a “taste” of what the final project will become and show the community that the City is dedicated to creating a vibrant atmosphere downtown. This should be the intent when implementing catalyst projects.

Branding And Wayfinding

Graham currently has a recognizable brand, which pays homage to Court Square. A unique brand is a key component to vibrant downtowns. Graham should continue to build out this brand; it can tell a story for the core district of the community. The brand should become a symbol for downtown and its vibrant future.

A simple way to communicate this branding is through a comprehensive system of wayfinding signage in downtown. Wayfinding directs residents and visitors to key destinations within a community. Wayfinding signage in Graham must focus on downtown and Court Square. The City has already begun implementing a well-designed wayfinding system for parking and should expand this to accommodate destination wayfinding throughout town.

Wayfinding can come in many forms, such as small placards along a sidewalk or street to branded banners. Both the simple and elaborate wayfinding signage may be appropriate to clearly identify the downtown district, the public spaces, and retail and dinning districts. See examples of successful wayfinding below.

ANN ARBOR, MICHIGAN

Pedestrian, vehicular, and parking wayfinding in downtown Ann Arbor

www.annarbor.com, www.corbindesign.com

NEWPORT, NEW JERSEY

Wayfinding in Newport includes parking, pedestrian routing, and vehicular wayfinding

www.twotwelve.com

Pilot Restripe Project

"Pilot" restriping projects are temporary, small-scale project intended to simulate proposed roadway changes using paint, planters, and street furniture. This plan proposes a pilot restriping in the Court Square.

Restriping project in Athens, GA

Pilot restriping projects serve several purposes. First, they allow people to practice driving, walking, bicycling, and wheeling in a new setting. Sometimes, changes in road configurations can be confusing and cause people to feel uncomfortable or unsafe. In Court Square, the proposed design will move traffic in a slightly different pattern. Pilot striping allows for users to gain confidence before the infrastructure changes are put in place.

Pilot projects are a great way to more clearly understand the changes in traffic patterns and user behavior in downtown before any permanent infrastructure is built. City staff should collect data before and during the pilot project for comparison of many factors, including speed limits, crashes, "near misses," yield behaviors, and number of heavy vehicles. Collecting and analyzing this data will help city staff and the design team tweak the design as needed before construction drawings are finalized.

Finally, a pilot restriping project allows the community to get involved in creating their downtown space. With clear programming and direction, community members can help city staff transform Court Square for the temporary restriping. This is an opportunity to engage students at Graham Middle School and Graham High School, non-profits and civic organizations, and local businesses. Including volunteers in a pilot project's set up fosters excitement for more change. It can be difficult to imagine what community change will look like, but the pilot project will allow people to experience what the final project will bring to downtown.

Guidelines:

- **The City of Graham should make the Court Square restriping pilot process a community event. Community volunteers helping with the restriping process should be given clear, direct tasks. Coordinate with local artists, vendors, musicians, or other community organizations to create a fun atmosphere.**
- **The pilot project should be left in place a minimum of 30 days (if not several months). This provides the community a chance to aclamate to the change and their travel behavior before the project is removed.**
- **The City must collect data on travel behavior before the restriping process begins and while the pilot project is still in place. Relevant data include speed limit, percentage of drivers yielding to pedestrians, traffic volumes, number of heavy vehicles, number of people bicycling and walking, and crash rates.**

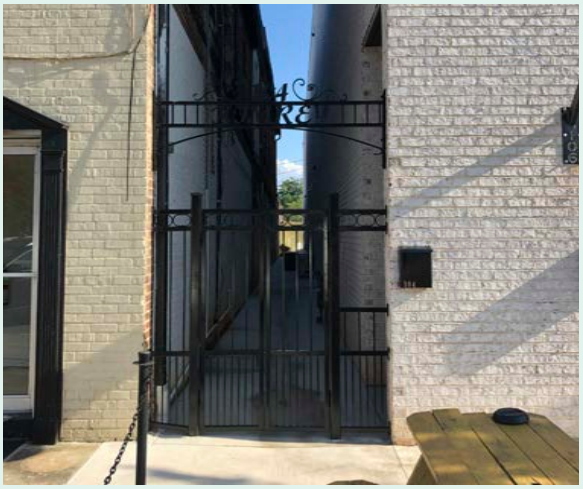
Alleyway Activation

Alleyways between buildings offer opportunities to extend the pedestrian realm from the streetscape to public parking and rear entryways into businesses. Typically, alleyways are neglected, poorly lit, and often forgotten spaces. By installing catenary lighting, murals and artwork on the open building canvas, and planter boxes to demarcate entrances, alleyways can become integral to the fabric of downtown. As noted in Chapter Three, the existing alleys in Graham can connect Court Square and the 100 Blocks to parking lots and alleviate the perceived pressure for on-street parking.

An activated public alleyway is an ideal catalyst project; it is a small-scale and low-cost investment that is also highly visible and fun. Community members can be invited to participate in beautification through community artwork, donations of plant materials and small street furniture, hang lights, or clean up. Alternatively, local artists can create murals along alleyway walls.

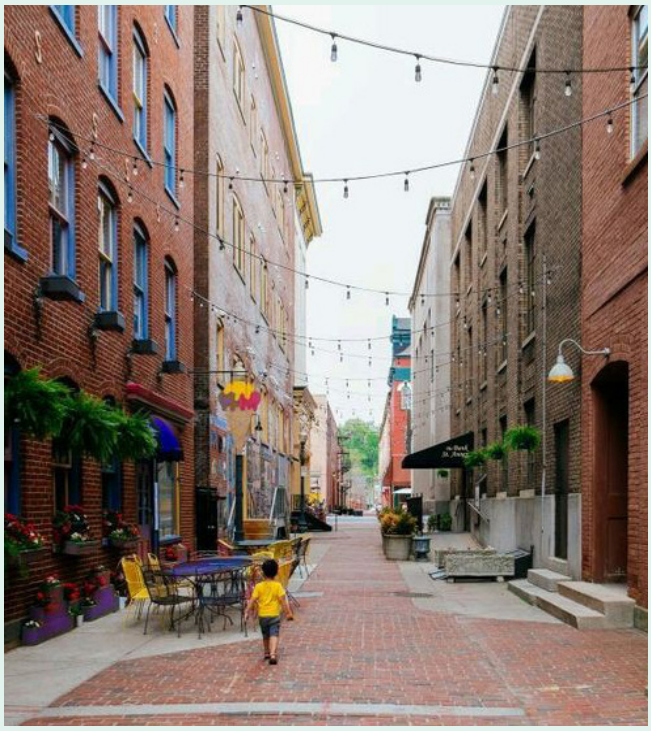
The alleyway beside HiFi Records is a prime candidate for the catalyst project. Not only does this alleyway connect a parking lot to Court Square, but there is also existing artwork on one of the alleyway walls. An expanded mural, plants, and lighting are all that is needed to create an inviting space. The same process could be applied to the alleyway between Green & McClure and Suttons, and next to Beer Co Graham (if an alleyway is privately owned the City should work toward a partnership with the owner to activate the alleyway).

EXISTING ALLEYWAYS OF GRAHAM

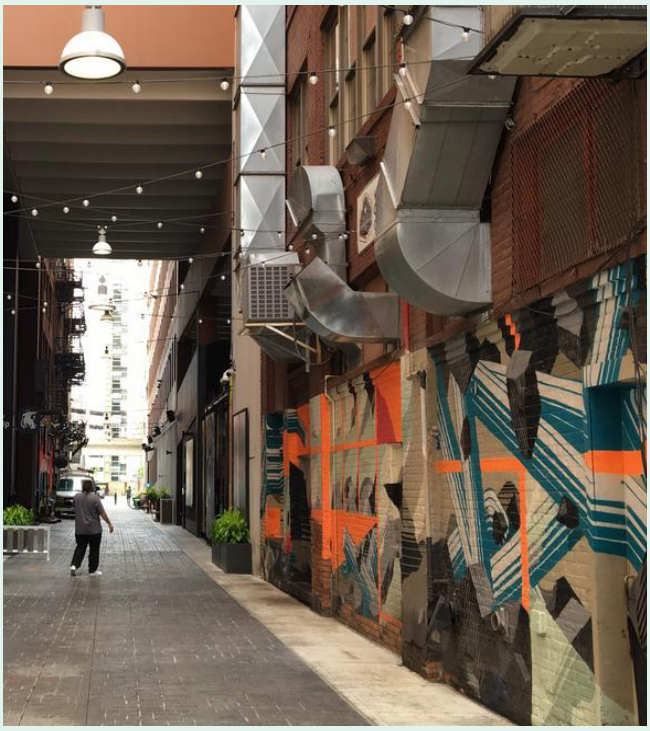


ALLEYWAY EXAMPLES

www.aspiremetro.com



www.pinterest.com



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APPENDIX A

AMENITY TOOLKIT

Landscape Palette
Hardscape Palette


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AMENITY TOOLKIT

The City of Graham realizes the visual quality of downtown is paramount to its success. This goes beyond storefronts and building facades and focuses on streetscape elements such as the roadway, sidewalks, crosswalks, furnishings, lighting, plant material, parking, intersection designs, material palette, and public art installations. The combination of these elements, when carefully designed and woven into the existing landscape fabric of Graham, create a vibrant and inviting atmosphere that is engaging, meaningful, and encourages economic growth. The following pages provide guidelines for the development of Downtown Graham's streetscape, acknowledging its past and planning for the future.

Amenity Toolkit Components

Landscape Palette:

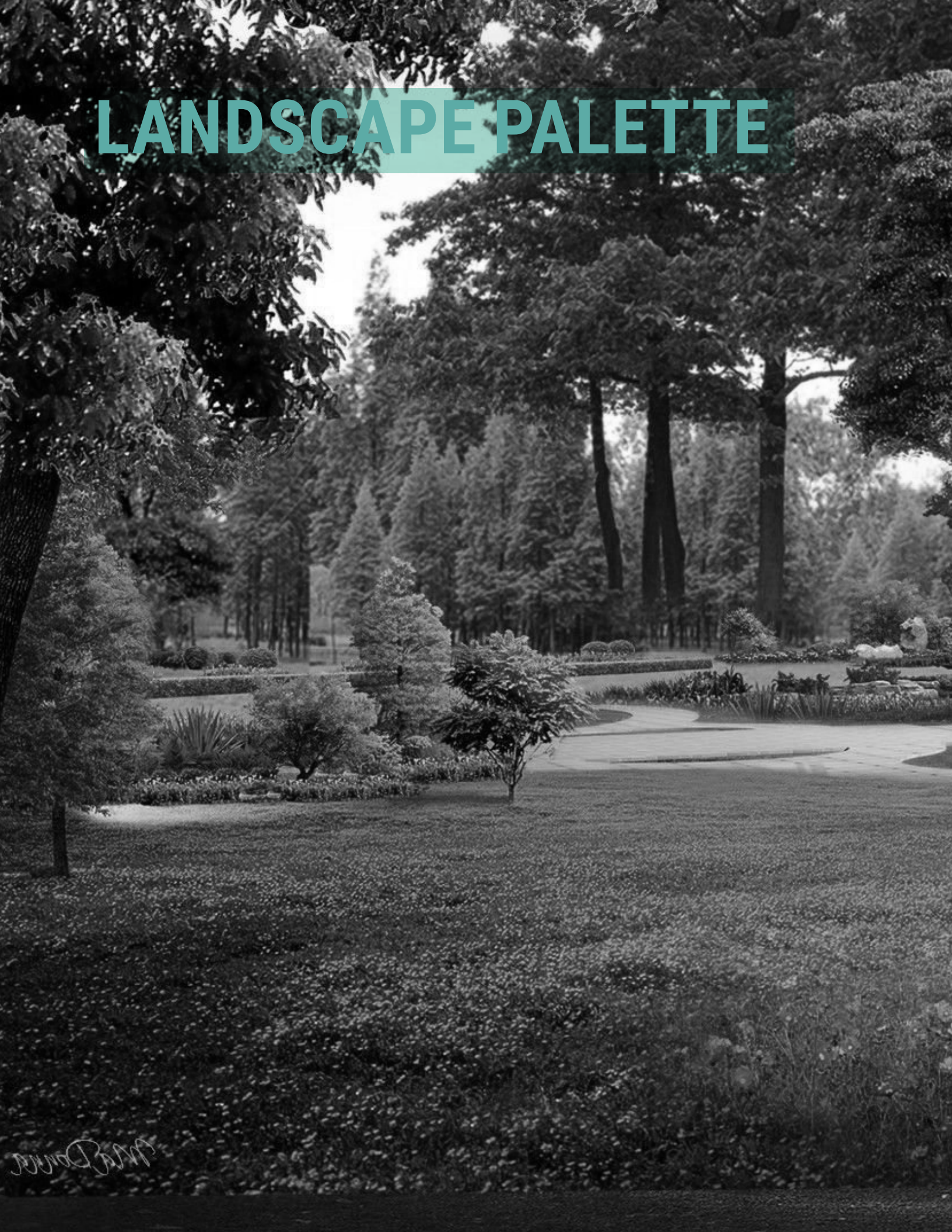
The landscape palette must be visually appealing, utilizing mass drifts of perennial flowers, shrubbery, and create an urban canopy of stately trees. The species of plant material have been selected based on their ease of maintenance, indigenous status, and climate of growth. The landscape must draw visitors and residents to downtown and leave a lasting legacy for years to come.

Hardscape Palette:

The hardscape palette must be bold yet understated and fit the exisitng historic nature of Graham. Furnishings, light fixtures, and surface materials all work together to establish the destitnation. A nod toward traditional furnishings with a modern take has been chosen to set the stage for Graham.

The following pages list and descripe hardscape materials, plant species, characteristics ,and seasonal interests. All plant material follows the North Carolina Department of Transportation (NCDOT) specifications for roadside plantings and height restrictions.

LANDSCAPE PALETTE



CANOPY TREES

COMMON NAME: Aeryn Trident Maple
BOTANICAL NAME: Acer buegerianum 'Aeryn'
CHARACTERISTICS: Tolerates poor soils, moderate drought conditions, and heavy clay soil.
HEIGHT: 25' - 35'
SEASONAL INTEREST: Lustrous dark green foliage, burgundy fall color.

COMMON NAME: Black Gum
BOTANICAL NAME: Nyssa sylvatica
CHARACTERISTICS: Slow-growing, native deciduous tree with a stright trunk and rounded crown.
HEIGHT: 30' - 50'
SEASONAL INTEREST: Scarlet fall color.

COMMON NAME: Chinese Pistache
BOTANICAL NAME: Pistacia chinensis
CHARACTERISTICS: Small deceduous tree with oval rounded crown.
HEIGHT: 30' - 35'
SEASONAL INTEREST: Fall color varies between yellow, orange, and red.

COMMON NAME: Swamp White Oak
BOTANICAL NAME: Quercus bicolor
CHARACTERISTICS: Medium native deciduous tree with a broad rounded crown tolerant of poor soils.
HEIGHT: 50' - 60'
SEASONAL INTEREST: Fall color is generally yellow but can be red.

COMMON NAME: Willow Oak
BOTANICAL NAME: Quercus phellos
CHARACTERISTICS: Medium to large native deciduous tree with willow-like leaves and relatively fast growth rate.
HEIGHT: 40’ - 60’
SEASONAL INTEREST: Dark, irregularly-furrowed trunks develop on mature trees.

COMMON NAME: Shawnee Brave Bald Cypress
BOTANICAL NAME: Taxodium disticum ‘Shawnee Brave’
CHARACTERISTICS: Medium native deciduous tree tolerant of poor soils and has a narrow columnar form.
HEIGHT: 75’
SEASONAL INTEREST: A stately tree with attractive bark and iconic bronze fall color.

COMMON NAME: American Linden
BOTANICAL NAME: Tilia Americana
CHARACTERISTICS: Medium to large deciduous tree with an ovate-rounded crown.
HEIGHT: 50’ - 80’
SEASONAL INTEREST: Fragrant pale yellow flowers in late spring.

COMMON NAME: Patriot Elm
BOTANICAL NAME: Ulmus x ‘Patriot’
CHARACTERISTICS: Vase or fountain shaped arching branch structure. Resistant to Dutch Elm disease and tolreant of urban conditions.
HEIGHT: 40’ - 50’
SEASONAL INTEREST: Glossy green foliage, yellow fall color.

COMMON NAME: Green Vase Japanese Zelcova
BOTANICAL NAME: Zelkova serrata ‘Green Vase’
CHARACTERISTICS: Medium to large deciduous tree with an upright, vase-shaped crown.
HEIGHT: 50’ - 80’
SEASONAL INTEREST: Fall color varies from yellow, yellow-orange, to red-brown.

ACCENT TREES

COMMON NAME: Oklahoma Redbud
BOTANICAL NAME: Cercis reiformis ' Oklahoma'
CHARACTERISTICS: Native tree, round to vase shape canopy, drought tolerant.
HEIGHT: 20' - 25'
SEASONAL INTEREST: Showy pink flowers in early spring, dark green glossy leaves, yellow fall color.

COMMON NAME: Flowering Dogwood
BOTANICAL NAME: Cornus florida
CHARACTERISTICS: Small native deciduous tree with a broadly-pyramidal shape
HEIGHT: 15' - 30'
SEASONAL INTEREST: White flowers (bracts) in early spring and red fall color.

COMMON NAME: Robin Holly
BOTANICAL NAME: Ilex x 'Conin'
CHARACTERISTICS: Small evergreen tree with a pyramidal shape
HEIGHT: 15' - 20'
SEASONAL INTEREST: Dark green foliage year-round with bright red berries.

COMMON NAME: Teddy Bear Magnolia
BOTANICAL NAME: Magnolia grandiflora ' Southern Charm'
CHARACTERISTICS: Naive evergreen tree with tight branching structure.
HEIGHT: 30' - 50'
SEASONAL INTEREST: Lovely white fragrant 6" to 8" wide flowers May thru November.

COMMON NAME: Saucer Magnolia
BOTANICAL NAME: Magnolia x soulangeana
CHARACTERISTICS: Small deciduous tree with a rounded crown.
HEIGHT: 20’ - 25’
SEASONAL INTEREST: Showy pink flowers with white interiors in spring.

COMMON NAME: Autumnalis Cherry
BOTANICAL NAME: Prunus subhirtella ‘Autumnalis’
CHARACTERISTICS: Medium deciduous tree with a symmetrical crown.
HEIGHT: 40’ - 50’
SEASONAL INTEREST: Heavy bloom of pink flowers in spring.

SHRUBS

COMMON NAME: Wintergreen Boxwood
BOTANICAL NAME: Buxus microphylla 'Wintergreen'
CHARACTERISTICS: Medium sized hedge and foundation plant to be kept at 24"-36" tall and wide. Very tollerant of pruning or shearing and grows in full sun to shade.
Size: 48"H x 48"W
SEASONAL INTEREST: Winter hardy lush green foliage.

COMMON NAME: Vintage Jade Distylium
BOTANICAL NAME: Distylium 'Vintage Jade' PP 23,128
CHARACTERISTICS: Low maintenance mounding evergreen tolerant of poor urban soils.
SIZE: 36"H x 48"W
SEASONAL INTEREST: Dark green evergreen leaves with small red flowers in winter.

COMMON NAME: Bobo Hydrangea
BOTANICAL NAME: Hydrangea piniculata 'ILVOBO' PP 22,782
CHARACTERISTICS: Low maintenance compact mounding shrub tolerant of urban soils and full sun.
SIZE: 36"H x 48"W
SEASONAL INTEREST: Engulfed by large white flowers in summer.

COMMON NAME: Soft Touch Holly
BOTANICAL NAME: Ilex crenata 'Soft Touch'
CHARACTERISTICS: A dense, mounded, evergreen shrub with soft-textured, glossy green leaves.
SIZE: 24"H x 36"W
SEASONAL INTEREST: Black ornamental berries persist throughout winter.

COMMON NAME: Little Henry Sweetspire
BOTANICAL NAME: Itea virginica 'Spirch' USPP 10,988
CHARACTERISTICS: Small native deciduous shrub with a round broad -spreading form.
Size: 24"H x 36"W
SEASONAL INTEREST: Tiny white flowers in cylindrical, drooping racems in spring. Red, orange, and gold in fall.

COMMON NAME: Crimson Fire Loropetalum
BOTANICAL NAME: Loropetalum chinense var. rubrum 'PIILC-I' PP 25,534
CHARACTERISTICS: Broad-leaved evergreen shrub with round form.
SIZE: 42"H x 60"W
SEASONAL INTEREST: Pink blooms in spring.

COMMON NAME: Autumn Chiffon Azalea
BOTANICAL NAME: Rhododendron 'Robled' PP 15862
CHARACTERISTICS: Compact evergree shrub with a rounded form.
SIZE: 30"H x 36"W
SEASONAL INTEREST: Double bloom pale pink flowers in spring and fall.

GRASSES + PERENNIALS

COMMON NAME: Lady's Mantle
BOTANICAL NAME: Alchemilla mollis
CHARACTERISTICS: Herbaceous clumping perennial.
SIZE: 18"H x 36"W
SEASONAL INTEREST: Tiny, star-shaped, chartreuse flowers in summer.

COMMON NAME: Tickseed
BOTANICAL NAME: Coreopsis auriculate 'Nana'
CHARACTERISTICS: Herbaceous perennial growing in a dense, slow-spreading clump.
SIZE: 18"H x 36"W
SEASONAL INTEREST: Yellow daisy-like flowers in late spring to early summer.

COMMON NAME: Purple Cone Flower
BOTANICAL NAME: Echinacea purpurea
CHARACTERISTICS: Clump forming native perennial
SIZE: 24"H x 36"W
SEASONAL INTEREST: Showy, daisy-like, purple flowers in summer

COMMON NAME: Blue Flag Iris
BOTANICAL NAME: Iris versicolor
CHARACTERISTICS: Clump-forming native perennial, naturalizing.
Size: 24"H x 36"W
SEASONAL INTEREST: Violet blue blooms in late spring and early summer.

COMMON NAME: Pink Muhly Grass
BOTANICAL NAME: Muhlenbergia capillaris
CHARACTERISTICS: Native ornamental grass.
SIZE: 36”H x 24”
SEASONAL INTEREST: Showy pink flower panicles, dark green foliage.

COMMON NAME: Walker’s Low Catmint
BOTANICAL NAME: Nepeta x faassenii ‘Walker’s Low’
CHARACTERISTICS: Clum-forming perennial grown in well-drained soils.
SIZE: 24”H x 30”W
SEASONAL INTEREST: Showy periwinkle blue flower spikes adorn fragrant mounds of gray-green foliage.

COMMON NAME: Cassian Fountain Grass
BOTANICAL NAME: Pennisetum alopercuroides ‘Cassian’
CHARACTERISTICS: Warm season graceful flowing ornamental grass.
SIZE: 24”H x 24”W
SEASONAL INTEREST: Showy, silver to pinkish-white, bottle brush shaped flower spikes.

COMMON NAME: May Night Saliva
BOTANICAL NAME: Salvia x sylvestris ‘May Night’
CHARACTERISTICS: Upright, clump-forming perennial.
SIZE: 24”H x 36”W
SEASONAL INTEREST: Showy spikes of deep violet-blue flowers in spring and summer.

COMMON NAME: Little Bluestem
BOTANICAL NAME: Schizachyrium scoparium ‘Standing Ovation’
CHARACTERISTICS: Native upright, silver-blue grass
Size: 36”H x 24”
SEASONAL INTEREST: Attracts wildlife, bronze-orange fall color.

GROUNDCOVERS

COMMON NAME: Blue Carpet Juniper
BOTANICAL NAME: Juniperus horizontalis 'Wiltonii'
CHARACTERISTICS: Low maintenance evergreen groundcover.
SIZE: 6"H
SEASONAL INTEREST: Green to blue-green foliage year-round.

COMMON NAME: Creeping Liriope
BOTANICAL NAME: Liriope spicata
CHARACTERISTICS: Herbaceous, grass-like groundcover.
SIZE: 18"H
SEASONAL INTEREST: Lavender flower spikes in late summer to early fall.

COMMON NAME: Asiatic Jasmine
BOTANICAL NAME: Trachelospermum asiaticum
CHARACTERISTICS: Low spreading groundcover that grows in average soils.
SIZE: 12" - 18"H
SEASONAL INTEREST: Spreading evergreen forming a dense mat of dark green foliage.

HARDSCAPE PALETTE


lice
of
Summer

Image courtosey of Landscape Forms: Concord Collections

Seating

A key component of a successful downtown is ample and consistent seating in the public realm. During the public outreach process community members preferred that seating be a single design, is durable and long-lasting as well as comfortable while not accomadating pedestrians to lie down.

Implementation

Seating can be located in the furniture zone of streetscapes as well as in public spaces like Court Square, green spaces, and greenspaces.

Specifications

Product: Melville Bench, Concord Collection

Manufactuer: Landscape Forms

Color: Stormcloud Powdercoat

Size: 6 feet

Finish: Backed, Aluminum Seat Panel

Image courtosey of Landscape Forms: Concord Collections

Refuse

Ample refuse and recycle receptacles are essential to the cleanliness of downtown. The receptacles must complement the other streetscape elements, be simple from a user standpoint, and be easy for refuse collection workers to empty.

Implementation

Receptacles should be located in the furnishing zone or curb extension of streetscapes as well as in public spaces like Court Square, green spaces, and greenspaces.

Specifications

Product: Poe Litter Receptacle, Concord Collection

Manufactuer: Landscape Forms

Color: Stormcloud Powdercoat

Size: 6 feet

Finish: Slot Opening

Image courtosey of Dero: Hoop Rack Heavy Duty

Bike Rack

Bicycle racks provide secure, dedicated space for bicycle parking. They will encourage active transportation and recreation downtown and keep bicycle parking off street trees and light poles.

Implementation

Bicycle parking can be located in the furnishing zone or in a curb extension. If more than one rack, they shoul be spaced a minimum of three-foot apart. Racks can either be installed by surface or in-ground mount.

Specifications

Product: Hoop Rack Heavy Duty

Manufactuer: Dero

Color: Iron Grey Powder Coat

Notes: In Ground Mount

Dero: Hoop rack heavy duty surface mount.

Image courtesy of Holophane

Street Lighting

Lighting has the ability to define a street and set the tone for comfort and safety. Pedestrian and street lighting should be consolidated on a single pole. Banners, hanging baskets, and electrical outlets can be incorporated for event needs.

Implementation

Lighting should be broken into two scales, vehicular and pedestrain, and spaced every 60 to 75 feet apart from one another based on desired affect. The first light should be set back 15 feet from the intersection and the remaining spaced as equidistant as possible.

Specifications

Product: GlasWerks LED Prismatic Glass, Prague

Manufacturer: Holophane

Color: Stormcloud Powdercoat

Notes: Teardrop class, Arm Mount

Cantenary lighting on main street in Sulphur Spring, Texas

Catenary Lighting

Catenary lighting, or more commonly known as string lighting, provides wonderful ambiance to a street, increased safety, and encourages nightlife. The lighting helps further define the street as a part of the public realm.

Implementation

Catenary lighting should be installed on both sides of Elm Street. Lighting must not cross Main Street as it is not approved by the North Carolina Department of Transportation. Stainless steel support wire should be spanned from the top of the street light to top of street light both directly across from each other and diagonally.

Specifications

Product: Cafe Lights

Manufactuer: Sterling Lighting

Notes: 300 foot length

Sterling Lighting: Commercial String Lighting

Clay Brick Paver

Concrete

Asphalt

Granite Cobble

Concrete Paver

Core-Ten Steel

Hardscape Materials

Currently, Graham's hardscape palette in the public realm downtown consists of concrete, asphalt, and small areas of clay brick. While these materials are traditional streetscape materials, in their current configuration, they do not contribute to the place that is downtown. Character must be brought into the public realm hardscape through natural materials, pattern, and orientation.

The material palette moving forward will complement what is existing while adding natural stone, weathered steel, and clay brick pavers. Concrete sidewalks will be maintained with a 6'x6' diamond pattern scored in the sidewalk frontage and clear zone. The furnishing zone will become a three-piece concrete paver. The roadway in most places will stay asphalt; however, on Elm Street and within Court Square it will become clay brick paver. Accents at crosswalks, bulb-outs, and curb extensions will be coreten steel and natural granite. This new palette will compliment Graham's historic buildings and bring life into downtown.

Standard Crosswalk

Enhanced Crosswalk

Crosswalks

Crosswalks are an important element to establish a safe pedestrian environment within a streetscape. They help inform pedestrians where to cross as well as inform drivers with a visual cue that pedestrians may be present at this location. Crosswalks must be present at all intersections within downtown and may be necessary at midblock crossings with heavy pedestrian movements. Pedestrian safety in Graham will benefit from a more consistent approach to crosswalk treatments. The following types of crosswalks should be used throughout downtown.

Standard Crosswalk

The standard crosswalk treatment should be a continental or high visibility crosswalk. The high visibility crosswalk typically consists of 24" wide white bars spaced 4' on center perpendicular to the path of travel. The crosswalk should be at least 8' wide or the width of the approaching sidewalk if it is greater. In areas of heavy pedestrian volumes, crosswalk can be up to 16' wide.

Enhanced Crosswalk

The enhanced crosswalk treatment should be a brick crosswalk with highly contrasting colors from the roadway material. The enhanced crosswalk should consist of two 12" decorative concrete bands with brick placed between them. The crosswalk should be at least 10' wide or the width of the approaching sidewalk if it is greater. In areas of heavy pedestrian volumes, crosswalk can be up to 18' wide.

Parallel Parking

Angled Parking

On-Street Parking

Parking is essential in creating a vibrant and accessible downtown. On-street parking helps provide easy access to storefronts, street side activates, green spaces, and reduces travel speeds. The parking has an additional benefit of providing a greater buffer and physical barrier between the roadway and sidewalk. On-street parking should not encroach the crosswalk or impede visibility at intersections. For this reason, all parking must maintain a minimum of a 20 foot buffer from crosswalks and intersections.

Standards

Standard parallel on-street parking stalls should be 8 feet in width, including the gutter pan and to the centerline of striping, and 20 feet in length. This will accommodate most standard-size vehicles and trucks. Special attention should be given to people with disabilities. The same dimensions should be used for the physical parking space with the addition of a 5 feet buffer added to the front or rear of the space for additional room to maneuver.

Standard angled parking stalls should be 9 feet in width and 18 feet in length, from the center of the valley gutter to the face of curb. This will accommodate most standard-size vehicles and trucks. Consult the American's with Disabilities Act for additional parking requirements.

Head-Out Angled Parking

Some citizens have expressed interest in head-out or reverse angle parking. Benefits to consider include:

- **Improved driver visibility when exiting the stall**
- **Car loading is performed from the sidewalk**
- **Car doors funnel children to the sidewalk**
- **The first step to parallel parking**
- **May aid in traffic calming**

Existing art in Downtown Graham

Public Art

Downtown Graham is already the scene of a great public art program. Alamance Arts has played a key role encouraging art to be weaved into the fabric of Graham. Public art has been effective in the economic revitalization of downtown's as well as the creation of a sense of place. Known benefits include education, job creation, increased real estate value and increased tourism.

Place for Public Art

In the public realm, public art can be located on streets, street corners and bulbouts near intersections, in the center of roundabouts, and in parks and plazas. Business owners can also allow for the installation or display of various types of art both indoors and outdoors.

Types of Public Art

Public art has endless opportunities for innovation and the medium in which they are made. The following would be ideas that could be easily incorporated into the public realm of Downtown Graham:

- Decorating utilities boxes
- Sculptures
- Planters, green walls, and hanging baskets
- Restoration of original business murals
- Temporary installations
- Interactive art
- Memorials

Modern Bench and Refuse

Modern Bench Pods

Artistic Bench

Big Belly Refuse

Artistic Bike Rack

Architectural Bench

Alternative Furnishings

The City of Graham currently lacks a standard for furnishings within downtown. A standard helps establish a sense of place and ownership of maintenance. While the preceding pages suggested a standard that is contemporary in nature, alternative furnishings that are more artistic and modern may be considered.

The above alternative furnishings are just a taste of what is currently available to municipalities. Custom artistic bike racks currently exist in downtown at multiple locations (pictured above). Big Belly refuse containers have the ability to dawn custom artwork and have the ability to use solar power for trash compaction. Alternative furnishings should be evaluated on a case by case basis and fit the aesthetic context of Graham.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APPENDIX B

COST ESTIMATES

Court Square Pilot Restripe
Elm Street 100 Block
Downtown Park Design Concept


P
FREE PARKING
AHEAD

COST ESTIMATES

The following pages of appendices provide opinions of probable cost for phase one projects and public realm elements within Downtown Graham, North Carolina. The opinion of probable costs are order-of-magnitude estimates made for budget purposes only. Estimates shall be reviewed, revised, and adjusted accordingly at program verification/schematic design phases. The estimates assume a competitive bid and are opinions of probable construction cost based on fair market value, historical NCDOT bid tabulations, and estimator's judgement. The estimates do not include right-of-way acquisition, utility relocation, or design fee. This is not a prediction of the anticipated low bid and should be used for planning purposes only. For each fiscal year after the publication of this document, 2019, estimator should add 5% to the unit cost of each item.

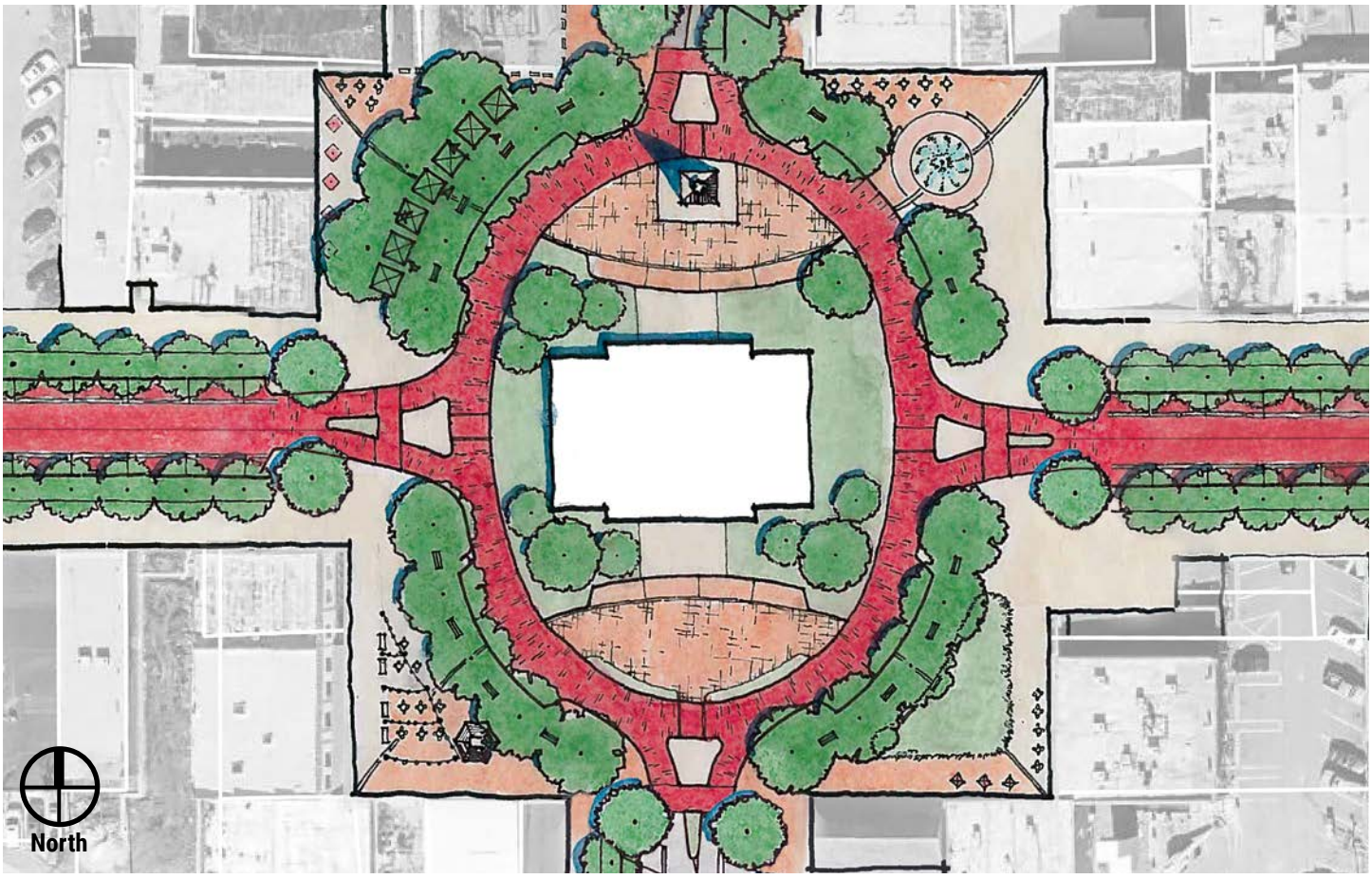
Opinion of probable costs included:

- Phase One: Court Square Pilot Restripe
- Phase One: Elm Street Reconstruction
- Phase One: Downtown Park Design Concept

Phase One: Court Square Pilot Restripe

Planning Level Opinion of Probabale Construction Cost

Through the implemenation of a pilot restripe project residents and visitors alike can experience the vision for Court Square first hand. Street space will be realocated based on the concept plan through temporary paint, planters, and barriers. The opinion of probable costs on the proceeding page are order-of-magnitude estimates made for budget purposes only. Estimates shall be reviewed, revised, and adjusted accordingly at program verification/schematic design phases. For each fiscal year after the publication of this document, 2019, estimator should add 5% to the unit cost of each item.



Proposed concept design for Court Square

Phase One: Court Square Pilot Restripe

DESCRIPTION	QUANITITY	UNIT	UNIT COST	ITEM COST
PAINT PAVEMENT MARKINGS (4" WHITE)	LF	4712	$0.25	**$1,178.00**
PAINT PAVEMENT MARKINGS (8" WHITE)	LF	1152	$0.50	**$576.00**
PAINT PAVEMENT MARKINGS (24" WHITE)	LF	360	$2.10	**$756.00**
PAINT PAVEMENT MARKINGS (SYMBOL)	EA	16	$40.00	**$640.00**
CONCRETE PLANTERS	EA	20	$250.00	**$5,000.00**
PORTABLE CONCRETE BARRIER	LF	750	$30.00	**$22,500.00**
SUBTOTAL				**$30,650.00**
CONTINGENCY (30%)				$9,195.00
MOBILIZATION (5%)				$1,533.00
TEMPORARY TRAFFIC CONTROL (5%)				$4,598.00
SIGNING (2%)				$613.00
CONCEPT LEVEL OPINION OF PROBABLE COST TOTAL				**$46,600.00**
PRECONSTRUCTION ENGINEERING COST				**$8,000.00**

Inflation of 5% per year

Phase One: Elm Street Reconstruction

Planning Level Opinion of Probabale Construction Cost

Elm Street will serve as the City's primary festival street. Phase One encompases both East and West Elm Street within the 100 block of downtown Graham. The project will focus on public realm improvements along the roadway and at both Maple Street and Marshal Street intersections (see Chapter 3 Streetscape + Public Space: Elm Street for additional details). The opinion of probable costs on the proceeding page are order-of-magnitude estimates made for budget purposes only. Estimates shall be reviewed, revised, and adjusted accordingly at program verification/schematic design phases. For each fiscal year after the publication of this document, 2019, estimator should add 5% to the unit cost of each item.

Inflation of 5% per year

Photo simulation of Elm Street looking east toward Court Square

Phase One: Elm Street Reconstruction

DESCRIPTION	QUANITITY	UNIT	UNIT COST	ITEM COST
PREPARING ROW	STA	7	$2,500.00	$17,500.00
CONSTRUCTION STAKING, LINES, AND GRADES	LS	1	$15,000.00	$15,000.00
CLEARING & GRUBBING	AC	1.5	$25,000.00	$37,500.00
TREE REMOVAL	EA	12	$500.00	$6,000.00
UNCLASSIFIED EXCAVATION	CY	1150	$50.00	$57,500.00
BORROW EXCAVATION	CY	200	$35.00	$7,000.00
REMOVAL OF EXT ASPHALT PAVEMENT	SY	4607	$9.00	$41,465.00
REMOVAL OF EXT CONCRETE PAVEMENT	SY	1600	$9.00	$14,400.00
CONCRETE DRIVEWAY REMOVAL	EA	6	$1,000.00	$6,000.00
AGGREGATE BASE COURSE	TON	1378	$52.00	$71,679.23
CONCERETE CURB & GUTTER (2'-0)	LF	794	$52.00	$41,288.00
CONCRETE CURB - VALLEY GUTTER	LF	672	$35.00	$23,520.00
6" CONCRETE SIDEWALK	SY	2511	$56.00	$140,597.33
6" CONCRETE DRIVEWAY	SY	98	$120.00	$11,733.33
CONCRETE CURB RAMPS	EA	16	$2,225.00	$35,600.00
FURNISHING ZONE PAVERS	SF	14894	$18.00	$268,092.00
FURNISH AND INSTALL - BRICK ROADWAY	SY	2522	$200.00	$504,444.44
24" RCP CULV CLASS IV	LF	200	$105.00	$21,000.00
36" RCP CULV CLASS IV	LF	725	$175.00	$126,875.00
CURB INLET	EA	8	$2,500.00	$20,000.00
INSTALL TOPSOIL	CY	100	$90.00	$9,000.00
LANDSCAPING	LS	1	$20,000.00	$20,000.00
IRRIGATION	LS	1	$15,000.00	$15,000.00
PEDESTRIAN LIGHTING	EA	20	$2,500.00	$50,000.00
LANDSCAPE LIGHTING	EA	96	$250.00	$24,000.00
LANDSCAPE TRANFORMER	EA	1	$650.00	$650.00
LANDSCAPE AMENITY (BENCH)	EA	16	$2,500.00	$40,000.00
LANDSCAPE AMENITY (REFUSE)	EA	8	$1,500.00	$12,000.00
SUBTOTAL				**$1,620,344.34**
CONTINGENCY (30%)				$486,104.00
MOBILIZATION (5%)				$81,018.00
TEMPORARY TRAFFIC CONTROL (5%)				$81,018.00
MISCELLANEOUS SANI SEVER/WATER UTILITIES (25%)				$405,087.00
ELECTRICAL SERVICES (5%)				$81,018.00
SIGNING (1.0%)				$16,204.00
PAVEMENT MARKINGS (1.0%)				$16,204.00
CONCEPT LEVEL OPINION OF PROBABLE COST TOTAL				**$2,787,000.00**
PRECONSTRUCTION ENGINEERING (12%)				$334,440.00
CONSTRUCTION ENGINEERING AND INSPECTION (10%)				$278,700.00

Phase One: Downtown Park Design Concept: Sesquicentennial Park

Planning Level Opinion of Probabale Construction Cost

A redesign of the Sesquicentennial Park could provide an additional amenity to the Court Square. The opinion of probable costs on the proceeding page are order-of-magnitude estimates made for budget purposes only. Estimates shall be reviewed, revised, and adjusted accordingly at program verification/schematic design phases. For each fiscal year after the publication of this document, 2019, estimator should add 5% to the unit cost of each item.

If a different location is desired, the opinion of probable construction cost can still be used with some alterations needed based on a sites comparable size and scale.

Conceptual rendering of Court Square Park

Phase One: Sesquicentennial Park Redesign

DESCRIPTION	QUANITITY	UNIT	UNIT COST	ITEM COST
MOBILIZATION	LS	1	$10,000.00	**$10,000.00**
CONST. STAKES, LINES, & GRADES	EA	1	$5,000.00	**$5,000.00**
TRAFFIC CONTROL	LS	1	$2,500.00	**$2,500.00**
CLEARING AND GRUBBING	LS	1	$2,500.00	**$2,500.00**
SILT FENCE	LF	240	$5.00	**$1,200.00**
ASPHALT REMOVAL	SY	605	$10.00	**$6,050.00**
UNSUITABLE SOIL EXCAVATION	CY	100	$30.00	**$3,000.00**
GENERAL GRADING AND GROUND PREPARATION	LS	1	$5,000.00	**$5,000.00**
GRADED AGGREGATE BASE COURSE	TON	102	$26.00	**$2,652.00**
DRAINAGE	LS	1	$16,000.00	**$16,000.00**
WOVEN GEOTEXTILE FABRIC	SF	2590	$10.00	**$25,900.00**
SLATE CHIP PATIO	TON	45	$75.00	**$3,375.00**
CONCRETE UNIT PAVER	SF	1328	$18.00	**$23,904.00**
WATER FEATURE - CENTER	LS	1	$78,000.00	**$78,000.00**
WATER FEATURE - SEAT WALL	LS	2	$45,000.00	**$90,000.00**
PLANTERS/SEATWALL	LF	124	$250.00	**$31,000.00**
TOPSOIL	CY	40	$50.00	**$2,000.00**
LANDSCAPE GRADING AND PREPARATION	LS	1	$1,500.00	**$1,500.00**
LANDSCAPE PLANTING	LS	1	$3,280.00	**$3,280.00**
IRRIGATION INSTALLATION	LS	1	$3,000.00	**$3,000.00**
PEDESTRIAN LIGHTING	EA	2	$1,800.00	**$3,600.00**
LANDSCAPE LIGHTING	LS	1	$9,175.00	**$9,175.00**
PERGOLA	LS	1	$45,000.00	**$45,000.00**
CAFÉ TABLE - 4 TOP	EA	8	$3,000.00	$24,000.00
TRASH RECEPTACLE	EA	2	$1,200.00	$2,400.00
SWING BENCH	EA	4	$2,500.00	$10,000.00
SUBTOTAL				**$400,036.00**
CONTINGENCY (30%)				$120,010.80
UTILITY RELOCATION(5%)				$20,001.80
CONCEPT LEVEL OPINION OF PROBABLE COST TOTAL				**$520,100.00**
PRECONSTRUCTION ENGINEERING (12%)				$62,412.00
CONSTRUCTION ENGINEERING AND INSPECTION (10%)				$52,010.00

Inflation of 5% per year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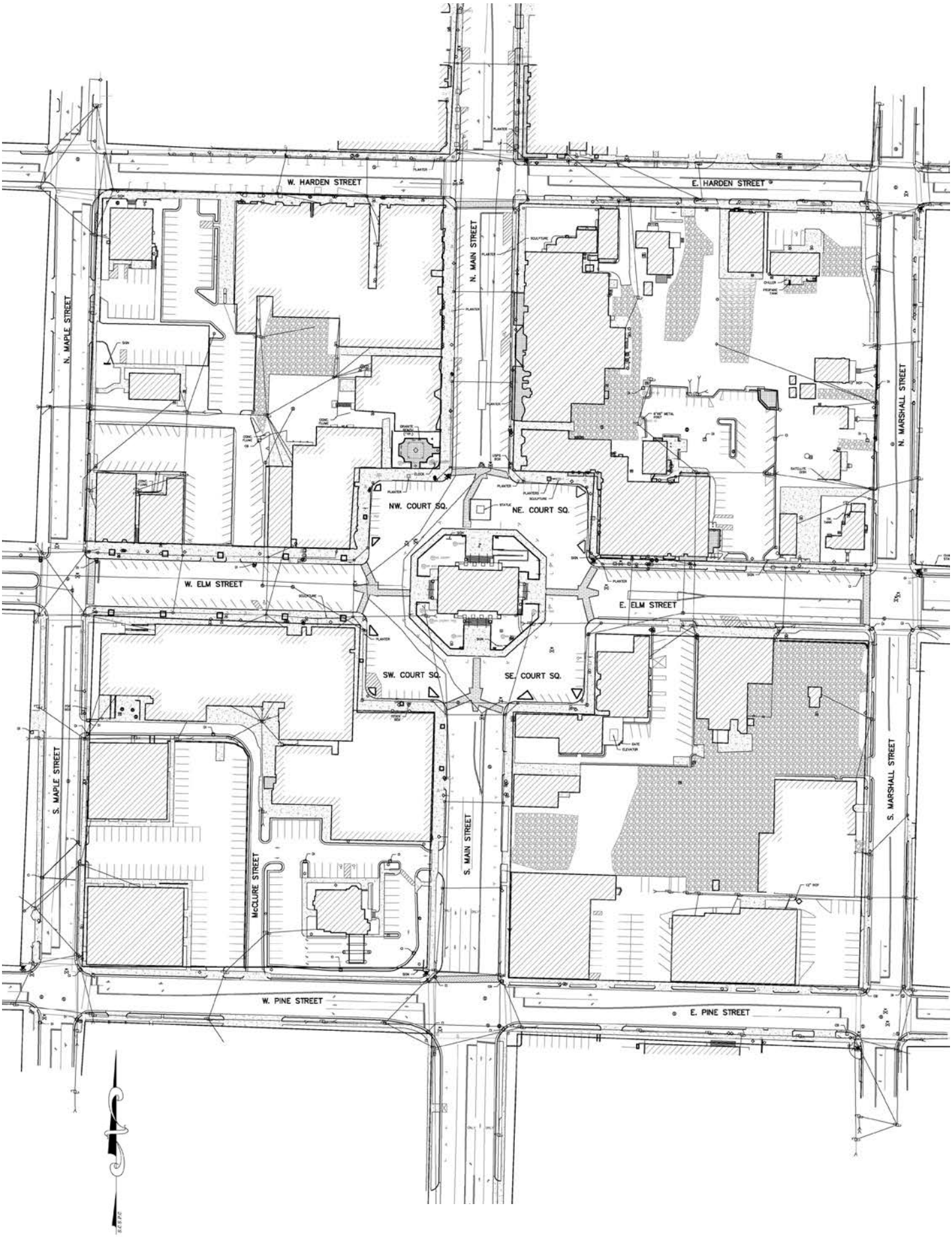
APPENDIX C

TOPOGRAPHICAL SURVEY

Topographical Survey

In an effort to help the City of Graham move planning projects forward to design, Toole Design hired a surveyor to develop a topographical survey of the study area. A topographical survey gathers data about the natural and man-made features of a particular site (e.g. building footprints, utility locations, edge of pavement, elevations, sidewalks, vegetation, property ownership, etc.). All design projects start with a survey and Graham now has the ability to move forward on projects within the study area. The survey should be updated periodically as Graham begins implementing recommendations downtown. Since April of 2019, the survey has already assisted two downtown business owners/ property owners with utility and property boundary inquiries. An excerpt of the survey can be found on the adjacent page.

The survey excerpt is for reference/information purposes only. Residence are encouraged to contact the City of Graham for specific questions regarding the survey.


W. HARDEN STREET
E. HARDEN STREET
N. MAIN STREET
N. MAPLE STREET
N. MARSHALL STREET
NW. COURT SQ.
NE. COURT SQ.
W. ELM STREET
E. ELM STREET
SW. COURT SQ.
SE. COURT SQ.
S. MAPLE STREET
McCLURE STREET
S. MAIN STREET
S. MARSHALL STREET
W. PINE STREET
E. PINE STREET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APPENDIX D

CONDITIONS OF IMPLEMENTATION


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CONDITIONS OF IMPLEMENTATION

It is essential that the Graham Downtown Master Plan be used as a planning resource only and not a design document. The concepts that are recommended should be further developed if and when the City Council decides to move forward. All design details such as parking (type and number), active and passive amenities, street materials, landscaping, intersection reconfiguration, and many more elements described in the plan are put forth as best practice and can be refined or altered during the design phase of each project by City Council before being implemented. This plan is conceptual in nature and all recommendations should be done in cooperation with property owners.

Goals for Implementation:

- **Additional planning and design should achieve pull in parking on West and East Elm Streets where possible.**
- **Additional planning and design should maintain non-restrictive loading zones as close to current sites as possible.**
- **Additional planning and design should recommend the most yield of 40 angled pull in parking spaces around the exterior of Court Square while exploring additional interior parking options as well. Let it be noted that the preferred rendering on page 35 is the smaller inset showing pull in parking as opposed to the larger rendering shown on page 35 and 36.**
- **Additional planning and design should eliminate the idea of a splash park.**
- **Additional planning and design should recommend the addition of a fire suppression riser system during any infrastructure upgrades in the downtown.**
- **Additional planning and design should consider all alternative routes for truck and vehicle traffic through downtown in addition to Gilbreath, Harden, McAden, Marshall, and Maple Streets.**
- **Additional planning and design should note that rear entry parking rendered on pages 42, 48, 50 and 51 is not actually preferred.**
- **Additional planning and design should not pursue a roundabout at McAden and South Main Street (shown on page 28).**

LIVE WORK PLAY

GRAHAM

NORTH CAROLINA