

(preliminary draft for review)

Missoula County & City of Missoula Mullan Area

MULLAN AREA NEIGHBORHOODS MASTER PLAN

June 25, 2020



CREDITS

Prepared for:



Missoula County &
City of Missoula
Montana

Planning Team:

Consultant Lead



TABLE OF CONTENTS



INTRODUCTION & BACKGROUND



PLANNING & PUBLIC PROCESS



THE BIG IDEAS



PLAN AREAS



IMPLEMENTATION



Scene from the Mullan Area



INTRODUCTION & BACKGROUND

THIS CHAPTER PROVIDES AN INTRODUCTION TO THE PROJECT, EXPLORING PREVIOUS PLANS AND CONCURRENT PROJECTS, AS WELL AS ILLUSTRATING HOW THIS PLAN SUPPORTS THE CITY AND COUNTY VISION.

1

INTRODUCTION

2

PREVIOUS PLANS AND STUDIES

3

A GROWING CITY

4

WHY BUILD HERE?

5

BUILD GRANT PROJECT

6

SITE HISTORY

7

SITE ANALYSIS

INTRODUCTION

"The master plan is an opportunity to align our land use planning to our values and recognize our constraints."

The Mullan Area Master Plan is an opportunity for the City and County to further evaluate and align land use planning and regulations, mobility elements, and plans for amenities in an area of the community currently receiving significant development pressure. The area of focus is located on the western edge of the City limits, between Mullan Road and West Broadway, west of Reserve Street and east of the Missoula International Airport.

This Plan reflects the "One Community" approach of the 2019 *Missoula Area Land Use Element* with a planning vision for the City and County as a single community, not divided by the jurisdictional boundaries.

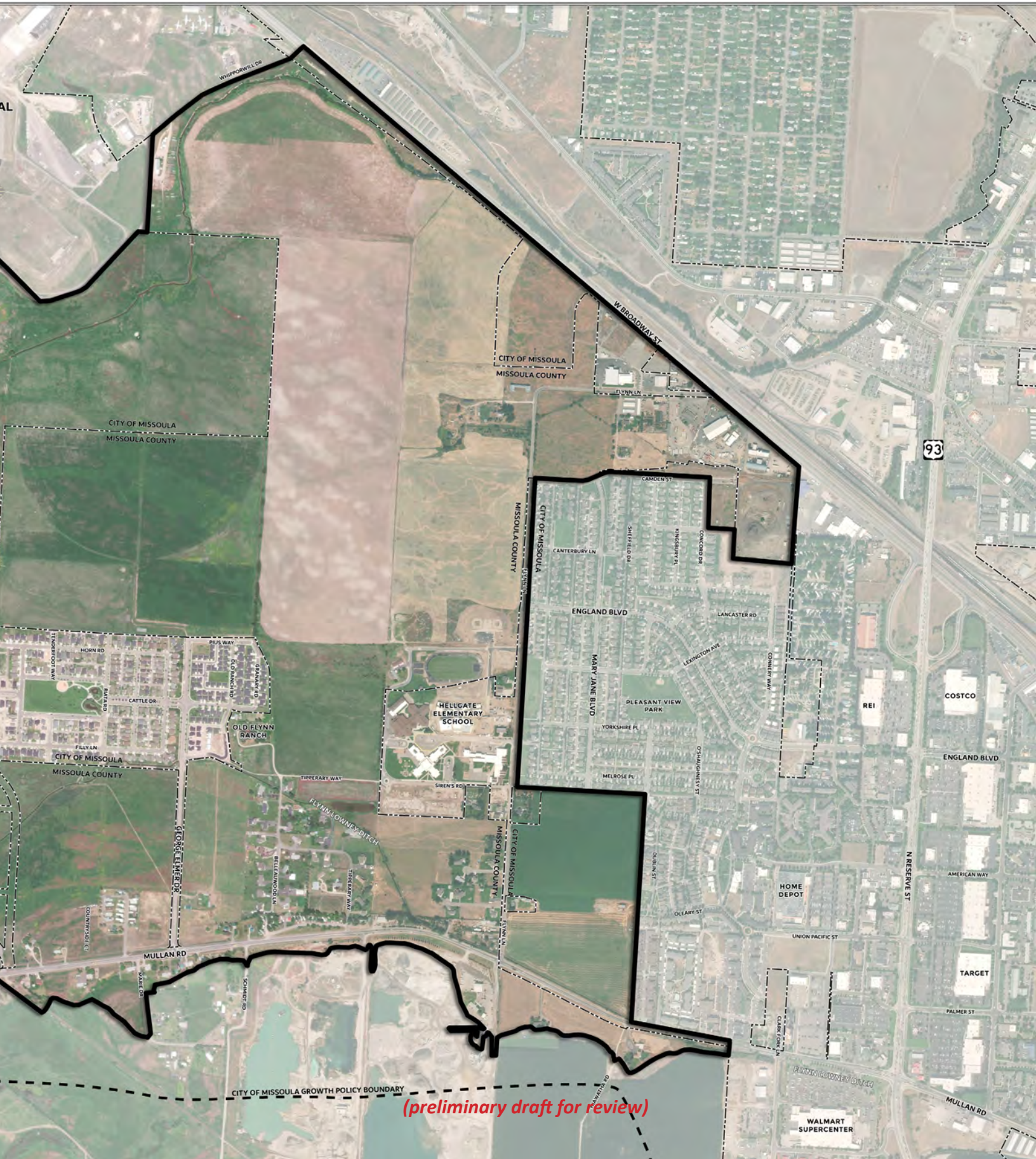
Just as the *Missoula Area Land Use Element* and the *Missoula City Growth Policy* provide guidance and direction for the future, this Plan does the same for an area currently in the County but likely to be annexed into the City.

The Mullan Area Master Plan is a shared planning effort between the City and County that follows the five components of the "One Community" approach for the greater Missoula area:

- ✓ **COORDINATE ON THE EDGES**
- ✓ **PLAN FOR THE PHYSICAL FRAMEWORK NEEDED TO FACILITATE UNIQUE NEIGHBORHOODS**
- ✓ **PROVIDE FOR RURAL NEIGHBORHOODS**
- ✓ **PROTECT PUBLIC HEALTH AND SAFETY**
- ✓ **PRESERVE WORKING LANDS, AGRICULTURAL AREAS, AND NATURALLY-FUNCTIONING SYSTEMS**

These recently adopted growth policies completed by the City and County describe the values important to the community and a vision for growth that is consistent with those values. The master plan is the opportunity to align Missoula's land use planning to Missoula's values while recognizing the constraints.





(preliminary draft for review)

PREVIOUS PLANS & STUDIES

BUILDING ON PAST PLANS: FROM GROWTH POLICY TOWARDS NEW NEIGHBORHOODS

The Mullan Area Master Plan builds upon a strong foundation of previous plans and studies. It attempts to integrate housing, economic, mobility, sustainability, aesthetic, preservation, and environmental goals from a variety of plans and initiatives into an overall framework for the Mullan Area.

In 2015, the City adopted a new growth policy called “Our Missoula,” which includes an “inward focused” directive promoting compact development in areas where infrastructure already exists and mixed-use and dense development along major transportation/transit corridors. Shortly after the adoption of the City’s Growth Policy, The MPO adopted a Long Range Transportation Plan, “Activate Missoula”, that established very ambitious mode split goals in order to cut drive-alone trips in half. The plan notes that achieving these goals will require ambitious policies and commitment from the City and County.

In spring 2019, the County updated a land use plan for the unincorporated areas of the Missoula Valley called the Missoula Area Land Use Element. The Missoula Area Land Use Element calls for a “one community” directive that supports the city’s inward focused directive and identifies ways the county can better facilitate growth and development in the unincorporated areas of the Missoula Valley. One of the actions implemented in Missoula Area Land Use Element was joint master planning between the city and county on the city’s western edge.

GROWTH POLICIES & LAND USE PLANS

- *Missoula Area Land Use Element* (2019)
- *Missoula’s Downtown Master Plan* (2019)
- *Missoula County Growth Policy* (2016)
- *City Growth Policy 2035* (2015)
- *WYE Mullan West Comprehensive Plan* (2005)

MOBILITY PLANS & STUDIES

- *Missoula Urban Transportation District (Mountain Line) 2018 Strategic Plan* (2018)
- *Activate Missoula 2045 LRTP* (2017)
- *Missoula International Airport Master Plan Update* (2009)

HOUSING

- *A Place to Call Home: Meeting Missoula’s Housing Needs* (2019)

DEVELOPMENT

- *Our Missoula Development Guide* (2018)

OUR MISSOULA (2015) CITY’S GROWTH POLICY

Inward focus for development. Mixed use along corridors.

MISSOULA AREA LAND USE ELEMENT (2019) COUNTY’S GROWTH POLICY

A “one community” directive that supports the city’s inward focused directive

Missoula County Growth Policy

Landscapes • Livelihoods • Communities

Missoula Area Land Use Element

An Amendment to the 2016 Missoula County Growth Policy
Missoula County Community and Planning Services

Adopted
June 6, 2019

ACTIVATE
MISSOULA 2045

Activate Missoula 2045
Missoula Long Range Transportation Plan
March 2017

A PLACE TO CALL HOME: MEETING MISSOULA'S HOUSING NEEDS

2019
Office of Housing & Community Development

433 Ryan Street
Missoula, MT 59802
(406) 552-4399

MISSOULA

Our Missoula Development Guide

Looking Forward
2018 - 2028

CITY GROWTH POLICY

2035 | Adopted November 23, 2015

OUR MISSOULA
Looking inward. Moving forward.

Final Report

Missoula International Airport Master Plan Update

2008-2028

Prepared for
Missoula County Airport Authority

2009

CH2MHILL

*Special appreciation to Chris Hart for the cover photo of a jet taking off at MSO

Missoula Urban Transportation District (Mountain Line) 2018 Strategic Plan

Mountain Line

Adopted by the Board of Directors August 23, 2018

JARRETT WALKER ARCHITECTS
DPA PC

\$20.00

**WYE MULLAN WEST
COMPREHENSIVE AREA PLAN**

Adopted November 16, 2005
by the Board of County Commissioners and
Missoula City Council

MISSOULA'S DOWNTOWN MASTER PLAN

The Downtown Missoula Master Plan: Complete Edition
November 4, 2019

A GROWING CITY

POPULATION GROWTH

GROWTH IN MISSOULA COUNTY

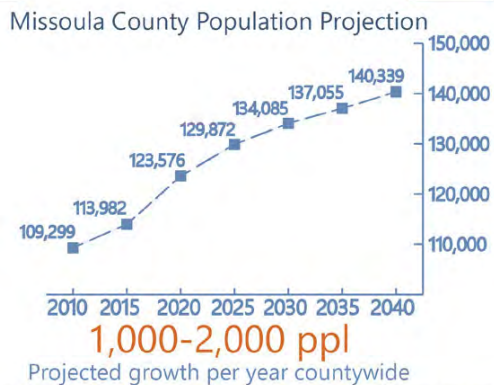
Missoula County is growing. People are moving here because of the high quality of life and to live in a place with a vibrant downtown and quick access to amazing landscapes. This is thanks to the efforts of many dedicated individuals and organizations who have worked tirelessly over the past decades cleaning up the Clark Fork, investing in the Downtown, and building a strong community. People take much pride in Missoula, as they should.

In 1970, roughly 30,000 people lived in the City with an additional 28,000 in the rest of the County. Today those numbers are around 75,000 and 45,000, respectively, more than doubling in population over the years. In the next 20 years, Missoula County is expected to grow by another 30,000 people, most of whom will live in or near the City.

Development is already occurring in the Mullan Area, as shown in the images to the right. This plan will help ensure that existing and new residents get the most benefit from growing here while mitigating, as much as possible, the negative impacts that are typically associated with development.



Growth in Missoula County



Population Distribution
8 out of 10 new Missoula County residents
end up living in the Missoula area



This series of aerial images show the changes occurring in the Mullan from 2002 (top) to 2009 (middle) and 2019 (bottom).

A NEED FOR AFFORDABLE HOUSING

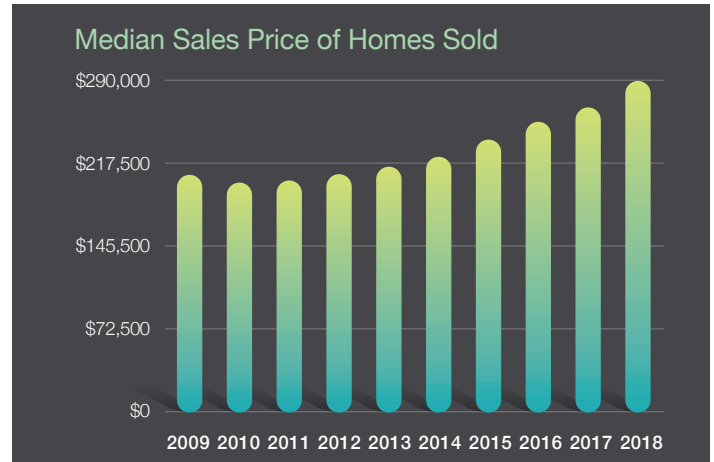
GROWTH IN HOUSING COSTS

With the rise in population in the Missoula area, there is a growing need for new residential units and more affordable housing.

The median sale price of homes in the Missoula urban area has increased by nearly \$100,000 since 2010, from \$200,500 to \$305,000 at the end of 2019. According to the Our Missoula City Growth Policy, over 12,000 new residential units in the urban service area will be needed by 2035. And while many new homes have been built since the policy was adopted in 2015, many more are still needed.

This all translates into a challenging housing market where many Missoulians are finding housing costs far outpacing wage growth. Within the City, a 2017 survey reports that 92.6% of housing rated as expensive or very expensive. Countywide, 37% of all households are considered cost-burdened.

It is clear that there is a need for a greater quantity and variety of housing choices to help Missoula remain affordable to Missoulians.



Median sales price of homes sold, 2019 Missoula Housing Report, Missoula Organization of Realtors

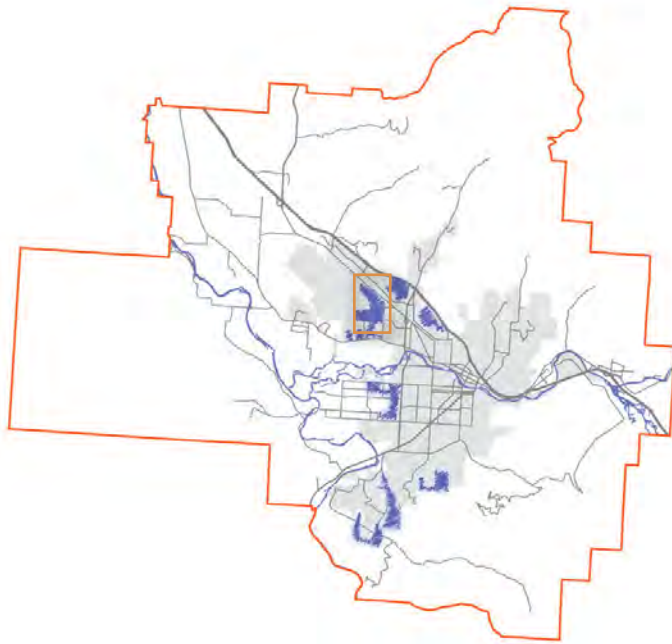
Cost-burdened housing, Missoula Area Land Use Element

37% of all households in Missoula County, including renters and homeowners, are cost-burdened.

(preliminary draft for review)

WHY BUILD HERE?

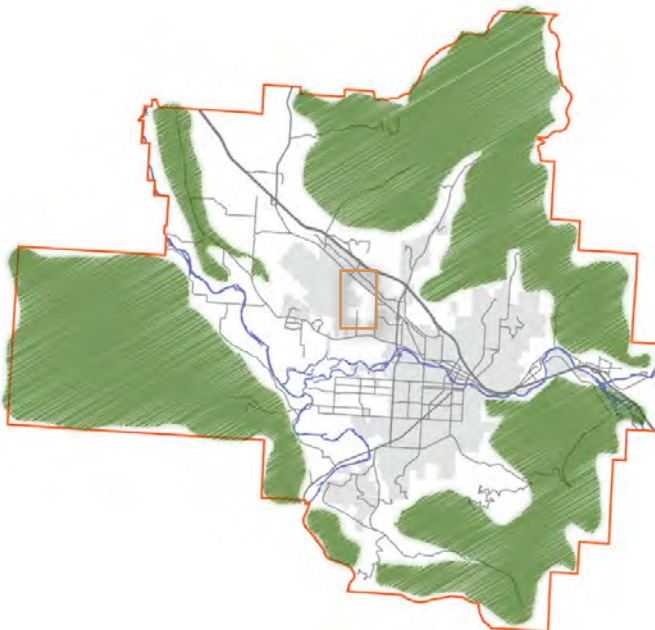
As more people move to the region because of all that Missoula has to offer, new development must contribute to what makes Missoula great. The City and County Growth Policies both focus this growth inward, meaning, to create great new in-town neighborhoods that are in many ways like Missoula's historic ones, while protecting the rural and natural landscapes that surround the City.



Coordinate on the Edges, Missoula Area Land Use Element

COORDINATE ON THE EDGES

Missoula County's role is to facilitate development patterns and efficient use of infrastructure in a consistent and congruent manner with the City of Missoula.



Preserve Lands, Missoula Area Land Use Element

PRESERVE WORKING LANDS, AGRICULTURAL AREAS, AND NATURALLY-FUNCTIONING SYSTEMS

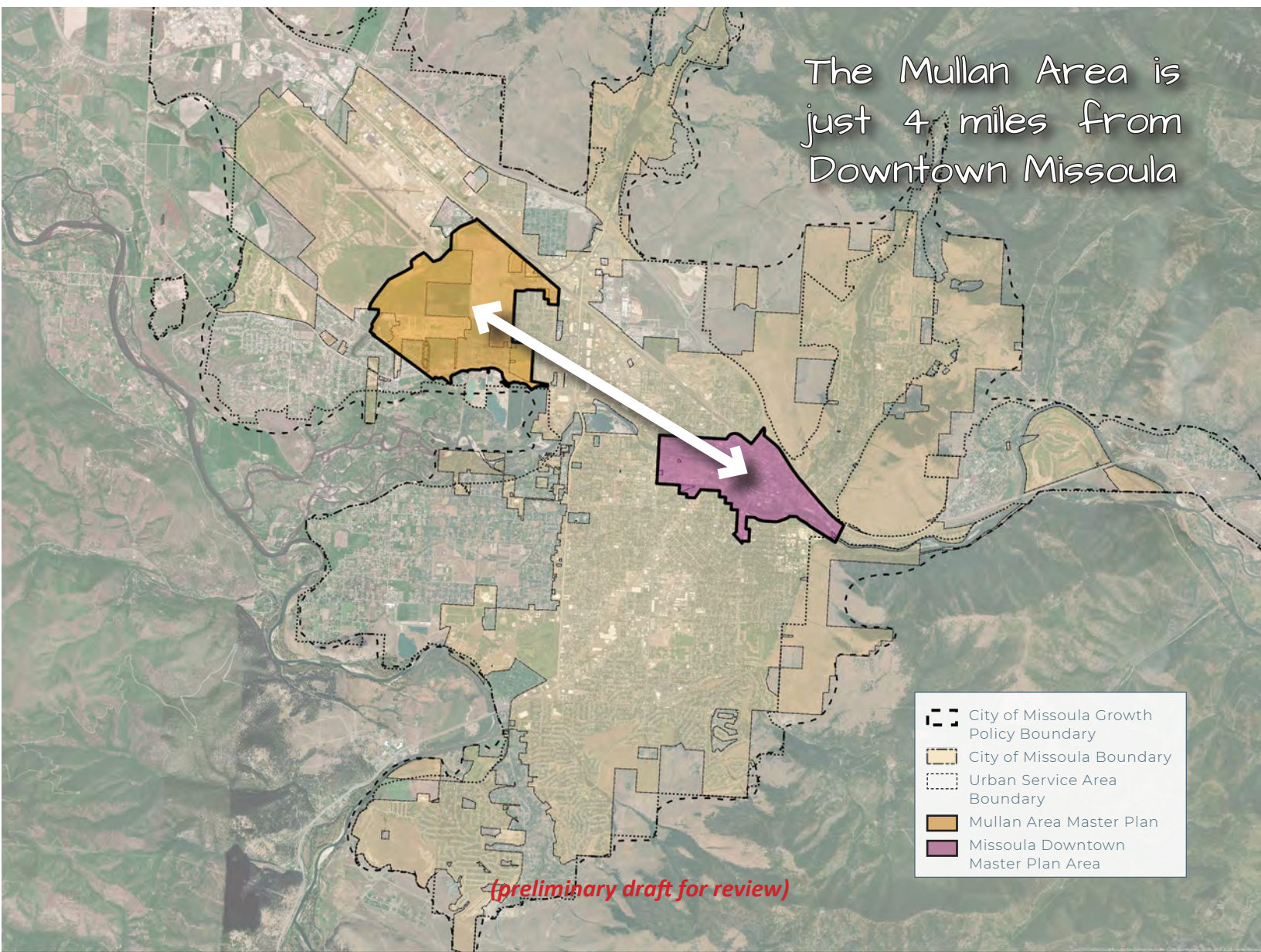
Missoula County's role is to guide the development of working lands, agricultural areas, and natural areas to preserve their abilities to function.

IMPLEMENTING A REGIONAL VISION

Located on the edge of the City of Missoula and adjacent to water and sewer infrastructure, both the City and County growth policies have identified the Mullan Area as a place for new housing. Similarly, the County growth policy sets out to preserve thousands of acres of working lands and natural areas further out from the City.

While the Mullan area is currently a mix of agricultural lands and suburban development, the area is quickly moving towards the later. By accommodating a larger percentage of the area's housing needs within the Mullan Area adjacent to infrastructure, development pressures on preservation areas are greatly reduced. To do this

requires coordination between the City and County as well as building more densely and carefully with the goal to create diverse, sustainable, and walkable neighborhoods. While development in this area is consistent with regional goals, the plan for the Mullan Area still preserves agricultural lands within its boundaries as well as large amounts of open space within it.



GROWTH POLICY - LAND USE DESIGNATIONS

Missoula County and the City of Missoula are coordinating to facilitate development patterns that are consistent and congruent while also making efficient use of infrastructure. This is evident in the County's Land Use Element that guides the future social, physical, environmental, and economic growth and development of the County and accompanying Land Use Designations Map, which describes a desired future vision for the County.

The map to the right identifies the County's future land use designations for the Mullan Area. Locating new development on the edge of the City puts it adjacent to existing infrastructure and transportation options. This will help in preserving important lands in the County by accommodating housing needs with the Mullan area, subsequently decreasing development pressure on the preservation areas.

AGRICULTURE

Supports economic diversity and contributes to the health of the country by providing for the local and regional production agricultural products. Allows for large-tract agricultural systems where agriculture soils and irrigation facilities are present. Protects the continuous function of natural landscapes and waterways, fish and wildlife habitat and movement corridors, and water quality. Protects public health and safety.

COMMERCIAL CENTER

Provides opportunities for retail, service, and employment. Provides for a mix of primarily commercial and higher intensity residential choices in a well-connected, walkable pattern.

RESIDENTIAL

Accommodates a range of housing options that contribute to county-wide housing diversity. Preserves and enhances the residential character of existing neighborhoods. Provides for compatible in-fill housing where land uses are in transition.

COMMERCIAL MIXED-USE

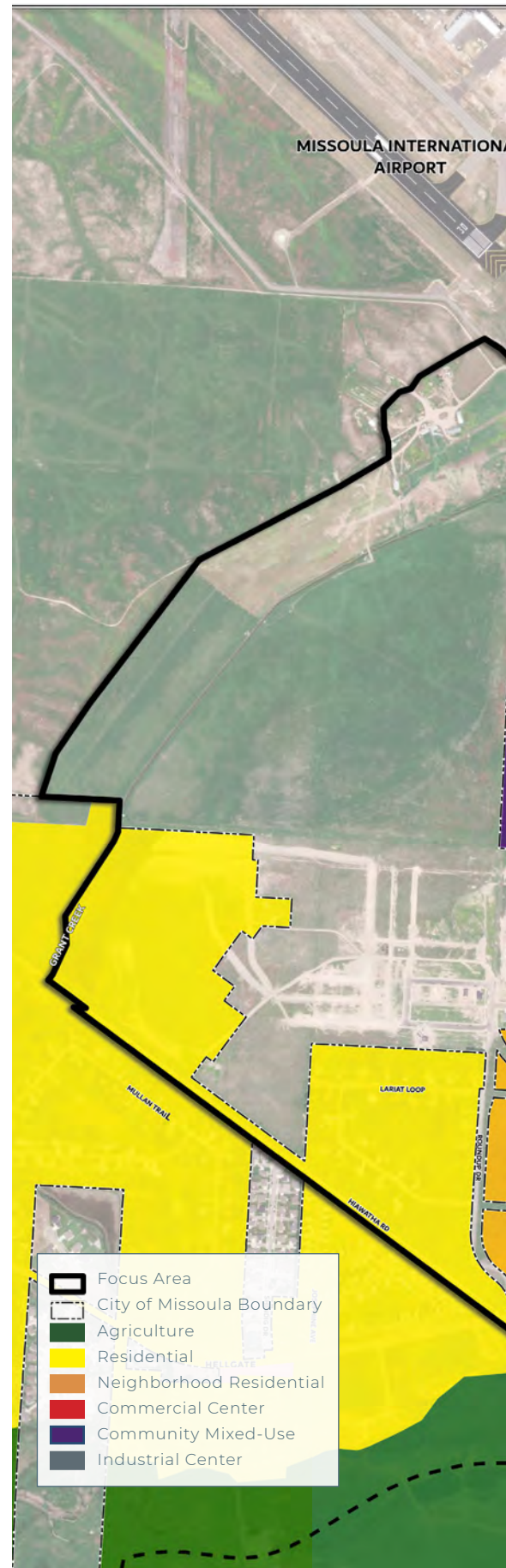
Accommodates a substantial portion of future growth. Provides a mix of primarily residential, commercial, and civic activity in a well-connected, walkable pattern. Provides an opportunity for retail, service, and employment. Accommodate higher intensity residential choices that contribute to county-wide housing diversity.

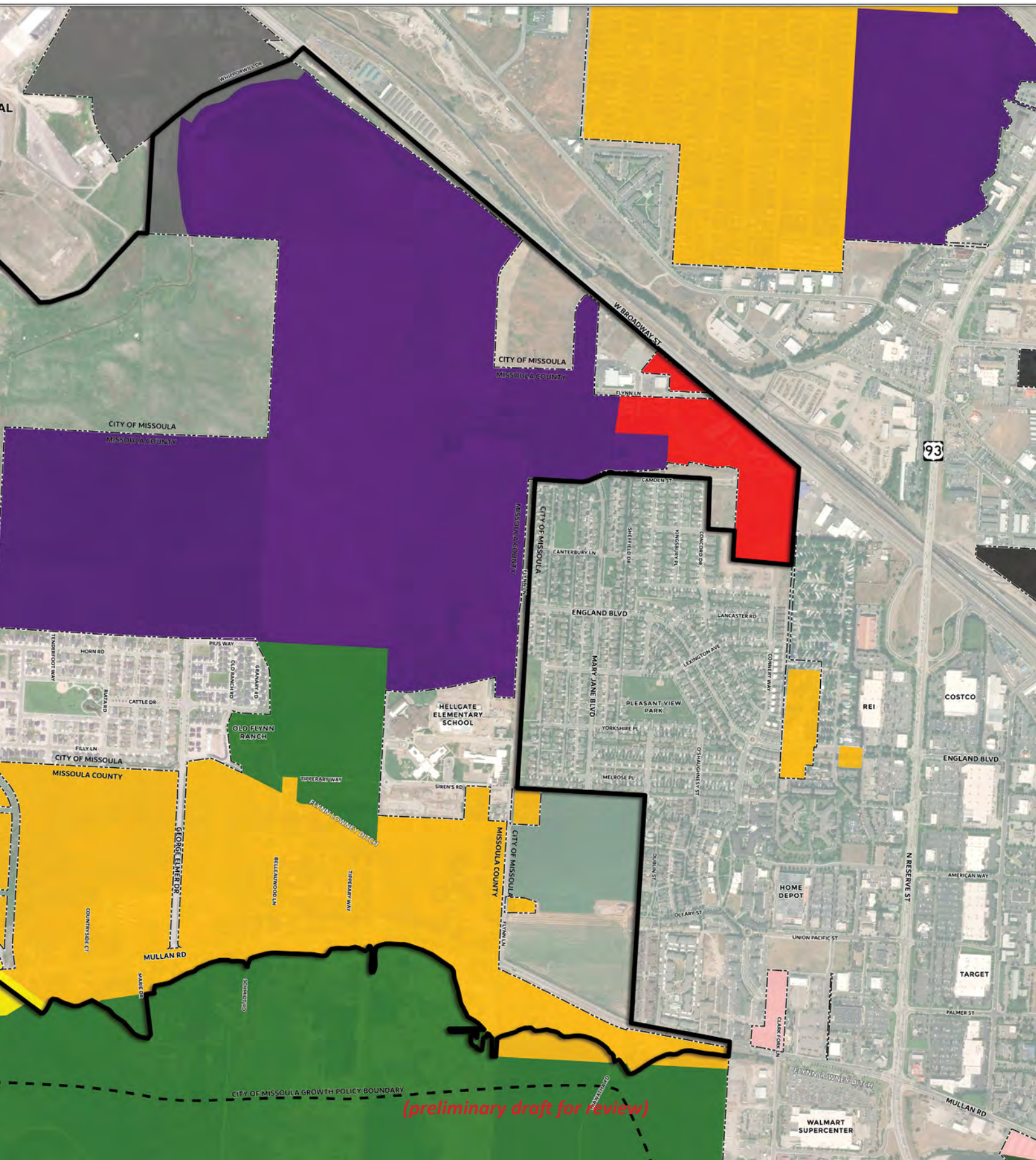
NEIGHBORHOOD RESIDENTIAL

Accommodates a range of residential options that contribute to county-wide housing diversity.

INDUSTRIAL

Contributes to the county's economic base by providing places where people work, create, build, store, and distribute goods and services.





(preliminary draft for review)

BUILD GRANT PROJECT

PROJECT BACKGROUND

In July of 2019, Missoula County and the City of Missoula partnered to apply for a discretionary grant through the US Department of Transportation known as Better Utilizing Investments to Leverage Development (BUILD).

The project focused on developing roads and infrastructure to support residential and commercial development in the area to the west of Reserve Street between Mullan Road and West Broadway. The project, as originally proposed, consisted of eight distinct project elements that were to be developed with grant funding and a local match from the City/County.

The Mullan BUILD project was awarded \$13 million in federal funds because it endeavored to address significant concerns related to safety and traffic congestion. Additionally, this project sought to promote economic development and offer transportation solutions for vehicles, cyclists, pedestrians, and other non-motorized users. The following elements will help to guide the project team in determining which components of the project will be built in the coming years with federal funds and which will be pushed to a later date as funding becomes available.

The Mullan BUILD project is highly collaborative, with representatives from the City, County, MPO, and other governmental jurisdictions. In addition to local government offices, DJ&A is the primary lead on plan development. Among other sub-consultants, Big Sky Public Relations is the primary point of contact for the public and partners throughout this multi-year project.

The Mullan Road BUILD team is currently preparing preliminary design plans for the entire BUILD project. One of the first objectives, and strong drivers of this project, is evaluating priorities to determine which segments to construct first. We intend to make the project as equitable as possible for all landowners and share the benefits of the BUILD grant over the entire Mullan and Broadway area. As these parameters are considered, our goal is to share the process clearly and transparently with the public and with our partners.

Existing road in the Mullan Area



PROJECT LIMITS



PROJECT ELEMENTS

- | | | | |
|--------|---------------------------|-------|--|
| 1a / — | GEORGE ELMER DRIVE NORTH | 4 / — | GRANT CREEK TRAIL AND STREAM RESTORATION |
| 1b / — | GEORGE ELMER DRIVE SOUTH | 5 / — | MILWAUKEE TRAIL |
| 2 / — | ENGLAND BOULEVARD | 6 / — | TIPPERARY WAY TRAIL |
| 3a / — | MARY JANE BOULEVARD NORTH | 7 / — | FLYNN LANE TRAIL |
| | | 8 / — | |

SITE HISTORY

PRESERVE HISTORIC STRUCTURES & CELEBRATE THE PAST

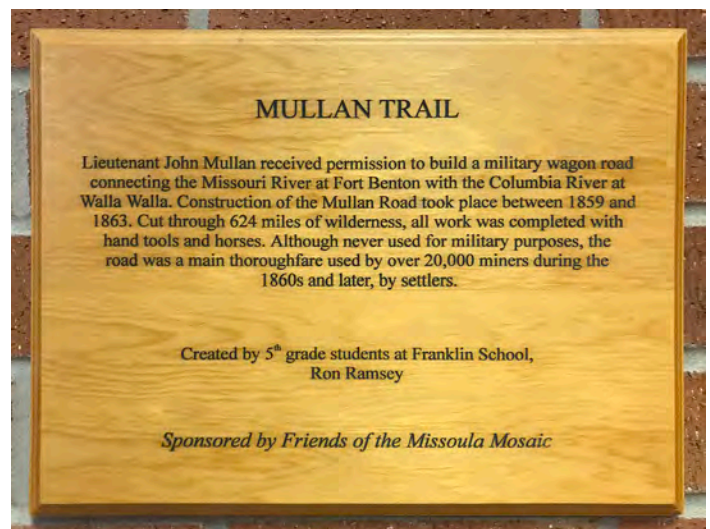
The first people to use the land in what is now the Mullan Area were the Native American tribes such as the Salish, Flathead, Pend d'Oreille, and Kootenai, who established trail networks across the area. The native population was removed from this land after the signing of the Hellgate Treaty in 1855. In the 19th Century, homesteaders and settlers began arriving in the area, and in 1858, the US military began construction on a military road connecting Fort Benton, Dakota to Walla Walla, Washington. Lieutenant John Mullan led the road building and the road and area now take his name. In the Mullan Master Plan Area, today's Mullan Road is located just north of the original. It was along this road in around 1860, that Hell Gate Village was established. Within six years, development had shifted four miles east to what is now downtown Missoula and is where the City grew.

The Mullan Area neighborhoods are just northeast of the original Hell Gate settlement. Although the plan area doesn't include the original settlement, it cites the historic Flynn Farm, also known as the McKinnon Home. The Flynn Farm home, built-in 1883, is on the National Registry of Historic Places and the forty acres surrounding it are part of a conservation easement. The Flynn farm at one point totaled 1,300 acres of land, encompassing a large portion of the Mullan Area. Other farmhouses and related structures were built over the years although few remain today, such as the barn and farmhouse along Flynn Lane north of Camden Street.

The plan seeks to preserve historic structures and their surrounding landscape to help maintain a connection to the past as Missoula moves forward. Historic markers and monuments can denote places of historic importance and can educate future residents and visitors on the area's rich history and those who came before, including the Native American tribes whose ties to the area go back generations.



Bitterroot flowers are an important part of the local Native American culture



A plaque offering a brief history of the Mullan Trail



Right: Photo of Flynn Farm, provided to the National Register of Historic Places by John DeHaas in 1977, courtesy of Missoula County

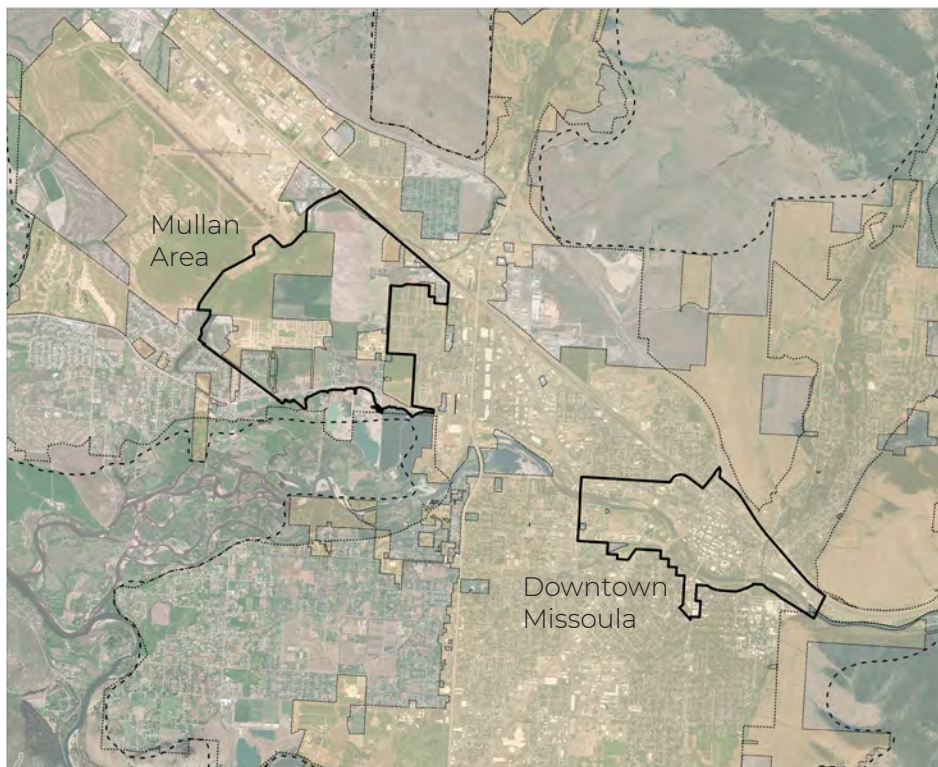
(preliminary draft for review)

SITE ANALYSIS

BACKGROUND MAPS

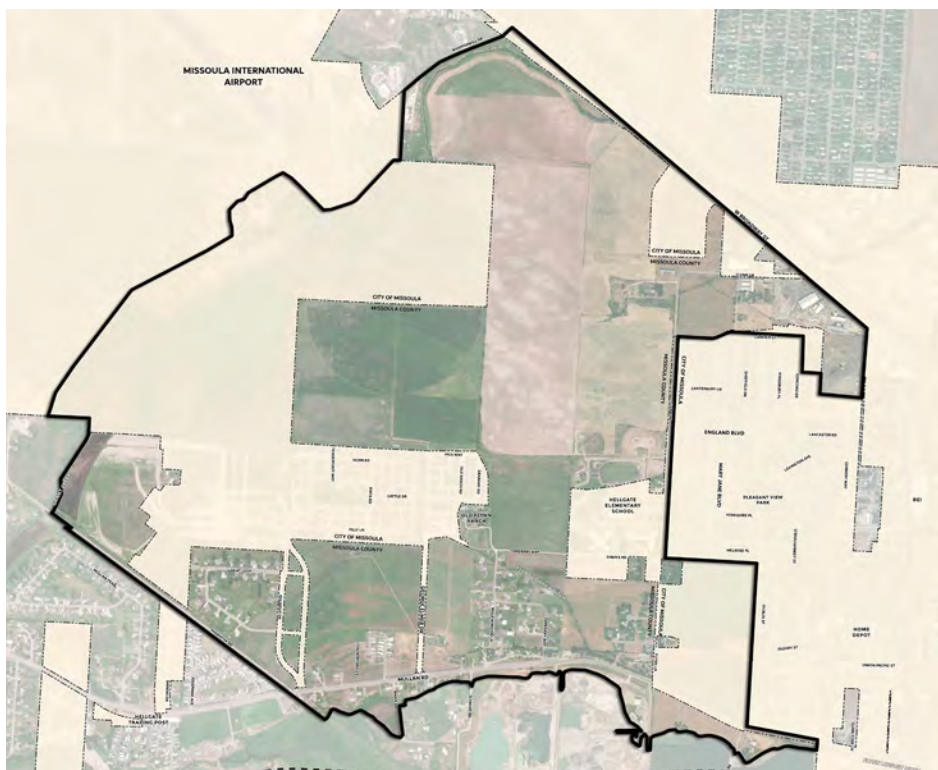
Using the County and City's existing maps and Geographic Information Systems (GIS) data, the team created a series of analysis maps to better understand the dynamics of the site. The maps highlight various aspects of the Mullan Area that relate to the natural environment, infrastructure, and the site context. Several of these analysis maps are included on the next few pages.

This first map shown to the right demonstrates just how large the Mullan Area is in comparison to Downtown and the rest of Missoula.



CITY AND COUNTY JURISDICTIONS

The Mullan Area is split between parcels that are within the City of Missoula and parcels that are unincorporated. As properties develop, they will be annexed into the City to be served by water and sewer.



LEGEND

-  City of Missoula Growth Policy Boundary
-  Focus Area
-  City of Missoula

FLOOD ZONES AND HYDROGRAPHY

FLOOD ZONES

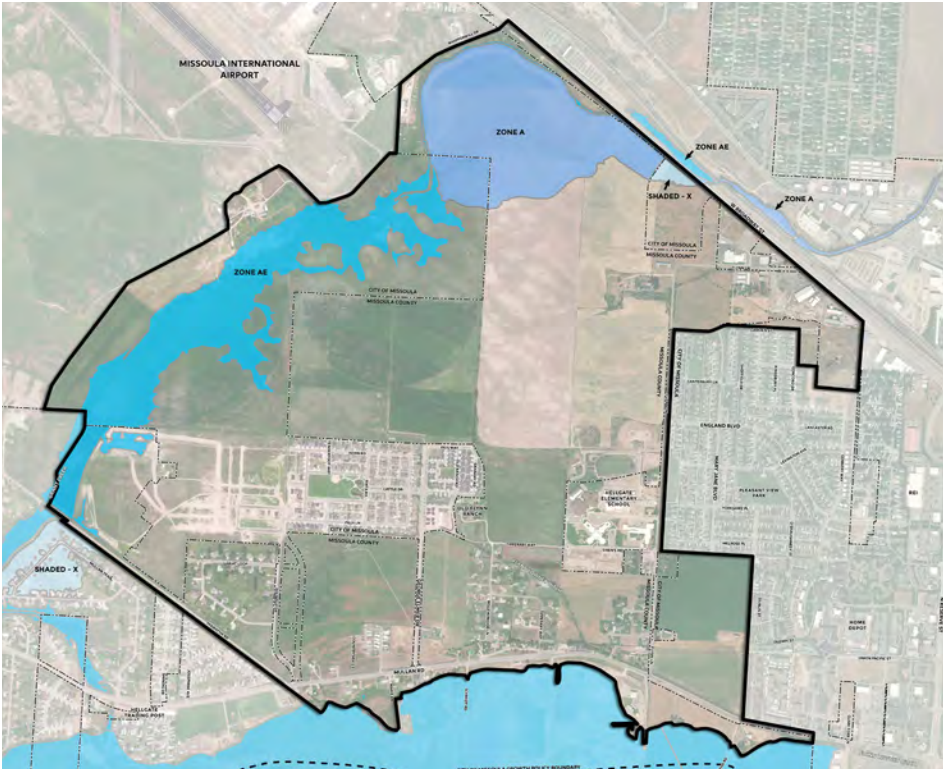
As Grant Creek is restored to a more natural condition, the flood zones will be reduced in area.

LEGEND

- City of Missoula Growth Policy Boundary
- Focus Area
- City of Missoula Boundary

Flood Zones

- Zone A (100 YR Floodplain - Approximate)
- Zone AE (100 YR Floodplain - With Elevations)
- Zone AE (100 YR Floodway)
- Zone AH (100 YR Floodplain - Ponding)
- Zone AO (100 YR Floodplain - Sheet Flow)
- Area Not Included (Tribal Lands)
- Zone D (Undetermined Flood Hazard)
- SHADED-X (100/500 YR Floodplain)
- SHADED-X (500-YR Floodplain Only)
- SHADED-X (Protected by Levee)
- Unshaded X (Out of Designated Floodplain)



HYDROGRAPHY

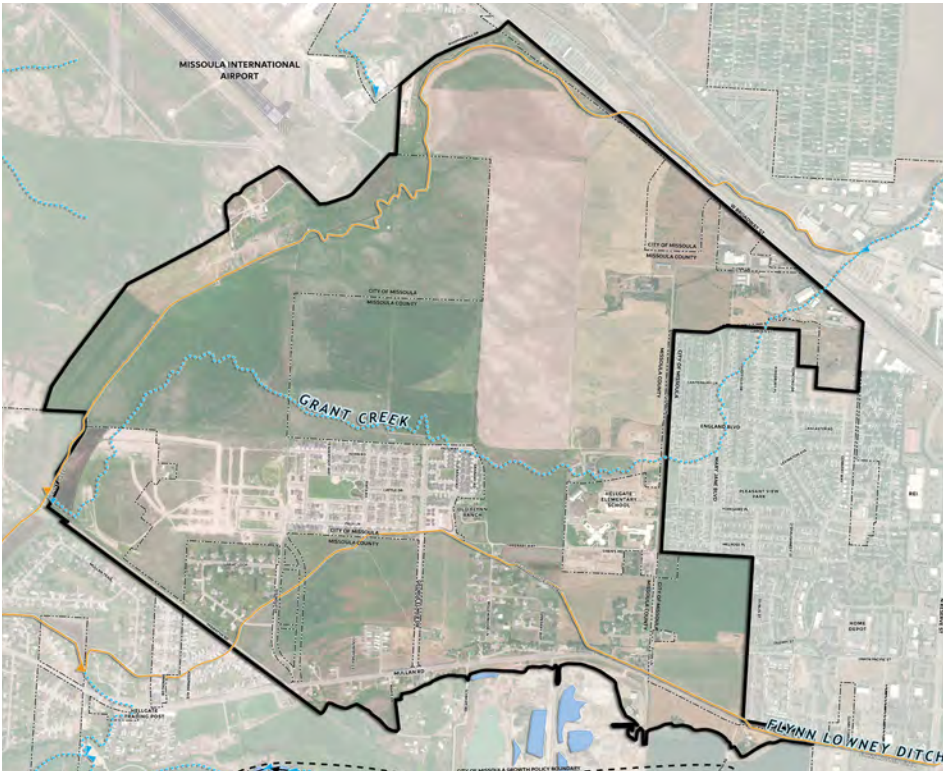
The Mullan Area is located within the Mill Creek - Clark Fork watershed, just north of the Clark Fork. A channelized Grant Creek runs across the northwestern portion of the area and the Flynn Lowney Ditch, built over 100 years ago to irrigate fields, traverses across the southern portion of the area.

LEGEND

- City of Missoula Growth Policy Boundary
- Focus Area
- City of Missoula Boundary

Water System

- Canal Ditch
- Intermittent Stream / River
- Rivers / Lakes / Ponds



INFRASTRUCTURE




The Missoula Land Use Element states that the infrastructure (water, sewer, and roads) already in place in and near the City should be used first to accommodate near-term growth. New infrastructure should be extended strategically to areas that will accommodate long-term growth.

The Missoula Land Use Element identifies the Mullan Area as one with key infrastructure in place for accommodating near-term growth. The following three maps depict the existing infrastructure in the Mullan Area. Additional infrastructure will be constructed to serve the Mullan Area as part of the Mullan BUILD Project.

Infrastructure should be used to guide growth within the Missoula Land Use Element planning area.

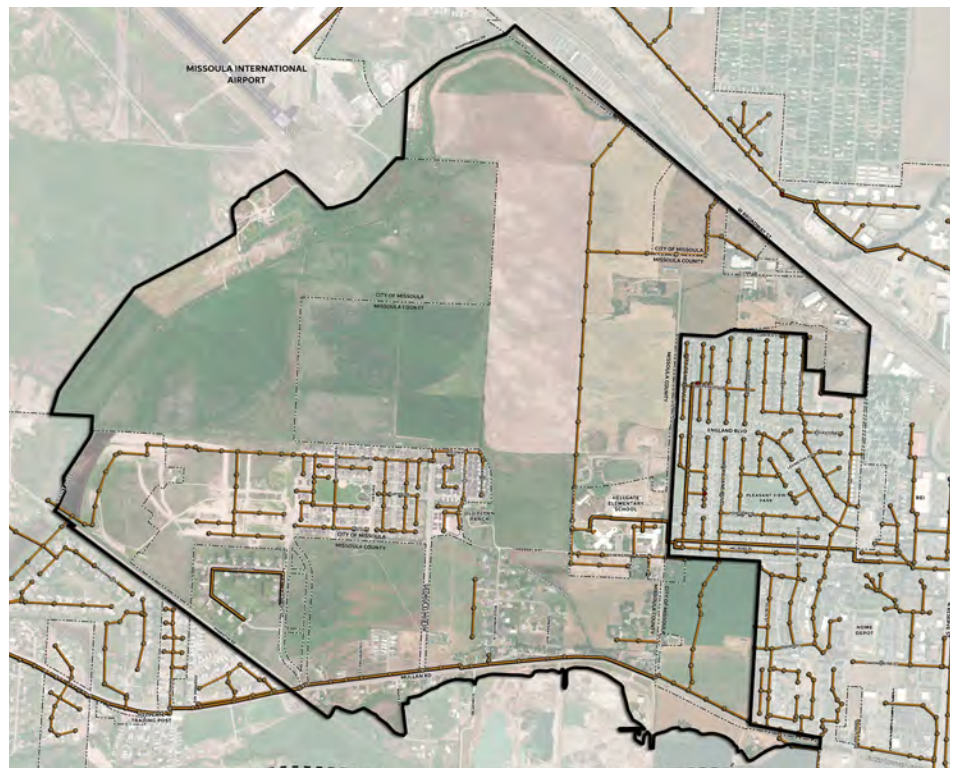
SANITARY SEWER

LEGEND

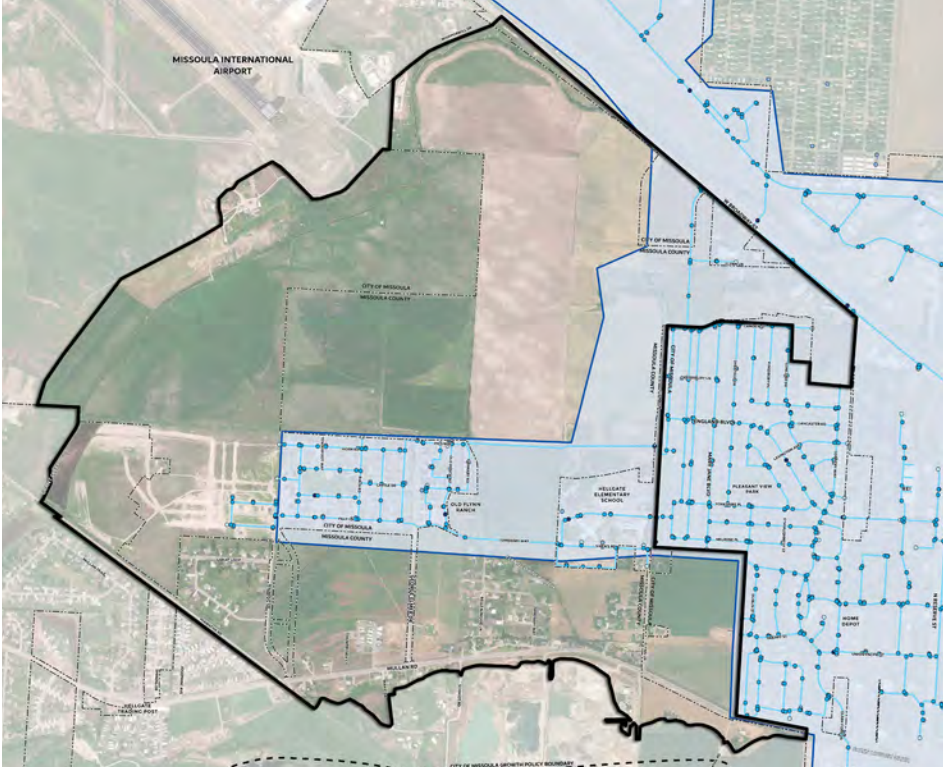
-  City of Missoula Growth Policy Boundary
-  Focus Area
-  City of Missoula Boundary

Sanitary Sewer

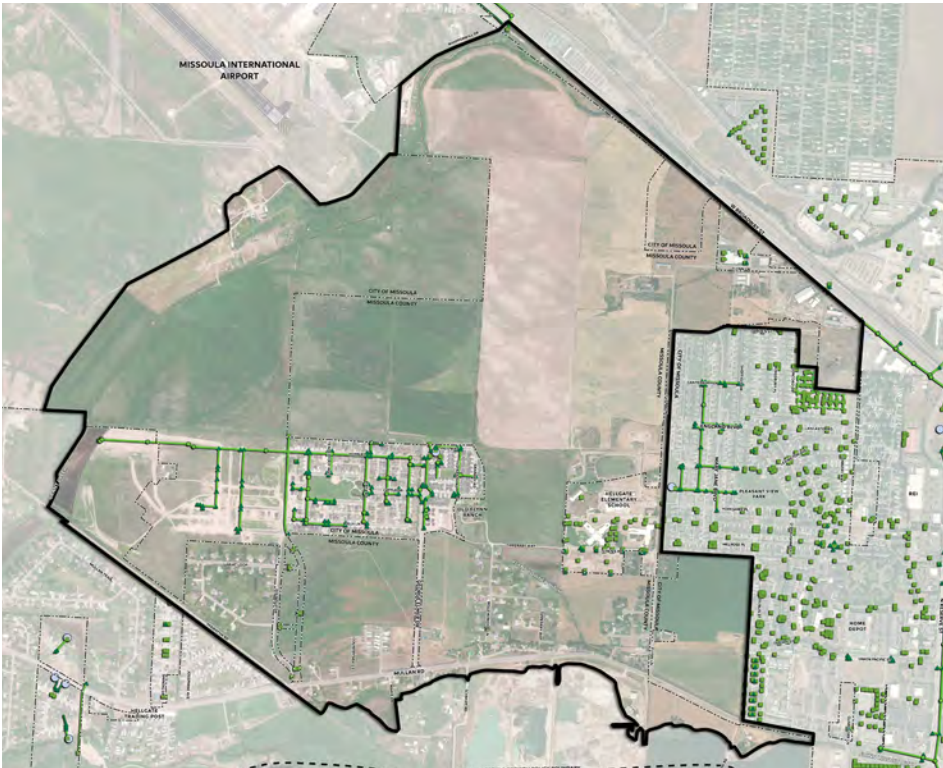
-  Lift Station
-  Manhole
-  Pressurized Main
-  Gravity Main



MISSOULA WATER SYSTEM



STORMWATER SYSTEM

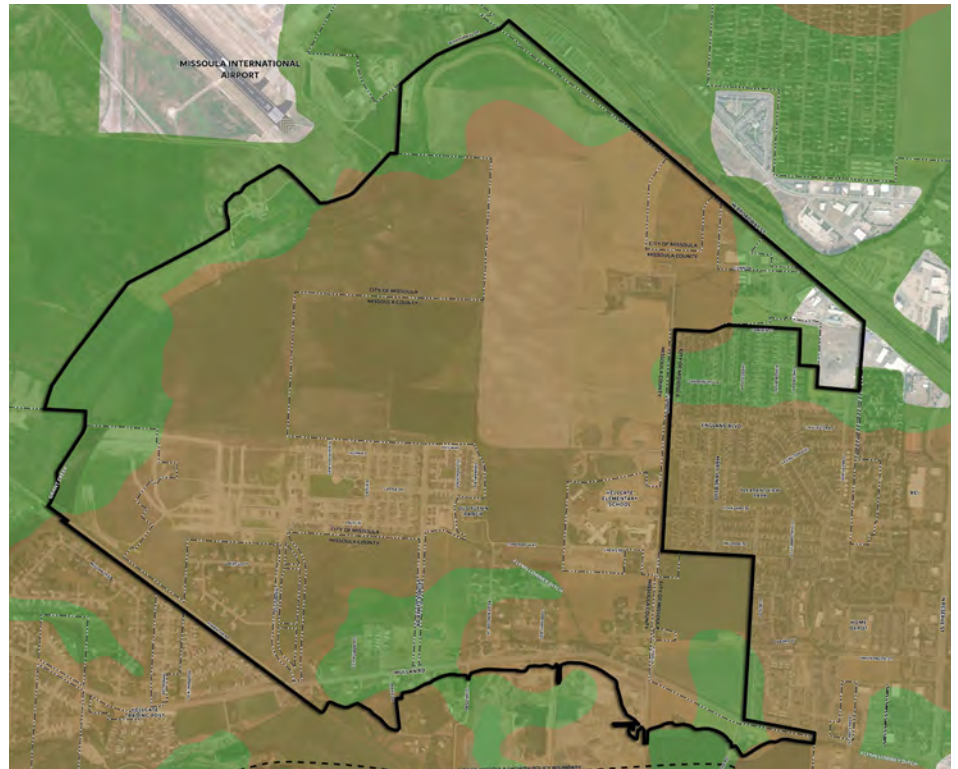


CONTEXT

SOILS OF IMPORTANCE

With irrigation, the Mullan Area can be prime farmland. Areas of working agriculture are to be maintained under the plan. Smaller community gardens and home gardening will also be permitted and promoted across the site.

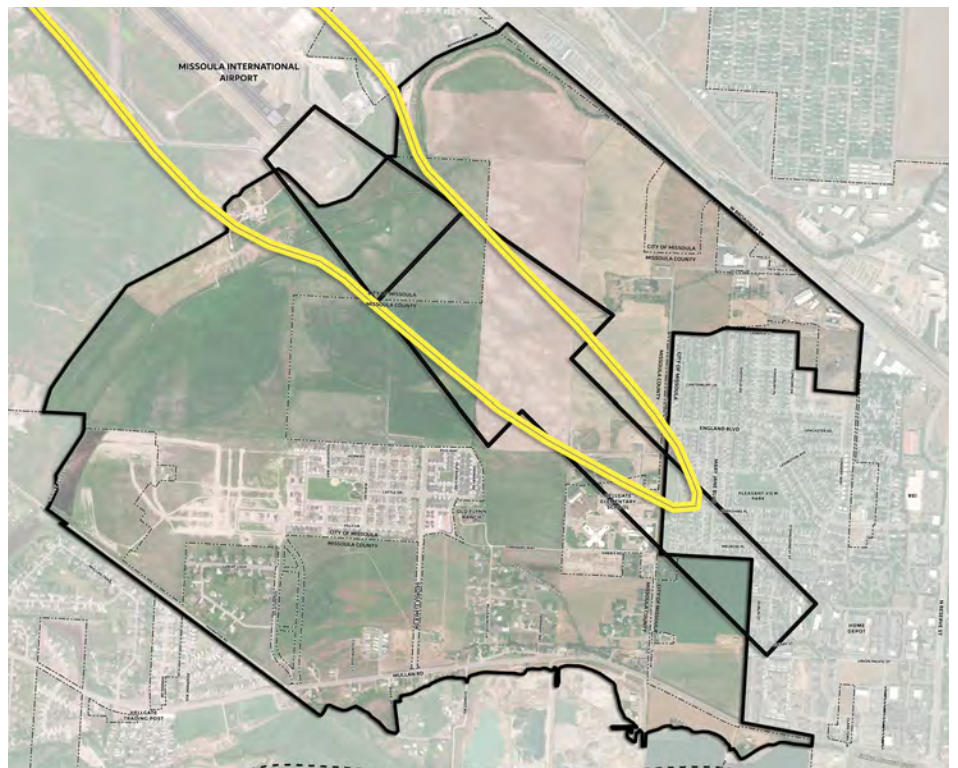
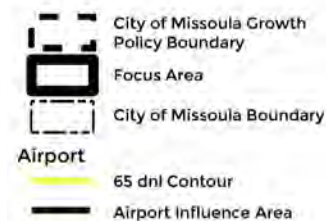
LEGEND



MISSOULA INTERNATIONAL AIRPORT

The Mullan Area is adjacent to the Missoula International Airport and the airport owns a large amount of land in the western portion of the site. Development and habitat creation and management within the Mullan Area should be done in coordination with the airport to mitigate negative impacts and promote safety.

LEGEND





(preliminary draft for review)





PLANNING & PUBLIC PROCESS

THIS CHAPTER SUMMARIZES THE PUBLIC
ENGAGEMENT PROCESS FOR THIS MASTER
PLAN

1

THE PLANNING PROCESS

2

THE PUBLIC PROCESS



PLANNING PROCESS

SITE VISIT & PREVIOUS WORK

As part of their previous work on the Downtown Master Plan, the Dover Kohl planning team had visited the Mullan area in 2019.

PROJECT KICKOFF

The Mullan Area Master Plan process kicked-off in January 2019 with a conference call between city and county staff and the consultant team.

INTERVIEWS AND TECHNICAL MEETINGS

The planning team followed up with meetings with the fire department and BUILD grant team prior to the start of the public engagement process.

PUBLIC ENGAGEMENT

The Public Engagement process for the Master Plan was greatly affected by the onset of COVID-19 and reflects an effort to continue to involve the public... virtually.

TAKING PUBLIC ENGAGEMENT ONLINE

On March 13, 2019, it was decided that the in-person public engagement of the Charrette on March 23-27 would need to transition to an entirely virtual and online format as the planning team and City of Missoula participated in social distancing.

The Public Charrette was then rebranded as the Virtual Charrette and would still take place from March 23 to March 27 and include all of the originally scheduled events in an online format. The planning team quickly reformatted the hands-on design sessions and public engagement tools to an online format to be hosted on the Mullan Area Master Plan website.

VIRTUAL CHARRETTE

From Monday, March 23, 2019 through March 27, 2019, members of the Dover-Kohl team hosted a series of meetings to engage the community in a public design charrette. The planning team was led by Dover, Kohl and Partners and included Territorial Landworks (now IMEG) and Jacobs Engineering. During the week, the team presented initial findings in short films, gathered feedback through online forms, led stakeholder meetings, and worked on potential design and policy solutions for the Mullan area. The goal during this time was to identify key priorities and to build consensus on a vision and direction for the future of the Mullan area. The week culminated in a series of “Work-in-Progress” films released on Friday, March 27, 2019 to summarize the week’s events, engagement results, preliminary designs, and confirm the path for the master plan.

Mar. 23

KICK-OFF PRESENTATION
FILM RELEASE

March 24 - March 26

VIRTUAL OPEN STUDIO
STAKEHOLDER MEETINGS:
Missoula Intl. Airport
Water Quality, Stormwater, & Grant Creek Restoration
Housing Development
Parks, Recreation, & Placemaking
Community Council & Homeowner's Association
Transportation & Infrastructure
Real Estate & Development
Agriculture, Environment, & Climate Adaptation
Transportation Staff
Economic Development
Landowners
Design Professionals
BUILD Project Team

Mar. 25

OPEN HOUSE
FILM RELEASE

Mar. 27

WORK-IN-PROGRESS
PRESENTATION
FILM RELEASE

VIRTUAL OPEN STUDIO

Following the Kick-Off Presentation, the Dover-Kohl team began working on potential solutions to the themes and concerns that emerged after their preliminary analysis. To begin, each member of the planning team studied specific areas of the Mullan area to illustrate ideas about how the City and County might resolve community concerns and improve the overall quality of life. Key topics studied included street design, bicycle infrastructure, workforce, and affordable housing, traffic and parking, and open space, especially around Grant Creek.

The public was invited and encouraged to join the team from 9 to 11 am, 3 to 4 pm. and from 5 to 7 pm to see the work as it was being produced, engage in discussions about the potential solutions, and bring suggestions. The Open Studio was conducted via a virtual meeting in which participants could sign in and join members of the design team in an online video format. Designers could share their screens to show work in progress, as well as use the Virtual Whiteboard to have participants draw out recommendations on the map. Residents, business owners, advocates, and members of the city council visited the open design studio with ideas to further improve the master plan.

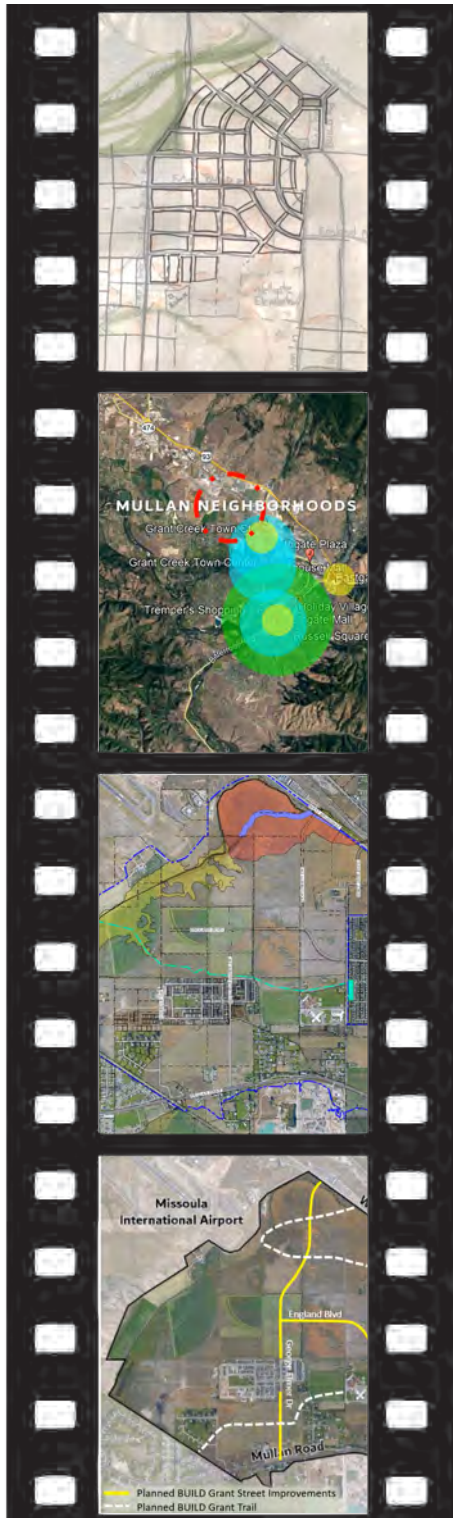
STAKEHOLDER MEETINGS

During the Charrette week, the planning team held virtual meetings to learn how current efforts, concerns, and future goals might be included as a part of the master plan. These groups included:

City of Missoula	Five Valleys Land Trust	Hellgate Meadows landowners
County of Missoula	MSU Extension: Horticulture	Pleasant View HOA
Missoula International Airport	Missoula Economic Partnership	Hellgate Meadows HOA
School Superintendents	Missoula Redevelopment Agency	Captain John Mullan Leadership Team
Missoula County Sheriff	Chamber of Commerce	44 Ranch HOA
Build Project Team	Missoula Organization of Realtors	
City of Missoula, Housing and Community Development	Bureau of Business and Economic Research	
Homeward	City Parks	
Missoula Housing Authority	County Parks	
Habitat for Humanity	City of Missoula Redevelopment Agency	
NeighborWorks Montana	Montana Independent Living Project	
Realtors	Montana Museum of Arts and Culture	
Garden City Harvest	Public Arts Committee	
Western Montana Growers Cooperative	Weeds	
Clark Fork Coalition		

KICK-OFF PRESENTATION

The Kick-Off to the Virtual Charrette was presented over a series of films summarized below.



1

URBAN DESIGN

Pamela Stacy King of the planning team presents the first steps in designing the Mullan Area Master Plan and how community input can help transform the plan.

2

ECONOMIC DEVELOPMENT

Jason King of the planning team discusses the economic development of the Mullan Area, including what the site can support in terms of retail or other destinations.

3

TRANSPORTATION

The planning team provides an overview of the transportation options that might be implemented in the Mullan Area Master Plan. A variety of street types including a multiway boulevard with a dedicated bus lane, main streets with protected bike lanes, and trail streets with shared-use paths.

4

STORM DRAINAGE & UTILITY OVERVIEW

This two-part film presented by Jason Rice of Territorial Landworks, now IMEG, helps lay the groundwork for the stormwater and infrastructure planning. It explores the current Missoula stormwater practices and takes a look at possible options for the Mullan Area Master Plan.

5

EXISTING TRANSPORTATION CONDITIONS

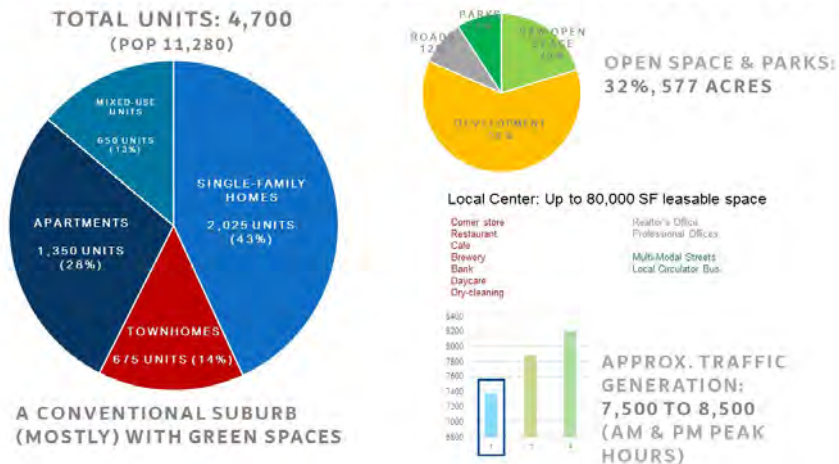
Ed Toavs of Jacobs Engineering discusses the existing transportation conditions, as well as future traffic projections for the area, how the BUILD Grant project plays a role in the transportation development effort of the Master Plan, and the opportunity to create and develop a new transportation network in the Mullan Area.

Clips from the films. To view the full films, visit: <https://www.mullanareamasterplan.com/>

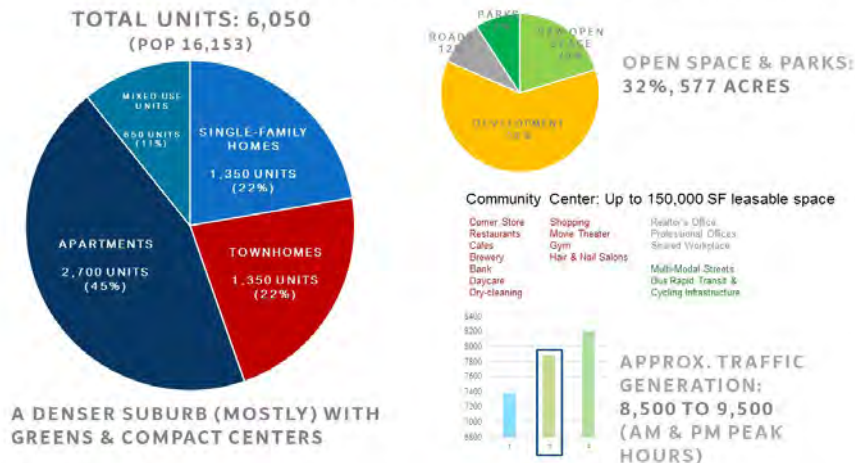
(preliminary draft for review)

DAY 1 POLLING QUESTIONS

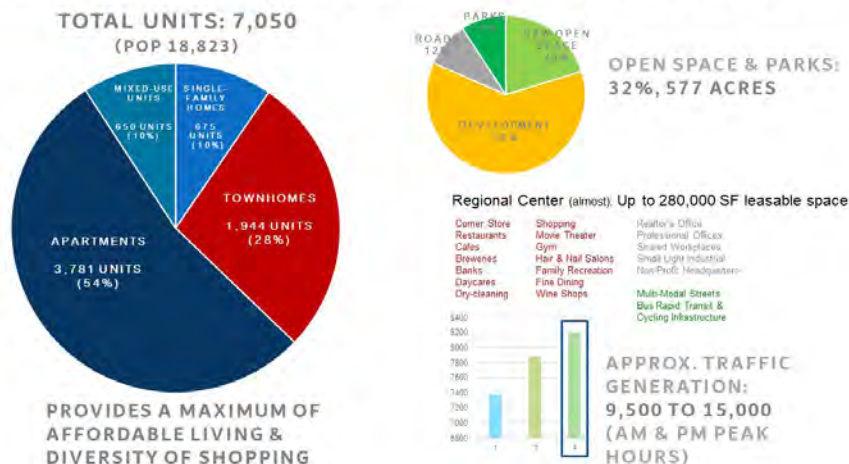
SCENARIO 1: PRIMARILY SINGLE-FAMILY & WALKABLE CENTERS



SCENARIO 2: MIX OF UNITS (SOME AFFORDABLE) & COMPLETE CENTERS



SCENARIO 3: MAX AFFORDABILITY & DESTINATION CENTERS



Following the Kick-Off Presentation, participants were asked,

"What level of investment should we plan for the site?"

This question regards the land uses, intensities, and densities for the area. "Level of investment" refers to private development on the site which can be limited (or encouraged) by planning tools such as zoning and land development regulations. This translates to the number of homes and apartments, the amount and types of commercial, office and retail space, and the number of jobs. While the streets and blocks may remain the same for each level of investment scenario, what fills in the blocks and streets will vary. And with this, so will the public services and the tax base to pay for those services vary. A short film reviewed three options for the level of investment (see left), and then participants were asked to vote on a scenario.

POLLING RESULTS

Scenario 1 - 20%

Scenario 2 - 50%

Scenario 3 - 30%

Above: The three options for the level of investment that participants were asked to vote on.

(preliminary draft for review)

OPEN HOUSE PRESENTATION

The team offered a mid-week progress report showing preliminary designs.



1

THE BIG 5 IDEAS

A brief review of what the Mullan Area neighborhoods Plan is set to accomplish, an overview of the process so far, and what are the big 5 ideas we have heard this week as we have been talking to and engaging people.

2

URBAN DESIGN: CHANGE OVER TIME

A potential step by step, change-over-time sequence for new development in the Mullan Area.

3

DETAILS OF THE PLAN - WEDNESDAY'S DRAFT

A descriptive walk through the different neighborhoods that together are the Mullan Area Neighborhoods along with descriptions of design principles implementing the 5 Big Ideas. This is a preliminary design presented mid-week during the Charrette.

Other videos presented throughout the week:

URBAN DESIGN OF MARY JANE SQUARE

Jason King discusses a possible mixed-use area on West Broadway.

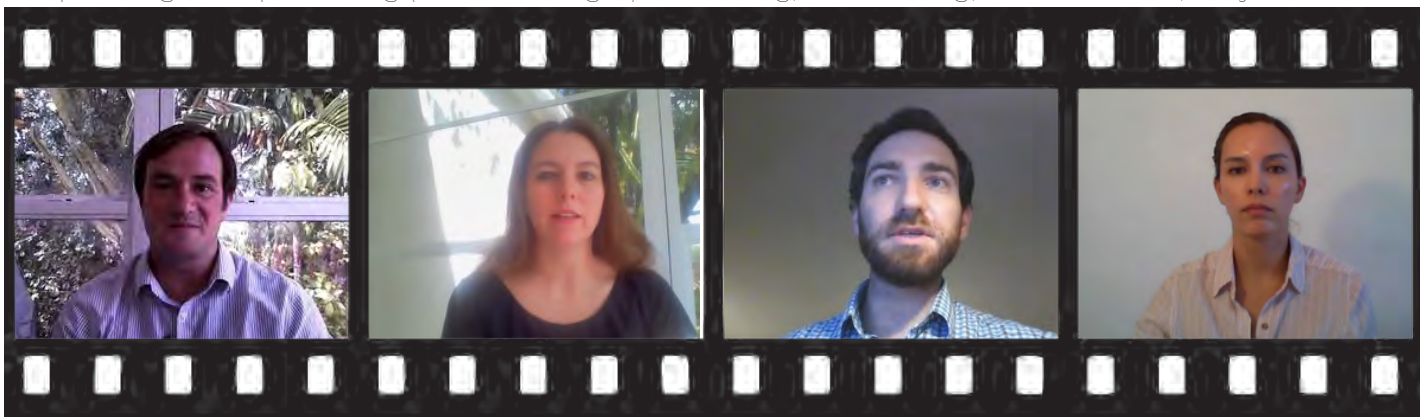
TRAFFIC & MOBILITY OVERVIEW

Jason King discusses the current Missoula Long Range Transportation Plan (LRTP) and what it says on approaches to traffic and mobility.

VIRTUAL ENGAGEMENT TALLY RESULTS

Aly Burkhalter of the planning team discussed the results of online engagement.

The planning team presenting (from left to right): Jason King, Pamela King, Rob Piatkowski, & Aly Burkhalter

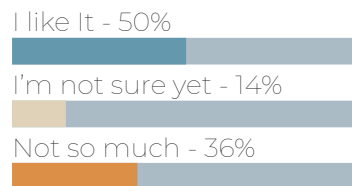
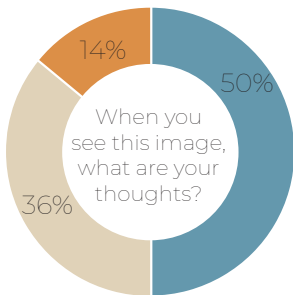


To view the full films, visit: <https://www.mullanareamasterplan.com/>

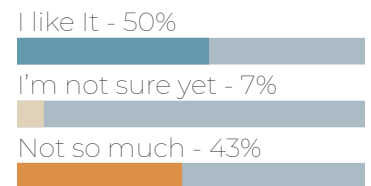
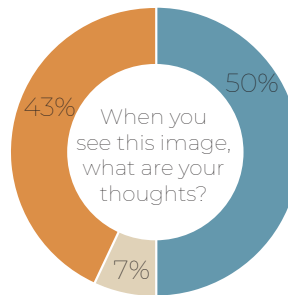
DAY 3 POLLING QUESTIONS

What are Your Thoughts on These Neighborhoods in the Draft Plan?

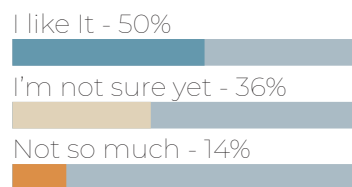
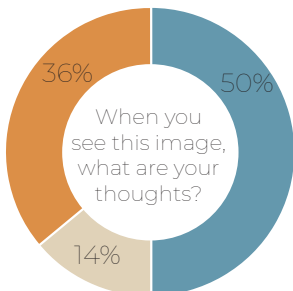
MARY JANE SQUARE NEIGHBORHOOD #1



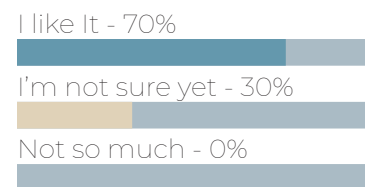
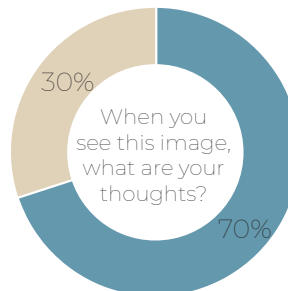
MARY JANE SQUARE NEIGHBORHOOD #2



HIAWATHA FARM NEIGHBORHOOD #1



HIAWATHA FARM NEIGHBORHOOD #2



WORK-IN-PROGRESS PRESENTATION



At the end of the week, the team presented over film the ideas gathered from the community and discussed how these ideas were incorporated into the draft plan.

1 THE SITE AND THE PROCESS

This film provides an introduction to the Mullan Area plan and the virtual charrette process for creating a community-driven master plan.

2 THE DRAFT PLAN

This film tours the DRAFT plan generally. Individual neighborhoods, trails, and open spaces are discussed.

3 THE DRAFT PLAN IN DEPTH

This film dives deeper into the plan, exploring “x-rays” of plan concepts, including transit, shared-use paths, and housing.

4 COMMUNITY SUPPORTED AGRICULTURE

Jason King discusses the prospects for Community Supported Agriculture (CSA) on the Mullan Neighborhoods site based on conversations with Garden City Harvest and 5 Valleys Land Trust.



Clip of Jason King presenting The Plan



Clip of Pamela King presenting details of the plan



Clip of Rob Piatkowski presenting details of the plan



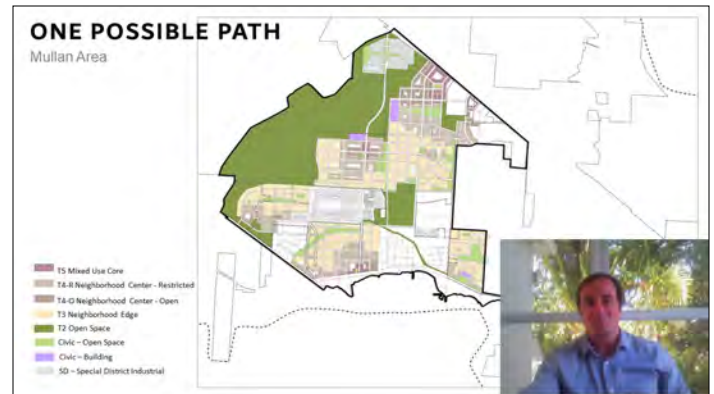
Clip from the film discussing CSA farms

(preliminary draft for review)

5

THE CODE

How will the plan be implemented? This film discusses Form-Based Codes and how they are different from Conventional Zoning. Learn how a Form-Based Code can be applied to the Mullan Area to create predictability while also allowing flexibility for landowners.



Clip of Jason King discussing how to Code the plan

6

STREETS FOR WALKING AND BIKING

This film explores one of the ways we can make the streets in the Mullan Neighborhoods safe and inviting places for people walking and biking.

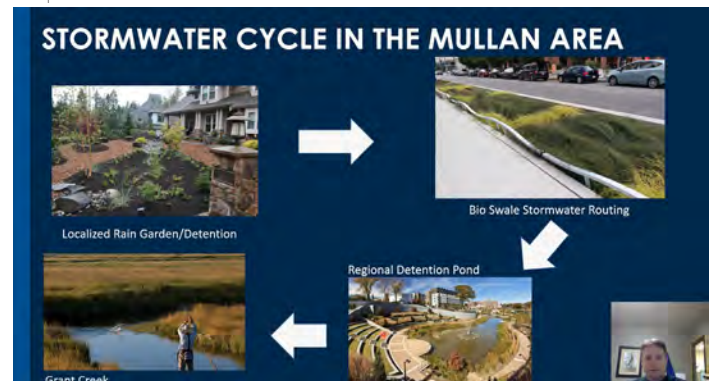


Clip of the Streets and Bikes film

7

STORM DRAINAGE & UTILITIES

This film shows our end of week findings on Storm Water, including great integration of design to match the natural topography.



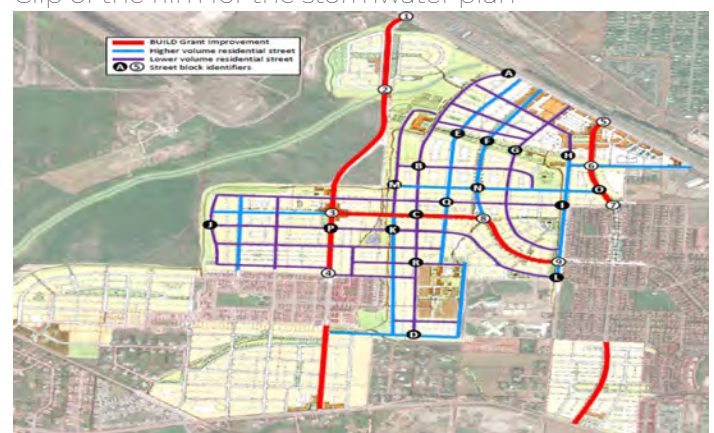
Clip of the film for the stormwater plan

8

TRANSPORTATION

This is a recap of the Virtual Charrette Week with regards to transportation for the Mullan Area Master Plan. The film discusses the current transportation conditions, stakeholder and public input received, Transportation Themes developed from the input, and a brief description of the current modeling effort and future action items moving forward.

To view the full films, visit:
<http://www.mullanareamasterplan.com/>

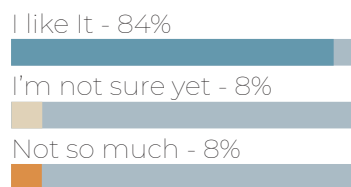
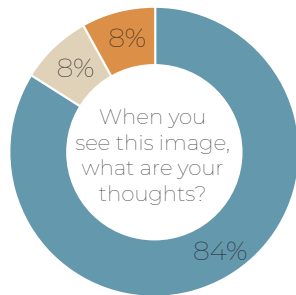


Clip of the Transportation film showing street types

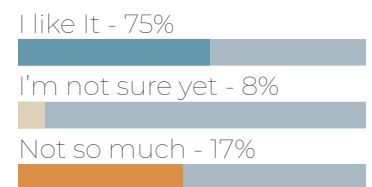
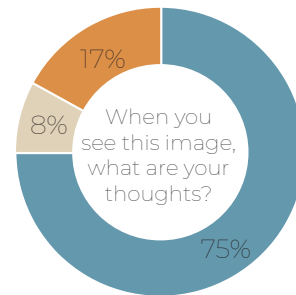
DAY 5 POLLING QUESTIONS

"Is the Plan on the Right Track?"

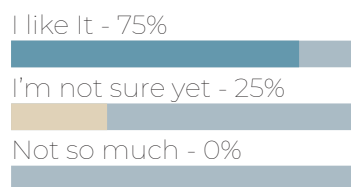
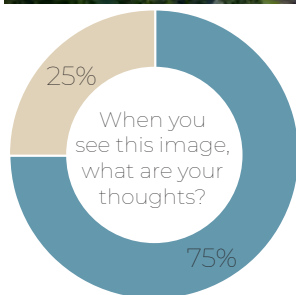
TRAIL STREETS



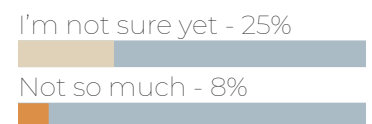
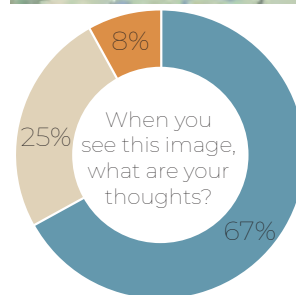
WEST BROADWAY SQUARE



COMMUNITY SUPPORTED AGRICULTURE



NORTH CREEK SQUARE INDUSTRIAL/COMMERCIAL



The final question was

"Is the Draft Plan Generally on the Right Track?"

92% Yes 8% No

(preliminary draft for review)

VIRTUAL ENGAGEMENT

The public feedback portion of the planning process was made entirely virtual through online tools that people could participate in safely from their homes during social distancing.

Participants were able to read a summary of each day's events and view the films on the Charrette Hub page of the Mullan Area Master Plan website. Outside of the scheduled meetings, participants were able to take part in the planning process through the Engage page. From there, they could take the daily poll, fill out the One Word Card, complete the Community Feedback and Community Image surveys, or use the Citizen Mapping tool.

 210+
Virtual Attendees

 26
Films

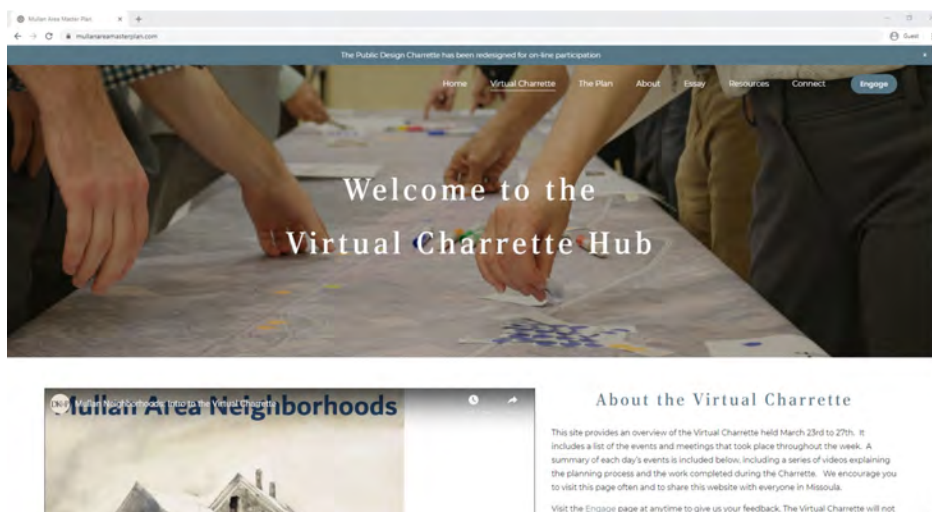
 1800+
Film Views

 1,700+
Twitter Impressions

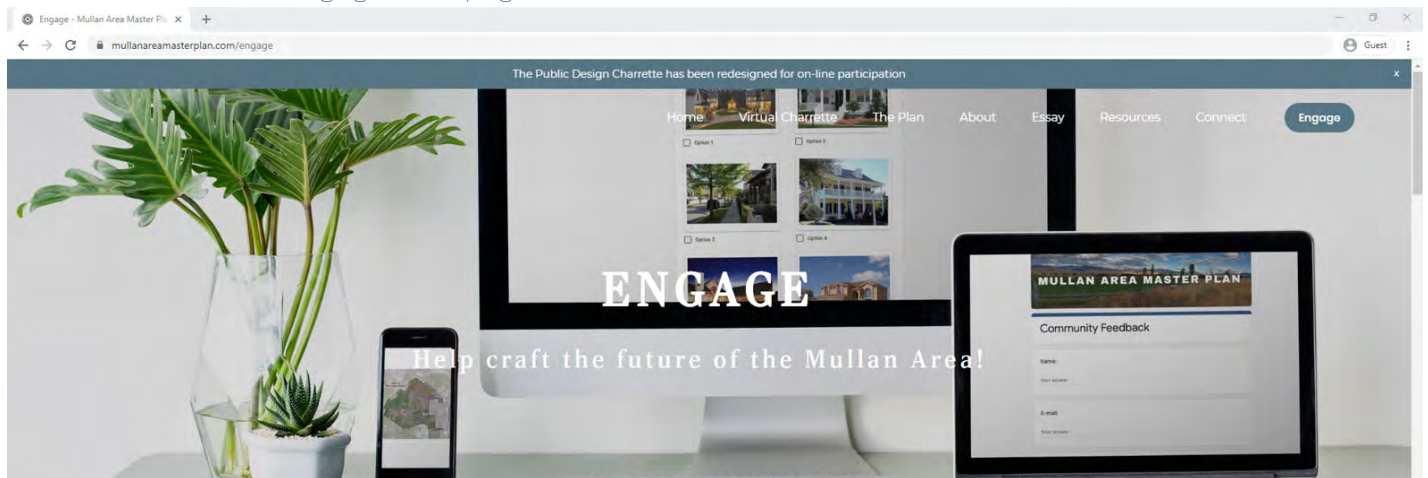
 3000+
Website Visits

 32,000+
Trackable Media Impressions

A view of the Charrette website



A view of the website engagement page



COMMUNITY FEEDBACK SURVEY

Participants were asked questions to get a better understanding of who was represented and what people's priorities might be.

WHAT ARE MISSOULA'S GREATEST STRENGTHS?

- River and creeks
- Pace of living
- Variety of neighborhoods
- Accessibility to all
- Extensive trail network and access to public transit.
- Connection to natural areas
- Small and easy to bike nearly anywhere in town
- Sense of community

HOW CAN THE MULLAN AREA MASTER PLAN IMPROVE UPON THEM?

- Better protect floodplains and make them into parks & wildlife areas
- Maintain that semi-agrarian and historical character
- Lacks reasonable multi-mode options today and has significant traffic safety issues
- Connect to the river, downtown, Grant Creek, and other points

WHAT TYPES OF PLACES ARE MISSING FROM MISSOULA? COULD THE MULLAN AREA BE A GOOD LOCATION FOR THEM?

- An arboretum.
- Housing designed as a community, not just rows of houses.
- Farm-to-table restaurants, velodrome, bodegas and small scale grocery
- Community gardens and or urban agricultural space
- Old corner market
- More parks , inside space to gather in winter, for play and mtgs, safe biking and walking to shop, neighborhood shopping, restaurants, entertainment, child care in lg. box stores
- Good agricultural soils are disappearing from the "Garden City"

HOW SHOULD WALKING, BIKING, AND TRANSIT (IN ADDITION TO DRIVING) BE INCORPORATED?

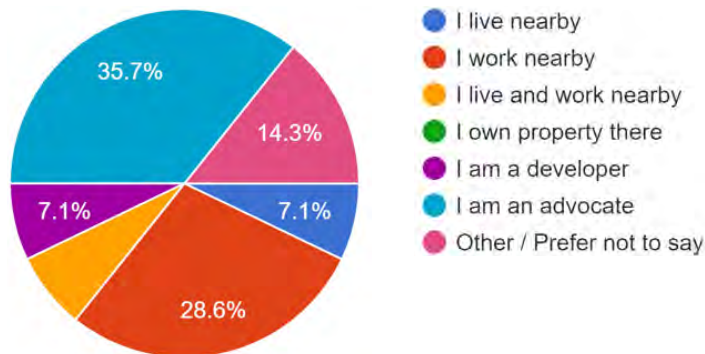
- A restored Grant creek could provide a pleasant walking area
- A bus route should loop through the area. Public transit can have centralised pick up, be frequent and direct and should exist in the area on Day 1
- Bike trails need to connect with other trails and provide access to commercial areas too.
- Make it possible (comfortable) to cross Reserve Street and railroad tracks north of Broadway by bike or on foot.
- Be sure that school buses are included in your development of streets.
- Some form of light rail or low emission transit options to minimize car transportation, and as an alternative to biking in winter

HOW CAN THE MULLAN AREA ADD TO THE HOUSING CHOICES AVAILABLE IN MISSOULA TODAY?

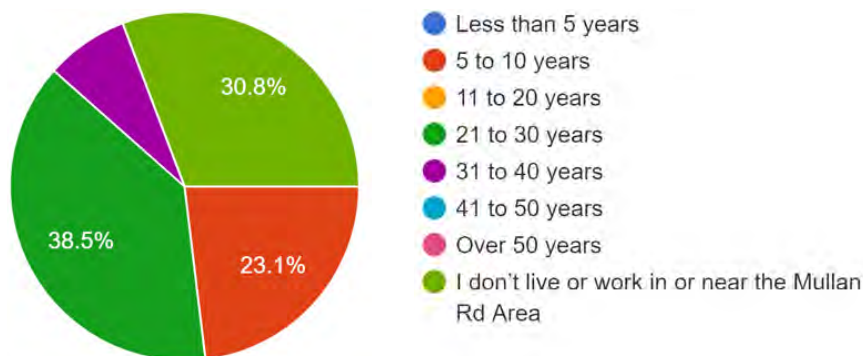
- Diversity of housing choices: Single family with ADUs, townhomes, duplexes, multifamily, missing middle. Make it diverse so wealthy people are living next to people of limited means. Support goals in Missoula's housing policy.
- Dense housing that leaves space for a natural creek corridor and green infrastructure for stormwater management
- Affordable workforce housing
- Entry level homes
- Affordable, sustainable and socially enhancing housing
- Include safe play areas - ie yard space, and inside community rooms, day care

This is a small sampling of responses received as of March 27, 2020.

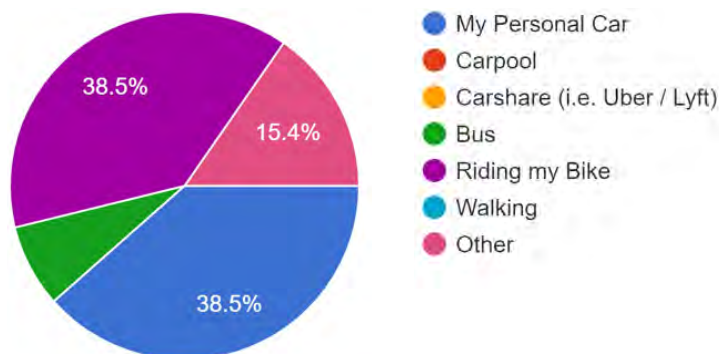
What is your primary interest in the Mullan Area Master Plan?



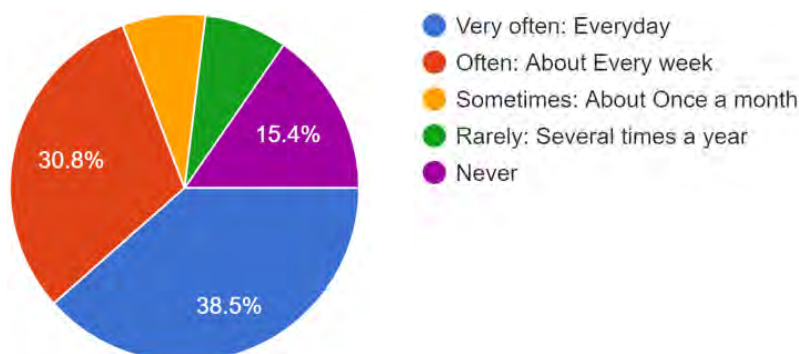
How long have you lived or worked in or near the Mullan Area?



The primary way I get around is by:



How often do you walk or use a bike instead of driving?



ONE WORD CARDS

The following word clouds provide guidance for the plan and were generated from an exercise conducted throughout the week. Participants were asked to type in one word that came to mind about the Mullan area "Now" and "In the Future." The more respondents used a particular word, the larger that word appears.

NOW:



IN THE FUTURE:



IN THE FUTURE, I WOULD LIKE THE MULLAN AREA TO BE:

...a place where kids remember being able to bike to the creek and neighborhood gardens.

...a safe community where families and businesses may prosper.

...a welcoming mixeduse area with multiple types of housing available in an integrated community.

...a vibrant, complete neighborhood where people can live a safe, healthy, fulfilling life.

...a rich, vibrant village interconnected with the larger social and natural environments.

...a place that I would enjoy, and have a reason to visit even though I am not a resident of that neighborhood.

...a perfect integration of housing and agricultural land

COMMUNITY IMAGE SURVEY

A visual preference survey was also presented to determine what the participants wanted to see and avoid.

Which of these single-family residential buildings do you feel are most appropriate for the Mullan Focus Area?

Which of these single-family housing types would serve Missoula the best? Are any types of single-family housing missing from this discussion? Are any of these not appropriate for the Mullan Focus area?

"Smaller houses that engage the public space with minimal setbacks can help create vibrant neighborhoods."

"Compact housing that supports transit should be a big part of the mix."

"Compact housing that supports transit should be a big part of the mix."



75%



7%



32%



57%



25%



25%



50%



14%



32%

Which of these multi-family housing types would serve Missoula the best? Are any types of multi-family housing missing from this discussion? Are any of these not appropriate for the Mullan Focus area?

"Most single-family homes should also have ADUs."

"Compact, smaller building areas with large open space in between"

The idea of higher density, small or "tiny" homes with an emphasis on functional, shared green space.

"The idea of higher density, small or "tiny" homes with an emphasis on functional, shared green space."

Which of these multi-family residential buildings do you feel are most appropriate for the Mullan Focus Area?



29%



4%



46%



36%



29%



14%



29%



65%



50%

What design features (connected sidewalks, landscaping and street trees, new public spaces, etc.) would you like to see as part of future development in commercial areas? What types of uses would best serve the neighborhood and Missoula communities?

We should make it so most basic needs are met in the area and residents don't need to cross Reserve Street every day to come into town.

I would prefer to see a German model, with shops on the ground floor and housing (often for the shop owner) on the upper levels.

Sidewalks, trees, flowers, gardens

Wide sidewalks, boulevard trees, protected bike lanes and intersections, outdoor seating, public art.

Which types of commercial buildings do you feel are most appropriate for the Mullan Focus Area?



57%



50%



68%



57%



61%



0%



4%



4%

Which of these mobility options and infrastructure types would serve you the best? What about people of different ages and abilities? Which options are we missing altogether? Are any not well suited for the area?

"Protected bike lanes, ample bike parking, traffic-calmed, and peaceful streets off the main arterials."

"Street options that keep up with the changing times: those which offer multimodal access and dissuade the use of the vehicle, encourage bussing, walking, and biking. Planning for the future, which will someday boot the car."

"All sidewalks should have disability ramps whether wheelchair or walkers. Parks should be adaptable as well."

Which types of streets do you feel are most appropriate for the Mullan Focus Area?



39%



29%



61%



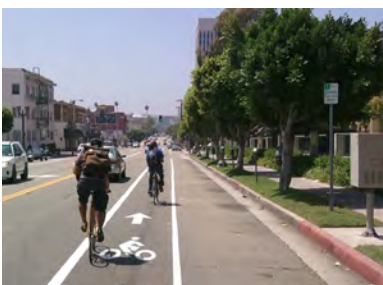
29%



18%



61%



36%



4%

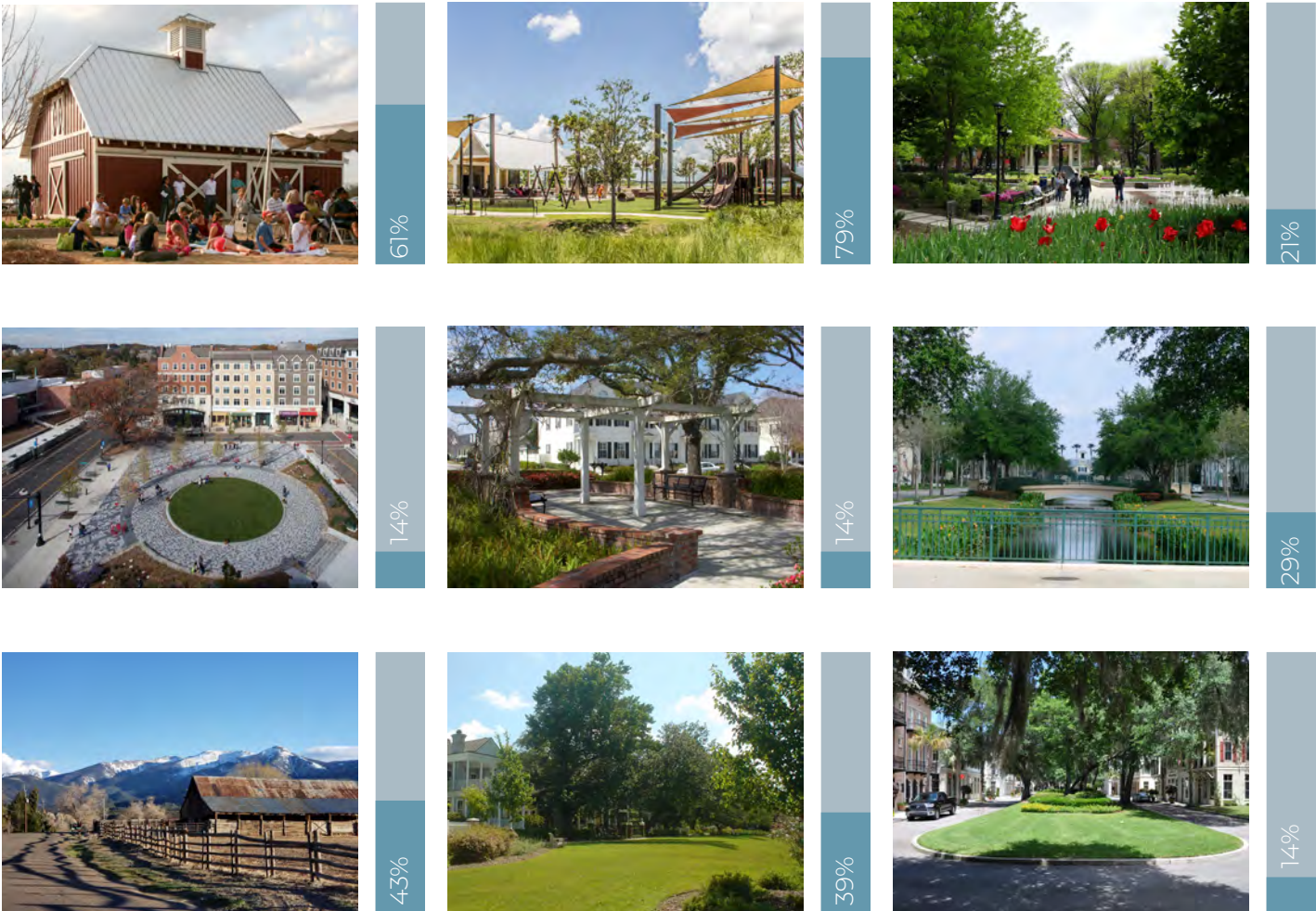


50%

Which parks and open space types would serve the Mullan Focus Area the best?



Which types of parks & open space do you feel are most appropriate for the Mullan Focus Area?



Chapter 2: Planning & Public Process

Public Process

What type of civic uses (library, post office, community center, Day Care, etc.) would be most needed in the Mullan Focus Area?

"Respect the history of the site, what are the common materials and architectural elements of buildings along the Mullan trail? I think this area has more of a small town/rural feel to it rather than a large civic center."

"3rd spaces, very public, bike/walk focused, walking paths, tiny parking lots for a few cars"

"Community center, branch library, and other unifying buildings would be useful in this area. Consider public transit facilities (robust stops, transfer center)."

Which types of civic buildings do you feel are most appropriate for the Mullan Focus Area?



21%



64%



39%



29%



11%



7%



46%

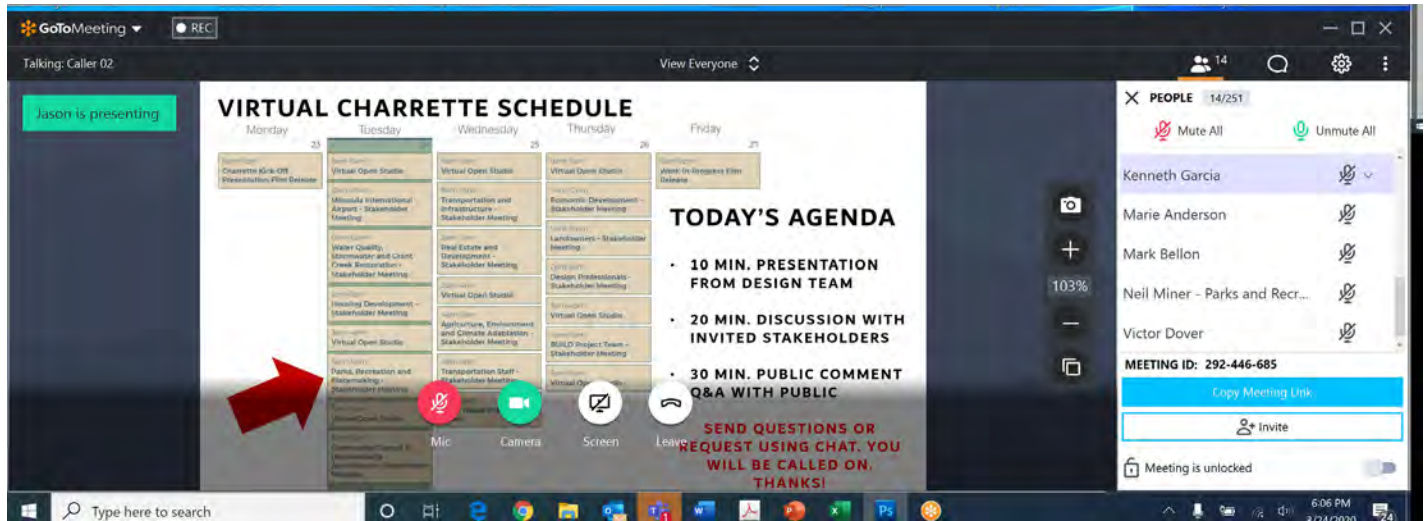


21%



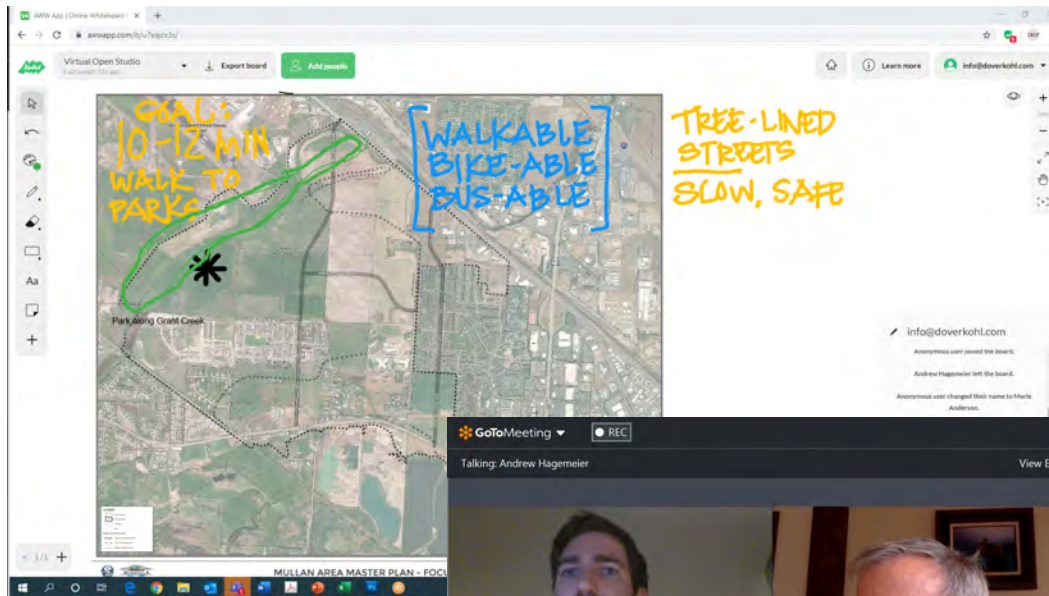
32%

ADAPTIVE ENGAGEMENT

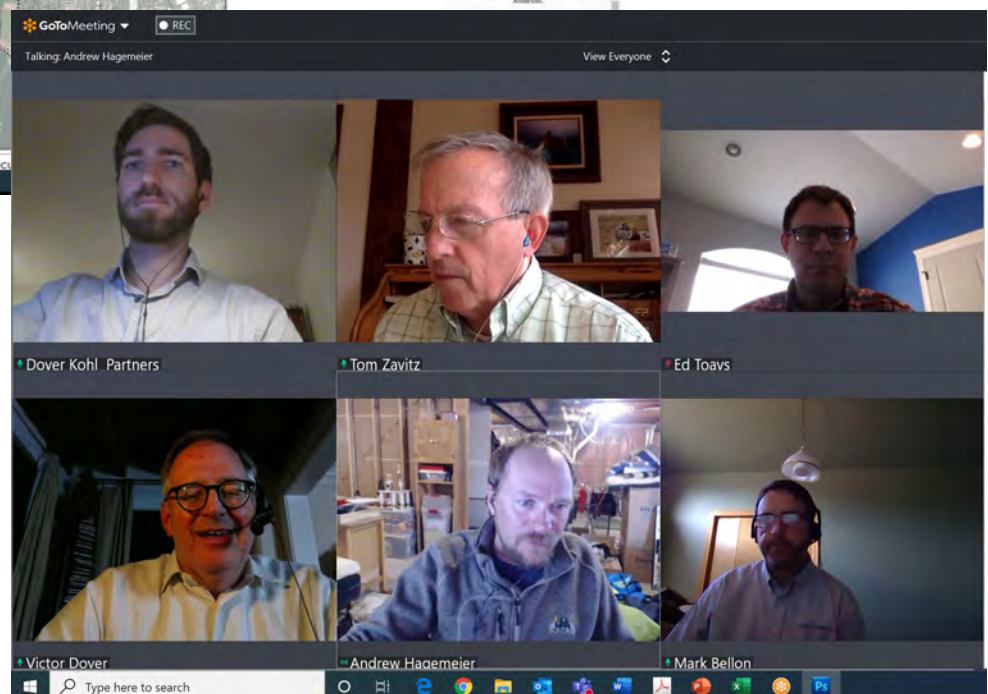


Top: View of meeting interface with meeting agenda and participants. Left: Interactive map for noting participants ideas directly on the Mullan Area

Bottom: View of the staff and consultant joining virtually from their own homes for a meeting



The nature of this charrette can not be fully captured in these images as city and county staff and the consultant team quickly adapted to the onset of COVID-19 and the need to limit public in-person gatherings. New tools were created to receive public input, in addition to growing accustomed to the video meeting format.







THE BIG IDEAS

THROUGHOUT THE VIRTUAL CHARRETTE PROCESS, 5 BIG IDEAS EMERGED TO GUIDE THE VISION AND PLAN FOR THE MULLAN AREA.

1

NEW DEVELOPMENT SHOULD BE COMPATIBLE, RESPECTFUL OF CONTEXT, AND BUILD GREAT NEW PLACES

2

CONNECT WITH AGRICULTURE, BUILD PARKS, AND ENHANCE GRANT CREEK ECO-HEALTH

3

BUILD FOR A SUSTAINABLE FUTURE

4

SAFE, COMFORTABLE, AND INTERESTING STREETS FOR ALL

5

DECIDE WHAT YOU WANT AND CREATE A CLEAR PATH FOR GETTING THERE

BIG IDEA 1:

NEW DEVELOPMENT SHOULD BE COMPATIBLE, RESPECTFUL OF CONTEXT, AND BUILD GREAT NEW PLACES

The Mullan Area offers an opportunity for building great new neighborhoods to accommodate Missoula's growing population in a sustainably and equitably.

A broad framework for development is established based on the neighborhood unit with an interconnected network of blocks and streets. A variety of housing types and sizes are set within this framework of walkable blocks and a mix of uses is permitted to allow for complete neighborhoods where daily needs can be met close to home. The Plan recognizes the area's historic buildings and landscape which are highlighted as defining community features.

With thoughtful design and a comprehensive plan for open space and trails, a higher density of homes and development can contribute to a vibrant community that supports local businesses and transit while offering a variety of housing prices.

A location adjacent to the Missoula International Airport requires carefully planning where all of this is to go.



Illustrative rendering of a new park lined with a mix of building types

- 1 **Mix of Housing Choices:** Provide a variety of housing types at a range of prices - affordability is essential
- 2 **Historic Preservation:** Preserve the area's historic structures and landscapes
- 3 **Neighborhood Units:** Develop complete neighborhoods with a defined center and edge

- 4 **Centers of Activity:** Places to gather, shop, work, socialize and more are located across the neighborhoods
- 5 **Design Matters:** Buildings and streets should come together as a cohesive whole to create a place people love
- 6 **Growing with the Airport:** Consider the adjacent airport when developing new homes and parks



THE NEIGHBORHOOD UNIT

The building block of every city is the neighborhood. A genuine neighborhood is not the disconnected, single-use development that characterizes sprawl. Complete neighborhoods - unlike the stand-alone apartment complex or the subdivision tract - provide housing, workplaces, shopping, civic functions, and more. Pedestrian-friendly and mixed-use, these communities are designed to be compact, complete, connected, and ultimately more sustainable —although the parameters of an ideal neighborhood vary in terms of size, density, and mix of dwelling types. There are five basic design conventions that provide a common thread linking great neighborhoods. The diagram of a complete neighborhood, at right, will be used to illustrate the five basic principles of a neighborhood.



Diagram of a complete neighborhood

1. IDENTIFIABLE CENTER AND EDGE

One should be able to tell when one has arrived in the neighborhood and when one has reached its center. A proper center has places where the public feels welcome and encouraged to congregate. Typically, at least one outdoor public environment exists at the center that spatially acts as the most well-defined outdoor room in the neighborhood. While it most often takes the form of a square or plaza, it is also possible to give shape to the neighborhood center with just a special “four corners” intersection of important streets that include shade and other protection from the elements.

The best centers are within walking distance of surrounding residential areas, possess a mix of uses, and include higher-density buildings at a pedestrian scale. Discernible centers are important because they provide some of people’s daily needs and foster social connections.



Identifiable center and edge

2. WALKABLE SIZE

The overall size of the neighborhood, which typically ranges from 40 to 200 acres, should be suitable for walking. Most people will walk approximately one-quarter mile before turning back or opting to drive or ride a bike. Most neighborhoods built before World War II were approximately one-quarter mile from center to edge.

Neighborhoods of many shapes and sizes can satisfy the quarter-mile radius test. Civic spaces requiring a great deal of acreage, such as schools with playfields, can be situated where they are shared by more than one neighborhood. Larger planned communities can satisfy the quarter-mile radius test by establishing several distinct neighborhoods within the community, being sure to place different neighborhood centers one-half mile apart or less.

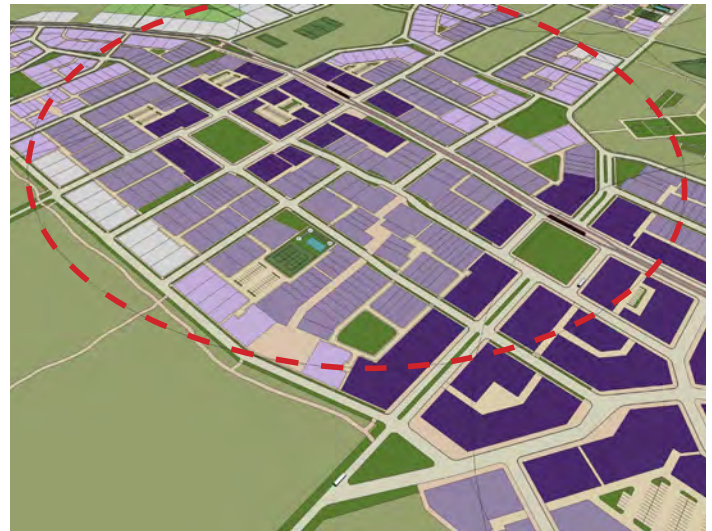
3. MIX OF LAND USES AND HOUSING TYPES WITH OPPORTUNITIES FOR SHOPPING AND WORKPLACES CLOSE TO HOME

Great neighborhoods have a fine-grained mix of land uses and housing types. This condition enables residents to dwell, work, socialize, exercise, shop, and find some daily needs and services within walking distance. Variety-rich neighborhoods, in comparison with the single-use, single “pod” developments, have multiple benefits.

Mixing uses is a powerful way to alleviate traffic congestion as it reduces the number of car trips needed throughout the day. A mix of housing is better socially, allowing people with diverse lifestyles and incomes to live in the same neighborhood. Residents have the choice to move elsewhere within their community as their housing needs change over time, while families of modest means are no longer forced into segregated concentrations. In addition, households with varied schedules and interests will activate the neighborhood at different times of day, adding both to the vibrancy and security of a place.



Walkable neighborhood size



Transect provide opportunity for a mix of land uses and housing types

4. INTEGRATED NETWORK OF WALKABLE STREETS

A network of streets allows pedestrians, cyclists, and motorists to move safely and comfortably through a neighborhood. The maximum average block perimeter to achieve an integrated network is 1,500 feet with a maximum uninterrupted block face of, ideally, 450 feet, with streets at intervals no greater than 600 feet apart along any one single stretch.

A street network forms blocks that set up logical sites for private development, provide routes for multiple modes of transportation, and provides non-motorized alternatives to those under the driving age as well as for senior citizens. Streets should be designed to be walkable first while also serving cars and emergency vehicles. Slow traffic speeds, coupled with features such as narrow curb-to-curb cross sections, street trees, on-street parking, architecture close to the street edge, and tight radii at the street corners, work together to create highly walkable environments. A connected web of streets allows for numerous driving patterns and orderly management of traffic.



Network of walkable streets

5. SPECIAL SITES RESERVED FOR CIVIC USES

In complete neighborhoods, some of the best real estate is set aside for community purposes. These locations are made significant by the geometry of the town plan. Unique settings such as terminated vistas or locations with greater activity should be reserved for landmark buildings that will act as permanent anchors for community pride. Similarly, special sites should be set aside for parks, greens, squares, plazas, and playgrounds (each of which has its own distinct character). Each neighborhood should have one special gathering place at its center, such as a village green.



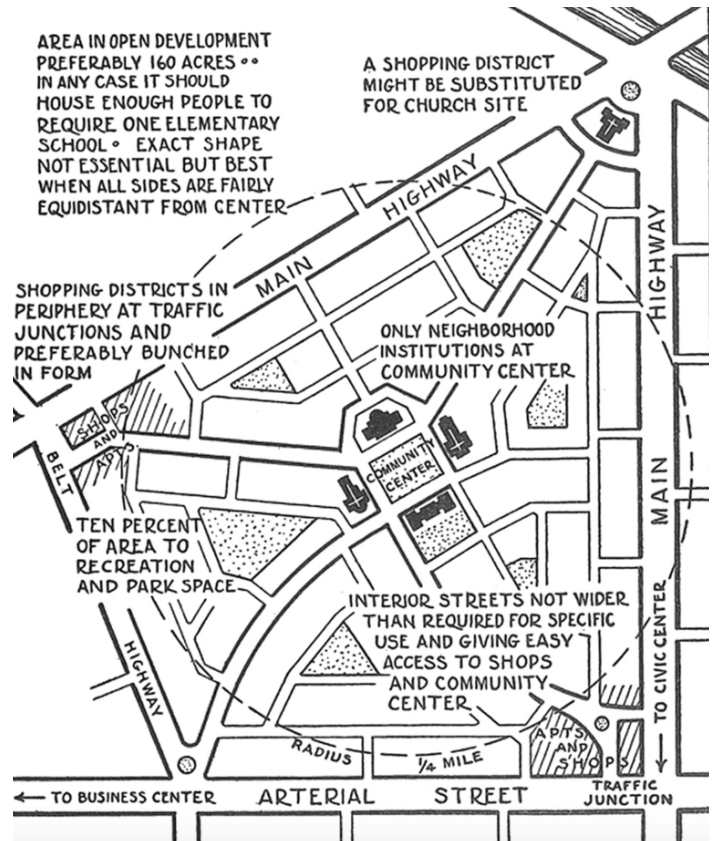
Special sites are reserved for civic purposes

THE MULLAN AREA NEIGHBORHOODS

Recognizing the importance of the neighborhood is the framework for creating places people love. Planning and development for the Mullan Area began with laying out neighborhood areas based on the principles of the neighborhood unit and the idea of the pedestrian shed or 5-minute walk. This concept is clearly illustrated by Clarence Perry in his neighborhood unit diagram, shown to the right. Perry's diagram further illustrates the idea of the pedestrian shed and how it can support community life by providing walkable amenities and destinations within a neighborhood.

It is at the neighborhood level that the plan will be put into action through updates to the land development regulations. The Form-Based Code is centered on the Neighborhood Unit Plan, a regulatory document that all development within the Mullan Area has to be consistent with. The Neighborhood Unit Plan establishes the general location, size, and type of neighborhood, as well as other important elements that define the overall structure of the Mullan Area and ensure a walkable, connected network of streets and blocks. Within that framework, flexibility is afforded for the specific layout of lots, blocks, and streets, as well as uses, to allow individual property owners and developers the ability to meet their needs.

The Mullan Area consists of three Neighborhood Unit Types: Town Center, Community Center, Crossroads Center, and Workplace.



Clarence Perry's Neighborhood Unit diagram



A VIBRANT MIX

NOT A ONE SIZE FITS ALL COMMUNITY

The Mullan Area will provide opportunities to live, work, play, & learn within one complete environment. These varying uses will benefit from proximity to each other, each, in turn, making others more valuable. Collaborative environments are created in communities where people can interact in both organized and informal ways.

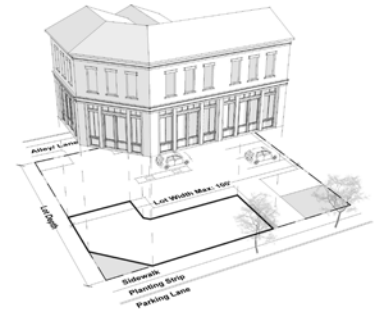
The plan for the Mullan Area promotes a vibrant mix of places, housing, businesses, and recreation through a flexible and carefully crafted code. The Mullan Area will not just be a one size fits all community. The community will meet the needs of a diverse population, with a range of housing types and amenities for all ages and demographics. There will be a mix of house sizes and types and locations. There will be housing at neighborhood centers and mixed in with retail and places to work and create as well as ones in more tranquil locations where you can easily move to the edge of the neighborhood and enjoy long views across fields towards the surrounding mountains. There is not just one kind of place to live.

There will also be different types of places to have businesses. There will be places that can incubate small entrepreneurs and their greatest new small idea that just might be the next big thing. Other locations will be right for business where an established operator can come in and work with what they have already figured out elsewhere. The uses of building forms may change over time, in response to the progression of the needs of Missoula. There are areas for research and light, clean industry next to the airport. Across the neighborhoods, live-work and live-make spaces are allowed, providing a venue for small businesses and cottage industries to grow.

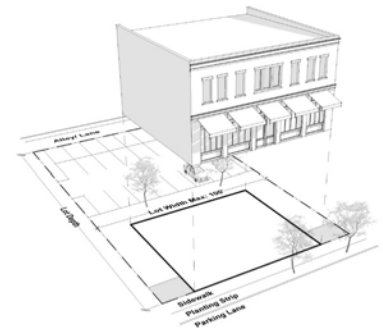
Recreational opportunities include a park and greenspace system as well as connectivity to the larger Missoula shared-use path and trail systems. Shops, restaurants, and entertainment venues are allowed in the mixed-used centers found in each neighborhood. Space is allocated for a new neighborhood school, which along with the existing school will provide places of learning for children, creating a space that meets the needs of its residents.

In addition to a mix of land uses, there will be a mix of building types to provide a visually vibrant palette along the street. By including a mix of building types, rather than buildings designed just for present needs, these buildings can adapt to future needs. For example, a live-work rowhouse with a 14-foot floor-to-ceiling ground floor may serve as housing now but adapt to a small business later. This also creates a more visually interesting street and sparks curiosity fostering more walkability. Just one strikingly different civic building can draw neighbors into a new part of the neighborhoods and become a landmark for wayfinding. Also, different buildings create a sense of place - as businesses may change, the image of a blue corner store next to the brick cottage will remain in people's memories.

Corner Store



Mixed-Use Building



Live/Work Building



Civic Building



A mix of building types is required in order to support neighborhoods with a diversity of ages and incomes as we use.

CENTERS OF ACTIVITY

The community visioning process and the County and City growth policies all highlight the need for complete neighborhoods, with neighborhood commercial centers. These can range from small pockets of neighborhood-serving commercial with just one or two buildings at an intersection to several blocks of more intense activity. These are the places that tend to become centers of community life, serving as neighborhood “third places.”

Small neighborhood centers with commercial uses catering to local residents' daily needs are vital elements of walkable, sustainable neighborhoods where within a few minutes' walk you can find a lot of life's basic daily needs. By building a complete, compact, and connected neighborhood, close to the city center, people are given an option besides driving a long way every time they need to do something.

Larger centers of activity are proposed along West Broadway Street, and to a lesser degree, Mullan Road where they are easily accessible to those living within the Mullan neighborhoods and those coming from the greater region. These areas are also located away from the flight path of the nearby airport.

These centers of activity are not intended to duplicate or compete with the important things going on Downtown, but to meet the demand for commercial space in the growing western portion of the City.



Proposed Centers of Activity

An attractive and vibrant neighborhood center can be made with just a couple of carefully built buildings at an intersection.



(preliminary draft for review)

DESIGN MATTERS

By focusing much of the Missoula region's growth over the next 10 to 20 years within the Mullan Area, careful attention to urban design is essential for creating a livable and sustainable community that benefits from compact development.

WHAT IS IMPORTANT?

There are many design considerations when developing a new community, ranging from the street layout to the color of a new building. Those that are most important and have the greatest impact on the community are those related to urban design - the design of the streets and public spaces and how buildings relate to those spaces.

FRONTS AND BACKS

Buildings and lots have fronts, sides, and backs and how these relate to one another form neighborhood character. Fronts of buildings ideally face the fronts of other buildings, and sometimes face the sides of buildings. However, the front of a building should never face the back of another.

STREETS

Streets should be designed as public spaces and thoroughfares for mobility. Street lighting and trees are vertical elements that help to define the public realm while also making the pedestrian feel safer and more comfortable. Trees, even in winter, add a sculptural quality and interest to the streetscape.

BUILDING-TO-STREET RELATIONSHIP

The physical and functional relationships between buildings and public spaces are essential to creating safe, comfortable, and attractive places. Building Frontage design can create walkable streets that are lined with the fronts of buildings with doors and stoops that activate the spaces and provide natural surveillance for the neighborhood.

BUILDING STANDARDS.

These are the rules related to building placement and massing (such as Setbacks, Build-to Lines or Zones, and Building Height).

PARKING

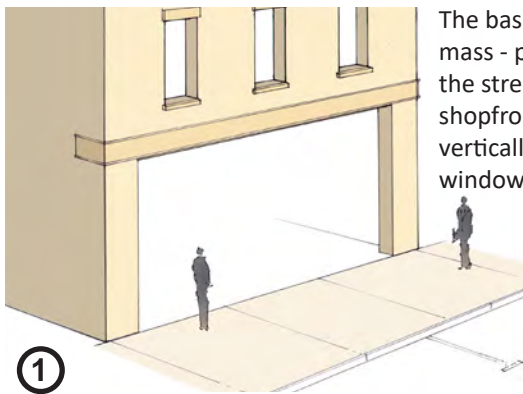
Parking is necessary, but by locating it in mid-block locations and behind buildings on a lot, it can remain hidden from view from the street and the interface between the building and sidewalk is not interrupted by parking.



THE ANATOMY OF A SHOPFRONT

SHOPFRONTS

There is an economic advantage to creating unique one-of-a-kind environments such as main streets. With mixed-use buildings, great care should be given to the architectural components that make for a good building-to-street relationship that encourages pedestrians and improves sales per square foot. The diagrams below show the elements that help foster better building-to-street relationships.



The basic building mass - placed close to the street. Generous shopfront with vertically-oriented windows above.



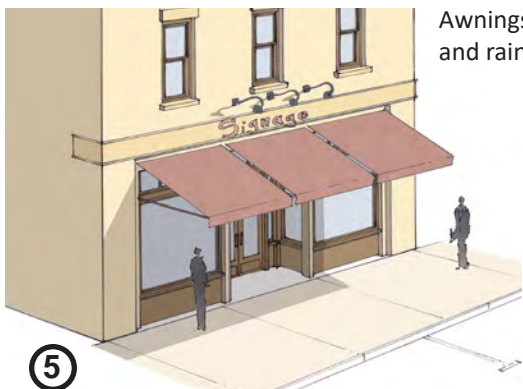
Columns sub-divide the shopfront opening and transoms help achieve well-proportioned shopfront windows.



Cased windows sit atop knee-height bulkheads.



Pedestrian-oriented entrance, signage, and lighting



Awnings provide shade and rain protection.



A gallery provides a second-floor terrace

CIVIC BUILDINGS

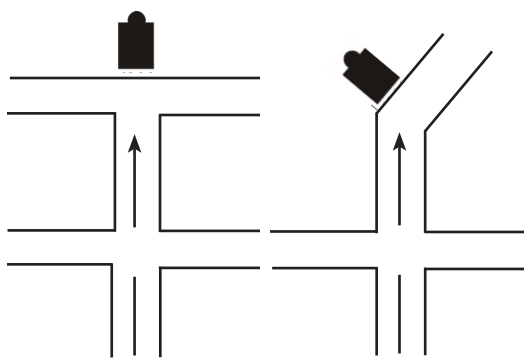
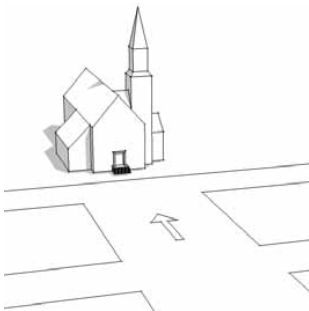
Civic buildings should be placed prominently and should have grander proportions and materials than their surrounding urban fabric. Approaches include locating public buildings at the ends of streets, across greens, or at the center of greens. Public buildings can be relatively small if placed strategically in the public view. Sites for civic purposes can be reserved even before there is a need for them to be constructed. The uses of these buildings may change over time as the needs of the community evolve.

The Plan designates key sites to be reserved for civic use, including a school and a fire station. A third site is shown reserved for a civic building to accommodate future needs.



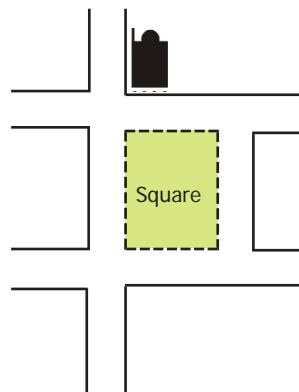
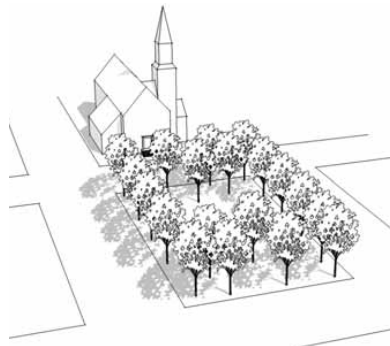
Even small civic buildings have a dominant presence when properly sited.

AS A TERMINATED VISTA



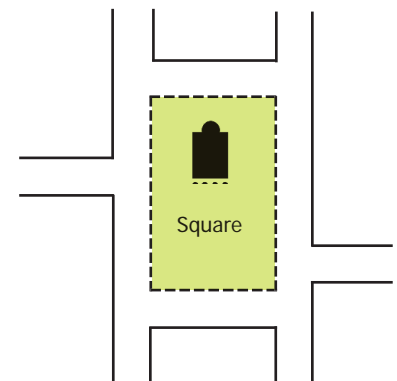
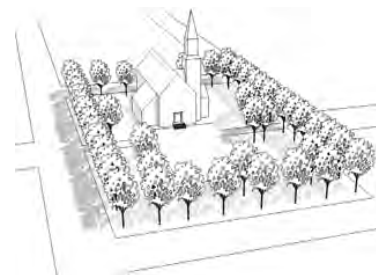
The Civic Building terminates the view of a street.

ACROSS A GREEN



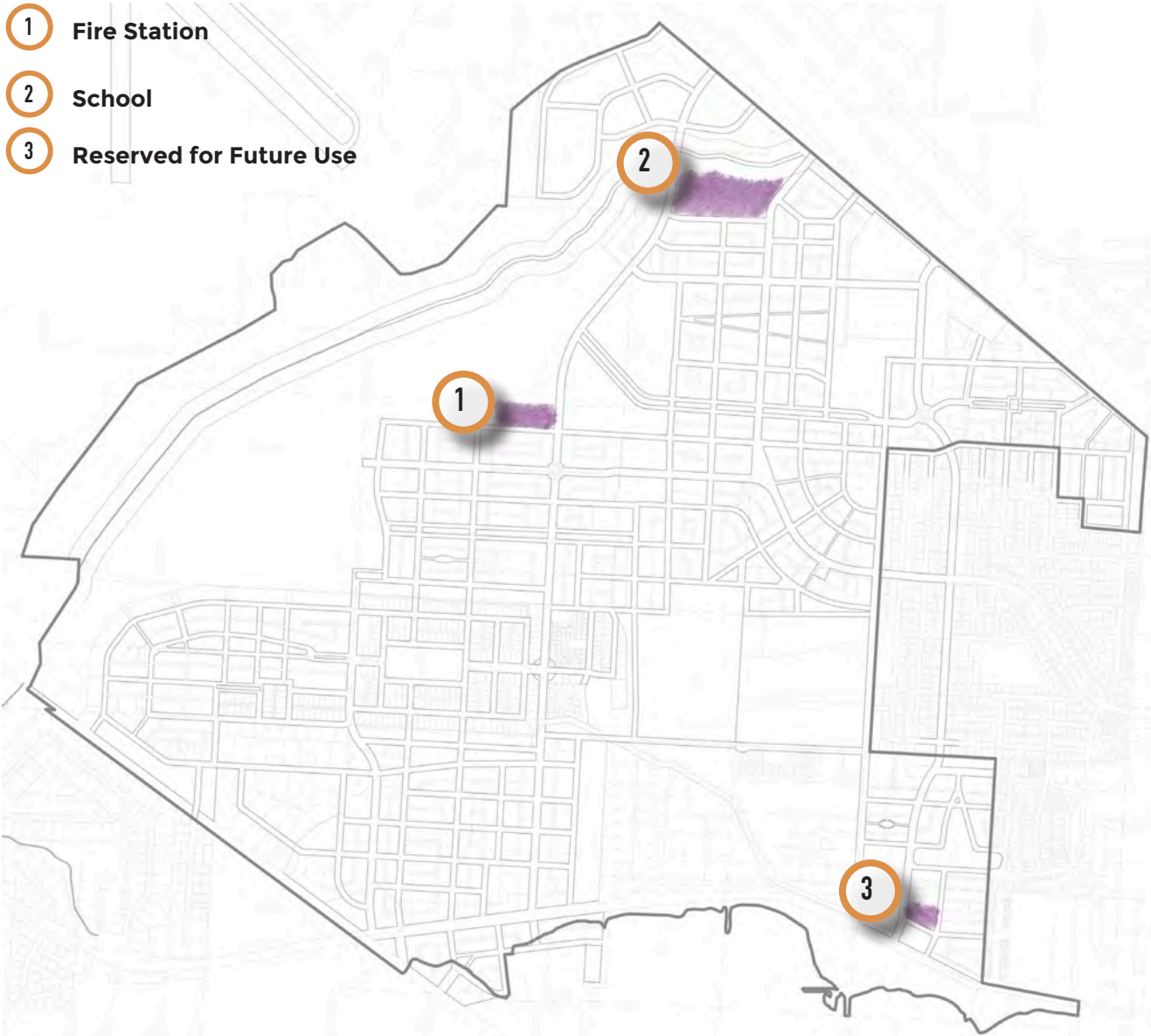
The Civic Building anchors the square at a prominent corner.

AT THE CENTER OF A SQUARE



The Civic Building anchors the space from within the square.

- 1 Fire Station
- 2 School
- 3 Reserved for Future Use



Proposed Civic Building Locations

HOUSING

DIVERSE AND AFFORDABLE NEIGHBORHOODS

Homeownership is out-of-reach for many Missoulians. Missoula's housing market is unaffordable to more than half of Missoula's households. The median household income in Missoula is \$41,968 a year (2019). The median home value is \$308,100 (2019). If the average family buys the average house they will be spending 35% to 40% of household income on mortgage and property taxes. Houses are considered "affordable" when households spend no more than 30% of their income. In addition, Missoula home values went up 11.5% in 2018 and are expected to continue to rise in 2019 at a much higher rate than median incomes.

The City's Office of Housing and Community Development produced *A Place to Call Home: Meeting Missoula's Housing Needs*, a Housing Policy that attempts to provide better housing at a wider range of entry points and to ensure that all Missoulians can obtain safe and decent homes. The Policy contains many recommendations that can be grouped into four action areas.

MISSOULA'S HOUSING POLICY STRATEGIES

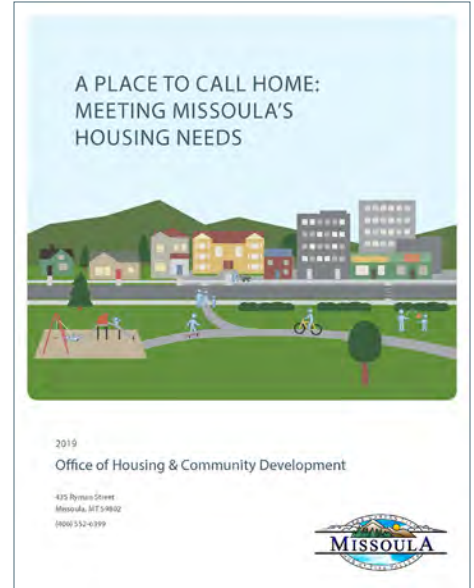
1. Track and analyze progress for continuous improvement;
2. Align and leverage existing funding resources to support housing;
3. Reduce barriers to new supply and promote access to affordable homes; and,
4. Partner to create and preserve dedicated affordable homes.

The Mullan Area Master Plan incorporates many of the Housing Policy recommendations and, through the accompanying Form Based Code, can implement even more strategies to promote lower costs and more affordable housing options.

PLANNING FOR AFFORDABILITY

The Plan and accompanying Form Based Code for the Mullan Area use market-friendly tools to advance the cause of affordability:

- ☒ Streamlined development review
- ☒ No / Low Parking Requirements
- ☒ Reduced Minimum Parcel Size
- ☒ Minimal Setbacks
- ☒ Equity in Land Use - Every project requires a mix of building and unit types
- ☒ Multi-family and Apartments permitted throughout much of the plan area
- ☒ Promotes Accessory Dwelling Unit (ADU) Development by allowing ADUs to be built by-right and removing policies limiting their use.



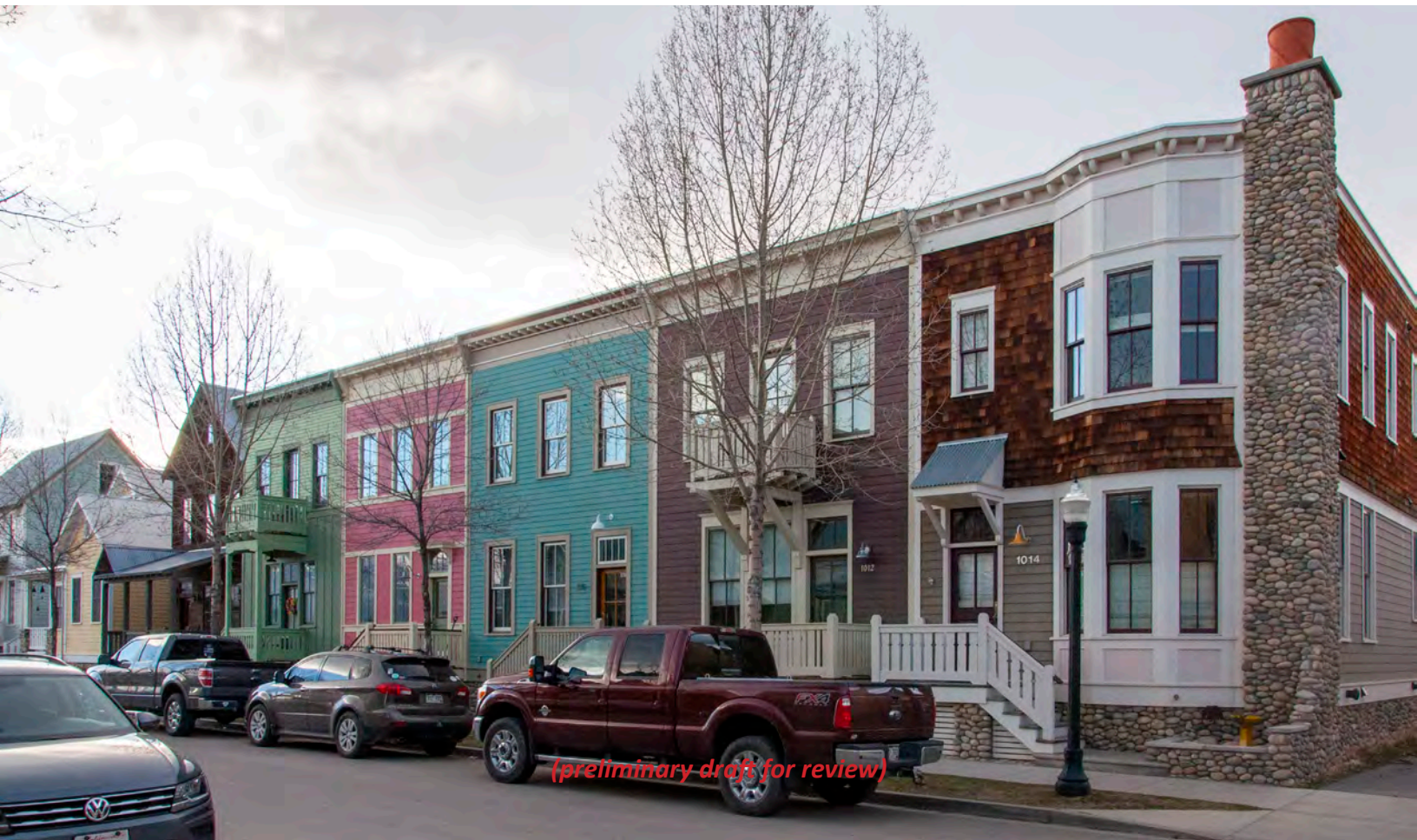
BUILDING AFFORDABLE HOUSING

While the market-friendly tools will help housing affordability in the Missoula Area, additional programs and strategies should be employed to ensure that the neighborhoods are mixed-income with homes available for all Missoulians.

AFFORDABLE HOUSING LAND TRUST

An Affordable Housing Land Trust should be established to support the creation of affordable housing units within the area. A certain number of platted lots could be required to be donated to a local land trust which specializes in packaging properties for affordable housing providers. Unlike a mandatory inclusionary zoning ordinance that requires developers to build deed-restricted affordable units, this requirement asks only for a certain number of lots per total number of anticipated building applications.

A mix of housing types are required in each neighborhood, which can include townhouses



HOUSING CHOICES

A mix of residential building types creates neighborhoods which allow a diversity of ages and incomes, and permit residents to trade up or downsize their homes without having to move away. Multi-generational and life-cycle neighborhoods create strong social networks, avoid concentrations of poverty or wealth, and lead to safer communities. A large variety and scale of housing choices can be found between the conventional single-family home and multi-family apartment complex. Here are just some of the building types that could meet those needs:



MIXED USE BUILDING



LIVE-WORK/MAKE UNIT



TOWNHOUSE



APARTMENT BUILDING



ACCESSORY DWELLING UNIT



DUPLEX



COTTAGE



COTTAGE COURT



HOUSE

“MISSING MIDDLE” HOUSING



Illustration © 2015 Opticos Design, Inc.

There is a growing demand for alternative housing types and walkable neighborhoods throughout the United States. The term “Missing Middle” was conceived by Daniel Parolek of Opticos Design, Inc. in 2010 to define a range of multi-unit or clustered housing types compatible in scale with single-family homes that help meet the growing demand for walkable urban living, that are often lacking in conventional suburban subdivisions.

The proposed FBC zoning regulations support the development of “Missing Middle” types to increase affordability and meet demands for dense housing forms, while also considering neighborhood design and infrastructure needs.

The following missing middle housing characteristics are excerpted from missingmiddlehousing.com:

WALKABLE CONTEXT: Missing Middle housing types are best located in a walkable context. Buyers and renters of these housing types are often trading square footage for proximity to services and amenities.

SMALL-FOOTPRINT BUILDINGS: These housing types typically have small- to medium-sized footprints, similar to nearby single-family homes. This allows a range of Missing Middle types—with varying densities—to be blended into a neighborhood.

LOWER PERCEIVED DENSITY: Due to the small footprint of the building types and the fact that they are usually mixed with a variety of building types within the neighborhood, the perceived density of these types is usually quite low. But, the actual measured density can meet established thresholds for supporting transit and neighborhood-serving main streets.

FEWER OFF-STREET PARKING SPACES: A balance must be sought between providing necessary car storage, and the expense and impact on community design of too much parking. Since they are built in walkable neighborhoods with proximity to transportation options and commercial amenities, Missing Middle housing types typically do not provide more than one parking space per unit.

SMALLER, WELL-DESIGNED UNITS: Most Missing Middle housing types have smaller unit sizes, which can help developers keep their costs down and attract a different market of buyers and renters, who do not have such options in many communities.

SIMPLE CONSTRUCTION: Missing Middle housing types can be simply constructed, which makes them an attractive alternative for developers to achieve good densities without the added financing challenges and risk of more complex construction types. This aspect can also increase affordability when units are sold or rented.

CREATES COMMUNITY: Missing Middle housing creates community through the integration of shared community spaces within the building type (for example, bungalow courts), or simply from being located within a vibrant neighborhood with places to eat and socialize.

MARKETABLE: Because of the increasing demand from baby boomers and Millennials, as well as shifting household demographics, the market is demanding more vibrant, sustainable, walkable places to live. Missing Middle housing types respond directly to this demand.

HISTORIC PRESERVATION

As the Mullan Area is developed into much needed housing as Missoula grows in the future, fundamental pieces of its past must be preserved.

PROTECT AND CULTIVATE IMPORTANT LANDSCAPES

The Mullan Area has been in agricultural production for over 100 years. The 160 acres that were homesteaded by Michael Flynn in 1872, and grew to 1,300 acres, has all but shrunk to 40 acres today, the only plot that has been retained by his descendants for conservation. The remaining land has since been subdivided or used to grow hay by other farmers.

The plan for the Mullan area clusters housing in compact neighborhoods, allowing for more housing as well as preserving areas of agricultural land to keep as working farms. The plan calls for three peri-urban farms, in addition to the open space preserved around Grant Creek, to continue the agricultural tradition of Missoula, provide locally-sourced food, and offer scenic views.

The existing conservation easement on forty acres of land next to Hellgate Elementary will allow agricultural use to continue there. The relatively large size of this area allows it to be a true working farm and its adjacent to the school can be used for educational purposes, offering students the chance to witness a glimpse into the past and to learn about food production.



Historic photo of Flynn Farm House

Historic photo of Flynn Farm. Courtesy of Mary Helterline Flynn photograph collection, University of Montana.



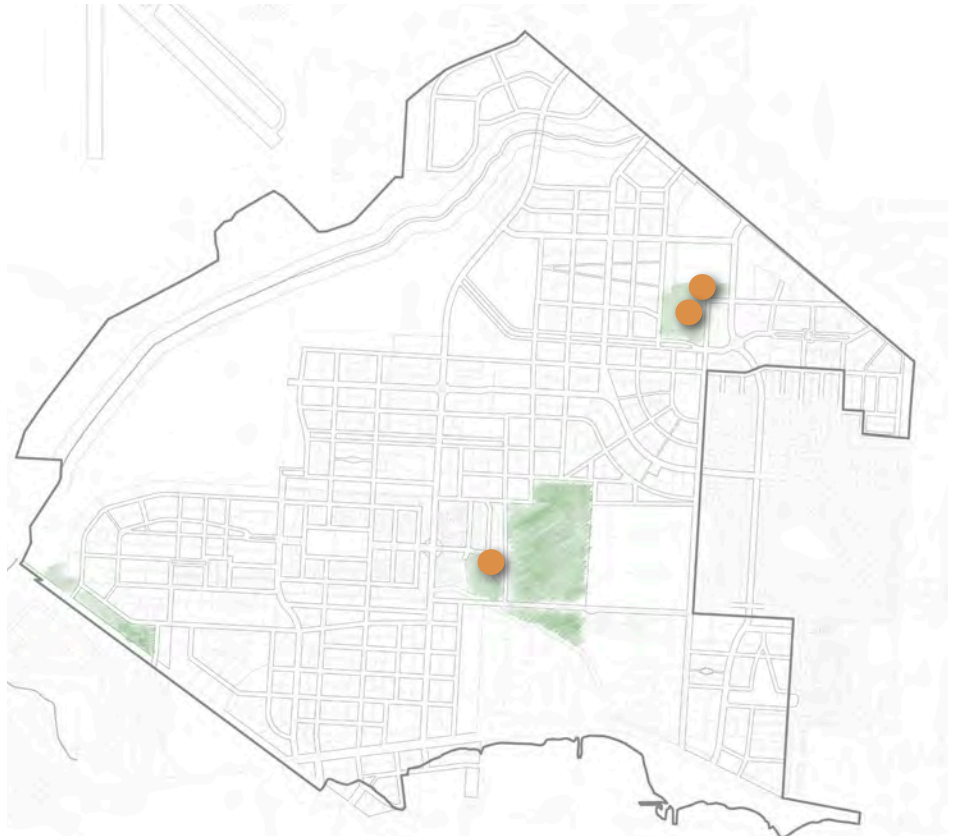
PRESERVE HISTORIC STRUCTURES & CELEBRATE THE PAST

The Mullan Area is just northeast of the original Hell Gate settlement. Although the plan area does not include the original settlement, it is sited on the historic Flynn Farm, also known as the McKinnon Home. The Flynn Farm home, built in 1883, is on the National Registry of Historic Places and the forty acres surrounding it are part of a conservation easement.

This building, along with other historic structures such as the Dougherty Ranch barn on Flynn lane, as well as their surrounding landscape, should be preserved. The buildings can take on new uses over time, adapting to changing needs, but maintaining a physical connection to the past is important when evolving forward.



Barn at the Dougherty Ranch along Flynn Lane



Structures in the Mullan Area to consider for historic preservation

BIG IDEA 2:

CONNECT WITH AGRICULTURE, BUILD PARKS, AND ENHANCE GRANT CREEK ECO-HEALTH

With new development, an emphasis will be placed on preserving the heritage of the Mullan Area in two parts: Grant Creek and agriculture. There will be an effort to restore Grant Creek back to a natural state with a flood plain that is wide, not deep, and meanders as it historically did. There will be a trail so that residents have access to nature, but also a riparian buffer to protect the native flora and fauna of Grant Creek. There will be other trails, along the Flynn Lowney Ditch for instance, and parks in each neighborhood to make sure every resident has access to nature and recreation.

The plan will also focus on access to local food production and education with support for various types of peri-urban and community agriculture.



Illustration of peri-urban agriculture in the Mullan Area

1

Keep Farming: Maintain agricultural land for community and peri-urban farms and gardens.

2

Farms and Community Gardens are Part of the Community: New homes face the farm and community gardens are found in each neighborhood.

3

Create New Parks: New parks of all sizes are integrated into the fabric of the plan for the Mullan Area



AGRICULTURAL TRADITION

AGRICULTURE IN THE MULLAN NEIGHBORHOODS

Much of the Mullan Area today consists of agricultural lands. This plan looks to preserve the agricultural tradition of the area and bring agriculture and local food into the community. This will be done through a mix of community supported agriculture (CSA), community gardens, and other urban and peri-urban agriculture farms. These various agricultural uses range from commercial to personal use and will be integrated at multiple scales which will be permitted across the entire master planning area. Some farms can be protected for agricultural use in perpetuity through conservation easements.

PERI-URBAN AGRICULTURE

Peri-urban agriculture is generally semi-commercial or commercial agriculture undertaken in places on the fringe of urban areas. These farms are generally larger and more intensive in production than their more urban counterparts and can produce products for market. Larger tracts of conserved agricultural land within the Mullan Area are well suited for this use.

COTTAGE FOOD

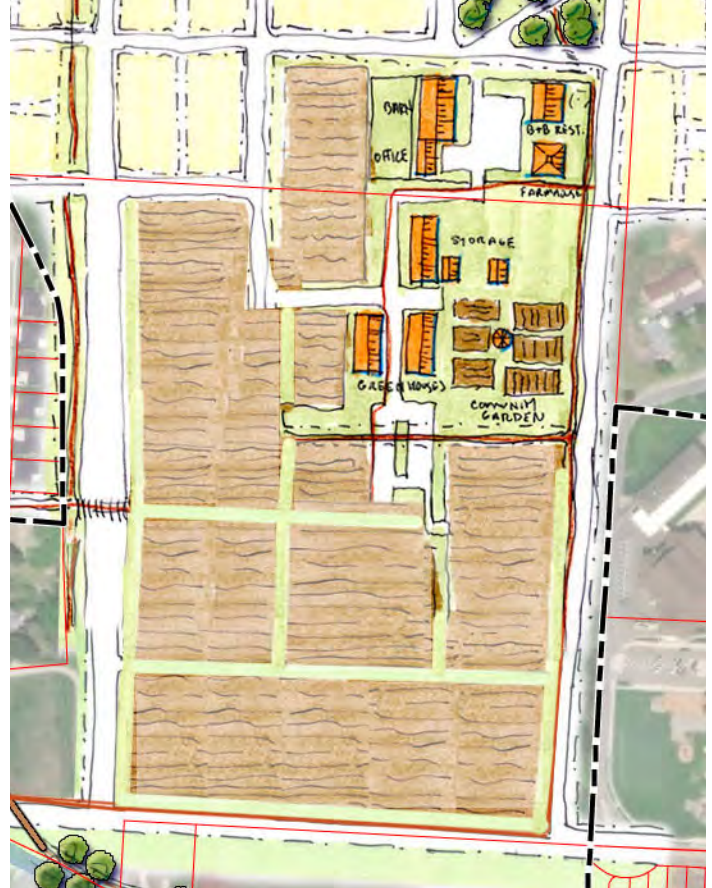
The cottage food industry is part of the local-food economy where home-kitchen cooks make and sell foods with a low risk of causing foodborne illness. Agricultural production within the Mullan Area can be utilized to support a local cottage food industry.

INCUBATOR FARM

Incubator farms help beginning farmers get into farming by providing access to land, infrastructure and training.

COMMUNITY GARDENS

A community garden is a piece of land collectively gardened by a group of people. These are typically located in more urban areas and can fit on small lots. The gardened plots are either individual or shared and can be used to produce a wide variety of produce. Community gardens should be located throughout each neighborhood and are especially important in the more urban areas where residences have small yards or no yard at all.



Agriculture in the Mullan area will continue as community gardens and larger CSA and peri-urban operations

FARMLAND PROTECTION

COMMUNITY SUPPORTED AGRICULTURE

Community Support Agriculture (CSA) is a community-farmer partnership whereby the public partners with a local farm operation to receive fresh, local produce and other farm products in return for a “share” of the farm. This relationship between farmer and community member is symbiotic in which the farmer is given financial security through monthly subscriptions and the member is given local food security. The farmers have an opportunity to get to know the people who eat the food they grow and consumers learn more about how food is grown. There is also an important concept of “shared risk” in that members pay up front for the whole season and farmers do their best to provide produce each week. This creates a feeling of “we’re in this together.”

SUPPORT AND EXPAND CONSERVATION EASEMENTS

As discussed in the Historic Preservation section, key farm fields will be preserved as part of the Mullan Neighborhoods plan. This includes the existing approximately 40 acre conservation easement located west of Hellgate Elementary School. Additional conservation easements can be pursued for other areas remaining in agricultural use.

FARMLAND MITIGATION FEES

To mitigate the loss of local agriculture, a farmland mitigation fee should be considered that requires a fee to be paid in order to secure a building permit. This fee could be used to support CSA, community gardens, and peri-urban agriculture within the Mullan Neighborhoods plan area or agriculture elsewhere in the County.

Existing agricultural landscape



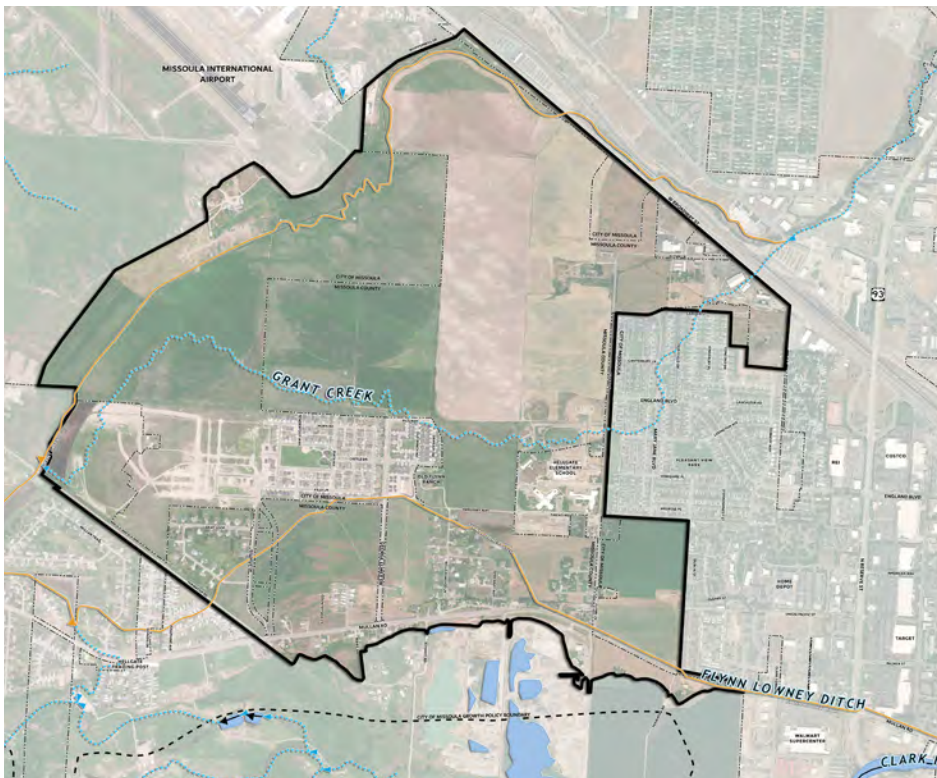
(preliminary draft for review)

GRANT CREEK RESTORATION

The restoration of Grant Creek is a critical component of both the Mullan Area Master Plan and the Mullan BUILD Project. Over the years, Grant Creek has been rerouted and channelized, resulting in degraded water quality and habitat. As part of the Middle Clark Fork watershed, the impaired water quality in the creek will have negative effects downstream on the Clark Fork River. It is also understood that as the area around Grant Creek develops, care must be taken to mitigate the increase in impervious surfaces.

The Mullan BUILD Project seeks to re-align and restore half-a-mile of Grant Creek's stream channel and associated floodplain. The Mullan Area Master Plan recommends protecting a 150 foot buffer (300 feet total width) along the total length of the stream through the master planning area. This will allow for the restoration of riparian habitat and the restoration of additional stream segments in the future. Along most of this length, the Plan promotes retaining agricultural land uses for hundreds of feet beyond the buffer. A stormwater district master plan largely relying on green infrastructure for the Mullan Area will help manage stormwater and ensure Grant Creek's health.

The restoration of the stream and its habitat should be done in close coordination with the Missoula International Airport, on whose property most of the creek is located, to limit the risk of attracting birds and other wildlife that may affect airport operations and safety.



PARKS & TRAILS

INCREASE ACCESS TO PARKS AND NATURE

A common theme heard from the community during the virtual charrette was the need for parks and trails for recreation and to connect community destinations. Community parks and recreation opportunities are a critical element of living and working in Missoula, tied closely to housing, economic development, and environmental sustainability. Public open space amenities and innovative design can help enable healthier lifestyles in the Mullan Area by providing affordable, encouraging, and fun environments for play.

PARKS OF ALL SIZES AND FUNCTIONS

Small to large parks are included in the Plan.

- Pocket Parks
- Neighborhood Parks
- Community Parks
- Regional Park

Through this master planning process, it is possible to identify the location of key parks that serve the larger community and region. The City and County in partnership with other organizations can work to acquire these larger parks in the location that will best serve the public, removing the ad-hoc creation of these important parks that typically occurs during the development process. Smaller parks, such as neighborhood and pocket parks will be required within all neighborhoods and built as areas develop.

SHARED-USE PATHS AND TRAILS

The Mullan Area will be criss-crossed with shared-use paths and hiking and biking trails, providing scenic routes for walking and biking through agricultural lands and alongside Grant Creek. These will connect with the regional networks.



Proposed parks and green spaces within the Mullan Area

An array of parks at different scales will provide access to green space for everyone with an assortment of facilities and recreation

1

NEIGHBORHOOD SQUARE

Neighborhood squares form the focal point in the public space network and a focus for civic pride and community expression. This may be presented in “harder” landscaping than the soft landscaping of parks, with a distinct edge formed by buildings, creating an “outdoor living room” for people to linger, interact, and connect. They provide a space for a wide range of formal and informal activities that supports social and cultural life for users of the center.

2

POCKET PARK

A pocket park is a small green space, less than a quarter-acre, that provides a safe and inviting environment for surrounding neighbors to meet, relax, and play. They can include a small dog park, playground, community garden, or even a small pavilion for neighborhood events. At a more intimate size, the size of a single or few house lots, they can be placed more frequently throughout the plan. The pocket park can act as a waypoint along a trail between larger neighborhood parks.

3

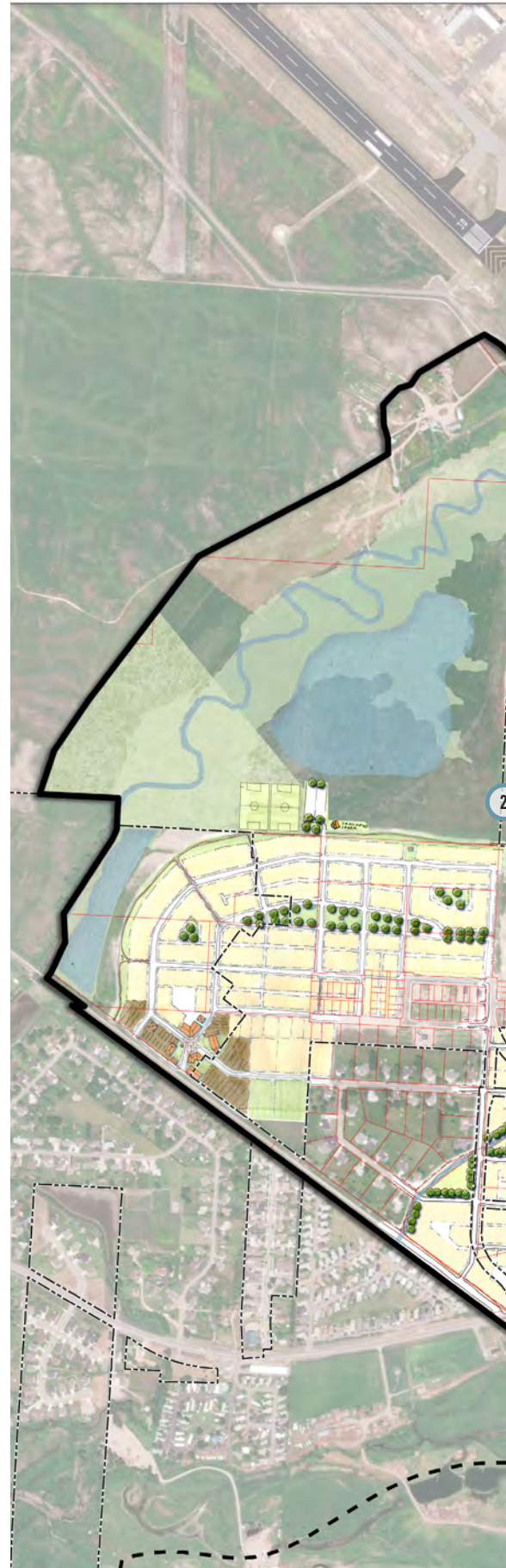
NEIGHBORHOOD PARK

Neighborhood parks will act as a central green space for each of the Mullan Neighborhoods. Between 1 to 10 acres, there is enough space to serve the neighborhood needs for recreation.

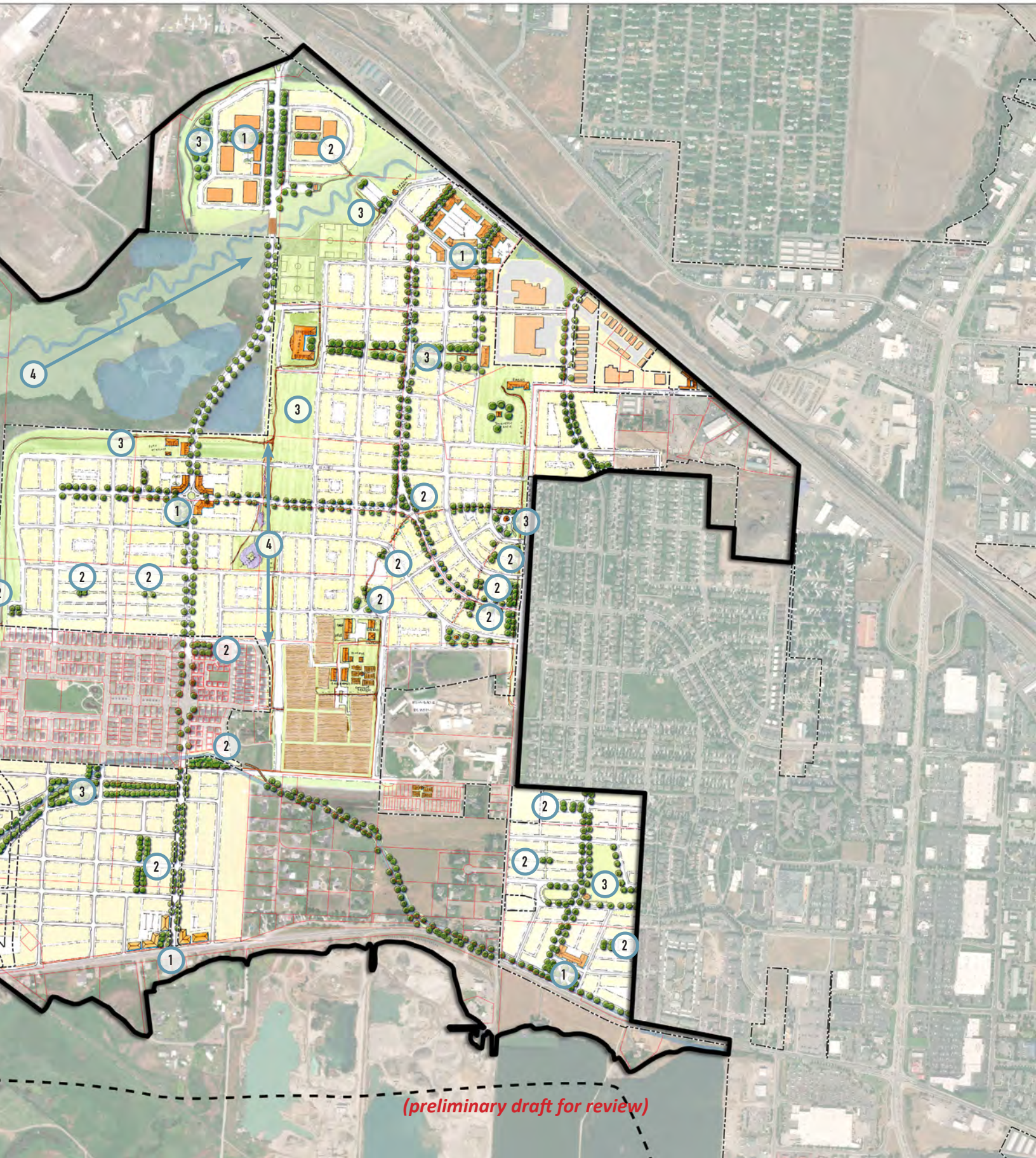
4

PASSIVE PARKS

Passive parks refer to the green spaces left largely untouched from the natural landscape. They may have trails but otherwise have less formal programming from the other parks.



Note: Not all planned parks are annotated on the plan (right) for clarity.



(preliminary draft for review)

Chapter 3: The Big Ideas

Connect with Agriculture, Build Parks, and Enhance Grant Creek Eco-Health

PARK AMENITIES

With the different scales of parks come different strategies for landscaping and amenities. Neighborhood squares will accommodate a higher volume of users with more seating and harder materials. Neighborhood parks will serve lots of families with playgrounds, picnic shelters, and playfields. Passive parks will not have much more than trailheads with parking.



Attached Urban Square



Urban square with a long view towards natural open space



Pocket Park, as pedestrian court between houses



Neighborhood Park with play equipment and picnic shelter



Passive Park with trail shade trees along the stormwater canal

BIG IDEA 3:

BUILD FOR A SUSTAINABLE FUTURE

In Missoula, “sustainability” is not just a buzzword, but a way of life, and the plan for the Mullan Area takes this seriously.

Choosing to accommodate Missoula’s growing population here is in itself a sustainable way to develop. Adjacent to the existing City, infrastructure is readily available and by growing here, more environmentally sensitive land and farms can be protected.

Building in traditional neighborhood development patterns puts walking and biking at the forefront of transportation choices, with small blocks, interesting streets, and a mix of uses. The higher density of houses, again, reduces development pressure elsewhere, and makes convenient transit service feasible.

Beyond these inherent benefits of building in this area in this manner, the Mullan Master Plan proposes an array of other strategies, policies and designs to enhance the Mullan Area neighborhoods’ sustainability. These range from the use of green infrastructure and light imprint design to renewable energy and green building materials.



Walkable, mixed-use urbanism is an efficient and more sustainable pattern for development compared to the more typical suburban patterns of separated uses.

1 **Stormwater Management Strategy:** A district-wide stormwater management strategy to maintain watershed health.

2 **Green Infrastructure:** Utilize green infrastructure to mitigate and manage stormwater as well as reduce costs

3 **Renewable Energy:** Require the use of renewable energy

4 **Green Building Materials:** Require the use of green building materials in the construction of new buildings

5 **Transit Ready:** Ensure a residential density that can support convenient and reliable transit service



STORMWATER

RECOMMENDED STORMWATER MITIGATION STRATEGY

The Mullan Area Master Plan establishes a district-wide framework for stormwater management to maintain high water quality. The stormwater management strategies are based largely on green infrastructure and light imprint design that can be applied at the scales of the entire district, neighborhood, street, block, and lot.

One commonly used technique for stormwater mitigation is the dry well stumps. This would be a good technique if the soil is well-draining and has low groundwater. Though, due to the variable soil and the presence of groundwater in some areas, this technique is not recommended to be the only source on this site.

Instead, local micro-storage facilities and small bio-retention ponds are recommended. These ponds are designed to reduce the peak flow of water during larger storm events, treat stormwater runoff closer to the source, and reduce the amount of developable land taken up by stormwater mitigation facilities. Studies show a 20% reduction in the peak flow of an entire drainage basin during the 100-year-storm when utilizing micro-storage for smaller storm events. The use of smaller localized ponds will help retain the difference between the pre- and post-development 10-year-storm and allow any additional stormwater runoff to overflow into regional ponds such as Grant Creek. Additionally, this technique will maximize developable land by reducing the amount of land set aside for stormwater mitigation.

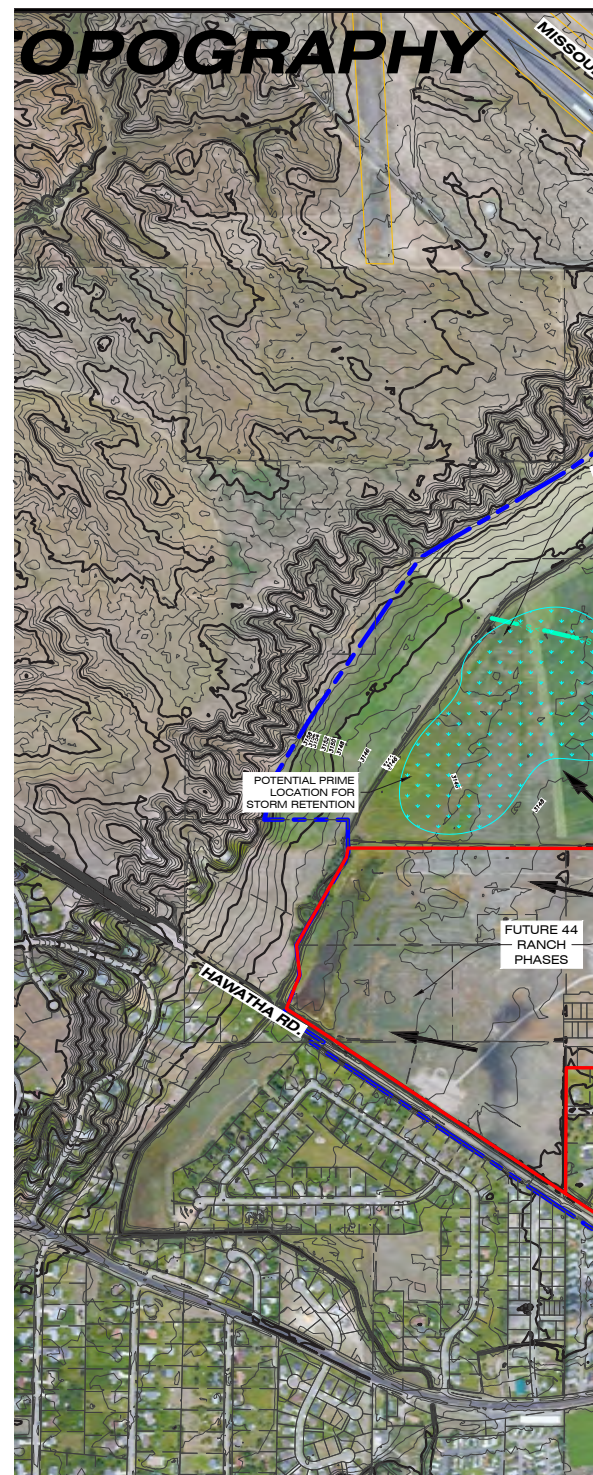
Where possible, grass-lined swales should be used to convey stormwater runoff from impervious areas to the stormwater mitigation facilities. Swales are green infrastructure that are effective at reducing sediment transport, lowering the temperature of stormwater, and increasing the time of concentration for the watershed. Grass-lined swales are easier to maintain than storm sewer networks and are generally more aesthetically pleasing.

Regional shallow detention ponds and swales are recommended to detain the difference between the pre- and post-development storm for events larger than the 10-year storm.

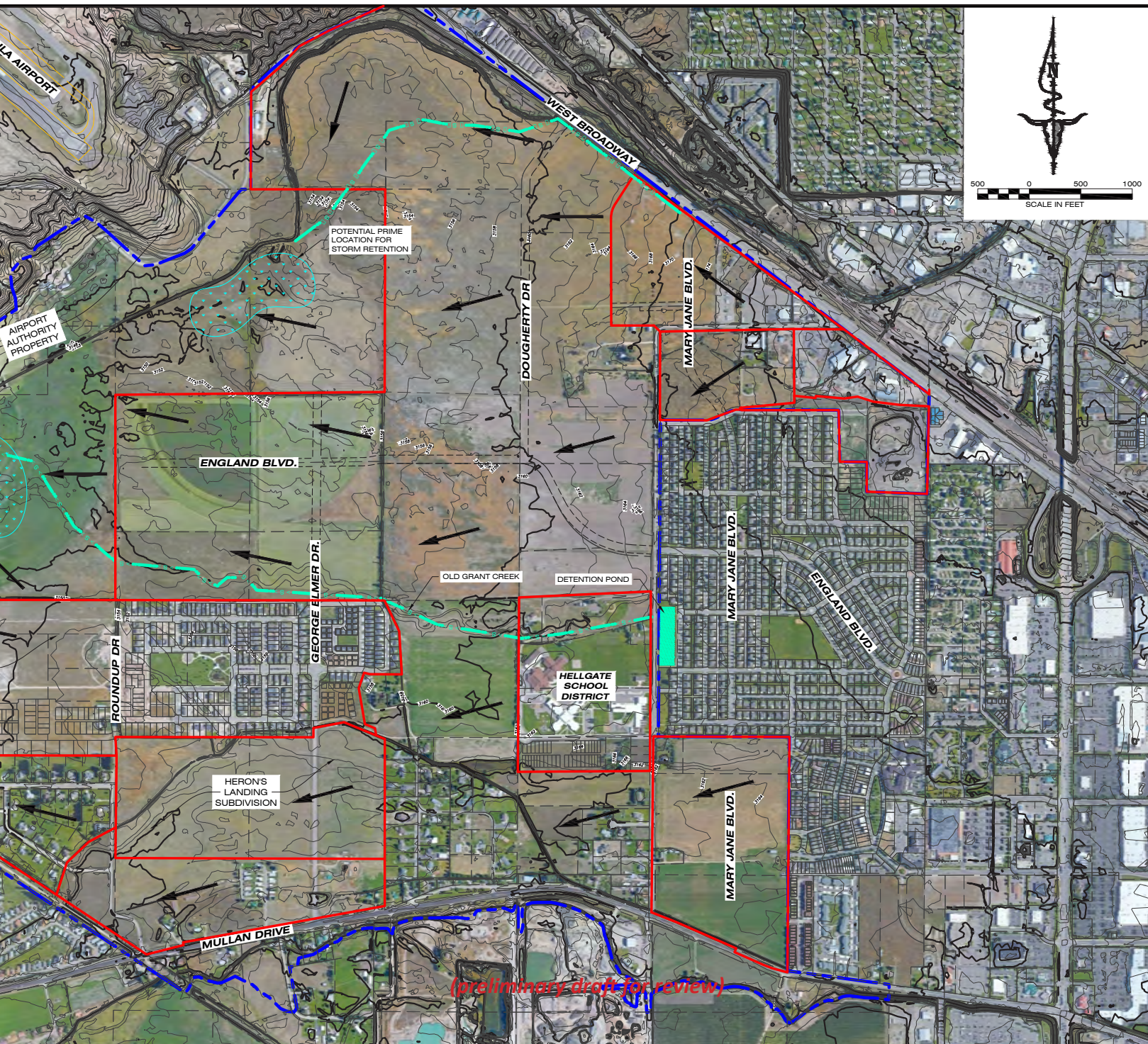
These regional ponds will store the stormwater runoff which overflows from the local microstorage ponds, which is then conveyed via open channels (grass-lined swales and storm sewer networks) to the western edge of the focus area.

The use of regional detention ponds, which are also community parks and green space, will maximize the amount of developable land within the focus area. These will also act as a final water quality treatment method before stormwater is discharged into Grant Creek.

Topographical map of bio-retention ponds that contribute to smaller regional ponds, cleaner water discharged into Grant Creek, and a higher density of development.



Green infrastructure can play a critical role in managing and treating stormwater, which can help the Mullan neighborhood protect its natural resources such as Grant Creek



STORMWATER MITIGATION STRATEGY IMPLEMENTATION

Micro-storage for a high-density residential subdivision can be achieved both on residential lots as well as within greenspaces.

The shallower on-site ponds will be of a greater benefit to stormwater quality treatment, as there is more pond bottom surface area per cubic foot of water. Therefore, there is a greater opportunity for the treatment of nutrients through the vegetative root layer. Additionally, personal micro-storage ponds have the potential to be a visually attractive feature to neighborhoods as homeowners can customize what plants are located inside.

Commercial lots can maximize density by incorporating landscaped islands and retention swales to mitigate the 10-year storm. While each micro-pond may be designed to be a certain volume, the design engineer will have to guarantee that this volume of runoff is conveyed to each micro-pond.

Some of the design difficulties associated with grassed swales in the Mullan Area stem from the silt and clay soils that are found in small areas within the focus area will cause frost heave and settling in areas where stormwater runoff infiltrates too close to roads and sidewalks. Ensuring that the flowline is setback from the adjacent road by at least 15 feet will help in discouraging stormwater from infiltrating under the road. We recommend a mechanism to ensure road sections do not become saturated to minimize the chance of settlement and frost heave.

A storm sewer pipe network could be installed along with the swale to capture water at intersections and convey it to the regional detention ponds. Another solution would be to install crossing pipes under intersections, where stormwater will enter the pipe and bubble up on the other side of the intersection and continue to be conveyed in the grass-lined swale. Storm inlet rims within the grassed swales should be set 4 to 6 inches above the bottom of the swale. This will allow smaller storm events to be treated by infiltration within the swale as well as allow for some excess sediment to settle before entering the inlet in larger events.

Large area retention ponds are feasible within the western area of the focus area. With a pond that is a half foot deep, it is possible to incorporate this with green spaces such as sports fields, dog parks, and general park space.

Due to the proximity of the Missoula Airport to the focus area, there are limitations on the maximum amount of time that stormwater can be held in storm ponds after a rain event. It has been verbally expressed by the Missoula Airport that 24 hours should be the maximum time, while the FAA regulations require a maximum time of 48 hours.

An infiltration rate of 0.7 inches per hour has been recommended for the area, which means that no stormwater pond should be deeper than 16 inches to drain within 24 hours and 33 inches to drain within 48 hours. Ideally, we recommend that stormwater ponds shall be as shallow as the volume requirements and available space will allow for.

In addition to limiting the time in which sitting water is stored in the pond, detention ponds must also be as uninviting to migratory and large birds as possible. Where possible, detention swales should be utilized to avoid designing large pond areas which will be more attractive to birds. Additionally, to minimize the risk of an airplane striking a bird, detention ponds should be designed to be out of the direct path of the runway, whenever possible.



Parks can be a part of a stormwater management system and a place for community events (Glenwood Park, Atlanta, GA).

GREEN INFRASTRUCTURE

WHAT IS GREEN INFRASTRUCTURE?

Green infrastructure (GI) emphasizes simple site design techniques and natural stormwater practices to clean and infiltrate rainwater and restore the natural water cycle. GI can often be a more cost-effective stormwater management approach when compared to more highly engineered traditional structural stormwater practices. When creatively incorporated into an overall site design, these nature-based techniques can provide additional community benefits including preservation of open space and natural systems, creation of wildlife habitats, traffic calming, public health, and beauty. Simply put, GI can be simpler, cheaper, and more valuable.

The GI approach is based on four fundamental principles:

- Embrace stormwater as a resource rather than a waste product.
- Preserve and/or re-create natural landscape features and systems.
- Minimize the effects of impervious cover.
- Implement stormwater control measures that rely on natural systems to manage runoff.

In other words, GI emphasizes simple site design techniques and natural stormwater practices to get rainfall filtered and absorbed back into the ground and atmosphere as close to where it falls as possible.

GI can be implemented as part of public and private development projects, and at a wide range of scales, in place of or in addition to more traditional stormwater control elements. Common green infrastructure tools, referred to as Best Management Practices (BMPs), include bioretention systems, tree box filters, flow-through planters, permeable paving, tree planting, and green roofs.

These systems of protected natural ecosystems and constructed infrastructure are managed and designed for their ecological processes that benefit human development, such as clean water and air. These associated benefits are known as ecosystem services. Larger scale, natural green infrastructure provides greater ecosystem services than smaller interventions and should be protected. The

ecosystem services provided by green infrastructure are just a portion of the benefits offered by healthy natural environments, which also provides wildlife habitat and places for recreation.

WHY GREEN INFRASTRUCTURE?

Green infrastructure can play a critical role in managing and treating stormwater, which can help the Mullan neighborhood protect its natural resources such as Grant Creek and its quality of life while moving towards meeting Federal standards for stormwater treatment.

The primary goal of this effort should be reducing the amount of stormwater runoff. This represents a shift from mitigation of the negative impacts of land development on stormwater quality to the prevention of it. Such a paradigm shift focuses on the protection and restoration of natural resources, including wetlands and floodplains, the use of green infrastructure, and careful site design to reduce the total quantity of stormwater, without necessarily reducing the amount of development. It is important to capture stormwater runoff before it reaches waterways, thus reducing overall non-point source pollution.

GREEN INFRASTRUCTURE AND SMART GROWTH

It is particularly important to consider smart growth and walkable urbanism when developing stormwater guidelines. Low-impact design and green infrastructure should not be implemented at the expense of creating walkable and connected neighborhoods. For example, requiring rain gardens in parking lots or in front yards of homes and businesses can actually increase the overall size of parking lots and push homes and businesses further away from the sidewalk. See the better solutions in the Green Infrastructure Toolkit.

GREEN INFRASTRUCTURE IMPLEMENTATION

Stormwater runoff must be treated for excess sediments, temperature, nutrients, and other pollutants such as VOCs.

Green infrastructure is crucial to treat stormwater before it is discharged into bodies of water. For the most part, the recommended green infrastructure consists of stormwater infiltration through root layers. Garden depth should be at a minimum 6" deep, to ensure enough root depth to fully treat stormwater.

In highly dense areas where on-site storage may not be possible, rain gardens provide a design option to treat stormwater before being discharged into Grant Creek. Rain gardens are designed to treat the initial stormwater runoff which is generated from impervious coverage. This initial runoff generally has the highest concentration of pollutants and therefore is important to treat as close to the source as possible.

The micro-storage ponds may also be considered as rain gardens to treat stormwater. For the most part, these ponds should be designed with the same design parameters as rain gardens. We recommend in highly dense areas the incorporation of rain gardens with landscape islands to treat stormwater.

The most important design aspect of rain gardens is having a full vegetative cover. Trees are not recommended inside of rain gardens. The area for ponding should be a shallow depression of 6 to 18 inches in depth. If planting soil is to be imported, a recommended planting blend consists of 50 to 60 percent clean sand, 20-30 percent peat or certified compost, and 20-30 percent topsoil. If the in-situ

subsoils are not free-draining an eight-inch thick layer of clean coarse aggregate shall be installed below the planting blend. Filter fabric shall separate this drain rock from the in-situ soils below and the planting mix above.

The design infiltration rate for rain gardens within the Mullan Area Master Plan shall not exceed 0.7 inches per hour unless substantiated with on-site testing.

The use of weed barrier fabrics and organic mulches (particularly wood chips) to promote healthy plant growth and reduce maintenance requirements are highly recommended.

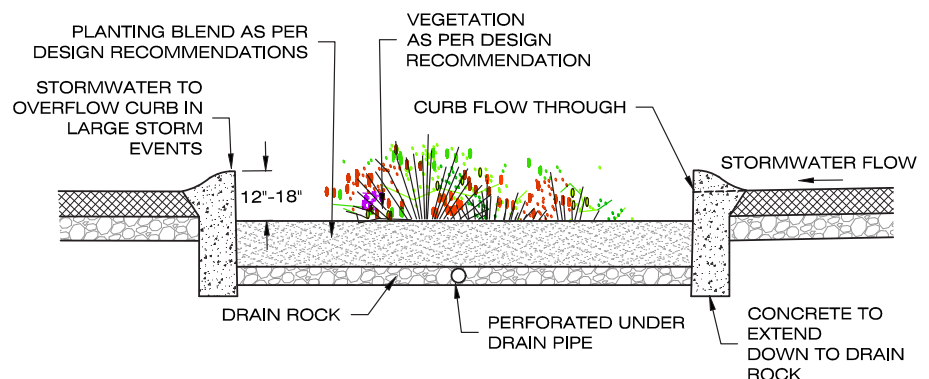
To avoid clogging the rain garden with sediment during the construction phase, construction runoff should be diverted away from the area where the rain garden is to be constructed at least until parking areas have been paved. Utilize BMPs to reduce the amount of sediment from stabilized areas.

In theory, most of the stormwater runoff should be treated before reaching the regional detention ponds at the western boundary of the focus area. The primary focus of the regional detention ponds is to mitigate the volume difference between the pre- and post-100-year storm events.

The regional ponds will provide stormwater quality treatment through infiltration. The grass cover from the detention pond will provide some plant uptake to treat nutrients and VOCs, and excess sediment will be deposited at the pond bottom.

PLANT RECOMMENDATIONS FOR RAIN GARDENS AND BIOSWALES:

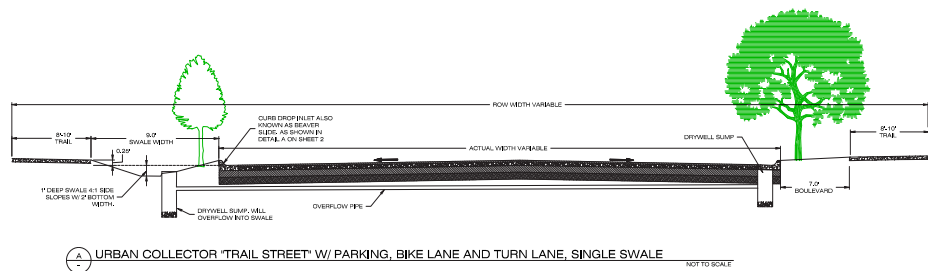
Blue-Eyed Grass, Thick-Headed Sedge, Yellow or Red Monkeyflower, Twinberry Honeysuckle, Horsemint, Tufted Hair Grass, Rocky Mountain Iris, Wild Mint, Ticklegrass, Shooting Star, Yellow Mountain Aven, Wild Chives, Red-osier Dogwood, Utah Honeysuckle, Sweetgrass, Mountain Hollyhock, Skullcap



GRASSED SWALE DESIGN RECOMMENDATIONS

Concentrated runoff may be directed from roads or parking areas towards grassed areas through curb cuts and concrete channels. A concrete apron should be constructed where water is discharged to the grass, with a vertical drop of 3 inches to prevent thick vegetation from impeding the flow of water. Cross-sections shall be either trapezoidal or triangular with side slopes not exceeding 4:1 (horizontal:vertical), preferably flatter. Where possible, swales shall be trapezoidal with a bottom section of at least 3 feet in width. Larger bottom sections allow for increased stormwater treatment. Check dams should be utilized on long stretches of the grassed swale to slow the overall velocity and promote the settling of sediment. Maximum flow depth should not exceed one foot at the 2-year peak flow rate to ensure proper stormwater quality treatment. An underdrain shall be installed for grassed swales located in areas of silt and clay soils to avoid frost heave and settling of adjacent roads. The finished surface of the grassed swale shall have at least 4 inches of sandy loam topsoil and shall

be seeded with a native turfgrass mixture. Bunch grasses shall be avoided as a full vegetative cover is an important design factor. The rim of swale outlets shall be set 4 to 6 inches above the swale bottom, to allow for sediment capture and storage. This storage area shall not be accounted for in the final calculation and design of the regional detention pond due to the use of underdrains.



GRASSED SWALE TREE RECOMMENDATIONS

Class 1 (Small Species):

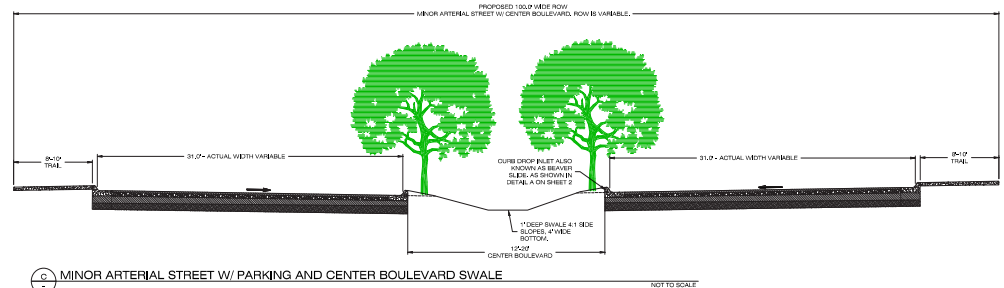
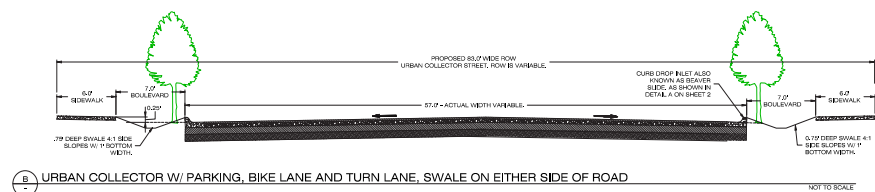
Snowcloud Serviceberry, Hawthorn, Cultivars Including: Cockspur and English, Crabapple, Cultivars Including: Prairiefire, Springsnow, Sugartyme, and Thunderchild

Class 2 (Medium Species):

Subapline Fir, Hedge Maple, Freeman Maple, River Birch, European Hornbeam, Katusura Tree, Yellowwood, Filbert, Honeylocust, American Hornbeam

Class 3 (Large Species)

Black Spruce, Siberian Spruce, Sycamore, Bur Oak, Valley Forge American Elm



URBAN STORMWATER TRANSECT

The urban stormwater management transect approach promotes traditional neighborhood design and at the same time develops an environmentally friendly strategy to manage stormwater. A sample toolset for addressing stormwater runoff is introduced here. The tools are broken down into four categories: paving, channeling, storage, and filtration. Each category has three options representing some typical conditions. The tools can be used jointly at different scales.

More Urban

Less Urban

PAVING

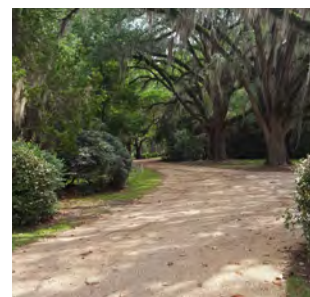
Paving plays a large role in receiving, producing, and directing stormwater runoff. Sturdy materials are oftentimes less permeable. Paving in dense urban areas requires a larger traffic load, thus they are less pervious.



Concrete



Concrete Paver Block



Crushed Stone/Shell

CHANNELING / TRANSPORT

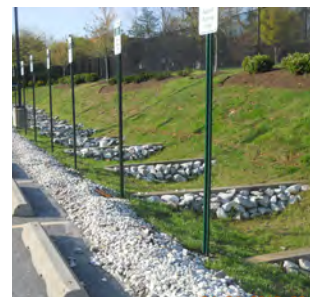
Channeling directs and controls the flow of stormwater. Channeling tools should consider the amount of impervious surface and pedestrian movement. Some tools have the potential to create artful expressions with stormwater.



Planting Strip Trench



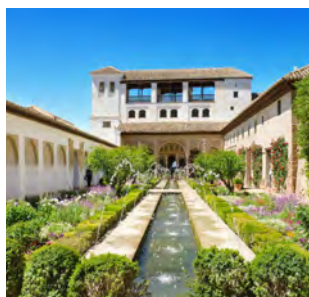
French Drain



Vegetative/Stone Swale

STORAGE

Many kinds of tools could be applied to collect and store stormwater. Storage tools are utilitarian for the development process.



Pool & Fountain



Landscape Tree Well



Retention Basin

FILTRATION

The goal of filtration tools is to mimic the natural system to reduce and remove contaminants in stormwater. Filtration tools can also serve as an amenity when they are well integrated into a design.



Green Roof



Bioretention Swale

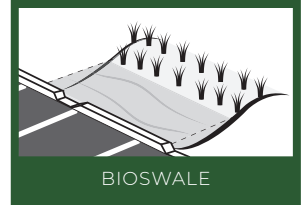


Filtration Pond

GREEN INFRASTRUCTURE TOOLKIT

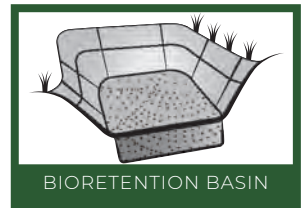
BIOSWALES

Bioswales are linear landscape elements designed to convey runoff. Typically bioswales are vegetated and provide water quality treatment. Bioswales designed with pretreatment facilities will perform higher filtering function and will require less maintenance over time.



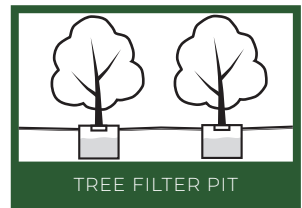
BIORETENTION BASINS

Bioretention basins are depressions in the landscape designed to collect and filter stormwater. A more highly engineered rain garden, bioretention basins typically have pretreatment forebays, perforated pipe underdrains, and special soils that help filter and enhance infiltration.



TREE FILTER PITS

Tree filter pits use stormwater runoff for irrigation. Primarily a water quality practice, runoff enters the systems from a deep sump inlet structure as a form of pretreatment. Stormwater is stored in the gravel reservoir below ground which allows the tree roots to soak up runoff.



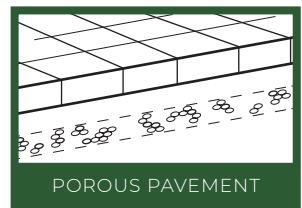
STORMWATER PLANTERS

Raised planters are ideal stormwater solutions for projects with space constraints adjacent to buildings. Roof runoff is diverted via downspouts into above-ground planters where microbes in the soil and around plant roots help to filter runoff before overflow into the storm system.



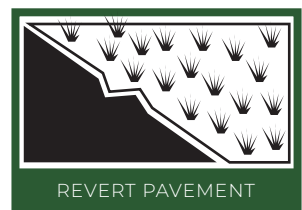
POROUS PAVEMENT

A range of free-draining alternatives to typical impervious bituminous pavement and concrete are available, such as pervious concrete, porous asphalt, pervious pavers, and structured grass. Proper design of the system base and review of the existing sub base for infiltration capacity is required.



REVERT PAVEMENT TO GREEN SPACE

Often the simplest and most cost-effective green infrastructure retrofit, "grey to green" interventions replace extraneous pavement with planted landscape, including tree planting if possible.



GREEN TRANSPORTATION

TRANSIT

As the Mullan Area develops into new neighborhoods, having a variety of transportation options is essential to reduce the number of car trips on the roadway network. Convenient transit service connecting the area to Downtown and the rest of Missoula was recognized during the virtual charrette as a priority.

BUILD AT TRANSIT-READY DENSITIES

Transit becomes a viable means of getting around when the places it serves are walkable - small blocks sizes, sidewalks, mix of uses, etc. The plan for the Mullan Area sets the stage for transit-ready, walkable neighborhoods with a residential density in the range of what is generally considered the base for supporting transit (14 units to acre minimum).

EXPAND THE TRANSIT TAX DISTRICT

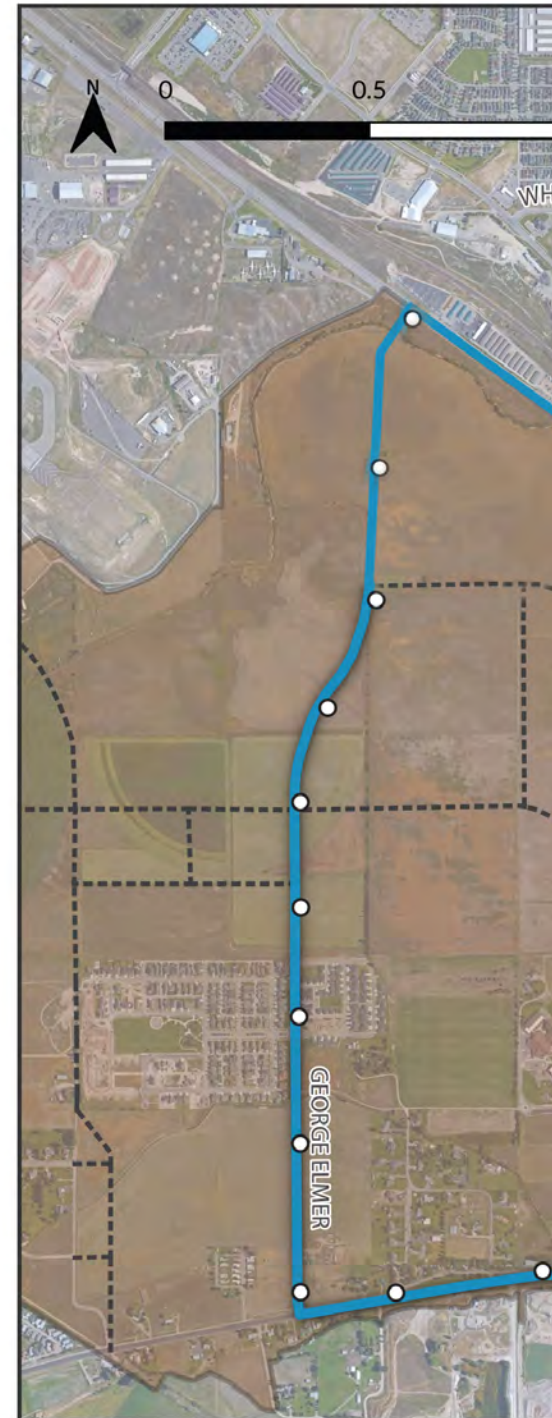
To pay for the extension of quality transit service to serve the area, the Missoula's Urban Transportation District (MUTD) tax boundary should be expanded to include the entirety of the Mullan Area.







EXTEND TRANSIT SERVICE

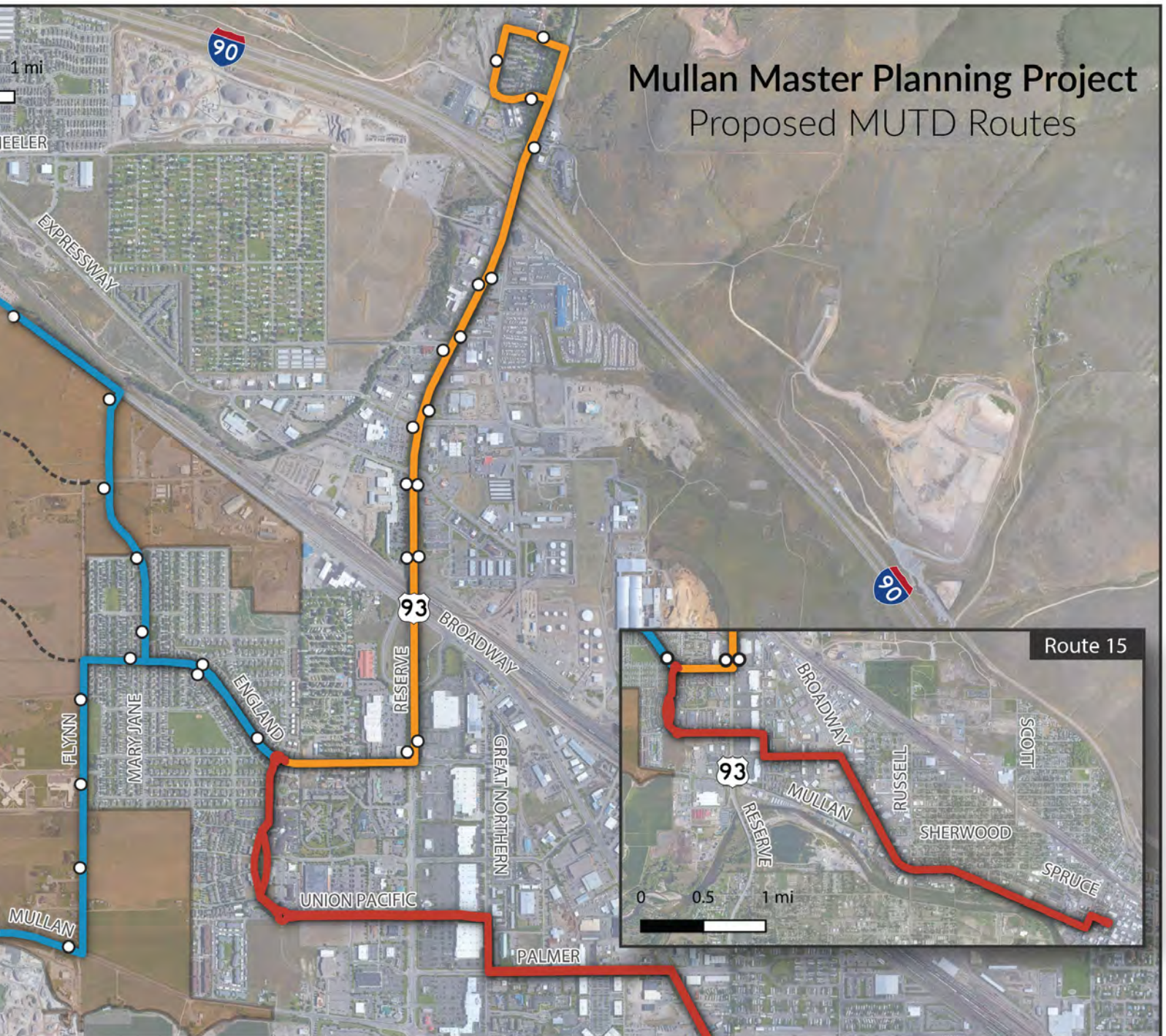
In the short term, existing Mountain Line routes should be extended to serve the Mullan Area. As the area builds out and revenues increase in the expanded MUTD, higher frequency transit service should be implemented, such as Bus Rapid Transit (BRT) service, to connect Missoula International Airport to Downtown and Midtown via the Mullan Area and Reserve Street.

ELECTRIC VEHICLE (EV) CHARGING STATIONS

The number of Electric Vehicles (EVs) on the road is growing every year, and so is the need for charging locations. To support the use of electric vehicles, all private and shared parking spaces for residential units should be designed and built with rough-in and conduit for electric vehicle charging ports. Additionally, at least 10% of commonly shared parking spaces in surface lots and garages should also be built with rough-in and conduit.



	Route 15 (15-Min)		New Bus Stop
	Route 15A (30-Min)		Mullan
	Route 15B (30-Min)		Mullan



is Stop
BUILD Roads
Master Planning Area

Route	New Buses	New Bus Stops	Total Capital Cost	Additional Annual Operating Cost
15	1	0	\$900,000	Revenue neutral with changes to Routes 2, 11, & 14
15A & 15B	3	38	\$3,045,400	850k - \$1 million

(preliminary draft for review)

RENEWABLE ENERGY & GREEN BUILDING

RENEWABLE ENERGY

All new residential, mixed-use, and industrial buildings should include accessory solar energy systems. These can include building-mounted, ground-mounted, or parking canopy systems. Geo-thermal is also to be permitted on all sites.

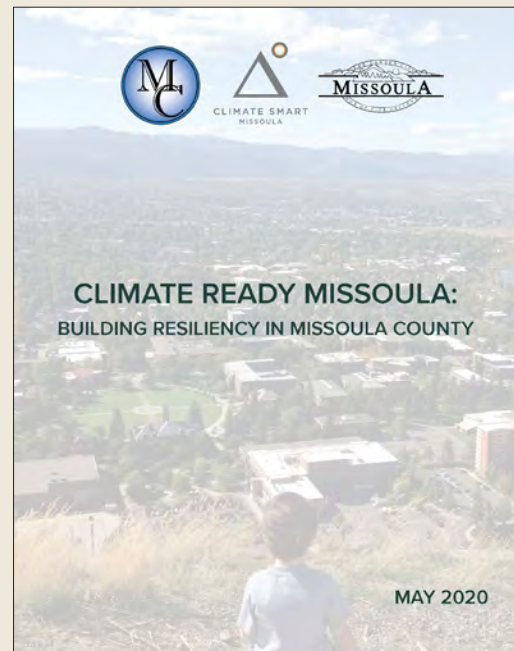
GREEN BUILDING

Buildings should be built of “green” building materials. “Green” materials can correspond to the following criteria: produced locally or salvaged, recycled and/ or recyclable; rapidly renewable; durable; containing a low embodied energy; manufactured in a less environmentally hazardous or toxic manner; for wood, certified in accordance with the Forest Stewardship Guidelines for environmentally responsible forest management; for refrigerants and fire suppression devices, not containing CFCs or Halon gas. Common “green” materials include cement/wood fiber composite siding, cellulose insulation, glue-lam beams, and concrete with fly ash content.

CLIMATE READY MISSOULA

The Climate Ready Missoula plan was adopted by the Missoula County Board of Commissioners and City Council in May 2020. Development of the Mullan Area should follow the Guiding Principles and seek to implelement it's goals and strategies.

- 1. COLLABORATE AND THINK HOLISTICALLY.**
- 2. PRIORITIZE EQUITY.**
- 3. ACT WITH, NOT FOR.**
- 4. DRAW ON TRADITION AND CULTURE.**
- 5. USE SCIENCE.**
- 6. VALUE NATURAL PROCESSES.**
- 7. DON'T EXACERBATE THE PROBLEM.**
- 8. BUILD ON
PAST WORK.**
- 9. BALANCE IMMEDIATE AND LONG-TERM NEEDS.**
- 10. CONSIDER COSTS AND BENEFITS.**
- 11. FOCUS ON PREVENTION.**
- 12. INNOVATE AND ADAPT.**



TEN MEASURES OF SUSTAINABLE DESIGN

The linked domains of sustainability are environmental, economic, and social. Sustainable design is a collaborative process that involves thinking ecologically—studying systems, relationships, and interactions—in order to design in ways that remove rather than contribute stress from systems. True sustainable design is beautiful, humane, socially appropriate, and restorative.

1. Sustainable Design Intent & Innovation

Sustainable design is rooted in a mind-set that understands humans as an integral part of nature and responsible for stewardship of natural systems. Sustainable design begins with a connection to personal values and embraces the ecological, economic, and social circumstances of a project. Architectural expression itself comes from this intent, responding to the specific region, watershed, community, neighborhood, and site.

2. Regional / Community Design & Connectivity

Sustainable design recognizes the unique cultural and natural character of a place, promotes regional and community identity, contributes to public space and community interaction, and seeks to reduce auto travel and parking requirements.

3. Land Use & Site Ecology

Sustainable design reveals how natural systems can thrive in the presence of human development, relate to ecosystems at different scales, and creates, re-creates, or preserves open space, permeable groundscape, and/or on-site ecosystems.

4. Bioclimatic Design

Sustainable design conserves resources and optimizes human comfort through connections with the flows of the bioclimatic region, using place-based design to benefit from free energies—sun, wind, and water. In footprint, section, orientation, and massing, sustainable design responds to the site, sun path, breezes, and seasonal and daily cycles.

5. Light & Air

Sustainable design creates a comfortable and healthy interior environment while providing abundant daylight and fresh air. Daylight, lighting design, natural ventilation, improved indoor air quality, and views, enhance the vital human link to nature.

6. Water Cycle

Recognizing water as an essential resource, sustainable design conserves water supplies, manages site water and drainage, and capitalizes on renewable site sources using water-conserving strategies, fixtures, appliances, and equipment.

7. Energy Flows & Energy Future

Rooted in passive strategies, sustainable design contributes to energy conservation by reducing or eliminating the need for lighting and mechanical heating and cooling. Smaller and more efficient building systems reduce pollution and improve building performance and comfort.

8. Materials, Building Envelope & Construction

Sustainable design promotes recycling through the life of the building. Using a life cycle lens, selection of materials and products can conserve resources, reduce the impacts of harvest / manufacture / transport, improve building performance, and secure human health and comfort. High performance building envelopes improve comfort and reduce energy use and pollution.

9. Long Life, Loose Fit

Sustainable design seeks to optimize ecological, social, and economic value over time. Materials, systems, and design solutions enhance versatility, durability, and adaptive reuse potential. Sustainable design begins with right-sizing and foresees future adaptations.

10. Collective Wisdom & Feedback Loops

Sustainable design recognizes that the most intelligent design strategies evolve through shared knowledge within a large community. Lessons learned from the integrated design process and the site and buildings themselves over time should contribute to building performance, occupant satisfaction, and the design of future projects.

“Definition of Sustainable Design” American Institute of Architects’ Committee on the Environment

BIG IDEA 4:

SAFE, COMFORTABLE, AND INTERESTING STREETS FOR ALL

The ability to bike and walk safely in the Mullan Area is a clear priority to Missoula residents, business owners, and stakeholders. Envisioned as a walkable urban place, streets in the Mullan Area should prioritize pedestrians and bicyclists, along with accommodating transit and motorists.

The plan for the Mullan Area can help the City and County in reaching Missoula MPO's ambitious mode share goals of reducing the number of driving trips. With walking and biking as safe and comfortable means for getting around, many trips within the Mullan Area can be made without driving. A robust shared-use path and trail network is proposed within the Mullan Area with connections to Missoula's well used shared-use path network, a critical component of regional mobility. Expanded transit service is also proposed to tie the Mullan Area to the rest of the Missoula Region, including Downtown.

Occupying anywhere from 25 to 35 percent of the city's developed area, streets make up most of the public space experienced by people on a daily basis. As such, they should be designed as the important spaces that they are.



This street with a shared-use path offers a safe, comfortable, and interesting experience to those using it, whether walking, on two wheels or four.

1 Design Streets for Walking and Biking: Key element of this Big Idea. Each of these will be expanded in this section.

2 Context Sensitive: Streets will be designed according to the context and land uses surrounding.

3 Design for People: Streets will be design with pedestrian safety and walkability first.

4 Street Trees: Street trees can provide shade, value, placemaking, as well as a variety of sustainability benefits.



STREET DESIGN

STREETS OF BOTH CAPACITY & CHARACTER

Streets can be beautiful places. Buildings and street trees give the space a sense of enclosure. Proper proportions and details create a comfortable space to be in that operate harmoniously together.

Streets are also for mobility, providing a *right-of-way* to get from where we are coming from to where we are going. How streets function should be based on a continuum, from pure mobility, such as an interstate highway, to a destination itself with strong economic and social functions, such as a pedestrian-only shopping street, like Pearl Street in Boulder, for example.

In walkable neighborhoods, streets must provide a mix of mobility and placemaking. They need to be great addresses and provide access to businesses and residences. They must also be spaces for socializing, commerce, dining, gathering, vending, and celebrating.

Community character is a major concern to the residents of Missoula and this applies to streets as much as to the development that lines them. Missoula's tree-lined streets are defining feature of some of the City's most popular neighborhoods.

Designing and building great streets can be a challenging task, balancing the priorities of many stakeholders and agencies. A great deal of this plan is devoted to designing streets as public spaces. This section provides guidance on turning streets into spaces where people want to be. And getting it right largely depends on following a context-based design approach.

CONTEXT SENSITIVE STREET DESIGN

There are two dimensions to classifying streets for design, functional classification and context area type. Functional classification refers to typical engineering languages such as highways, arterials, collectors, or local roads. The context area type refers to the type of place in which the road traverses. Both aspects need to be considered when looking for the appropriate design of a street and its surrounding context.

The function of context-based street design is to balance the multiple and sometimes competing demands placed on streets. The context describes the physical form and characteristics

of a place, interpreted on a block-by-block basis for thoroughfare design. What happens within the bounds of the right-of-way should largely be determined by the setting of private development laying outside of the right-of-way lines.

Context-based awareness, such as through the development of this Master Plan, will result in careful planning and effective implementation of the street network based on clear and lean plans and regulations. This plan for new neighborhoods will lead to successful placemaking when the transportation system is designed in harmony with the future vision.

To achieve the community's multiple goals of vibrant nodes of commerce and community, sustainable and affordable housing, and walkability, new street standards will be needed with the following features:

- Lower target speed;
- Shorter curb radii;
- On-street parking; and,
- Narrower travel lane widths.

To reduce congestion, public transit, bikeways, sidewalks, and mixed-use zoning and land use patterns that allow people to walk between destinations rather than drive should be explored.

It is not surprising that, given their multiple roles in urban life, streets require and use vast amounts of land. In the United States, 25 to 35 percent of a city's developed land is likely to be in the public right-of-way, mostly streets. If we can develop and design streets so that they are wonderful, fulfilling places to be, community building places, attractive public places for all people of cities and neighborhoods, then we will have successfully designed about 1/3 of the city directly and will have an immense impact on the rest.

- Allan Jacobs, Great Streets

STREETS FOR WALKING

Towns and cities across the country are in the process of creating new neighborhoods that are both walkable and accessible. Strategies that make the Mullan Area easier to navigate on foot or bicycle will also make the area more livable and attractive. Most transportation corridors should be more than just roadways for cars. They should be designed to reflect a balance between many modes of transportation and the surrounding land uses.

COMPLETE STREETS

“Complete Streets” is a concept for streets designed to enable safe access and mobility for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. Where gaps in the bicycle and pedestrian networks exist, effective and safe circulation is hindered. In key locations, such as neighborhood centers and near schools and parks, a well-connected network is especially important. All streets within the Mullan Area should be prioritized for complete streets treatments.

SPEED MANAGEMENT

Another important aspect of walkability and public safety involves reduced traffic speeds and the use of traffic calming devices. The speed of vehicles is a critical component of pedestrian safety and comfort. A pedestrian involved in a collision with a vehicle has a 95% chance of survival if the car is traveling at 20 miles per hour; there is a 10% chance of pedestrian survival if the car is traveling at 40 miles per hour. Pedestrian-friendly speeds are typically 20-25 miles per hour and are no more than 30 miles per hour.

Furthermore, many of the key design criteria for streets that are safe and comfortable for pedestrians and bicyclists, as well as for streets that are beautiful, such as lane widths, tree placement, and curb radii, are dimensions stipulated in the design manuals as factors of speed. With slower speeds, acceptable lane widths decrease and the space between street trees and the curb are reduced. Designing for slower speeds is critical for creating streets that actually encourage motorists to travel at lower speeds rather than relying on signage and posted speed limits alone. The geometry of the street has a much greater affect on motorist behavior.

SIDEWALKS

Wide and continuous sidewalks allow for active, safe, and healthy lifestyles. Properly-designed pedestrian networks accommodate persons with disabilities, the elderly, and children who walk to school and other places.

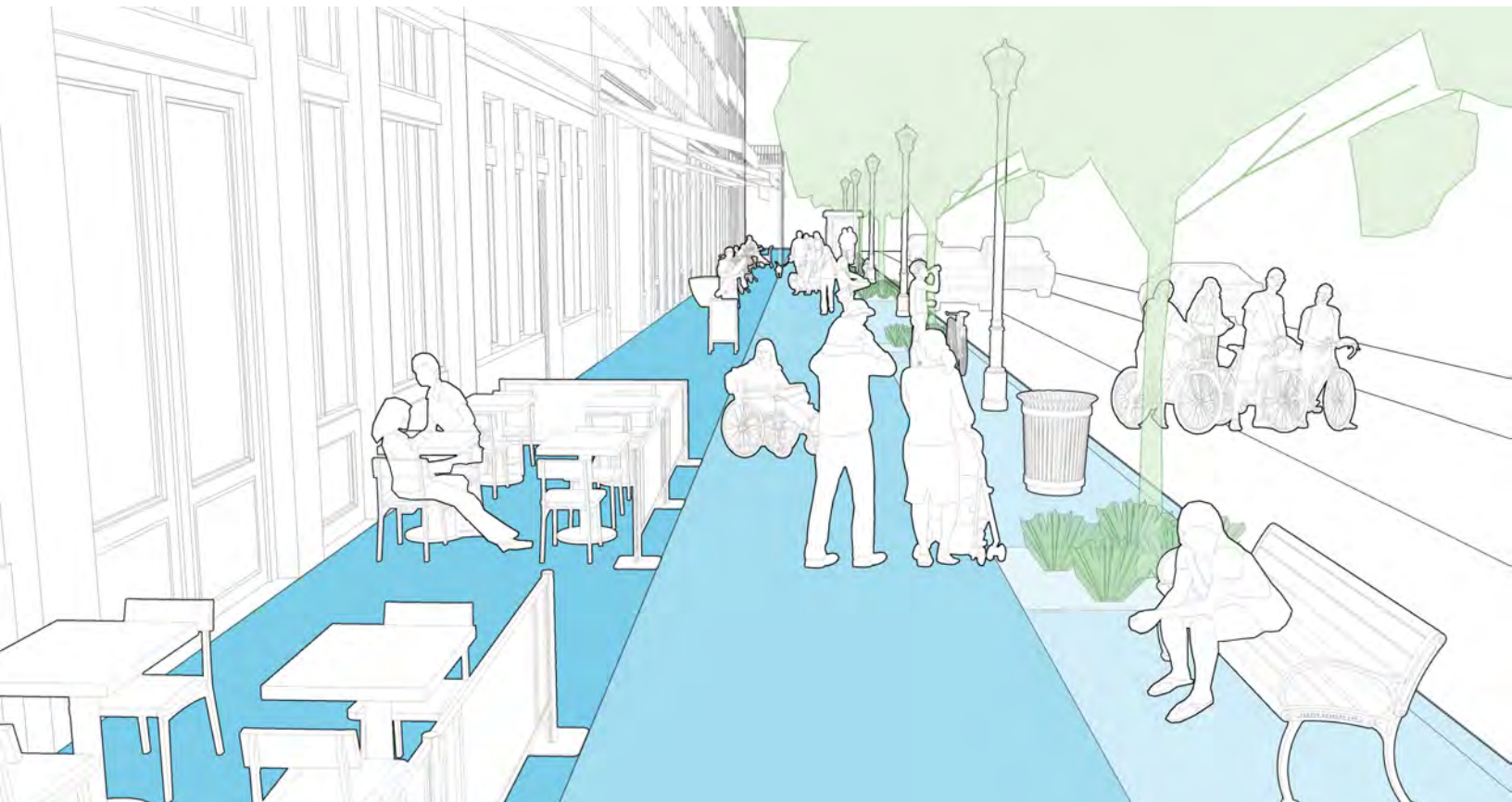
For walking to become a regular, acceptable, and dignified means of transportation in the Mullan Area, all streets should include sidewalks or other types of walkways. Sidewalks must also be comfortable places to make walking an inviting means of getting around. Sidewalks should be lined with street trees that have shade-providing canopies or covered with galleries and arcades. The street trees should be planted between the sidewalk and edge of pavement to provide a buffer between motor vehicles and pedestrians. All sidewalks should have a minimum clear zone of six feet, which should be wider along busy shopping or entertainment destinations.



SIDEWALK DESIGN GUIDE

DESIGN FOR PEOPLE

A special focus should be placed on the design of sidewalks, both as a space for travel and as a place for social and economic activity. Sidewalks can be divided into three primary functional zones: the Frontage Zone; the Clear Path; and the Furnishing/Landscape Zone. The purpose of each zone remains consistent across the Mullan Area, but the actual design and dimensions will vary depending on the unique character of each street and block. This design guideline should be applied to streets in the neighborhood centers and centers of activity.



FRONTAGE ZONE

This is the space between the building façade or property line and the clear path. This space supplements the buildings' activities and provides a buffer between pedestrians, building appurtenances, and opening doors. It is the location for seating, signs, retail displays, and landscaping.

CLEAR PATH

This is the portion of the sidewalk dedicated to pedestrian travel. It must be accessible and free of physical obstructions to allow for the movement of people. It should be well-lit and functional.

FURNISHING/LANDSCAPE ZONE

This space serves many functions, varying greatly depending on the type of street. Its primary purpose is to separate the clear path from motorists and provide a location for street furniture and utilities. These may include street trees, benches, storm water elements, lighting, transit stops, bike racks, and signage, to name a few.



STREET TREES & LANDSCAPING

Street trees and landscaping provide many natural, physical, and psychological benefits. They bring nature into the city, add shade in the summer, help shape the street, add character, and provide an opportunity for green stormwater infrastructure.



SIDEWALKS

Sidewalks provide a space for people to travel, gather, relax, meet, and connect with others. They constitute a large portion of a city's public space and should be carefully designed to reflect this and to fit their context.



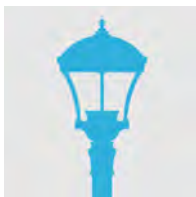
PEDESTRIAN RAMPS

All crossings should have pedestrian ramps to facilitate access to the sidewalk and street for all. Tactile paving strips on sidewalks, station edges, and pedestrian ramps should be provided to facilitate accessibility for people with vision impairment.



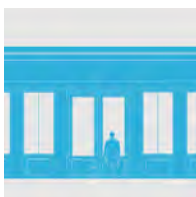
STREET FURNITURE

Public seating should be available for people to rest, linger, and watch the world go by. Private café seating can accompany adjacent businesses and add to the vitality of the street. Other amenities can include recycling and waste receptacles and bike racks.



LIGHTING

Lighting serves both safety and aesthetic purposes. It should be pedestrian-scaled and create a feeling of comfort without being overly bright and contributing to excess light pollution. The lighting type should be tied to the street's context.



ACTIVE GROUND FLOORS

The relationship between a building façade and the sidewalk is critical to creating a comfortable and inviting place. Building entrances should be frequent and the street-level façade designed to be human-scaled, transparent, and interesting to people traveling at a walking pace.

(preliminary draft for review)



10 STEPS FOR MAKING GREAT STREETS

1. DESIGN FOR PEDESTRIANS FIRST.

Great streets are designed to provide a high-caliber experience for pedestrians foremost; once this is accomplished, great streets generally accommodate a wide range of other modes of travel.

2. PROPORTIONS MATTER.

A street should function as an outdoor room, surrounding its occupants in a space that is welcoming and usable. A 1:3 ratio for building height to street width is often cited as a minimum section for a sense of enclosure. Creating this sense of enclosure involves more than just a narrow street width, however. There are well-defined eight-lane roads just as there are two-lane roads that seem to be impassable. Streets must be sized properly for their use and should be defined with appropriate building sizes. Street trees and features such as lighting also play a critical role in defining the space of the street.

3. DESIGN THE STREET AS A UNIFIED WHOLE.

An essential distinction of great streets is that the entire space is designed as an ensemble, from the travel lanes, trees, and sidewalks, to the very buildings that line the roadway. Building form and character is particularly important in shaping a sense of place. The best streets invariably have buildings fronting them, with a particular height and massing that creates an appropriate sense of enclosure. The random setbacks generated by conventional zoning rarely produce this effect; form-based regulations must be put in place to control building form and placement. Furthermore, urban buildings must front the street with features such as doors, windows, balconies, and porches. These features promote a lively streetscape, and ultimately provide passive security for pedestrians by focusing “eyes on the street.”

4. INCLUDE SIDEWALKS.

Appropriately designed sidewalks are essential for active pedestrian life. Pedestrians will be more willing to utilize sidewalks if they are protected from automobile traffic. One of the simplest ways to buffer the pedestrian is to place street trees between the street and the sidewalk. Other street furniture

such as streetlights, bus shelters, and benches occupy wider sidewalks and provide additional separation between pedestrians and automobile traffic. The width of the sidewalk will vary according to the location. On most single-family residential streets, five or six feet is an appropriate width, but streets with townhouses and multi-family buildings require a more generous sidewalk. On Main Streets, fourteen feet is an ideal minimum sidewalk width, which must never fall below an absolute minimum of eight feet.

All new streets in Thomasville should include sidewalks. Retrofitting existing streets, which is to say adding sidewalks where there aren't currently sidewalks, is often an expensive and time-consuming process. Choose streets for new sidewalks with care based on which streets are most likely to see pedestrians.

5. PROVIDE SHADE.

South Georgia is hot. Pedestrians and cyclists need shady streets and motorists typically prefer them. Shade provides protection from heat and sun and contributes to the spatial definition of a street. Shade can be provided with canopy trees or architectural encroachments over the sidewalk. Canopy trees should be planted in a planting zone between the sidewalk and the street in order to provide continuous definition and shade for both the street and the sidewalk. Architectural encroachments over the sidewalk such as awnings, arcades, and cantilevered balconies are another way to protect pedestrians from the elements and shield storefronts from glare.

6. MAKE MEDIANS SUFFICIENTLY WIDE.

Where divided thoroughfares are unavoidable, medians must be generous enough to serve as a pedestrian amenity. A minimum median width of 8' will accommodate a row of street trees and will provide adequate refuge for pedestrians crossing a wide roadway.

Quite often an 8' median isn't possible. That's okay, the right species can grow in even a 3' median. The tree may never reach its growth potential but it isn't necessary that it does to provide shade and beauty.

"The design of cities begins with the design of streets. To make a good city, you need good streets, and that means streets where people want to be."

- John Massengale, Street Design: The Secret to Great Cities & Towns

7. PLANT THE STREET TREES IN AN ORDERLY MANNER.

Great streets are typically planted with rows of regularly-spaced trees, using consistent species. This formal tree alignment has a powerful effect; it at once shapes the space and reflects conscious design. More importantly, the shade produced by the trees will be continuous enough to make walking viable. Furthermore, the spatial impression of aligned trees also has a traffic calming effect.

8. USE SMART LIGHTING.

Streets should be appropriately lit for automobile and pedestrian safety. Pedestrians naturally avoid streets where they feel unsafe. Widely-spaced, highway-scaled "cobra head" light fixtures do not provide appropriate light intensity and consistency for pedestrian well-being. More frequently-spaced, shorter fixtures are more appropriate and provide light beneath the tree canopy as street trees mature.

9. ALLOW ON-STREET PARKING IN SUITABLE LOCATIONS.

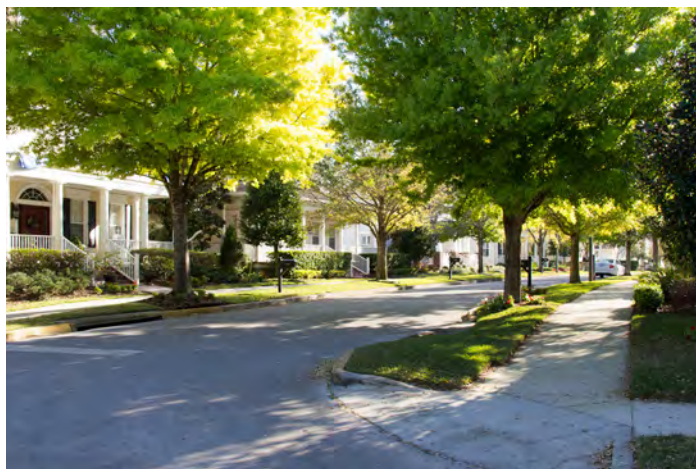
On-street parking buffers pedestrians from moving cars and calms traffic by forcing drivers to stay alert. Parallel parking is the ideal arrangement, because it keeps streets as narrow as possible. Diagonal parking is acceptable on some shopping streets, as is the case along Broad Street in Downtown, as long as the extra curb-to-curb width is not achieved at the expense of sidewalk width. Parking located in front of a street-front business encourages people to get out of their cars and walk and is essential to leasing street-oriented retail space.

10. AVOID PARKING LOTS IN FRONT OF BUILDINGS.

The bulk of a building's parking supply should occur behind the building. The conventional practice of placing surface parking lots in front of buildings results in a disconnected pedestrian environment. If current zoning regulations are reformed to provide "build-to" lines rather than mandatory front setbacks for commercial buildings, parking can be accommodated in the interior of the block. As a result, the pedestrian realm of the sidewalk will be defined by shop fronts and building entrances rather than parking lots.



Clematis Street, West Palm Beach, FL



Baldwin Park, Orlando, FL



Downtown Missoula, Montana

DESIGNING FOR BICYCLISTS

BICYCLE FACILITIES

Missoula has a strong local bike culture for both recreation and commuting. The City has a robust network of shared-use paths and on-street bike facilities that are well used year round, and the network is growing. To continue to support the network growth and ability to travel around Missoula safely on two-wheels, an on-street and off-street bicycle network has been included in the plan for the Mullan Area. It is also important to address safety for riders of all-abilities and continue filling in gaps in the existing bicycle and trail network. Riding a bicycle or crossing a street should not require bravery. Separated, buffered bike facilities, improved intersections, secure bicycle parking, and ADA compliant sidewalks are all ways to address these common concerns.

There are many varieties of bicycle facilities. With the flexibility afforded by a new development, the Mullan Area Master Plan prioritizes the safest and most comfortable facility types to expand bicycling as a viable means of transportation to as wide a range of people as possible.



SEPARATED BICYCLE LANES

Separated bicycle lanes (also known as protected lanes or cycle tracks) offer significant improvements in safety performance over other on-street bicycle facilities, including buffered lanes. Raised cycle tracks are bike facilities that are vertically separated from the roadway. Sometimes they occur at the plane of the sidewalk, often with a furnishing zone or planting strip between the cycle track and the roadway, and sometimes they are placed at an intermediate height between the road and the sidewalk. At intersections, they may be dropped and merged with the street or continue on the sidewalk, where they cross with pedestrians.

Raised cycle tracks / Separated bicycle lanes are more attractive to a wider variety of cyclists and have been documented to offer other benefits as well, including increased rates of bicycling activity and increased storefront sales revenues. Some of these sales increases are associated with reduced vehicle speeds and improved street appearance, in addition to the effects related to increased cycling activity. Raised cycle tracks / separated bike lanes are proposed for all to-be-constructed streets that are part of the BUILD Grant. They are also proposed for other major through-going streets and as connections between gaps in the off-street shared-use path network.



BUFFERED BICYCLE LANES

A buffered cycle track offers some protection from moving traffic in the form of a buffer space between the edge of the bike lane and the edge of the vehicular travel lane. The buffer helps encourage more cyclists to use the facility. If the buffer is three feet or wider, the interior should have diagonal cross-hatching or chevron markings. Narrower buffers can be marked with two solid white lines, which also helps discourage crossing.



TWO-WAY CYCLE TRACK

Two-way cycle tracks are physically separated cycle tracks that allow bicycle travel in both directions on one side of the road. They can be designed as a protected cycle track, at the street level with a parking lane or other barriers between bikes and vehicles, or as a raised cycle track with the track separated vertically from the roadway.

The benefits of a two-way cycle track are that they are attractive to a wide range of cyclists, they reduce the risk and fear of collisions, they allow for contra-flow bike travel on one-way streets, and they can have lower implementation costs. They work best on streets with fewer driveways and cross-streets on one side.



SHARED-USE PATH

Shared-use paths are a type of trail designed to provide off-road routes for many different users including cyclists, runners, pedestrians, and manual or motorized wheelchair users. While similar to other recreational trails, these paths are part of a larger transportation system and serve as a supplement to on-street bike lanes, shared roads, and paved shoulders.



SHARED LANE MARKINGS

Shared routes are typically located in compact or urban areas, at the center of a neighborhood, town, or city. They are often marked with a sharrow, a marking indicating that the travel lane is to be shared by cars and bikes.

Shared routes work best on streets with low design speeds, where car traffic moves slowly and parallel parking lines each side of the street. Travel lanes are typically narrow in this setting (10 feet) and street trees help provide a sense of enclosure. Cyclists and pedestrians have priority while motorists are also permitted to travel.

OTHER DESIGN COUNTERMEASURES

Numerous design features may also be applied to streets to increase the visibility and safety of existing and proposed bicycle and shared-use path facilities. These include bicycle boxes, bicycle detection, signal heads, wayfinding and informational signs, and bicycle refuge islands.

WINTER MAINTENANCE

Separated bike lanes are growing in popularity and can be found across cities where snow is a common winter occurrence. Maintaining these facilities to operate year-round requires the right equipment and a winter maintenance plan, just as is necessary for keeping general motor vehicle lanes free of snow and ice.

Separated bike lanes are typically too narrow for standard snow removal equipment used on streets. Cities rely on small all-terrain or mini-loader vehicles instead for sweeping and plowing separated bicycle lanes, as well as sidewalks. For small accumulations of snow, typically under two inches, a power broom can be used to clear the lanes. For larger accumulations, plows are necessary.

Snow storage is the more difficult issue when it comes to maintaining operable bikeways during winter storm events. Snow can be pushed to the sidewalk's landscape/furnishing zone or the adjacent landscaped boulevard, if existing. Where these options are not available, or the amount of snow is too great, the snow will need to be transported elsewhere. The bikeway network must also be kept clear of ice. Typical methods of doing so involve the use of salt, aggregate, and brine treatments. Magnesium chloride is used effectively in Denver.

Just as the City has a plan and prioritization for street plowing, it should have one for bike facilities. This plan needs to prioritize which facilities get cleared first and when, in coordination with what is happening on the general motor vehicle lanes to ensure any snow that is pushed from the rest of the street into the bikeway gets cleared. This plan should be made publicly available so residents know which routes they can depend on. This plan should include the following:

- **Priority Network** – Have a network of priority bike facilities. These will be the ones that are cleared first and the ones that people can rely on when planning their routes.
- **Frequency of Clearing** – Snow clearing should begin after a certain accumulation of snow, typically one inch. Some cities will clear their bikeways within a certain amount of time after the snow event instead.
- **Clear Width** – Establish the minimum width that must be cleared to allow an operable protected/separated lane. This should be four feet minimum. This is important to allow the length of operable bikeway network to be increased before going back and clearing the rest of the width of the bikeway.



(preliminary draft for review)

The Milwaukee Trail in
Missoula, cleared of snow

NOT JUST BIKE PLANNING | LOW-SPEED MOBILITY MODES

Urban transportation in the US has evolved rapidly over the past decade. Key emerging trends have included the arrival of bike share, followed by dockless bike share, affordable e-bikes, and rented electric scooters. These low-speed mobility modes have tapped into significant latent demand for local travel that, at up to 15 mph, exceeds walking speeds but does not require driving.

The development of low-speed, motorized mobility offers significant potential benefits for Missoula in reaching its mode share goals, but presents safety challenges as well. Scooters and e-bikes should not be allowed to operate on busy sidewalks, as they negatively impact pedestrian safety and convenience. However, they also present a safety challenge on higher-speed streets where they are too slow and vulnerable to mix safely with higher-speed vehicular traffic. In this way they echo the challenges of providing for safe bicycling and, in fact, are more compatible with bicycling than with any other travel modes. Low-speed mobility modes should be incorporated into the planning for bicycle facilities and provisions for parking or otherwise storing these vehicles should be provided.

TRAIL-ORIENTED DEVELOPMENT

A somewhat recent phenomenon across the country is new homes and businesses fronting and focusing along trails, something that can be called trail-oriented development. This is occurring in small towns, such as Winter Garden, Florida, medium sized cities including Madison, Wisconsin, and large cities like Atlanta. Businesses and residences in locations like these place a building frontage along the trail with the trail as the primary access and driving economic force for the development. The trail is the focal element of these developments, in which buildings engage the trail as they would a walkable street with shopfronts and residential entrances.

Example of Trail-Oriented Development along the West Orange Trail, Winter Garden, FL



(preliminary draft for review)

INTERSECTION DESIGN

MODERN ROUNDABOUTS

A modern roundabout accommodates traffic flow and capacity while creating a greater sense of place and allowing safer conditions for pedestrians. Walkability at a roundabout is increased because traffic speeds are lower as vehicles approach and exit the roundabout, and pedestrians have fewer lanes of traffic to cross at one time. Roundabouts provide a greater sense of place because of their distinctive design and greater opportunities for urban design. A sculpture, fountain, or tree can be placed in the center of the roundabout, although care must be taken to preserve adequate sightlines.

Modern roundabouts allow pedestrians and bicyclists to maneuver through the intersection (see detail at right). An appropriately low speed is key to pedestrian safety elements in roundabout design. Bicyclists are sometimes concerned about travel through a roundabout, especially if they have experience with the much larger and faster traffic circles found in New England. In fact, modern roundabout intersections are safer for bicyclists than traffic signals, due to slower traffic speeds.

PEDESTRIANS

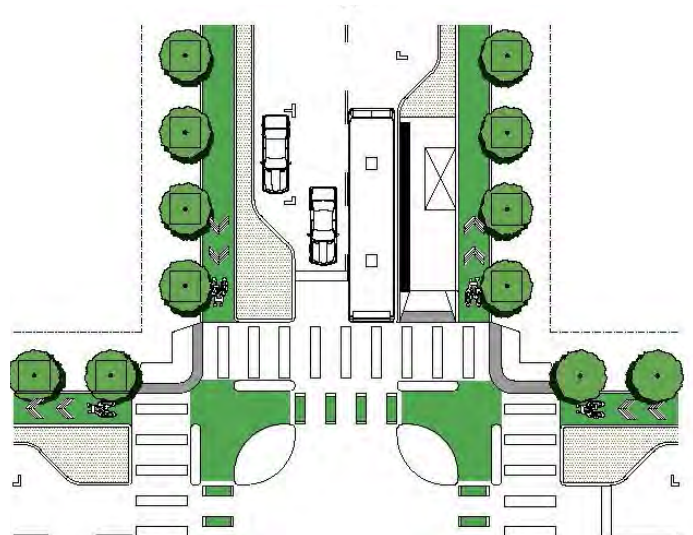
Roundabouts are designed to achieve a consistent, low vehicle speed (15 to 25 mph) to minimize crash potential. When traffic volumes are light, many gaps are available for pedestrian crossing. When vehicle volumes are high, more vehicles pause at the yield line, allowing pedestrians to cross safely behind the first vehicle. The pedestrian crosswalk should occur one car length back (approximately 20 feet) from the yield line to place the pedestrian safely in view of the second waiting vehicle's driver.

BICYCLISTS

Entering and circulating at 25 mph or less, automobiles can easily share space with bicycles traveling through a roundabout. To traverse the roundabout, the cyclist simply travels through in the vehicle lane just like an automobile. Cyclists who are uncomfortable sharing the road with automobiles may, alternatively, use the sidewalk system as if a pedestrian.

BIKE FRIENDLY INTERSECTIONS

While separated and raised cycle tracks provide a safe and comfortable place for biking, the benefits they afford can be lost at intersections. Protected intersections should be utilized along the Mullan Area's separated bike network. Protected intersections keep bicycles physically separate from motor vehicles up until the intersection. They also provide shorter, safer crossings for people walking. Where there are not enough space for a full protected intersection, a dedicated intersection or turn queue box should be provided. At minor street crossings, compact corners, raised crosswalks, and bikeways can provide a safer crossing.



BIG IDEA 5:

DECIDE WHAT YOU WANT AND CREATE A CLEAR PATH FOR GETTING THERE

It can be challenging to create a consistent plan across a large area with many property owners and stakeholders, not to mention multiple municipal jurisdictions. But that is just what Missoula County and the City of Missoula set out to do. Through the planning in public process, a consensus-vision was created with residents, land owners, developers, environmental groups and various City and County departments.

A new new process is needed to implement the vision and to orchestrate public and private operations. New zoning and rules that allow builders to respond to the market needs to be created. This also needs to streamline the permitting process (annexing and rezonings are rigorous) and create predictability in approvals, cost-sharing, and timelines.

This Master Plan outlines the vision for what the community would like to see for the area. The Form-Based Code will set the path for getting there.

DIVISION 3

(preliminary draft for review)

TRANSECT STANDARDS



SECTION 3.4 (T5) MIXED TRANSECT ZONE STAND

A. Overview

This district forms the center of most walkable m is placed here on optimizing the physical charac for increased walkability. This Transect Zone perm of uses with buildings located close to the sidewa and parking lots screened from public view. Buil the tallest here, consistent with Federal Aviation , to create landmark defining features and termin



Figure 3-1: Illustrative example of buildings and

3-6

MULLAN TRADITION

B. Examples



Mixed-use buildings and apartments up to four stories can be located in this zone.



The shallow build-to-zone locates buildings at the sidewalk.



Large shopfront windows provide interesting views for pedestrians.



Smaller scale buildings occupy the sidewalk.



Larger and more modern buildings closer to the sidewalk.



Two and three story residential buildings.

MULLAN TRADITIONAL NEIGHBORHOOD DEVELOPMENT FBC • DRAFT

A Form-Based Code is a land development regulation that fosters predictable built results and a high-quality public realm

(preliminary draft for review)

A Form-Based Code is a land development regulation that fosters predictable built results and a high-quality public realm by using the physical form of streets, buildings, and public spaces as the organizing principle for development.

(preliminary draft for review)

DIVISION 3
TRANSECT STANDARDS

T5

D. Parking

Key

- Frontage/Property Line
- Setback Line
- Parking Area

a. Parking Locations (Distance from Property Line)

Front Setback	30' min.	1
Side Street Setback	5' min.	2
Side Setback	0' min.	3
Rear Setback	5' min.	4
Rear Setback	0' min. (When Adjacent to Alley)	5

¹ Parking Location applies to location of garage or parking lot

b. District-Specific Parking Requirements

Parking shall be provided as established in Section 4.1

Parking shall be located behind the Front Façade of buildings and accessed from Rear Alleys or Side Streets whenever possible.

Streetscreens, Garden Walls, fences, or hedges are required along all un-built Street Right-of-Ways adjacent to parking.

Parking / Driveway Curb Cut Width	20' max. (2 way)	6
	12' max. (1 way)	7

E. Encroachments

Key

- Frontage/Property Line
- Setback Line
- Build-to-Zone (BTZ)
- Encroachment Area

a. Allowed Encroachments

Balconies, Bay Windows, Awnings, and Other Frontage Elements

Front	12' max.	1
Side Street	8' max.	2
Rear	0' max.	3

Note: When permitted, Frontage Elements may Encroach forward of the Build-to-Zone and/or into the Right-of-Way, barring any additional restrictions by the public entity that has control over the public Right-of-Way. A 6 foot minimum sidewalk clear zone must be maintained. Frontage Elements shall maintain a minimum 2 foot setback from the curb face.

b. Mixed-Use

All buildings must have a Principal Entrance along the Front Façade.

Where a building Façade steps back or is absent from the maximum Setback Line, the Setback Line should be defined by a Streetscreen.

Loading docks, overhead doors, and other service entries shall not be located on Façades facing Streets or across from, or adjacent to, Civic Building Frontages or Civic Open Spaces, and should instead be located in rear service areas.

Frontage Line

BTZ

Frontage Type

ROW

Building

BTZ

1 Story min.¹

4 Stories max.¹

6" max. (Non-Residential)

24" min. (Residential)

14' min. (Non-Residential)

9' min. (Residential)

9' min.

15' min.

Gallery

Stoop

All Permitted Uses Allowed

All Permitted Uses Allowed

3-7

3-8

3-9

05.28.20
MULLAN TRADITIONAL NEIGHBORHOOD DEVELOPMENT FBC - DRAFT 05.28.20
05.28.20

FORM BASED CODING

CREATE AFFORDABLE, COMPLETE NEIGHBORHOODS

Form-Based Coding is one type of regulatory tool used to shape communities and improve existing ones, by establishing a framework of urban contexts, including natural, rural, suburban, and urban areas. Standards for each context or “transect zone” specify the desired character and development forms found along streets and public spaces, and prescribe the physical attributes of development, shaping the physical environment in a predictable way.

The Form-Based Code establishes a detailed set of development standards and procedures with the purpose of creating compact and walkable neighborhoods with ample open space and a diverse range of housing choices. These standards reflect the principles of Traditional Neighborhood Design (TND) and draw upon precedents established by historic neighborhoods and towns.

The basis for creating compact, walkable neighborhoods in this code is the Transect. The Transect is a planning and zoning tool that organizes zones in a continuum from rural to urban, referred to as T1, T2, T3, T4-R, T4-O, and T5. An additional zone is the Special District - Workplace. Each Transect Zone has a different set of characteristics that correspond with building placement, building form, and frontage standards, all of which influence

the neighborhood. The purpose and intent of the Transect Standards is to specify the desired character and development forms found along streets and public spaces, and to prescribe the physical attributes of new development.

The code is further intended to improve predictability in the outcome of future development within the Mullan Area by using a streamlined process of development application review and approval to expedite proposals that fulfill the purposes and intent of the code and conform with its standards.

A Regulating Plan is a site plan that describes the varying character of land within a Neighborhood development, or fragment thereof, within the Mullan Area. Regulating Plans designate a Transect Zone for all development parcels within the Mullan Area Form-Based Code boundary, and Street Types that describe the design of neighborhood Streets. The Transect Zones and Street Types correspond with standards in other code sections.

A sample Regulating Plan is shown on the opposite page, illustrating how the Transect code be applied to the Mullan Area under the Form-Based Code.



The Transect is a planning and zoning tool that organizes zones in a continuum from rural to urban, referred to as T1, T2, T3, T4-R, T4-O, and T5.



Illustrative Regulating Plan for the Mullan Area



**(T4-O/R) NEIGHBORHOOD
GENERAL**



(T5) MIXED-USE CENTER







THE NEIGHBORHOODS

THIS CHAPTER LOOKS AT THE OVERALL VISION FOR THE MULLAN AREA AND THEN ZOOMS IN TO TAKE A CLOSER LOOK AT DESIGN RECOMMENDATIONS FOR EACH NEIGHBORHOOD

1

THE ILLUSTRATIVE PLAN

2

WEST BROADWAY NEIGHBORHOOD

3

FLYNN SQUARE NEIGHBORHOOD

4

GEORGE ELMER CIRCLE NEIGHBORHOOD

5

HIAWATHA FARM NEIGHBORHOOD

6

GEORGE ELMER SQUARE NEIGHBORHOOD

7

MULLAN SQUARE NEIGHBORHOOD

8

NORTH CREEK SQUARE NEIGHBORHOOD

ILLUSTRATIVE PLAN

Change is coming, and thoughtful, deliberative, and inclusive planning improves outcomes.

The Illustrative Plan depicts the proposed streets, buildings, alleys, parking locations, and open spaces of a full future build-out of the Mullan area. Understanding that complete change will not happen overnight, the plan is designed to be implemented one piece at a time, as opportunities arise and landowners are ready to move forward. Although some plan details may change over time to meet physical, regulatory, or market constraints, the main concepts contained in the illustrative plan should be adhered to.

1

PROJECTS IN THE WORKS

The main connecting roads will be funded by the BUILD Grant along with a restoration project for Grant Creek.

2

TOWN CENTER AREAS

Town center areas along Mullan Road and West Broadway Street provide opportunities for mixed-use development, apartments, and retail.

3

PRESERVE FARM AREAS

Hiawatha Farm, Dougherty Ranch, Flynn Ranch, and the community farm preserve the historic farming of the area while providing food for the local community.

4

PARKS & CIVIC SPACES

Large park space for activities like soccer or baseball need to be preserved while also creating smaller neighborhood parks to enjoy as part of a stroll, visit a playground, or see nature.





(preliminary draft for review)

THE NEIGHBORHOODS

WEST BROADWAY NEIGHBORHOOD

A TOWN CENTER

West Broadway Square can be a center of activity for the entire Mullan area. Building off of the existing neighborhoods and activity at the future Veterans Hospital this area can provide restaurants, a corner store, and other neighborhood commercial activities without the need to travel to the much busier Reserve Street or even farther afield.

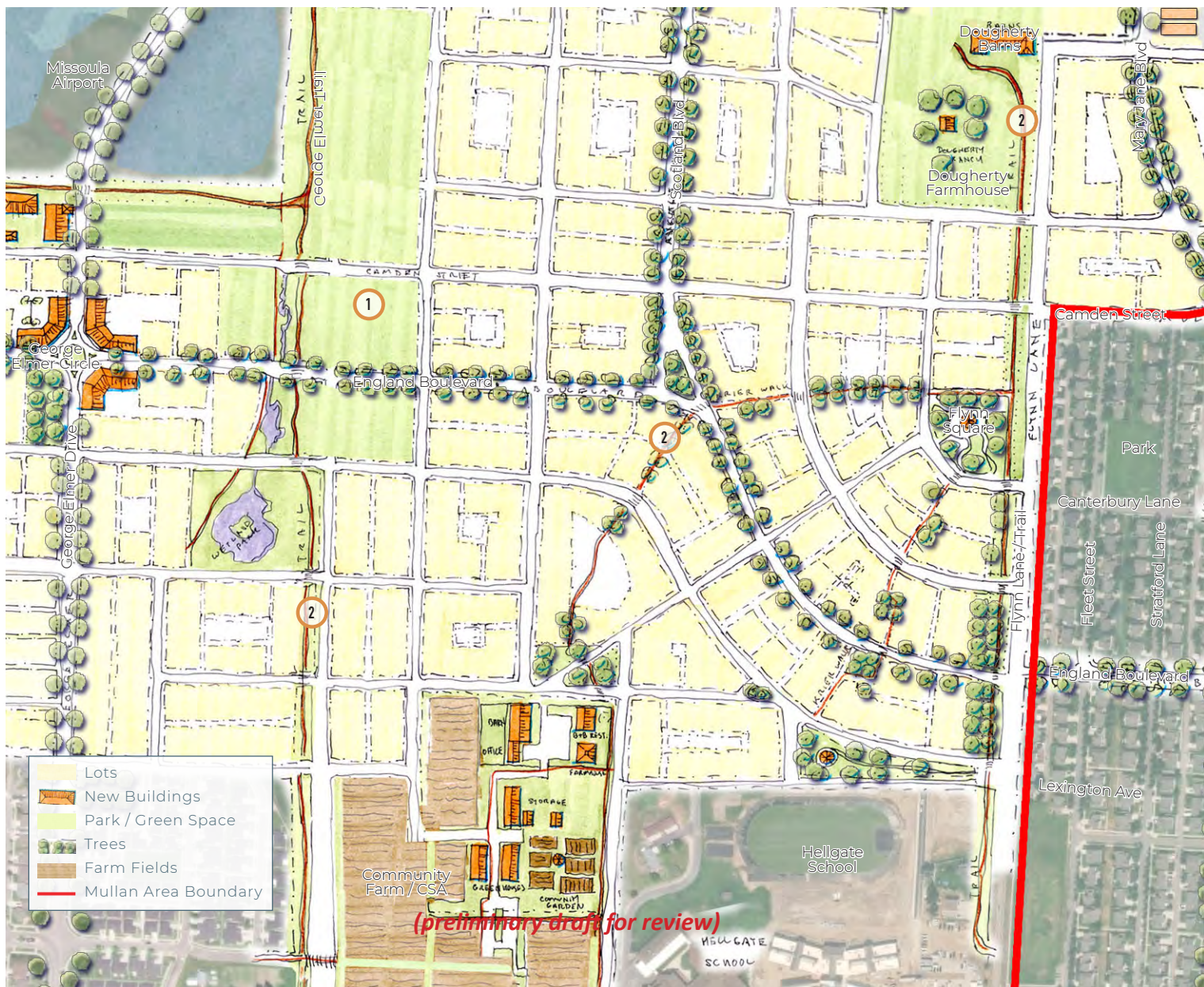
- 1 Veterans Hospital is in development adjacent to the BUILD extension of Mary Jane Boulevard.
- 2 New apartments between West Broadway and Mary Jane Boulevard.
- 3 North Creek Community Park includes a trail head and community fields.
- 4 A civic building, such as a school or community center, can visually terminate the Grant School Trail and also make use of the community park field.



FLYNN SQUARE NEIGHBORHOOD

The Flynn Square Neighborhood straddles England Boulevard, one of the BUILD Grant connections and is bounded by Flynn Road to the east, George Elmer Trail to the west, Dougherty Ranch to the north, and the Community Farm / CSA to the south. At the center of this neighborhood is Flynn Square, a small community park.

- 1 The Flynn Square neighborhood abuts the airport property and lies partially under the flight path. Density in this neighborhood should remain low.
- 2 Multiple trails run north and south along Flynn Lane and the park along George Elmer Drive. Another trail runs from Flynn Square to the Community Farm.



WEST BROADWAY SQUARE

The new main center of the community.

Most likely to support mixed-use walkable urbanism.

To the east, there is the VA Clinic and Apartment Buildings.

West Broadway Square is the most mixed. The place where people can live, work, and play.

There are apartments above shops, rowhouses, apartment buildings, and a hotel with restaurants.

BRT Transit stops on the green within walking distance for people in the neighborhood to sit and read the paper with a coffee while waiting for a quick bus to downtown.

Workspaces of various sizes and configurations provide spaces for startups, shared working, and for larger offices.

The main square is supplemented with a variety of smaller plazas and courtyards distributed to serve the surrounding building fabric.

The best centers are within walking distance of surrounding residential areas, possess a mix of uses, and include higher-density buildings at a pedestrian scale.



(preliminary draft for review)

1 West Broadway Square

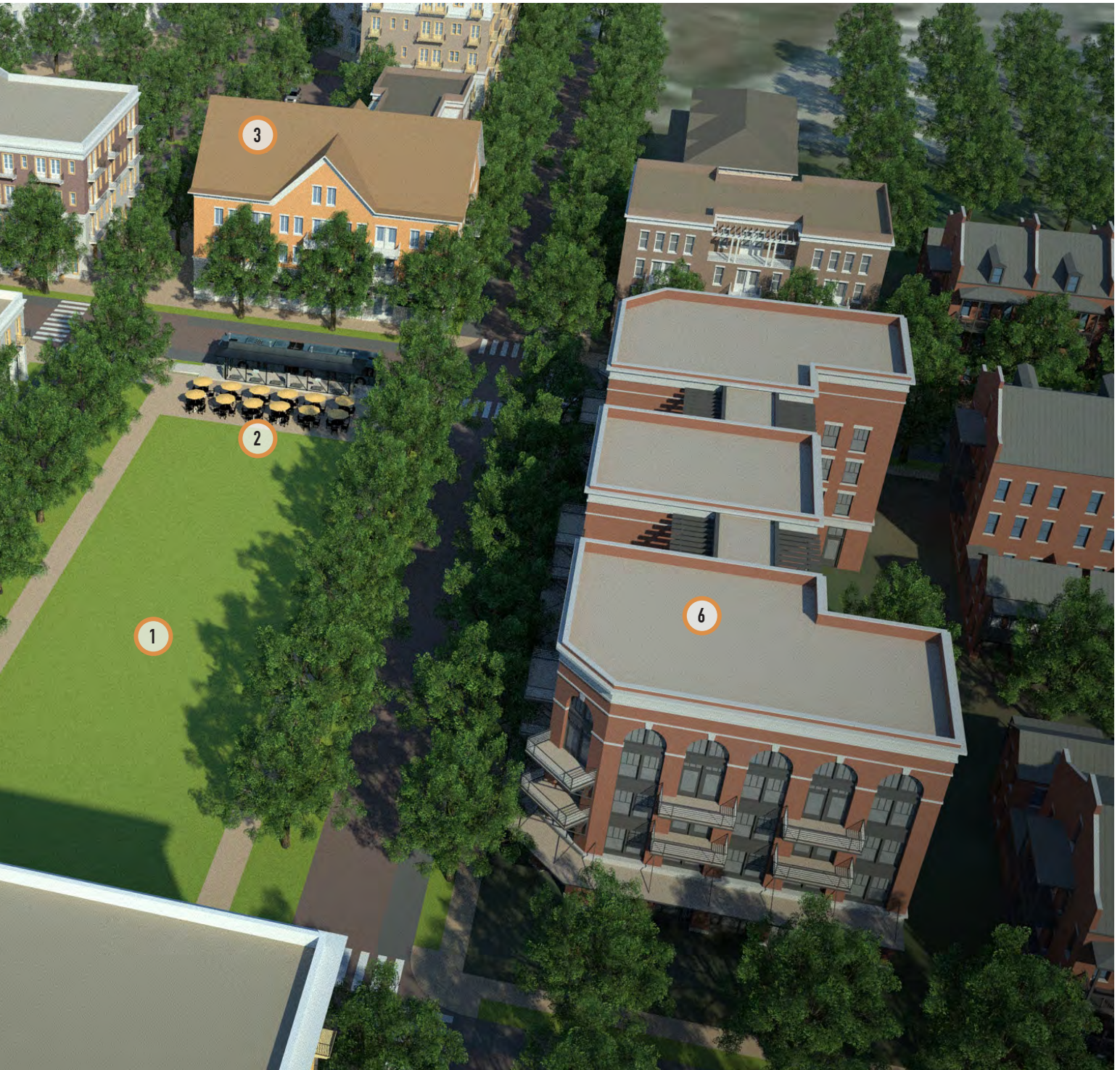
2 Transit Stop

3 Civic Building

4 Hotel & Restaurant

5 Mixed-Use Buildings

6 Apartments



(preliminary draft for review)

GEORGE ELMER CIRCLE NEIGHBORHOOD

The intersection of George Elmer Drive and England Boulevard provides an opportunity for great access to the community for a new fire station. This neighborhood extends the neighborhood from the south. Existing streets Riata Road and Tenderfoot Way can extend to create a better street network.

- 1 George Elmer Circle can be a center of the community.
- 2 This neighborhood can provide single-family homes of varying lot sizes.
- 3 A trail runs around the edge of the neighborhood.



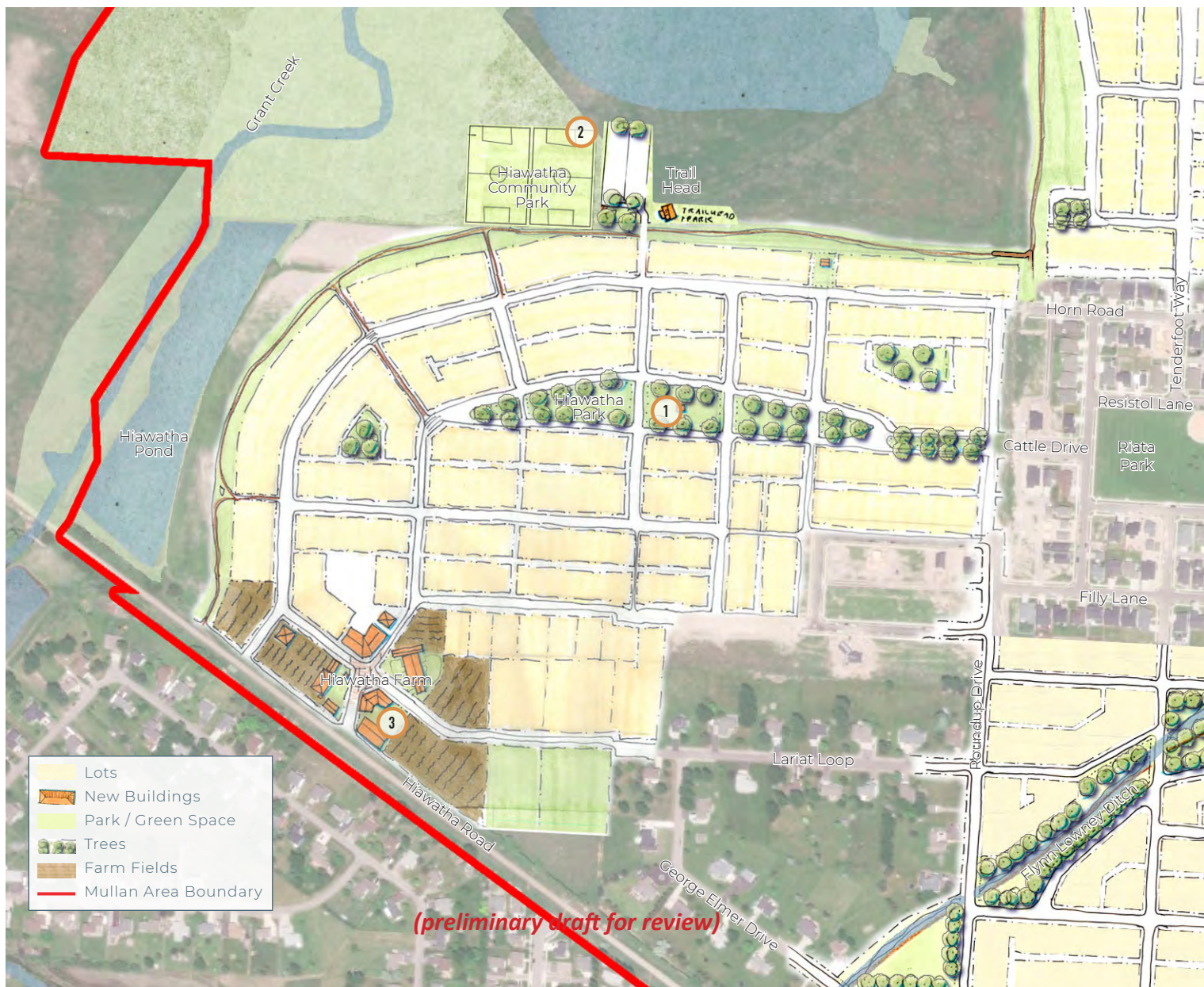
HIAWATHA FARM NEIGHBORHOOD

Hiawatha Farm and some limited fields are retained while a neighborhood grows up around it.

A connected trail system encircles the neighborhood and connects Hiawatha Farm, Hiawatha Pond, and a new community park to the larger trail system.

Hiawatha Pond, a recreational pond used by locals for birding and nature walks, provides an opportunity to create a unique amenity in this area.

- 1 Hiawatha Park is in the middle of the neighborhood. This park, combined with the surrounding natural system provides numerous amenities for the neighborhood.
- 2 A trailhead and new Community Park are located adjacent to this neighborhood on property owned by the airport. New fields and a trail are located outside the floodplain and outside the potential flight path of a future second runway.
- 3 Hiawatha Farm is located strategically on Hiawatha Road to give it direct access to Mullan Road. More details on the next page.



HIAWATHA FARM SQUARE NEIGHBORHOOD

The Hiawatha Farm Square Neighborhood is an idea for a potential use of the properties at the end of Hiawatha Road. This road is currently a private access drive, but could, in the future, provide access, whether public, private, or even just as a trail. With any of these scenarios, it could serve to help provide access to a new neighborhood area.

The neighborhood could feature a rural, small-town character with a mixture of building types like those found in the region's historic neighborhoods. Apartments, mixed-use buildings, row houses, duplexes, and a wide variety of single-family types and sizes could be arranged along walkable streets and public spaces like Hiawatha Park. The edge of the neighborhood could provide a permanent green open space with trail system access.

The entrance could feature a Farm Square with a farm stand and space for special events overlooking agricultural fields. If enough visibility occurred from Hiawatha Road, eventually this entry area could function as a small main street for the Hiawatha Farm Square Neighborhood.

Great neighborhoods feature a variety of building types and street scenes of varied character that differ from center to edge.



(preliminary draft for review)

1

Hiawatha Farm

2

Hiawatha Farm Square

3

Hiawatha Park

4

Trailhead

5

Community Park

6

Special Events Pavilion



(preliminary draft for review)

GEORGE ELMER SQUARE NEIGHBORHOOD

The intersection of George Elmer Boulevard with Mullan Road is the perfect location for a town center. The neighborhood can be centered on a set on “main street” stores. They should be located on both sides of George Elmer Boulevard with parking located both on-street and in lots at the center of the block.

- 1 The Flynn Lowney Ditch, along with a future trail connection as part of the BUILD grant, runs through this neighborhood. Instead of running the ditch through private yards, it can be run through a park. This will reduce the incidence of flooding while providing an amenity for the entire neighborhood.
- 2 Existing large lot homes line the east side of this neighborhood. Similar large lots could back toward these existing homes before transitioning to smaller lot types.



MULLAN SQUARE NEIGHBORHOOD

This neighborhood will be one of the first developed. It connects Mary Jane Boulevard to Mullan road and extends the creative neighborhood from the east to Flynn Road. Along with the existing neighborhoods, this community provides an opportunity for kids to walk or ride their bikes to Hellgate School.

- 1 The Oleary Community Park should provide a large park space uninterrupted by streets to provide recreational space for the larger community.
- 2 Apartments or office space could be located on Mullan Square.
- 3 A Community Garden is being developed across from Hellgate School.



TRAIL STREETS

Streets in the Mullan Area should safely and comfortably accommodate all modes of travel. Where right-of-way is limited and a dedicated bicycle facility is desired, a trail street is a good option for doing this where pedestrian traffic is not too high. By locating a shared-use path along one side of the street in place of the sidewalk, those on two wheels have a place to ride that is separate from motor vehicles.

Like all good street design, trail streets should be lined with street trees and street-oriented architecture. Travel lanes should be as narrow as possible to reinforce the desired travel speed and on-street parking should be provided on at least one side of the street.

Along these streets a wide variety of building types, offering different housing options, can be found. Single family homes, duplexes, and townhouses can together form a coherent street scene, as shown in this image.

"The ballet of the good city sidewalk never repeats itself from place to place, and in any one place is always replete with new improvisations."

- Jane Jacobs, *The Death and Life of Great American Cities*



(preliminary draft for review)

1

Shared-Use Path

2

On-Street Parking

3

Mix of Building Types

4

Street Trees

5

Street-Oriented Architecture

6

Narrow Travel Lanes



(preliminary draft for review)

NORTH CREEK SQUARE

INDUSTRIAL AND RESEARCH HUB

The area north of Grant Creek and adjacent to the airport is a prime location for industrial and commercial activity. The proximity to the airport means easy storage of goods as they come into the city or light manufacturing of goods that can then be exported elsewhere. The noise and activity of the airport will not bother these uses.

- 1 Industrial buildings can still be developed with the environment around them in mind. They do not have to sit in a field of parking, but large buildings can face one another across a green or a beautiful tree lined street.
- 2 Workers can walk to the adjacent community park to enjoy the outdoors during lunch.
- 3 This employment area is a short walk or bike ride from the developing Mullan community.



EXAMPLES



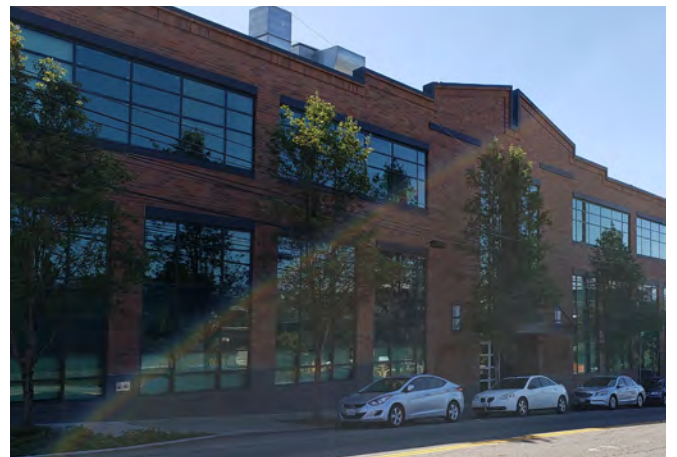
Office and research buildings create a walkable urban form.



Buildings can be brought close to the street.



Functional green spaces and plazas are an integral part of this Transect District.



Tall ceiling heights can accommodate a wide range of uses and meet the demands for modern workplaces.



Industrial buildings and uses are also a part of the Workplace District.



The Special Workplace District is the location for industrial, research, and institutional uses.



5 IMPLEMENTATION

THE IMPLEMENTATION CHAPTER OUTLINES THE NEXT STEPS AND ACTIONS FOR THE CITY AND COUNTY TO UNDERTAKE TO REALIZE THE VISION FOR THE MULLAN AREA OUTLINED IN THIS PLAN.

1

IMPLEMENTATION PROCESS

2

IMPLEMENTATION MATRIX

The following implementation matrix organizes strategies and actions by the Five Big Ideas.

Each action is accompanied with additional information.

ACTION

Description of policy, program or action that should be taken

LEAD AGENCY

The organization(s) leading or coordinating the implementation of the action item.

TIMEFRAME

Describes the anticipated timeframe and/or duration for implementation for each action item, defined as:

- Ongoing: immediate / continuous
- Immediate: within the first year following plan adoption
- Near-Term: 1 to 5 following plan adoption
- Long-Term: 5 years or longer

IMPLEMENTATION PROCESS

HOW THIS PLAN WILL BE IMPLEMENTED

FLEXIBILITY IS KEY

This plan lays out the framework for a coordinated approach to development in the Mullan Area based on the vision for the area created during the virtual charrette process. Much of what the plan entails is to be carried out by private entities as individual properties are developed over time. In the immediate term, the plan calls for public sector strategies and action items to be implemented to establish the groundwork and development code in which development will occur and be shaped by. This will in a large part be done through the Mullan BUILD Project.

The Plan is also flexible. The illustrative plan and sample regulating plan are just that, examples of what could be done following the accompanying code which is intended to help realize this vision. As properties with the plan area develop, the developer will be able to refine the plan for their property to meet their needs on account for changing economic conditions and market demand overtime. For these reasons, the plan will not be implemented exactly as it is drawn, but the important characteristics of a walkable, mixed-use neighborhood will be.

In the study of communities, we find that two types of actions have been crucial to achieving desirable outcomes: long-term planning and a willingness to reconsider one's values. Communities work to identify values and then let those values guide action. When a community's energies are guided by a plan, every new public and private investment is more likely add to quality of life and not detract from it. Always have a plan, but recognize that the conversation, the act of planning itself, is the most important part.

OPPORTUNITIES FOR FUNDING

The field of Urban Planning has always recognized that funding follows inspiration and the Mullan Area Master Plan is an inspirational plan. While the BUILD Grant funding will go a long way in laying the groundwork for this vision, additional funding will be needed to implement many of the public goals envisioned.

IMPLEMENTATION MATRIX

1 New Development Should be Compatible, Respectful of Context, and Build Great New Places

Strategy / Activity		Lead Agency	Timeframe
Strategy 1.1: Create Walkable, Mixed-Use Neighborhoods			
Action 1.1.1	Adopt a Form-Based Code for the Mullan Area	City County	Immediate
Action 1.1.2	Administer the Form-Based Code and update as needed	City County	Ongoing
Strategy 1.2: Reserve Key Civic Sites			
Action 1.2.1	Reserve or otherwise acquire land for a new fire station near the intersection of England Boulevard and George Elmer Drive	City	Near-Term
Action 1.2.1	Reserve or otherwise acquire land for a new school within the Mullan Area	City	Near-Term
Strategy 1.3: Preserve Historic Structures and Protect Important Landscapes			
Action 1.3.1	Designate historic structures within the Mullan Area for protection from demolition	City County	Immediate
Action 1.3.2	Protect landscapes around historic structures by establishing conservation easements on the surrounding land	City County	Near-Term
Action 1.3.3	Pursue grants and other funding opportunities for restoration and maintenance of historic structures	City Non-Profits	Near-Term
Action 1.3.4	Install historic markers and monuments to educate on the history of the area	City	Near-Term
Strategy 1.4: Expand Affordable Housing Options			
Action 1.4.1	Establish an affordable housing land trust for the Mullan Area	City Non-Profits	Near-Term

2 Connect with Agriculture, Build Parks, and Enhance Grant Creek Eco-Health

Strategy / Activity		Lead Agency	Timeframe
Strategy 2.1: Continue Agriculture			
Action 2.1.1	Establish conservation easements on properties that are to remain in agricultural use	City County	Near Term
Action 2.1.2	Establish a Community Supported Agriculture (CSA) farm program for the Mullan Area	Private	Near Term
Action 2.1.3	Implement a farmland mitigation fee to support CSA, community gardens, and peri-urban agriculture within the Mullan Neighborhoods plan area or agriculture elsewhere in the County	County	Near Term
Strategy 2.2: Restore Grant Creek			
Action 2.2.1	Establish a minimum 150 foot buffer on either side of Grant Creek for riparian restoration and protection	City County	Immediate
Action 2.2.2	Restore the northern segment of Grant Creek through the BUILD Grant	City County	Near Term
Action 2.2.3	Restore the remaining segments of Grant Creek located within the Mullan Area	City County	Long Term
Action 2.2.4	Coordinate with the Missoula International Airport on the habitat restoration and maintenance along Grant Creek	City County	Ongoing
Strategy 2.3: Increase Access to Parks			
Action 2.3.1	Coordinate with Missoula International Airport to establish a regional park on portions of airport property within the Mullan Area	City	Near Term
Action 2.3.2	Acquire sites for one community park in each neighborhood	City	Near Term
Strategy 2.4: Develop a Trail Network			
Action 2.4.1	Secure right of way for the BUILD Grant trails	City County	Near Term
Action 2.4.2	Build out the BUILD Project trail network	City County	Near Term
Action 2.4.3	Expand the trail network	City County	Near Term

3 Build for a Sustainable Future

Strategy / Activity		Lead Agency	Timeframe
Strategy 3.1: Create a District Stormwater Plan			
Action 3.1.1	Perform a hydrologic study for the entire site.	City County	Near Term
Action 3.1.2	Advance the stormwater mitigation strategy into a design for implementation	City County	Near Term
Action 3.1.3	Construct the regional stormwater system	City County Private	Near Term
Strategy 3.2: Utilize Green Infrastructure			
Action 3.2.1	Incorporate green infrastructure into the Form-Based Code for the Mullan Area	City County	Near Term
Strategy 3.3: Expand Transit Service			
Action 3.3.1	Expand transit service to the Mullan Area	Mountain Line	Near Term
Action 3.3.2	Extend the transit tax district to incorporate the Mullan Area	Mountain Line	Near Term
Action 3.3.3	Implement a BRT line from the Airport to Mullan Area, the Downtown, University and Midtown Areas	Mountain Line	Near Term
Strategy 3.4: Support Green Transportation Options			
Action 3.4.1	Require electric vehicle charging stations for new residential, mixed-use, commercial and public buildings	City	Ongoing
Strategy 3.5: Promote Renewable Energy			
Action 3.5.1	Require all new construction to support accessory solar systems	City	Ongoing
Action 3.5.2	Require accessory solar systems for all new mixed-use, commercial, and public buildings	City	Ongoing
Action 3.5.3	Follow the guiding principles of Climate Ready Missoula	City County	Ongoing
Strategy 3.6: Incorporate Green Building Techniques and Materials			
Action 3.6.1	Require all new construction to make use of green building techniques and materials	City	Ongoing

4 Safe, Comfortable, and Interesting Streets for All

Strategy / Activity		Lead Agency	Timeframe
Strategy 4.1: Build Streets that are Safe, Comfortable and Interesting			
Action 4.1.1	Adopt and Implement the Street Atlas accompanying the Form-Based Code	City County	Near Term
Action 4.1.2	Construct the complete BUILD Grant Project street network utilizing the typical sections contained in the Form-Based Code	City County	Near Term
Strategy 4.2: Prioritize Bicycling			
Action 4.2.1	Incorporate separated bicycle lanes / cycle tracks on all new construction BUILD Grant Project streets.	City County	Near Term
Action 4.2.2	Include separated bicycle lanes / cycle tracks, two-way cycle track, or shared use path on all other non-local streets	City County	Near Term
Action 4.2.3	Adopt new bicycle parking requirements for all new construction	City County	Near Term
Strategy 4.3: Carefully Design Intersections			
Action 4.3.1	Require protected intersections where both approaches have protected Bicycle / Micro-Mobility Lanes unless there is not enough space to set back the bikeway from mixed traffic at the intersection in which case a dedicated intersection treatment shall be provided.	City County	Near Term
Action 4.3.2	Use dedicated intersection treatments or raised crossings at minor street crossings along streets with protected Bicycle / Micro-Mobility Lanes.	City County	Near Term
Action 4.3.3	Allow the use of modern roundabouts that prioritize pedestrians at intersections that would otherwise warrant a traffic signal.	City County	Near Term
Strategy 4.4: Plan for Low-Speed Mobility Modes			
Action 4.4.1	Allow low-speed mobility modes to share the bicycle facilities	City County	Ongoing

5 Decide What You Want and Create A Clear Path for Getting There

Strategy / Activity		Lead Agency	Timeframe
Strategy 1: Create a Consistent and Predictable Development Process			
Action 5.1.1	Streamline the development review process for projects that meet the standards of the Form-Based Code	City County	Immediate

