



Indirect and Cumulative Effects Analysis

Mullan BUILD Project

Missoula County, Montana

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1 Introduction

In 2019, Missoula County, in partnership with the City of Missoula, was awarded \$13 million in funding from the Federal Better Utilizing Investments to Leverage Development, or BUILD, Transportation Discretionary Grant program to fund transportation improvements and environmental enhancements to the Mullan area located in northwest Missoula. The overall scope of the project includes design and construction of three miles of new collector and minor arterial roadway, new sewer and water infrastructure, 3.7 miles of new trails, and 0.5 mile of stream restoration and flood control along Grant Creek.

The \$13 million awarded for this project was only a portion of the \$23.2 million requested from the federal BUILD program in the 2019 grant application. As a result of partial funding, the entire project cannot be constructed using federal dollars as originally proposed in the 2019 grant application. See more information in Section 1.4, Prioritization and Scope of the Federal Project.

Occurring concurrently with the Mullan BUILD design project, Missoula County is conducting the Mullan Area Master Plan, a public planning and design process for the study area that is intended to identify future land use planning and regulations, transportation elements, and plans for amenities through community and stakeholder engagement. The final Mullan Area Master Plan, expected to be complete towards the end of 2020, will provide an illustrative plan meant to help guide future development in the area.

As a federally-funded project, the Mullan BUILD project is required to comply with the requirements of the National Environmental Policy Act, or NEPA. The proposed project is anticipated to meet the criteria for approval as a Categorical Exclusion (CE) under the provisions of 23 CFR 771.117. The environmental document will utilize the standard CE Documentation form developed by the Montana Department of Transportation (MDT). The proposed project has potential to result in induced growth effects due to the nature of the project. The purpose of this technical report is to assess the potential indirect effects of induced growth that may occur as a result of the federally-funded project and provide the detailed analysis as referenced in Part 6.11, Induced Growth Analysis, of the MDT CE form.

1.1 Project Location

The study area is located at the western edge of Missoula, Montana and is partially located within the City of Missoula limits. The study area is approximately bound by West Broadway Street (commonly referred to as Broadway Street) to the north, approximately Flynn Lane to the east, Mullan Road to the south, and Grant Creek and Missoula International Airport to the west. The study area is located within portions of Sections 6, 7, and 18 of Township 13 North, Range 19 West and Sections 10, 11, 12, and 13 of Township 13 North, Range 20 West. Figure 1-1 shows the study area as identified by the Mullan Area Master Plan boundary.

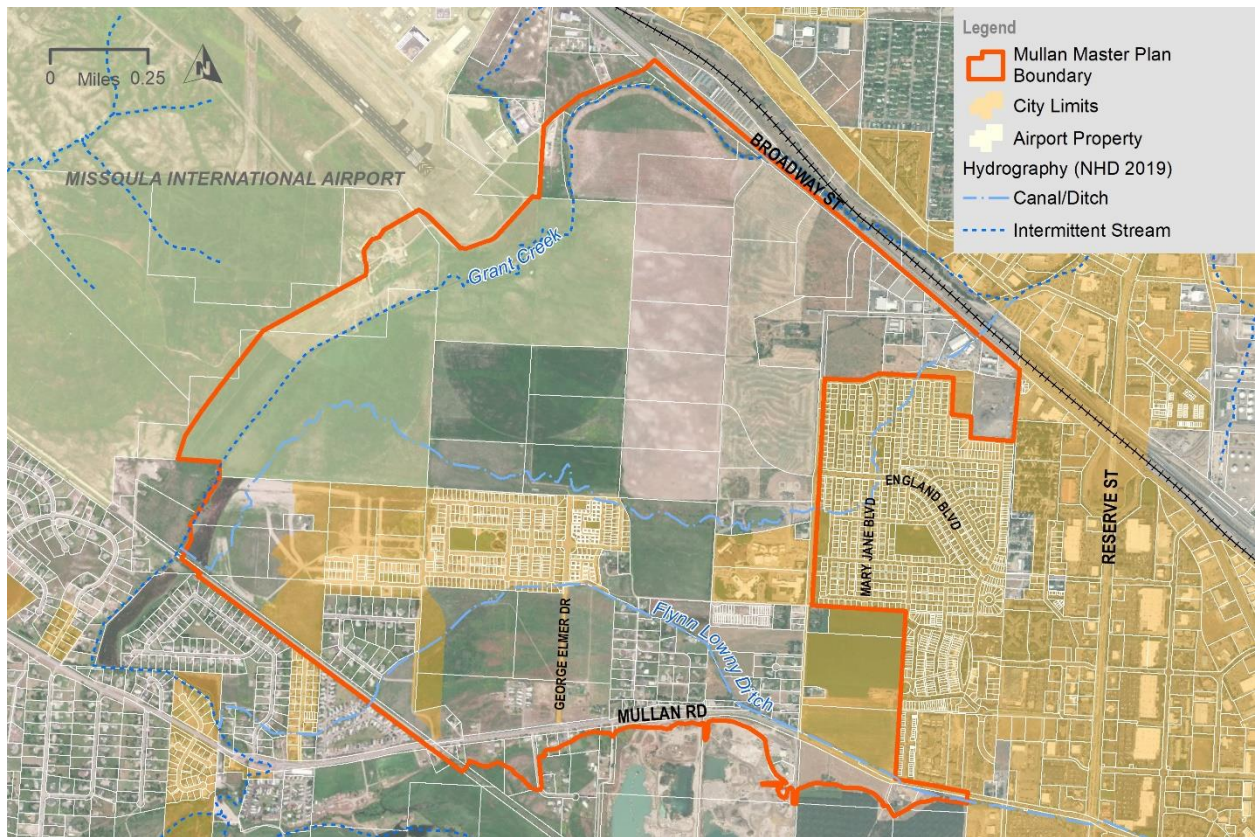


Figure 1-1. Mullan BUILD Study Area

1.2 Project Purpose

The project purpose as outlined in the 2019 BUILD grant application is to use federal funds to construct the transportation infrastructure needed to:

- Reduce commute times for those living and working in the area;
- Bring jobs to Missoula, the regional economic center of western Montana;
- Attract private economic development to increase workforce housing and business opportunities, including in Missoula County's only Opportunity Zone which abuts the study area to the east along Reserve Street;
- Promote development close to existing communities to avoid leap-frog development that stresses rural roads and increases transportation costs;
- Create shorter, more direct transportation routes to connect people with jobs, health care and other critical resources; and
- Create safer corridors for bicyclists and pedestrians, as well as vehicles.

1.3 Project Elements

The proposed project includes eight main project elements as described in the 2019 grant application and as shown and described below. Figure 1-2 depicts the eight project elements and is followed by a detailed description of each element.



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
3b / —	MARY JANE BOULEVARD SOUTH	8 / —	MULLAN ROAD TRAIL

Figure 1-2. Mullan BUILD Project Elements (Source: D,J&A)

1. **George Elmer Drive:** Completes a new street connection between Mullan Road and Broadway Street, extending the existing section of road to Broadway Street and upgrading the existing section to the south. Includes a traffic signal or roundabout at its intersection with Mullan Road (including necessary Mullan Road widening/turn lanes east and west of the new intersection control), a bridge over Grant Creek, a traffic signal or roundabout at its intersection with Broadway Street, and related utility infrastructure.
2. **England Boulevard:** Extends a new street from Flynn Lane to George Elmer Drive, extending England Boulevard to the west from its current dead end at Flynn Lane. Includes a

roundabout at its intersection with George Elmer Drive, a roundabout or traffic calming at its intersection with Mary Jane Boulevard, and related utility infrastructure.

3. **Mary Jane Boulevard:** Completes a new street connection between Mullan Road and Broadway, extending the existing section of road from current dead ends on both the north and south. Includes a traffic signal or roundabout at its intersection with Mullan Road (including necessary Mullan Road widening/turn lanes east and west of the new intersection control), a traffic signal or roundabout at its intersection with Broadway, and related utility infrastructure.
4. **Grant Creek Restoration and Trail:** Restores 2,800 feet of stream channel and floodplain to return Grant Creek to a natural condition, and constructs 1,600 feet of levee to improve flood protection. Also, extends a new shared-use path along the restored Grant Creek corridor, linking to future connections with the Milwaukee Trail and trail connections north of Broadway.
5. **Milwaukee Trail:** Extends a new shared-use path from Mullan Road to Grant Creek, which is part of a planned trail system extending over 120 miles into eastern Idaho along the former Milwaukee & St. Paul Railroad.
6. **Tipperary Way Trail:** Extends a new shared-use path connecting residential development to Hellgate School along the Flynn Irrigation Ditch.
7. **Flynn Lane Trail:** Extends the existing shared-use path north along Flynn Lane, connecting Hellgate School to the Grant Creek trail corridor.
8. **Mullan Road Trail:** Extends the existing Mullan Road shared-use path the final 0.75 miles from Flynn Lane to Reserve Street.

1.4 Prioritization and Scope of the Federal Project

In November 2019, \$13 million of the original \$23.2 million requested was awarded to the City of Missoula and Missoula County (City/County) for the proposed project. The City/County are committed to constructing all of the project elements included in the BUILD grant request but, due to the approximate \$10M shortfall in funding, the City/County must prioritize which project elements will be delivered with the grant funding that is currently available and which elements will be delayed until future funding becomes available.

The City/County desires to leverage the awarded grant funds to the greatest extent possible for the maximum benefit of the public. Therefore, two prerequisites were identified in the prioritization process that, if not satisfied, would greatly diminish the value of the projects to the public. Project elements must meet the following prerequisites to be evaluated further:

- **Independent Utility** – At the time of selection, project elements must be usable and functional, independent of other projects or improvements, in order to provide value to the public.
- **Right-of-Way Availability** – At the time of selection, project elements must have adequate public right-of-way, or satisfactory evidence that the public right-of-way is in the process of being established. The acquisition of right-of-way can be time consuming and expensive. With limited funding, greater value will be delivered to the public by spending money on the design and construction of project elements that do not require the acquisition of right of way.

In addition, project elements that meet the prerequisites previously outlined were further evaluated based on the following evaluation criteria according to the total number of possible points indicated.

- Safety (30pts)
- Traffic Congestion (20 pts)
- Access to Land for Economic Development (20 pts)
- Transportation Choice (20 points)
- Environmental Review¹ (10 points)

An evaluation committee², comprised of government officials and industry experts, ranked the ten project elements (both elements 1 and 2 include two separate elements) based on the evaluation criteria. Based on the evaluation results, the following five elements were selected as providing the greatest public benefit and are therefore the proposed scope of the federal project.

1. Mary Jane Boulevard South
2. Mary Jane Boulevard North
3. George Elmer Drive South;
4. England Boulevard; and
5. Flynn Lane Trail.

2 Indirect Land Use Effects

The proposed project was assessed for its potential for project-influenced growth (e.g., increased population and/or traffic, changes in land use, etc.). Potential indirect land use effects resulting from the proposed project were evaluated consistent with the MDT publication *Assessing the Extent and Determinants of Induced Growth* (Tidd et al. 2013).

2.1 Indirect Effects Screening Process

Tidd et al. provides a screening process to assess a project's potential to result in indirect changes in land use. Particularly, the Indirect Effects Desk Reference (in Appendix 1 of the report) provides an initial screening framework to determine if the proposed project warrants further evaluation of indirect effect issues. Figure 2-1 provides the flowchart to the indirect land use effects screening process. The screening process is designed to continue through the flowchart until a box is reached stating no further analysis is needed or that a detailed analysis is needed.

¹ Because this project is federally funded, it is subject to the National Environmental Policy Act of 1970 (NEPA), which evaluates project-induced environmental impacts. Some project elements may require a more detailed level of environmental review based on potential impact, which may have schedule and cost implications. Project elements that have fewer anticipated impacts or require fewer permitting and regulatory approvals, were scored higher than those with more.

² Refer to the Mullan BUILD website for information on the Prioritization Process: <https://www.mullanbuild.com/>

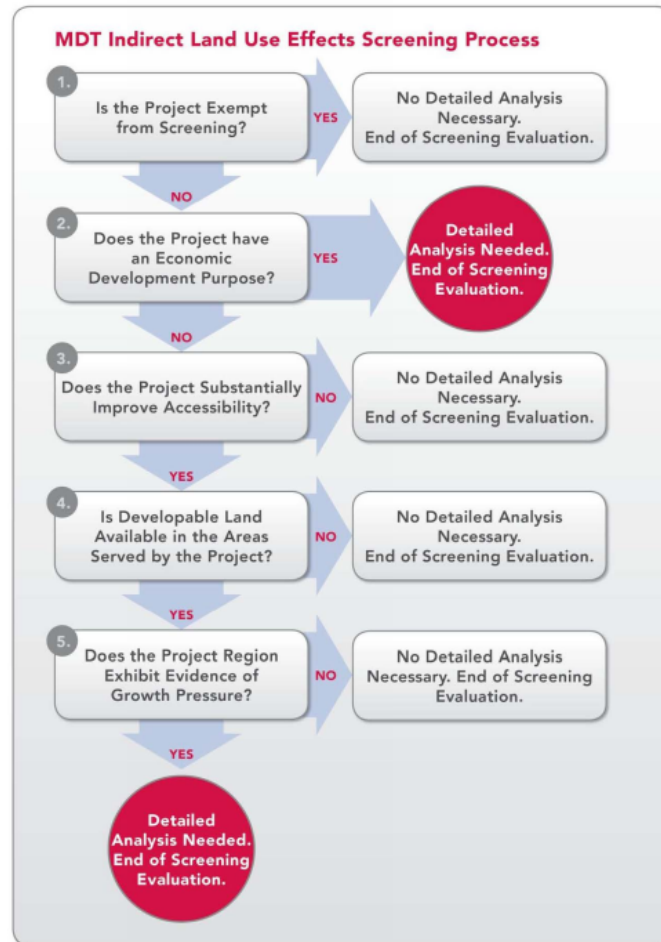


Figure 2-1. MDT Indirect Land Use Effects Screening Process (Source: MDT)

The following includes a step-wise screening analysis assessing the proposed project's potential for induced growth effects.

Step #1: Is the Project exempt from screening? **Answer: NO.**

The proposed project is not a project type represented in Table 1, Projects Exempt from Indirect Effects Screening found in Appendix 1 of *Assessing the Extent and Determinants of Induced Growth*. The proposed project involves constructing new roads to connect to the existing road system, which will increase capacity by adding new lanes and intersections.

Step #2: Does the Project have an economic development purpose? **Answer: YES.**

The proposed project has a stated economic development purpose as described in the 2019 BUILD grant application. One of the express purposes of the project is to "create jobs, increase housing supply, and provide places for new and expanding businesses in on the Montana's fastest growing communities." Per the 2019 grant application, the proposed project would:

- Potentially create \$2.6 billion in new taxable value from commercial, industrial, and residential development, including construction of a new Veteran's Affairs (VA) hospital and workforce housing adjacent to Missoula's Opportunity Zone
- Create 349 construction jobs
- Support 7,000 permanent future jobs

Based on the answer of “yes” to Step 2, and as illustrated in Figure 2-1, a detailed analysis is required and the screening evaluation is complete. The detailed analysis is provided in the subsequent sections.

2.2 Detailed Analysis Framework

The detailed analysis framework is organized around the seven steps as illustrated in Figure 2-2. Notably, the MDT process differs from many national and state-specific guidance due to the inclusion of a step devoted to the assessment of the future No Build condition land use. This step was identified in Tidd et al. as an essential step to properly establish a “clean” No Build condition to forecast the potential indirect land use effects of transportation projects.



Figure 2-2. Indirect Effects Detailed Analysis Process (Source: MDT)

2.2.1 Study Goals and Methodology

The goal of this study is to provide a detailed induced growth analysis to supplement the findings within the CE environmental document. Per Part 6.11 of the CE form, a detailed analysis is necessary to identify and disclose the induced growth effects resulting from the proposed project. The proposed project is intended to generate economic growth by providing the backbone transportation infrastructure necessary to spur new residential and commercial development. To gain a better perspective on the potential for indirect effects of the project, the goals of the study include:

- Identify the potential induced residential, commercial, and industrial growth (number of houses, jobs, etc.);
- Identify the potential for induced traffic impacts and benefits on conjoining roads due to the proposed densities; and
- Identify potential mitigation measures to address changes in land use, population, and employment.

The methodology uses the guidance developed by the MDT in their publication *Assessing the Extent and Determinants of Induced Growth* (Tidd et al. 2013).

2.2.2 Study Area Boundaries and Time Horizon

The study area utilized in this analysis is the Mullan Area Master Plan boundary as shown in Figure 1-1. The time horizon is 2050, which corresponds to the long-term transportation planning analysis being conducted by the Missoula Metropolitan Planning Organization (MPO). The MPO is currently updating their transportation demand model (TDM) for the long-range transportation plan to include updated population, housing, and employment projections for the study area, as well as the future transportation network of committed projects. The TDM uses the socio-economic conditions for 2050 to predict future transportation demand for the urban area. Based on the current MPO TDM update, the time horizon of 2050 is appropriate for this analysis.

2.2.3 Existing and Future No Build Land Use Patterns

Missoula is one of Montana's fastest growing cities and developable land to support the city's growing population is becoming increasingly scarce. The study area has long been recognized and targeted by the City/County as an area of future growth due to its location on the edge of the city boundary and adjacency to a range of infrastructure and transportation options. The proposed Mullan BUILD network is a project of regional significance and is included in numerous City/County planning documents and other relevant studies, including:

- Missoula Long Range Transportation Plan Update (in progress (2020))
- Missoula Area Land Use Element (2019)
- Community Transportation Safety Plan (2019)
- Mullan Road and George Elmer Drive Traffic Signal Warrant Analysis (2019)
- Broadway Street and Flynn Lane Traffic Signal Warrant Analysis (2019)
- Pedestrian Facilities Master Plan (2018)
- Bicycle Facilities Master Plan (2017)
- Missoula County Growth Policy (2016)
- Missoula International Airport Master Plan (2009)
- Wye-Mullan West Comprehensive Area Plan (2005)
- Wye-Mullan Grid Roadway Network County Resolution 2001-005 (2001)

Based on population projections and recent growth patterns, the greater Missoula area could grow by more than 14,000 people by the year 2040 (Missoula County 2019a), further increasing demand on an already limited housing stock. The 2016 Long Range Transportation Plan (LRTP) entitled *Activate Missoula*, projects a population increase of 6,881 people in the study area over the next 20 years, which would result in approximately 2,950 new homes at 2.33 persons per household (Missoula County 2019b).

Existing land uses in the study area include a mix of agriculture, residential, and general commercial. Over the past decade, residential development has slowly been replacing agriculture in the study area vicinity. The Reserve Street commercial corridor has grown as have residential developments

west of Reserve Street. Infrastructure improvements such as water and sewer extending westward on Mullan Road have also made it possible for additional residential growth at higher densities than is typically experienced in more rural areas within Missoula County. According to the adopted 2019 Missoula County Land Use Element (Missoula County 2019a), the study area outside of the city boundary is a mix of uses including: community mixed use (the majority of existing agricultural area), commercial center (along West Broadway Street), neighborhood residential (along Mullan Road), and a small area of agriculture (located approximately in the center of the study area). Land use designations from the 2019 Missoula Area Land Use Element are shown in Figure 2-3.

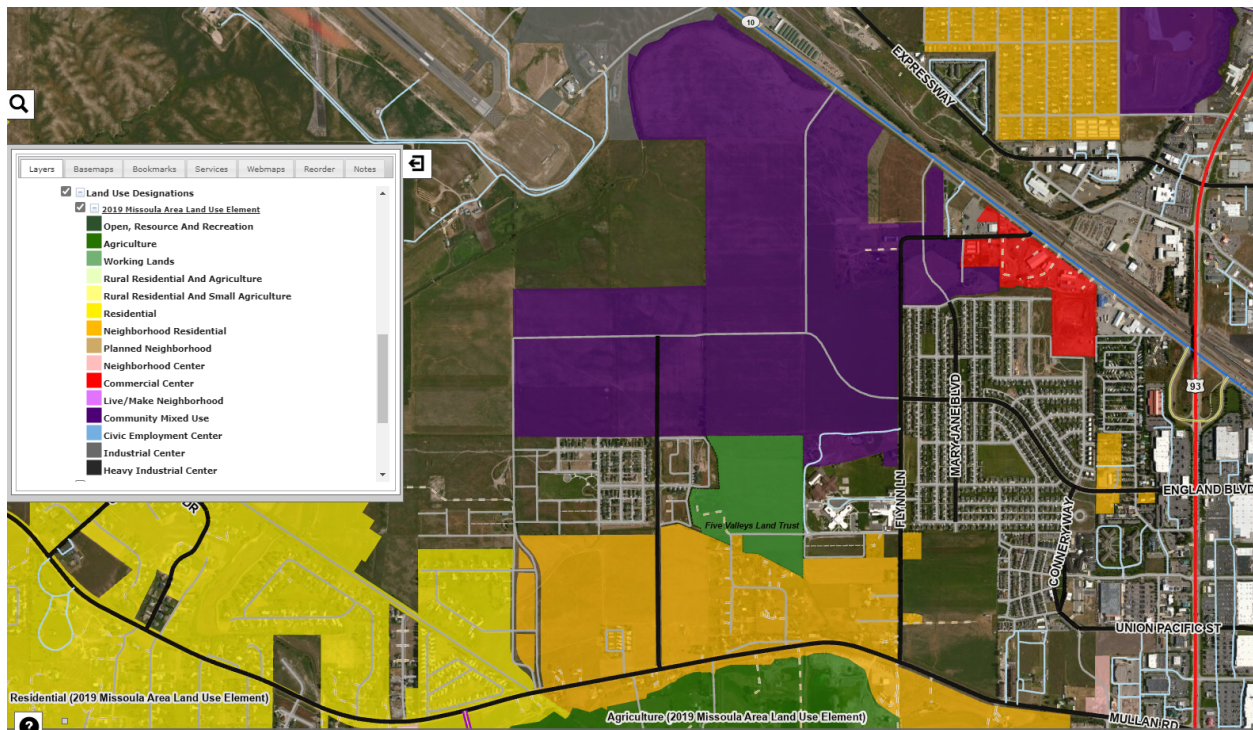


Figure 2-3. Land Use Designations, 2019 Missoula County Land Use Element Plan (Source: Missoula County)

Future land development is constrained within the study area. Developable lands within the study area are bound to the west by Missoula County Airport Authority lands. A conservation easement held by the Five Valleys Land Trust exists immediately west of the Hellgate K-8 school and is shown as agriculture in the above figure. The area immediately south of Grant Creek and west of West Broadway Street is within the Grant Creek 100-year floodplain, thus constraining the development potential in the vicinity of the creek.

Under a future no build condition, and in absence of the federal BUILD funds, it would be expected that development would continue to steadily occur within the study area in accordance to the adopted 2019 Land Use Element Plan and the not yet completed Mullan Area Master Plan. The study area is specifically called out in the 2019 land use plan as an opportunity to plan for public-private partnerships for future development. The 2019 land use plan identifies the need to “complete a road grid east of the airport and west of Reserve Street between Mullan Road and Broadway.” The plan notes constraints to future growth due to the lack of a road grid network and that development of such a road grid “would help accommodate additional growth and provide new north-south alternatives to North Reserve Street” (Missoula County 2019a). Areas in the vicinity of the study area have recently been annexed by the City of Missoula and it is anticipated that the study area will soon be annexed by the City of Missoula.

The majority of the study area is currently identified as Community Mixed Use. Several developments are currently underway, including a residential subdivision immediately south of the existing Pleasant View development along Mary Jane Boulevard and the construction of Summit Beverage and the VA Hospital along West Broadway Street (see Section 3.4 below for more information). The existing 44 Ranch subdivision on George Elmer Drive is currently in Phase 9 of a planned 21 phase development and, based on existing zoning information, is slated to continue to develop westward. Similarly, there are various other developments in the study area that are in the early planning stages based on information gathered by the Mullan BUILD design team, although limited information exists on the details and timelines of these developments.

Under the no build condition, traffic congestion and delay in the Reserve Street corridor is projected to worsen. The study area is bound by three main corridors: Mullan Road (State Secondary Highway 263) to the south, Reserve Street (US Highway 93) to the east, and West Broadway Street (US Highway 10) to the north, all of which currently experience heavy traffic. Flynn Lane, a narrow, two-lane road, is the only road providing a connection and potential congestion relief between the three main corridors. Flynn Lane is not designed to handle the existing traffic volumes it currently experiences let alone the added traffic anticipated as the area grows, further exacerbating safety concerns. Future traffic projections show levels of service degrading to ratings of E or F along Mullan Road and Reserve Street by 2040 without the relief of addition north-south roadways through the study area.

2.2.4 Future Build Condition, Land Use Conditions and Indirect Land Use Effects

The future build condition as a result of the federal BUILD grant will construct the five design elements identified in Section 1.4. This includes a new north-south connection between Mullan Road and West Broadway Street provided by Mary Jane Boulevard and a new east-west connection from Reserve Street provided by England Boulevard that would connect to Mullan Road via the extension of George Elmer Drive. As previously noted, the Mullan BUILD study area has been identified as an area for future growth and coordination between the City/County has been ongoing to ensure the area develops consistent with City/County growth goals and policies. As such, the future build condition is anticipated to result in future land use conditions consistent with existing adopted planning documents, including the current LRTP for the Missoula area, Wye-Mullan West Comprehensive Plan, Missoula International Airport Master Plan, and the City of Missoula and Missoula County Growth Policies. In essence, the future land use conditions in the study area are likely to be similar under the no build condition and the future build condition, with the exception that the federal BUILD grant will provide the funding to implement transportation improvements much sooner than would occur under the no build condition.

Indirect land use effects resulting from the proposed project are likely to include increased residential, commercial, and industrial development, which are anticipated to occur at faster rate under the build condition than under the no build condition. The proposed project is identified in the 2019 Mullan BUILD grant application as necessary to provide better access to approximately 1,485 acres of undeveloped land for economic growth. Per recent updates to the MPO travel demand model, the traffic analysis zones (TAZ) located in the Mullan Area are projected to grow by an additional 4,800 housing units as identified in the Mullan Area Master Plan. The MPO model projects an increase in 4,100 jobs within the TAZs of the study area. The change in housing and jobs from 2015 to 2050 is shown in Figures 2-4 and 2-5, respectively.

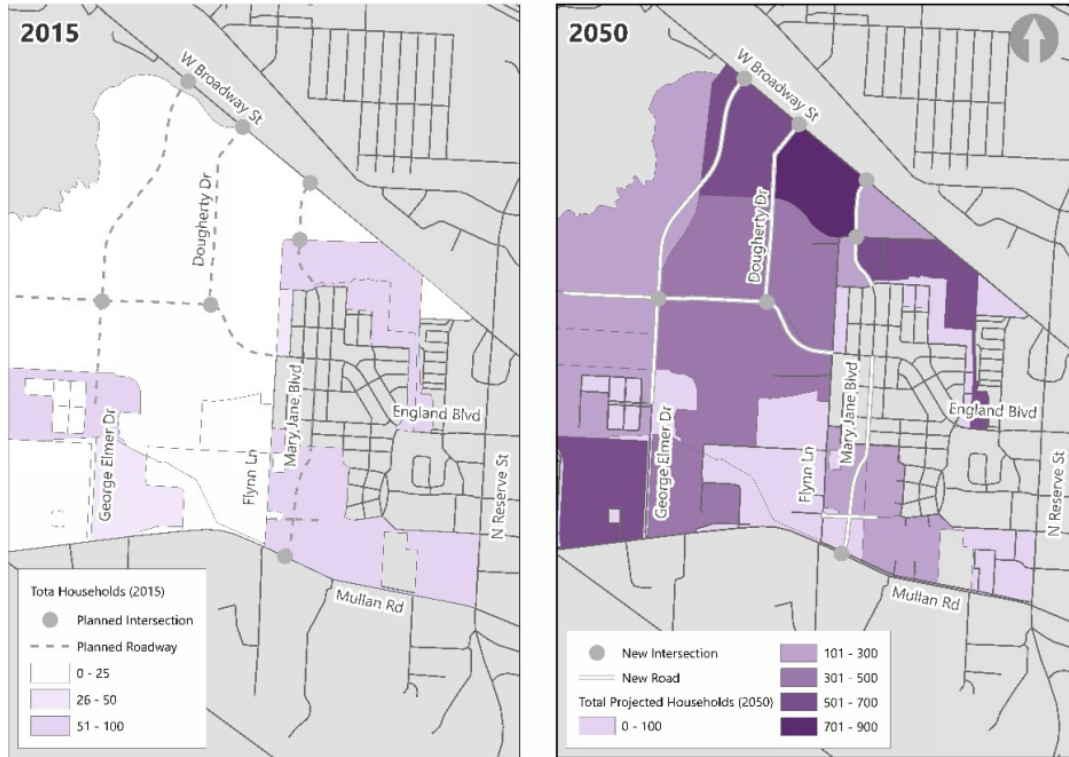


Figure 2-4. Projected Population Growth (2015 - 2050) at TAZ Level (Source: Kittleson & Assoc.)

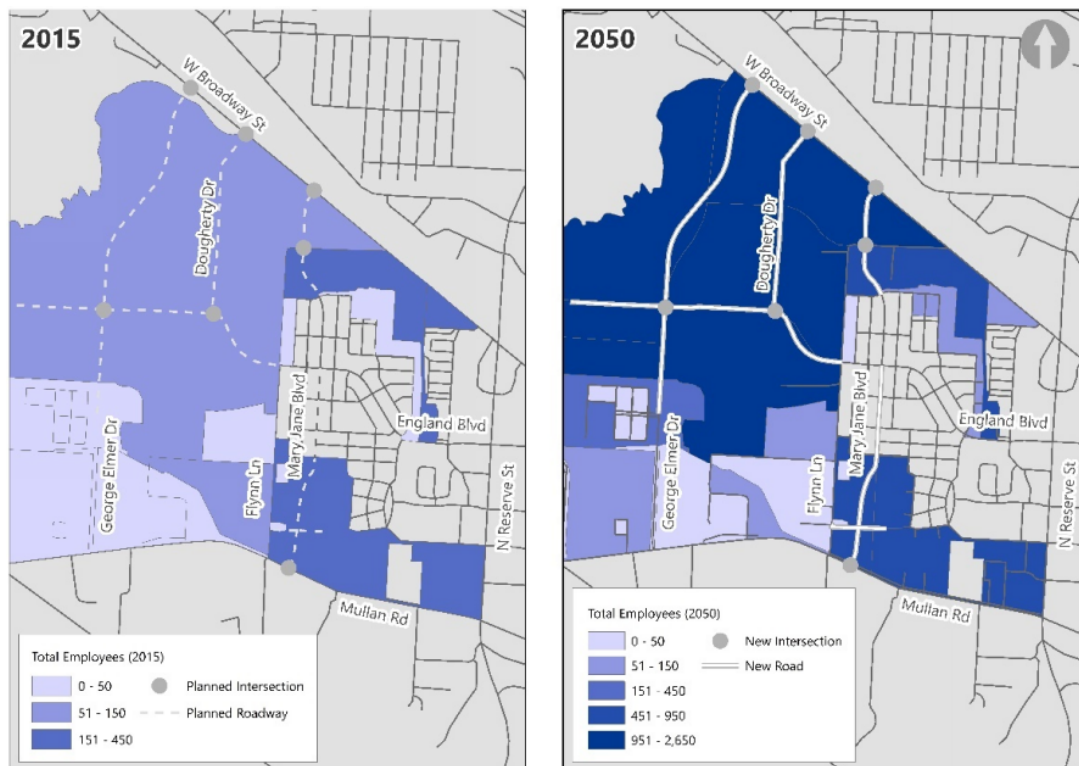


Figure 2-5. Projected Employment Growth (2015 - 2050) at TAZ Level (Source: Kittleson & Assoc.)

Short-term economic benefits from construction of the proposed project include the creation of approximately 349 jobs (Missoula County 2019b). Additional construction jobs could be expected from the construction of housing, commercial, and industrial development. The proposed transportation improvements would reduce the cost and risk of development, thus encouraging private development, and allow for well-planned, efficient use of public funds to construct and maintain infrastructure (Missoula County 2019b). Adequate land access would allow development of affordable workforce housing and encourage businesses, thereby increasing economic productivity in the region.

The construction of additional roadway infrastructure would have immediate benefit on the transportation network by relieving congestion along Mullan Road, Reserve Street, and West Broadway Street. The incorporation of traffic calming devices into project design, including traffic signals, turn lanes and roundabouts, as well as the addition of sidewalks, bike lanes, and the proposed Flynn Lane Trail, would improve safety for motorized and non-motorized users over the no build condition. Transportation benefits were quantified using the travel demand model for a 30-year period for the future build condition versus if no improvements to the road network were made. Preliminary results indicate the vehicle miles traveled is projected to decrease by approximately 30,000 miles/day and congested hours of travel would reduce 2,500 hours/day (MPO 2020).

2.2.5 Potential for Indirect Impacts on Sensitive Resources

The potential for induced growth resulting from the proposed project has potential for indirect impact on some sensitive resources as described below. Direct potential effects to these resources are evaluated in the environmental document.

Farmland

The study area includes soils designated as prime or unique farmland or farmland of statewide or local importance, which are subject to the requirements of the Farmland Protection Policy Act (FPPA). Right-of-way acquisition and construction of the proposed project would result the direct conversion of soils meeting Important Farmland classification to non-agricultural uses. Projects resulting in the irreversible conversion of farmland, either directly or indirectly, are subject to FPPA requirements. In accordance with FPPA requirements, a Farmland Conversion Impact Rating for Corridor Type Projects Form (NRCS-CPA-106) will need to be processed for the proposed project in coordination with the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). Consultation with the NRCS may be required depending on the Total Points identified under Part VII of the form.

Wildlife

Wildlife diversity and suitable habitat is lacking in the study area. The open farmland associated with the study area supports a variety of mammal species including Columbian ground squirrels, which are widespread throughout the study area, red fox, coyote, white-tailed deer, striped skunk, raccoon, and domestic cats and dogs. Bird species in the study area are those adapted to open farmland habitat and those associated with water features such as Grant Creek and the numerous irrigation ditches. Construction of the proposed project would convert primarily agricultural fields to roads. Direct and indirect impacts to wildlife are anticipated to be relatively minor, considering the availability of habitat available elsewhere in the vicinity of the study area, such as near the Clark Fork River.

Grant Creek Floodplain

Grant Creek has a regulatory floodplain within the study area as shown in Figure 2-6. While the proposed project will not involve development within the floodplain, there is potential that subsequent development and/or additional transportation infrastructure could indirectly impact the floodplain. Moreover, the initial BUILD grant elements include Grant Creek restoration and bridge crossing for the northern extension of George Elmer Drive. Funding for Grant Creek restoration, and thus the timeline for implementation, are currently unknown. Regardless, when the Grant Creek components are funded and final design is completed, the project will require compliance with local floodplain regulation and permit acquisition. This process will include a Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) from FEMA, which may take up to one year pre- and post-construction, respectively. One of the goals of the Grant Creek restoration is to design a stream channel with a floodplain bench and ultimately to reduce the area associated with the 100-year floodplain, which will increase the availability of developable land in the study area.

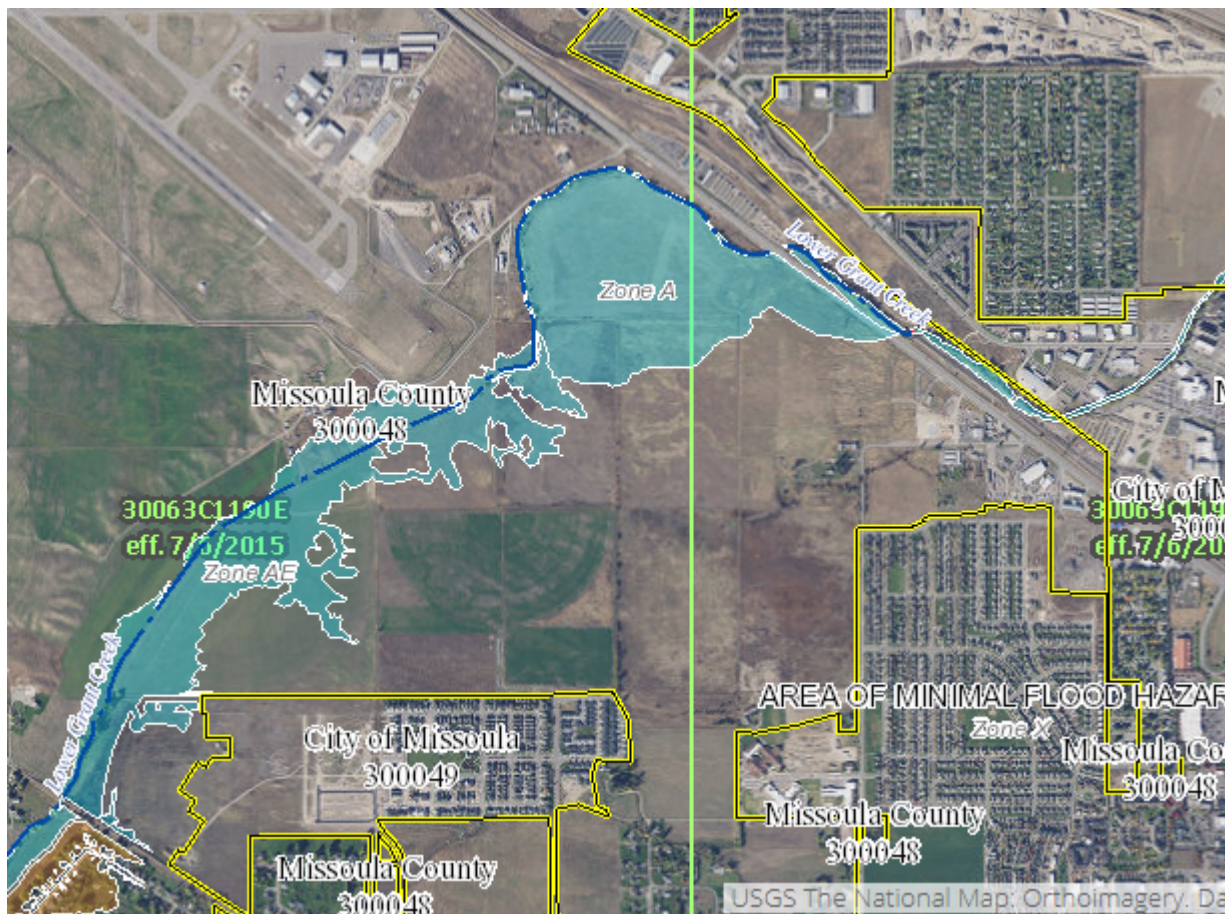


Figure 2-6. Grant Creek Floodplain in the Study Area (Source: FEMA)

Air Quality

The proposed project is anticipated to result in beneficial impact on regional air quality. The BUILD grant road network provides considerable transportation connectivity improvements to and between the Mullan Road/West Broadway/Reserve Street corridors. Currently, development pressure combined with limited access and connectivity on existing roadway networks has led to increased congestion at intersections with Mullan Road and Reserve Street, as well as inefficient function of uncontrolled intersections such as Flynn Lane and George Elmer at Mullan Road. The proposed

project has been demonstrated to reduce delay by providing connectivity to West Broadway Street and extending Mary Jane Boulevard, as well as increasing efficiency at the primary intersections.

The connectivity benefits were demonstrated in the updated 2018 travel demand model (2050 target year projections) that is currently being updated as part of the MPO 2020 LRTP project. MPO staff also evaluated impacts of the BUILD grant project on the updated 2018 travel demand model. Using a 2050 baseline growth plus the existing transportation network, the MPO compared adding the BUILD project network to see what impacts that project alone would have on regional travel patterns. Although this analysis does not include all future recommended improvements or a preferred growth scenario, it does demonstrate the network connectivity benefits of the project. As previously reported in Section 2.2.4, based on the model outputs, VMT is projected to decrease by approximately 30,000 miles/day and congested hours of travel is estimated to decrease 2,500 hours/day. These are substantial improvements over baseline conditions, indicating an overall air quality improvement compared to a no build condition.

The proposed project location is within the Missoula Carbon Monoxide (CO) Maintenance Area. The proposed project is not located within the PM-10 Maintenance Area, which was reclassified from Non-Attainment status effective June 24, 2019. Project-level air quality analysis is required to demonstrate conformity per the requirement of the Clean Air Act and NEPA. See Section 3.5 for more information.

2.2.6 Potential Mitigation Measures

Adverse indirect effects are not anticipated to be significant because future development will occur in accordance with the established plans and studies with overlapping jurisdictions to the study area. A list of these planning documents is provided in Section 2.2.3.

Adverse indirect effects are anticipated to be substantially mitigated through the implementation of comprehensive planning and zoning regulations that are currently being developed for the study area by the Mullan Area Master Plan. The Mullan Area Master Plan is being developed concurrently with the Mullan BUILD project, and has included a series of virtual charrettes held from March 23rd to 27th, 2020, to engage the public on a variety of issues facing the area (e.g., housing development; parks, recreation and placemaking; agriculture, environment and climate adaptation, etc.). The project will include a zoning plan and drainage and infrastructure recommendations and a second round of public meetings scheduled for the week of July 27, 2020. The master plan will include elements related to growth management strategies and resource management and preservation. The final plan is anticipated to be completed towards the end of 2020. Final adoption of the plan and future development in accordance to the adopted plan will ensure the study area is developed in a manner congruent with established codes and regulations and community desires.

Potential indirect effects will also be mitigated through implementation of design features (i.e., complete street design) to improve the safety and functionality of the proposed roadways and the robust public participation and stakeholder engagement occurring as part of the proposed Mullan BUILD project as well as the aforementioned Mullan Area Master Plan.

A detailed traffic and safety analysis has been conducted that examined existing and projected traffic conditions. Roundabouts are recommended at the project's intersections with West Broadway Street and Mullan Road to improve traffic flows and safety. These are recommended as single-lane roundabouts that can be expanded to a multi-lane roundabout in the future as traffic conditions change. The proposed project will include coordination with the MDT to mitigate impacts to the

adjoining state routes. Figure 2-7 depicts preliminary traffic control recommendations for the proposed roadway network.

It is important to note that the *2050 Conditions & Recommendations Technical Memorandum #4* developed by Kittleson & Associates on July 23, 2020 recommended a multi-lane roundabout at the intersection of Mary Jane Boulevard and W. Broadway St., which is what is shown in Figure 2-7 below. However, based on subsequent coordination and funding assistance from MDT, the project is moving forward with a signalized intersection at Mary Jane Boulevard and W. Broadway Street. A signal was evaluated in the traffic analysis and was projected to operate at Level of Service (LOS) B in 2050, which is an improvement in operation over the roundabout that is projected to operate at LOS C.

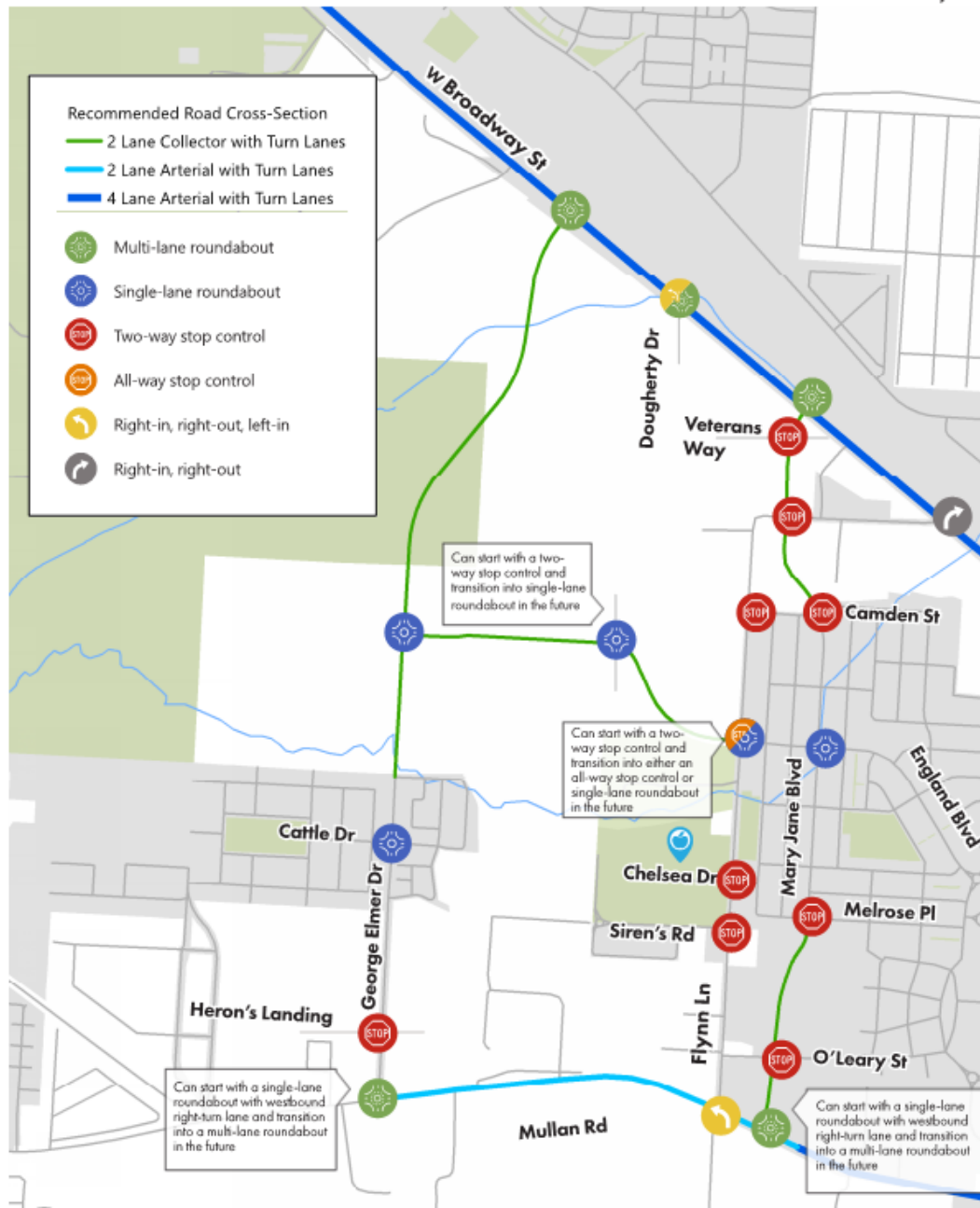


Figure 2-7. 2050 Preliminary Recommendations for Intersection Controls (Source: Kittleson & Assoc.)

The Mullan BUILD project public involvement activities have included developing a robust project webpage; media relations (leading to several positive traditional media placements); engaging with residents and stakeholders remotely; staffing community partner meetings; and the latest focus has been on the steering committee and engaging with the public online and in neighborhood locations. Direct advertising will also be executed to reach residents online later in the project timeline and as the project moves closer to construction.

3 Cumulative Effects

3.1 Introduction to Cumulative Impacts

Council on Environmental Quality (CEQ) regulations require an assessment of cumulative impacts. As defined in CEQ's regulations for implementing the National Environmental Policy Act (NEPA; 40 CFR § 1508.7):

"Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place during a period of time.

The following analysis uses the multi-step process outlined in the CEQ handbook, *Considering Cumulative Effects under the National Environmental Policy Act* (1997).

3.2 Resources Assessed for Cumulative Impacts

Determining cumulative environmental consequences requires delineating the cause-and-effect relationships between the multiple actions and the resources, ecosystems, and human communities of concern. One of the first steps is to identify the cumulative effects issues for the project and which resources are important from a cumulative effects perspective. The resources evaluated for cumulative impacts in this technical report are based on sensitive resources and/or resources known to exist in the study area and include:

- Farmland
- Water Resources and Water Quality
- Air Quality
- Floodplain
- Threatened and Endangered Species
- Visual Resources
- Traffic and Access
- Economic

3.3 Geographic Scope and Timeframe of Cumulative Impacts Analysis

The geographic area of analysis used to assess cumulative impacts is approximately the study area described in Section 1.1. In some cases, the geographic areas of analysis are expanded to include a broader area to effectively assess the cumulative effects on a particular resource (e.g. threatened and endangered species). The geographic areas of analysis are used to assess the effects of other

past, present, and reasonably foreseeable future actions to determine if those actions, combined with project impacts, have a cumulative effect to that resource.

3.3.1 Timeframe Scope of Analysis

The timeframe for this analysis, i.e., temporal boundary, extends roughly 30 years into the past and into the future, so approximately 1990 to 2050. The environmental reference point of 1990 predates many infrastructure improvements that have since occurred in the study area vicinity. The temporal boundary for future development is based on the transportation planning horizon for the in-progress LRTP, which is 2050. RFFAs and cumulative effects are considered through that time, approximately 30 years from the anticipated opening of the proposed project.

3.4 Past, Present, and Reasonably Foreseeable Future Actions

This section identifies relevant past and present projects as well as known or programmed projects that are reasonably foreseeable to occur in the study area vicinity. Existing plans (and planning boundaries) that overlap the study area or have a jurisdictional relevance to the proposed project were reviewed to identify projects that, in consideration with the proposed project, have potential to result in cumulative impacts.

Several past projects have been completed in the vicinity of the study area as identified in the 2019 BUILD grant application (Missoula County 2019b) that include:

- Airway Boulevard Interchange (1999)
- Previous Right-of-Way Dedication for Proposed Grid Roads (2004)
- Mullan Road Sewer Interceptor (2004)
- Portion of England Boulevard (2007)
- Portion of George Elmer Drive (2008)
- Mullan Road Trail (2010)
- Airway Boulevard Roundabout and Signalization (2011)
- Grant Creek Environmental Floodplain Restoration & Flood Control (2017)
- Chuckwagon/Roundup Drive (2019)

One location within the study area consisting of two individual projects is currently under construction. The VA Hospital and Summit Beverage are located along the proposed Mary Jane Boulevard North and West Broadway Street.

The project design team has engaged the developer community to ascertain information on planned subdivisions within the study area. The following is a list of subdivisions that have been platted and are in the approval process and will foreseeably be constructed.

- Heron's Landing: Located on George Elmer Drive immediately south and adjacent to the 44 Ranch subdivision. This development is 72 acres and approximately 325 lots.
- Hellgate Meadows West: The subject property consists of three parcels located immediately north of and adjacent to Mullan Road, east of Flynn Lane, and west of Hellgate Meadows.

This development is 57.5 acres. Proponents of this subdivision are currently working through a re-zoning process to amend the 2035 Our Missoula City Growth Policy land use designation from Residential Medium to Neighborhood Mixed Use.

- 44 Ranch Estates: The existing 44 Ranch subdivision on George Elmer Drive is currently in Phase 9 of a planned 21 phase development and per existing plat maps is slated to continue to develop westward.

It should be noted that several other developments in the study area vicinity are in various stages of planning and design. Although these are not platted or approved currently, they further demonstrate the impending development for which the proposed BUILD project is a catalyst. These include, but are not limited to:

- Subdivision in the approximately 4.8 acre lot along Mary Jane Boulevard North between Camden Street and Flynn Street;
- Remington Flats subdivision in the area west of George Elmer Drive and north of Pius Way; and
- Subdivision in the lot immediately north of Pius Way and adjacent to George Elmer Drive.

The MDT Tentative Construction Projects 2020-2024 web application was reviewed on July 21, 2020, to identify any MDT-sponsored projects occurring in the vicinity of the proposed project. A single roadway resurfacing project (project number NH 92-1(16)0) is identified on Reserve Street (US-93) from I-90 south to the intersection with Brooks Street.

3.5 Cumulative Impacts

The following section includes an assessment of potential cumulative impacts on study area resources.

Farmland: Conversion of prime farmland to transportation and urban uses in the study area vicinity would continue to adversely affect the availability of prime farmland in Missoula County. The proposed project, in addition to future projects identified in the study area vicinity, would result in incremental losses of prime farmland. In accordance with the FPPA, consultation with the NRCS has been completed. The proposed project was evaluated by the NCRS on August 8, 2020 and, per the final score on the NRCS-CPA-106 form of 157, the total score is less than 160 and the project area does not need to be given further consideration for protection.

Any future federally funded project impacting farmlands would be developed in accordance with the Farmland Protection Policy Act. Future development in the study area vicinity would occur in accordance with adopted land use plans and growth policies.

Water Resources and Water Quality: Past land use practices including agricultural and urbanization within the watershed have affected water quality in Grant Creek. The future projects identified in the study area vicinity will increase the amount of impervious surface area and storm water runoff. It is anticipated that runoff from the additional impervious surfaces would be treated through use of appropriate site drainage and ditches in accordance with local MS4 permitting requirements thus minimizing adverse effects to water quality in the study area.

The restoration of Grant Creek is included in the BUILD grant application, however, funding is insufficient to complete this project component under the proposed project. The City/County have committed to completing this project but the timeline and funding source are undetermined. This

project component would restore 2,800 feet of stream channel and floodplain to return Grant Creek to a natural condition. As identified in the 2019 grant application, this project component will restore habitat, floodplain, and hydraulic function on 2,800 feet of Grant Creek, which has been significantly modified over many years. Restoration will provide a natural greenbelt adjacent to the airport, with opportunities for open space protection, agricultural use, and trails. Restoration of the floodplain will provide flood control and improve development potential for properties currently at risk of flooding.

Any water quality impacts associated with future projects affecting aquatic resources such as wetlands and streams would be identified and mitigated on a project-by-project basis through the permitting processes established by the federal, state, and local regulatory authorities.

Air Quality: The proposed project is located within the carbon monoxide (CO) Maintenance Area but is located outside of the PM-10 Maintenance Area, which was reclassified from Non-Attainment status effective June 24, 2019. As such, the project's potential effect on CO emissions is relevant given the project location. Past air quality violations resulted in non-attainment status in 1990; however, Missoula has not violated the NAAQS in 30 years. The proposed project is anticipated to improve air quality over the long-term by relieving congestion at intersections on Reserve Street and Mullan Road. The MPO regional travel demand model indicated that for the projected year of 2050, VMT is projected to decrease by approximately 30,000 miles/day and congested hours of travel is estimated to decrease 2,500 hours/day. These are substantial improvements over baseline conditions, indicating an overall air quality improvement compared to a no build condition. The proposed BUILD project has been included in the Amendment #4 to the 2016 Missoula LRTP and was determined to meet the applicable air quality conformity requirements found in 40 CFR Part 93, Subpart A, from FHWA and FTA, in consultation with the EPA, on July 15, 2020.

Project-level air quality conformity analysis has been completed. State-level transportation conformity consultation requirements and procedures found at ARM 17.8.1305 through 17.8.1306 require interagency consultation to allow air quality agencies to review the analyses and provide comment. Air quality agencies have concurred that the proposed project meets the applicable conformity requirements found in 40 CFR Part 93 (EPA on October 26, 2020; MT DEQ on October 26, 2020; and Missoula County on October 28, 2020).

A qualitative mobile source air toxins (MSAT) analysis was conducted for the project. In general, MSATs, of which PM-2.5 and PM-10 are of particular concern, are not expected to increase over existing conditions. This is due to the aforementioned reduction in overall VMT as a result of the project, but also due to EPA's implementation of MSAT reduction programs.

The construction of future actions may result in short-term and localized construction-related impacts on air quality. Additionally, as the area develops, vehicular travel and emissions will increase in the study area vicinity. These future effects when added to the proposed project are not anticipated to result in significant cumulative impacts on air quality because the air quality analyses conducted in relation to the regional travel demand model have been found to be within the budgeted emissions for the urban area and in compliance with the National Ambient Air Quality Standards.

Floodplain: The proposed Grant Creek restoration is discussed above and is anticipated to have positive cumulative impact on floodplain function within the study area. This process will include a Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) from FEMA, which may take up to one year pre- and post-construction, respectively. Additional encroachments on the revised regulatory floodplain as a result of any future project would be subject to the floodplain regulations administered by Missoula County and require a compliance review during the permitting process. Future transportation projects receiving federal funds would be designed in accordance

FHWA regulations (23 CFR 650 Subpart A) and in coordination with the appropriate regulatory agencies. Because of this, adverse cumulative effects on the floodplain are not anticipated.

Threatened and Endangered Species: Several threatened and endangered species have been documented to occur within Missoula County; however, as described in detail in the Biological Assessment, all species with the exception of bull trout are not expected to occur within the project area due to lack of suitable habitat and no effect on these species is expected to occur. These effect determinations are appropriate given the lack of suitable habitat and general improbability for these species to be present in the action area during construction and no conservation measures are necessary for these species.

Informal consultation with the U.S. Fish and Wildlife Service was completed on October 29, 2020. The USFWS has concurred with the determination that the proposed project may affect, but is not likely to adversely affect the threatened bull trout and designated bull trout critical habitat. In their concurrence letter, the USFWS identified concerns with regard to future plans for restoration work along Grant Creek, the treatment of storm water runoff from increases in impervious surfaces that will result from development of the area, and the potential resultant effects of these items on the threatened bull trout and bull trout critical habitat in Grant Creek. Because the Mullan Area Master Plan is outside the scope of the proposed project's consultation process, the USFWS requested that representatives from Missoula County and the City of Missoula coordinate with them regarding plans for storm water runoff and Grant Creek restoration work as the project progresses to better understand these components so they can assess potential effects to bull trout, and make recommendations as necessary.

Any future work within Grant Creek has the potential to adversely affect the federally-listed bull trout and its designated critical habitat protected under the Endangered Species Act. While in-water work within Grant Creek may result in temporary, short-term effects, the stream restoration project as a whole would be anticipated to result in positive long-term benefits on fish habitat. Any future project involving federal funds or requiring federal approval (permit) is required assess the effects of the proposed action on threatened, endangered, and proposed species and to consult with the USFWS for concurrence on the determination of effect. Because of this, cumulative impacts on threatened, endangered, and proposed or candidate species are not anticipated.

Visual Resources: Past development in the study area vicinity has gradually affected the visual character through introduction of homes, roads, overhead utilities, and other infrastructure. Subdivisions have fragmented the agricultural fields that were once characteristic of the Mullan area. Future development within the study area will cumulatively change the visual character of the study area from rural agriculture to more urban setting. Efforts currently underway by Missoula County with the development of the Mullan Area Master Plan have included design charrettes and other public engagement that are intended to create a community consensus on the future uses and visual character of the Mullan area. Future changes in land use affecting the visual character of the study area would be consistent with existing planning documents and community goals. The inclusion of open space, street landscaping, and other beautification measures are anticipated to mitigate adverse effects on the visual character.

Traffic and Access: The proposed project is anticipated to indirectly induce growth by providing a portion of the backbone transportation infrastructure for the area by constructing new north-south connection between Mullan Road and West Broadway Street provided by Mary Jane Boulevard and a new east-west connection from Reserve Street provided by England Boulevard that would connect to Mullan Road via the extension of George Elmer Drive. The new development and increased

residential densities will affect the transportation network by adding vehicular trips to the existing and planned roadway network. The proposed project has evaluated present and future traffic demands consistent with the MPO's forecasted growth and has recommended improvements and intersection treatments that will allow for acceptable levels of service through the design year of 2050.

Economic: The proposed project, in conjunction with present and future projects in the area, would not result in significant adverse cumulative impacts on economic resources. The proposed project is intended to stimulate economic development and resulting cumulative effects would be beneficial. According to the 2019 BUILD grant application, the proposed project has potential for \$2.6 billion in new taxable value from commercial, industrial, and residential development, including the new VA hospital and workforce housing adjacent to the Opportunity Zone east of Reserve Street.

4 Conclusions

Potential indirect and cumulative effects were evaluated for the proposed Mullan BUILD project and no significant impacts were identified as defined in 40 CFR § 1508.27. The proposed project would construct the backbone transportation network to serve as a catalyst for future commercial, industrial, and residential development. Indirect effects in the form of induced growth are anticipated to occur within the study area vicinity. As previously described, the study area has been identified in numerous plans for future growth and city annexation in accordance with City/County growth policies and adopted land use plans. Efforts underway related to comprehensive planning (i.e., Mullan Area Master Plan), complete streets design to improve the safety and functionality of the proposed roadways for all users, and robust public and stakeholder participation will mitigate effects resulting from the proposed project.

5 References

- CEQ (Council of Environmental Quality). 1997. Considering Cumulative Effects under the National Environmental Policy Act. January 1997.
- Missoula County. 2019a. Missoula Area Land Use Element. An Amendment to the 2016 Missoula County Growth Policy Missoula County Community and Planning Services. Adopted June 6, 2019. 53 pp.
- Missoula County. 2019b. Mullan BUILD Grant Application. Prepared by Missoula County. July 10, 2019.
- MPO (Missoula Metropolitan Planning Organization). 2020. Email correspondence between Aaron Wilson (MPO) and Ryan Hammon (FHWA). June 30, 2020.
- Tidd, L., Sliker, L., Braitman, Lee-Roark, C., and Ballard, L. 2013. Assessing the Extent and Determinants of Induced Growth. Report No. FHWA/MT-13-004/8216. Report prepared by the Louis Berger Group, Inc. June 2013.