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CITY OF Grand Junction COLORADO

GRAND JUNCTION CITY COUNCIL
MONDAY, MAY 2, 2022
WORKSHOP, 5:30 PM
FIRE DEPARTMENT TRAINING ROOM AND VIRTUAL
625 UTE AVENUE

1. Discussion Topics

a. Affordable Housing Goal Development

b. Truck Routes and Compression Brakes

c. Union Pacific Railroad (UPRR) Downtown Quiet Zone

2. City Council Communication

An unstructured time for Councilmembers to discuss current matters, share ideas for possible future consideration by Council, and provide information from board & commission participation.

3. Next Workshop Topics

4. Other Business

What is the purpose of a Workshop?

The purpose of the Workshop is to facilitate City Council discussion through analyzing information, studying issues, and clarifying problems. The less formal setting of the Workshop promotes conversation regarding items and topics that may be considered at a future City Council meeting.

How can I provide my input about a topic on tonight's Workshop agenda?
Individuals wishing to provide input about Workshop topics can:

1. Send an email (addresses found here https://www.gjcity.org/313/City-Council) or call one or more members of City Council (970-244-1504);

2. Provide information to the City Manager (citymanager@gjcity.org) for dissemination to the City Council. If your information is submitted prior to 3 p.m. on the date of the Workshop, copies will be provided to Council that evening. Information provided after 3 p.m. will be disseminated the next business day.

3. Attend a Regular Council Meeting (generally held the 1st and 3rd Wednesdays of each month at 6 p.m. at City Hall) and provide comments during "Citizen Comments."

Grand Junction City Council

Workshop Session

Item #1.a.

Meeting Date: May 2, 2022

Presented By: Tamra Allen, Community Development Director, Mollie Fitzpatrick, Root Policy Research

Department: Community Development

Submitted By: Kristen Ashbeck, Principal Planner
Tamra Allen, Community Development Director

Information

SUBJECT:

Affordable Housing Goal Development and Dedicated Funding

EXECUTIVE SUMMARY:

Root Policy Research will present and participate in a discussion with City Council concerning development of a housing goal(s) relative to the recently-adopted Housing Strategy.

BACKGROUND OR DETAILED INFORMATION:

On October 6, 2021, the City Council adopted Resolution No. 82-21 that outlined twelve strategies to be pursued to address the City's housing needs. This workshop is intended to focus on Strategy 2: Adopt a Local Affordable Housing Goal(s) and of which the draft recommendation is specifically focused on defining affordable and attainable housing as well as production goals for affordable housing. The workshop is also intended to focus on Strategy 7: Create a Dedicated Revenue Source to Address Housing Challenges and provides, for discussion, typical dedicated revenue sources.

FISCAL IMPACT:

N/A

SUGGESTED ACTION:

This item is for discussion only.

Attachments

1. Strategy 2 Memo_goal
2. Strategy 7 Memo_funding sources
3. Housing - Dedicated Revenue
4. 2021 Grand Junction Housing Strategy (PDF)

ROOT POLICY RESEARCH

MEMORANDUM

Grand Junction
Strategy 2: Adopt Affordable Housing Goal (s)

PREPARED FOR:
City of Grand Junction

DRAFT DATE:
April 26, 2022

On October 6, 2021, the City Council adopted Resolution No. 82-21 that outline twelve strategies to be pursued to address the City's housing needs. **This memo focuses on Strategy 2: Adopt a Local Affordable Housing Goal(s) and is specifically focused on affordable housing production. It is not intended to address the full spectrum of housing needs identified in the HNA**. Additional detail on needs and the complete toolkit of recommended strategies is available in the GJ Housing Strategy.

This memo provides documentation of next steps toward the adoption of local affordable housing goals for the City of Grand Junction. It begins with a review of the City's Housing Strategic Plan element related to goal development and follows with supporting research related to existing housing needs and gaps (based on the Grand Valley Housing Needs Assessment (HNA)), current inventory and production pipeline of affordable housing, and definitions of "affordable" and "attainable" housing.

HOUSING STRATEGIC PLAN (HSP): STRATEGY 2. ADOPT A LOCAL AFFORDABLE HOUSING GOAL(S).

Formally adopting local affordable housing goals helps establish a target for the city to monitor progress. Goal structure varies by community; for example goals can be:

- Output oriented (e.g., 10% of all housing units will be affordable to households earning less than 80% AMI by 2040);

- Input oriented (e.g., the City will allocate 20% of housing trust fund resources to services for people experiencing homelessness); or
- Value oriented (e.g., increase supply of attainable ownership housing available to those making less than 100% AMI).

Goals should be related to identified needs, reflect City priorities and provide clear direction with measurable outcomes.

Benefits. Signals to development community the City's desire for affordable development; provides a benchmark for the City in navigating negotiations with developers and/or establishing incentives.

Challenges. Political challenges in defining goal; if goal specifies income category, may reduce flexibility in future; outcome-oriented goals are not always in the city's control.

Expected outcomes and keys to success. Outcomes vary depending on the goal as well as the other tools in place to help the city achieve its goal. This works best when paired with other tools and strategies designed to support the goal.

Recommended actions for Grand Junction:

- Work with housing coalition and non-profit partners to identify specific housing targets over the next five years to inform affordable housing production goal.
- Consider **committing to a goal** related to the housing gap or related to annual production of affordable housing units. For example "Reduce the housing gap by 500" or "Create 500 new affordable units over the next 5 years." Note actual target should be informed by anticipated production (see previous bullet).
- Include **clear definitions** of "affordable" and "attainable" housing in targets.
- **Track annual** affordable housing production (or other metrics) to measure progress toward goal.

This memo provides specific recommendations consistent with the Recommended Actions for Grand Junction.

BACKGROUND INFORMATION TO INFORM AFFORDABLE AND ATTAINABLE DEFINITIONS AND GOAL-SETTING

CURRENT MESA COUNTY AMI

Area Median Income, or AMI, is the typical metric by which households qualify for various housing programs. HUD sets AMI annually by market area and household size; Grand Junction is included in the broader Mesa County AMI. Figure 1 below shows the Grand Junction AMI income limits in both 2019 and 2021 (2019 is included for consistency with 2019 data points from the Grand Valley HNA).

Figure 1. HUD AMI, Mesa County

	Persons in Family				
	1	2	3	4	5
2019 AMI					
30% AMI	$14,650	$16,910	$21,330	$25,750	$30,170
50% AMI	$24,400	$27,900	$31,400	$34,850	$37,650
60% AMI	$29,280	$33,480	$37,680	$41,820	$45,180
80% AMI	$39,050	$44,600	$50,200	$55,750	$60,250
100% AMI	$48,800	$55,800	$62,800	$69,700	$75,300
120% AMI	$58,560	$66,960	$75,360	$83,640	$90,360
2021 AMI					
30% AMI	$15,450	$17,650	$21,960	$26,500	$31,040
50% AMI	$25,750	$29,400	$33,100	$36,750	$39,700
60% AMI	$30,900	$35,280	$39,720	$44,100	$47,640
80% AMI	$41,200	$47,050	$52,950	$58,800	$63,550
100% AMI	$51,500	$58,800	$66,200	$73,500	$79,400
120% AMI	$61,800	$70,560	$79,440	$88,200	$95,280

Source: HUD and Root Policy Research.

HOUSING GAP AND NEEDS BY AMI

The Grand Valley Housing Needs Assessment quantified both rental and owner gaps by income; those analyses are summarized below to provide context for the goal discussion.

The rental gap analysis, which compares current rental supply and demand in Grand Junction identifies a shortage of 2,168 units affordable to households earning less than $25,000 per year. The cumulative gap shows that a cumulative shortage persists for households earning up to $35,000 per year. The rental gap at $25,000 roughly approximates to **30%-50% AMI**, and the cumulative gap at $35,000 roughly approximates to **50%-60% AMI**, depending on household size.

The ownership gaps model, which compares potential demand among first time buyers to the for-sale supply by price-point highlights an acute gap for households earning less than $35,000 and a cumulative gap for households earning up to $75,000. The for-sale gap at $35,000 roughly approximates to **50%-60% AMI**, and the cumulative gap at $75,000 roughly approximates to **90%-150% AMI**, depending on household size.

Figure 2.
Rental Gap Summary

Source: Root Policy Research from Grand Valley HNA.

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Renter Incomes	Max Affordable Gross Rent	Rental Demand (Current Renters)		Rental Supply (Current Units)		Gap	Cumulative Gap
		Number	Percent	Number	Percent		
Less than $25,000	$625	4,422	40%	2,254	20%	(2,168)	(2,168)
$25,000 to $34,999	$875	1,185	11%	2,709	24%	1,524	(644)
$35,000 to $49,999	$1,250	1,833	17%	3,242	29%	1,409	765
$50,000 to $74,999	$1,875	1,592	14%	2,356	21%	764	1,529
$75,000+	$1,875+	1,976	18%	646	6%	(1,330)	199

Figure 3.
First-Time Buyer Gap Summary

Source: Root Policy Research from Grand Valley HNA.

Potential 1st Time Buyer Incomes	Max Affordable Home Price	Potential 1st Time Buyer Demand (Current Renters)		For-Sale Supply (Homes Sold 2020-2021)		Renter Purchase Gap	Cumulative Gap
		Number	Percent	Number	Percent		
Less than $25,000	$120,592	4,422	40%	88	3%	-38%	-38%
$25,000 to $34,999	$168,831	1,185	11%	169	5%	-6%	-44%
$35,000 to $49,999	$241,190	1,833	17%	744	21%	5%	-39%
$50,000 to $74,999	$361,787	1,592	14%	1,512	44%	29%	-9%
$75,000+	$361,787 +	1,976	18%	949	27%	9%	0%

DEED/INCOME RESTRICTED HOUSING STOCK AND DEVELOPMENT PIPELINE

According to affordable housing providers and stakeholders, the current inventory of deed/income restricted housing stock in Grand Junction is 1,733 rental units and 64 ownership units.[1] This total excludes vouchers, which can be used in market-rate units or in affordable units. Collectively, these deed/income-restricted units account for 7% of the total housing stock in Grand Junction (15% of rental units and 0.4% of owner units are income restricted). Another 90 income-restricted rental units are in the pipeline and Habitat for Humanity sets a target of 5 additional income-restricted ownership units per year.

Figure 4. Income Restricted Units, Grand Junction

	Deed/Income Restricted Units	Total Occupied Units in the City	Deed/income Restricted as a % of Total
Rental Units	1,733	11,207	15%
Owner Units	64	15,274	0.4%
Total	1,797	26,481	7%

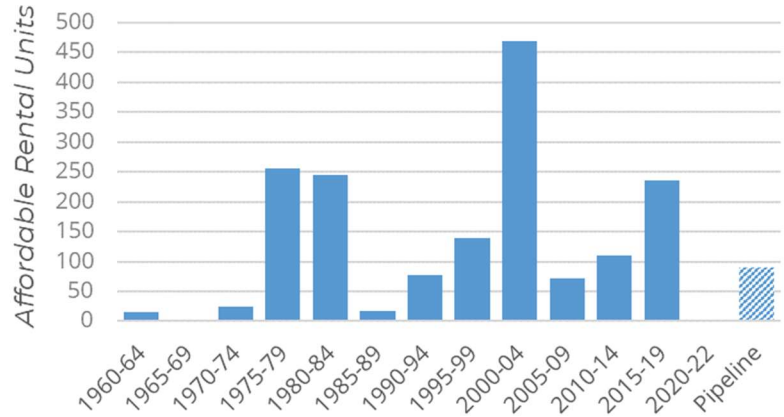
Note: Does not include vouchers.

Source: GJHA, Catholic Outreach, Habitat for Humanity and Root Policy Research.

In addition to the income restricted, affordable units identified above, there are 1,501 housing vouchers (i.e., Housing Choice Vouchers, Project Based Vouchers, etc.) in use in the Grand Valley. Overall, about one-third of vouchers are used in income restricted units—this subsidy overlap allows such units to achieve even deeper affordability for extremely low income households and improves project viability for affordable development. In addition, "affordable" developments are often among the few options for voucher-holders, as many rentals exceed the Voucher Payment Standard, and some Landlords are reluctant to rent to voucher-holder households.

Figure 5 shows affordable rental units in Grand Junction by year built; it includes the current projected pipeline of units. The pace of development is impacted by market conditions, land availability, LIHTC allocations, as well as affordable housing provider operations and funding.

Figure 5. Affordable Rental Development by Year



Source: GJHA, Catholic Outreach, Habitat for Humanity and Root Policy Research.

[1] HRWC has helped create 350 affordable ownership units in the Grand Valley through the Self-Help program, but those homes do not carry a long-term deed restriction and are not included in the affordable inventory.

PROPOSED AFFORDABILITY DEFINITIONS AND PRODUCTION GOAL

DEFINING AFFORDABLITY

Lower-case-"a," affordable housing is generally linked to the idea that households should not be cost burdened by housing.[3] However, the term "Affordable housing" (upper case "A") is often used to specifically describe housing that has some type of income restriction or public support or subsidy, such as public housing, HUD housing, Low Income Housing Tax Credits (LIHTC), etc. "Attainable" or "Workforce" housing are also common terms used to describe affordable options for moderate income households.

As noted in the Housing Strategy, having clear definitions of "Affordable" and "attainable" housing is critical for effective implementation of goals. Considerations for definitions include alignment with local housing needs; as well as consistency with existing housing program and funding definitions.

The LIHTC program[4] (the largest contributor to affordable rental housing in Grand Junction) targets 60% AMI households or less (though individual units can go up to 80% AMI when the development average is 60%). State funding sources, including Private Activity Bonds (PAB),[5] target 60% AMI or less for rental and 115% AMI or less for owners. Habitat for Humanity's ownership units target households earning 30% to 65% of AMI.

The term of affordability—the length of time the deed-restriction or income-restriction applies—varies by program but typically ranges from 15 years to 99 years.

AFFORDABLE & ATTAINABLE DEFINED:

Affordable housing: Housing units with a contractual requirement (deed-restriction or income restriction) that keeps the cost of rent or mortgages affordable to households making 80% or less of the AMI. [The affordability term for projects receiving City funding or incentives should be no less than 30 years].

Attainable housing: Housing units affordable to households making between 80% and 120% of AMI. This can include naturally occurring or deed-restricted properties.

Resource Prioritization: The City may opt to prioritize resources to the most acute needs, which are concentrated below 30% AMI but extend up to 60% AMI for rentals. The most acute needs for ownership are units at or below 80% AMI for ownership options.

[3] Cost burden is defined as spending 30% or more of gross income on housing.

[4] More info on LIHTC: https://www.huduser.gov/portal/datasets/lihtc.html

[5] More info on PAB program: https://www.chfainfo.com/rental-housing/private-activity-bonds/pab-overview-guide-for-local-communities

GJ AFFORDABLE HOUSING GOAL DEVELOPMENT

AFFORDABLE PRODUCTION GOAL

The City desires to set an Affordable housing production goal that is both reasonable/achievable but that increases the production of Affordable housing beyond the anticipated pipeline of current affordable housing providers in the City. Key considerations for goal setting include:

Affordable Housing Needs:

- The rental gap analysis (described in detail in the HNA and summarized on page 3), identifies a 2,168-unit shortage affordable to households earning less than 50% AMI. The rental gap describes an affordability shortage (not necessarily a production shortage) which could be addressed through a combination of new construction, preservation, and rental assistance.

- Affordable for-sale homes are also in short supply, particularly for households earning less than 80% AMI (see page 3 for ownership gap summary; details in the HNA).

- In addition to the current affordability gap, the Grand Valley HNA forecasts a county-wide need for an additional 5,254 units below 80% AMI through 2030—a mix of both owner and rental units. At a 43% share of the county's total housing units, Grand Junction would need to produce **227 units per year** at 80% AMI to meet the forecasted affordable production need.

Housing Production Capacity:

- Since 2010, the City has averaged 467 new units of housing per year in total (regardless of price-point, tenure, or income restrictions). Prior to 2019 the annual average was just 352 units per year.

- New production of income-restricted housing has averaged 29 units per year since 2010 (see page 4 for details).

- The pipeline of affordable housing development suggests that about 90 Affordable rental units and 15 Affordable ownership units will be created over the next three years (an average of **35 units per year**).

- A proposed state policy may unlock additional financial resources for communities that increase their affordable inventory by 3% per year, which equates to 55 units per year in Grand Junction.

- In addition to the above, affordable housing legislation and programming at the state level may increase the capacity of local communities and affordable housing developers to contribute to affordable production in the near term.

AFFORDABLE PRODUCTION GOAL:

Based on the considerations summarized above, Root recommends the following affordable housing goal:

Grand Junction aims to increase the total Affordable housing stock in the City by 225 units over the next 5 years (an average of 45 units per year, at <80% AMI).

The City also acknowledges the need for attainable housing, affordable for households earning between 80% and 120% AMI.

To that end, the City may consider future tools and incentives to encourage attainable development, outside the scope of the Affordable production goal.

Figure 6 shows the affordable rent and home prices at 60%, 80%, and 120% AMI based on the 2021 HUD AMI for Mesa County. Note that 80% AMI reflects the stated goal, but 60% AMI and 120% AMI are also included for reference if the City opts to prioritize resources at these levels.

Figure 6. Affordable Rents and Home Prices by AMI

	Persons in Family				
	1	2	3	4	5
Affordable Rent					
60% AMI	$732	$837	$942	$1,046	$1,130
80% AMI	**$976**	**$1,115**	**$1,255**	**$1,394**	**$1,506**
120% AMI	$1,464	$1,674	$1,884	$2,091	$2,259
Affordable Home Price					
60% AMI	$122,759	$140,368	$157,977	$175,334	$189,421
80% AMI	**$163,720**	**$186,989**	**$210,468**	**$233,737**	**$252,603**
120% AMI	$245,518	$280,736	$315,953	$350,668	$378,842

Note: Affordable rent assumes 30% of income is spent on housing. Maximum affordable home price is based on a 30-year mortgage with a 10% down payment and an interest rate of 4.25%. (Note that the HNA used an interest rate of 3.11%, but rates have increased since that report was drafted). Property taxes, insurance, HOA and utilities are assumed to collectively account for 25% of the monthly payment.

Source: 2021 HUD AMI and Root Policy Research.

TRACKING AFFORDABLE PRODUCTION

As noted in the Housing Strategy, the City should track annual affordable housing production to measure progress toward the goal. A system for tracking should include an annual survey of housing coalition and non-profit partners to identify new units, units lost to expiring contracts, and pipeline. A survey for the city is currently in development.

ROOT POLICY RESEARCH

MEMORANDUM

Grand Junction Strategy 7: Dedicated Revenue Source

PREPARED FOR:
City of Grand Junction

DRAFT DATE:
April 26, 2022

On October 6, 2021, the City Council adopted Resolution No. 82-21 that outline twelve strategies to be pursued to address the City's housing needs. **This memo provides a brief overview of options related to implementation of Grand Junction Housing Strategy 7: Create a Dedicated Revenue Source to Address Housing Challenges.** The Strategy language from the Grand Junction Housing Strategic Plan is copied below for reference.

HOUSING STRATEGIC PLAN (HSP): STRATEGY 7. CREATE A DEDICATED REVENUE SOURCE TO ADDRESS HOUSING CHALLENGES.

Local funding or a "Housing Trust Fund" can have an impact on meeting housing needs. "Trust funds" have grown immensely in popularity with reductions in federal funding for housing. Revenue sources are varied and include: General Obligation Bonds, Real Estate Transfer Taxes (RETT), commercial and/or residential linkage fees, sales tax, jurisdictional general fund set-aside or cash-in-lieu from inclusionary zoning buyouts, and other types of taxes, generally those that are directly tied to demand for housing.

Benefits. Can be used on a variety of programs to address needs across the housing spectrum; flexible funding source without federal regulations.

Challenges. Does not always have political support; efficacy is tied to level of funding; requires staff capacity to manage and allocate resources.

Expected outcomes and keys to success. Can be very effective, depending on funding amount and priorities. Works best when City has clear housing plan/goals and has staff capacity to manage.

Recommended actions for Grand Junction:

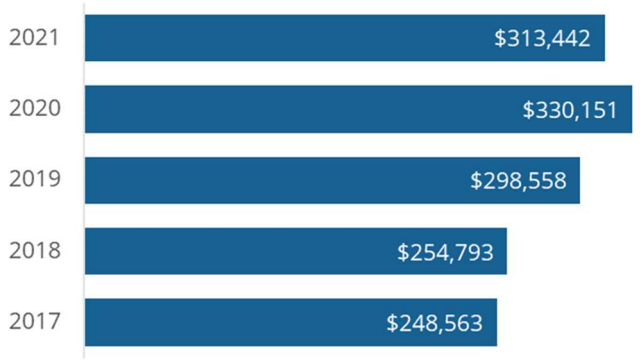
- If possible, appropriate funding in the short-term for implementation of the Housing Strategic Plan.
- Establish working group to evaluate the potential for sustainable, dedicated local funding and determine the most appropriate source of funds. Often, a General Fund allocation is the easiest way to initiate a Housing Trust Fund, but a dedicated stream is ideal for the long-term.
- Conduct analysis of the cost of other prioritized housing strategies and/or related capital items.
- Determine priorities for the fund—what programs/policies should it support? Consider the other strategies outlined in this report that require funding for efficacy.

This remainder of this memo provides an overview of development costs and financing structure for affordable housing construction, relying primarily on data related to Low Income Housing Tax Credit (LIHTC) projects. It then provides a description of common municipal funding options. The memo is intended as a first step in discussing potential funding tools and does not provide a recommendation for the City's consideration.

COST TO DEVELOP AFFORDABLE HOUSING

According to data from the Colorado Housing and Finance Authority (CHFA), the average development cost of affordable housing in Colorado was $313,442 per unit in 2021, up from $248,563 per unit in 2017.

Figure 1. Affordable Development Cost per Unit



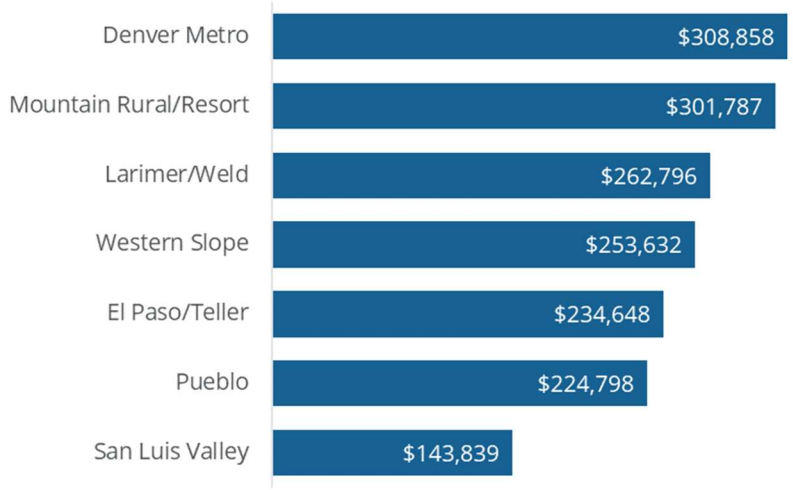
Note: Reflects all Colorado LIHTC (44 developments per year on avg). Includes new construction and acquisition/rehab projects.

Source: CHFA Affordable Housing Development Cost Dashboard.

The five-year average (2017-2021) for Western Slope affordable housing development is $253,632 per unit—lower than front range and mountain communities but higher than other areas of the state (see Figure 2 on the following page).

GJ DEDICATED REVENUE FOR AFFORDABLE HOUSING

Figure 2. Affordable Development Cost per Unit by Region, 2017-2021 5-year Average



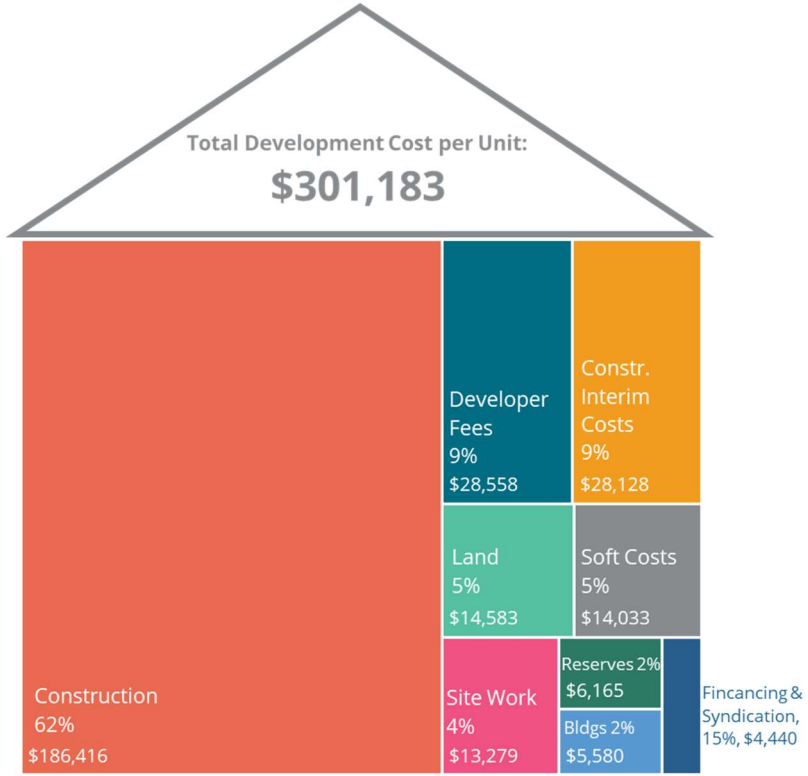
Note: Includes new construction and acquisition/rehab projects. Western Slope region includes Moffat, Rio Blanco, Garfield, Mesa, Delta, Gunnison, Montrose, Ouray, San Miguel, San Juan, Dolores, Montezuma, La Plata, and Archuleta counites. There were 17 Western Slope LIHTC projects in 2017-2021.

Source: CHFA Affordable Housing Development Cost Dashboard.

As shown in Figure 3, construction costs account for 62% of total development costs in new construction LIHTC projects and averages $186,416 per unit.

Land costs average 5%, or $14,583 per unit. It should be noted that 17% of new construction deals in this dataset received free or heavily discounted land; the average land cost per unit for deals that did purchase land was $17,858.

Figure 3. Total Development Cost by Element for New Construction LIHTC Projects 2017-2021



Note: Excludes acquisition/rehab projects.

Source: CHFA Affordable Housing Development Cost Dashboard and Root Policy Research.

GJ DEDICATED REVENUE FOR AFFORDABLE HOUSING

Financing for LIHTC or other affordable housing development typically includes a mix of debt, equity (funded by the tax credits) and soft funds such as gap financing, subsidy, and/or forgivable loans. This differs from conventional (i.e., market-rate) developments which are financed exclusively by debt and equity.

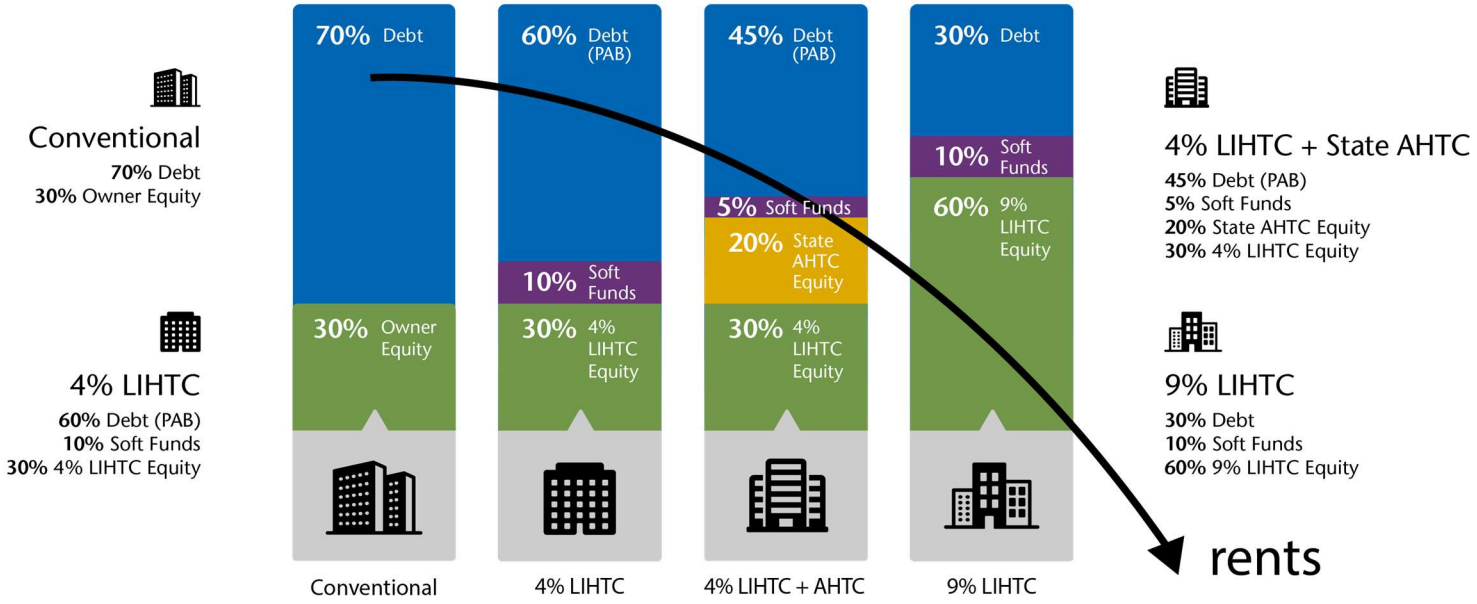
Figure 4 illustrates the differences in financing structure by project type (market rate or conventional vs Affordable).

The financing structure for LIHTC assumes the project is entirely affordable. For conventional (market-rate) projects that include some affordable units (e.g. based on negotiated agreements or inclusionary requirements) the financing structure will look primarily like a conventional structure but may include a small portion of soft funds (in the form of fee waivers or other small cash subsidies from local governments).

Figure 4. CHFA Graphic: Capital Stack for Conventional and LIHTC Development

Source:

Colorado Housing and Finance Authority.



GJ DEDICATED REVENUE FOR AFFORDABLE HOUSING

As shown in the previous graphic, soft funds (i.e., subsidies) typically cover 5%-10% of the total development cost, above and beyond the value of the tax credit equity.

Applying this percentage to the average cost for Western Slope affordable development ($253,632) yields an estimated subsidy of $12,700 (5%) to $25,400 (10%) per affordable unit.

RESOURCES TO ACHIEVE AFFORDABLE HOUSING PRODUCTION GOAL:

Based on the cost and subsidy information outlined above, the public resources for affordable development can range from **$25,000 per unit** (for a 10% subsidy in addition to LIHTC) **up to $255,000 (or more) per unit** (for total production cost).

The City of Grand Junction would need **$5.6 million to $57 million over 5 years** in order to produce the targeted 225 affordable housing units.

See Goal Development Memo for details on affordable production goal.

COMMON MUNICIPAL FUNDING OPTIONS FOR AFFORDABLE HOUSING TRUST FUNDS

According to As noted in the strategy overview, revenue sources are varied and can range from targeted fees to broad taxes (note that all tax options would require voter approval). Some of the most common revenue options are described below:

- **Sales Tax**—additional assessment on taxable goods. This option provides a broad base for revenue generation but does require voter approval to initiate. Sales taxes may be more likely to burden lower income households than other tax/fee options.
- **Property Tax**—additional mill levy dedicated to affordable housing. Similar to the above, a property tax mill provides a broad base for revenue generation but does require voter approval to initiate.
- **Real Estate Transfer Taxes (RETT)**—an assessment on the sale of a home. Though several Colorado communities were "grandfathered in" imposition of new RETT in the State of Colorado is illegal. However, the Town of Fruita is considering a potential real estate transfer fee that could be a model for other communities.
- **Linkage Fees (or impact fees)**—assessments on new commercial and/or residential development to produce affordable housing. These fees are calibrated to offset the impact of the new development housing availability and

affordability by providing funding for new affordable housing developments. Similar to other types of impact fees, linkage fees do require a nexus study to set fee amounts.

- **Inclusionary Zoning Fee-in-Lieu**—inclusionary zoning or inclusionary housing ordinances are requirements to include income-restricted housing in new developments. Most IZ or IHO programs allow developers to pay a fee-in-lieu of construction the affordable (income restricted) units and fee revenues are typically dedicated to an affordable housing trust fund.
- **Lodging Tax**—recent state legislation gives communities more flexibility in how lodging tax revenue is spent, making this a more viable option for affordable housing funding. This option capitalizes on tourism to help fund local housing.
- **Short Term Rental Fee**—a fee imposed on short-term rentals. Similar to a lodging tax, this revenue source capitalizes on tourism to help fund local housing.

POTENTIAL REVENUE MODELING

In order to provide context for discussion, the City evaluated potential revenue generation across some of the options for dedicated revenue sources. Results are shown below:

- Sales tax at a rate of .25%: Based on 2022 projected sales tax (original budget)= $5.5 million
- Property tax at a rate of 1 mil: Based on 2021 levy/2022 assessment= $1,171,105
- Lodging tax at a rate of 1%: Based on 2022 projected lodging tax (original budget) = $669,578
- Short Term Rental Tax/Fee at a rate of 1%: Based on 2021 Revenues reported through Host Compliance = $23,015

OTHER HELPFUL RESOURCES

Additional resources that may be useful as the City evaluates the options available for a dedicated revenue source include:

- https://localhousingsolutions.org/housing-policy-library/housing-trust-funds/
- https://housingtrustfundproject.org/htf-elements/revenue-sources/
- https://localhousingsolutions.org/housing-policy-library/dedicated-revenue-sources/
- https://cmlresource.com/497-2/housing/revenue-for-affordable-housing/

	Revenue Generation Tools									
	Excise Tax	**Use Tax (on Construction Materials)**	**Occupational Privilege Tax (Head Tax)**	**Document Recording Fee**	**Dedicated Sales Tax**	**Dedicated Property Tax**	**Dedicated Lodging Tax**	**RETT / RETA**	**General Fund Set-Aside**	**CDBG/HOME/AHF/ PAB Dedication**
What is it?	Residential and commercial development pay a fee per sqft of new floor area	Additional assessment on construction materials	Tax assessed per employee per month	Additional fee per document	Additional assessment on taxable goods	Additional mill levy	Additional assessment on lodging	Ad valorem tax (RETT) or assessment on sale of home (RETA)	Ongoing annual contribution from the General Fund to the Affordable Housing Fund	Dedication from these funds to create or maintain affordable units
What is a typical assessment?	$0.50 to $13.00 per sqft	0.35% to 3.00%	$4 to $10 per month per employee	$3 per document	0.25% to 0.50%	0.17 to 0.80 mills	2% to 4%	0.1% to 2.0%	Set annual amount or % of annual revenue	40% CDBG (60% already dedicated elsehwere); $3 million PAB (must be debt);
How is it administered?	Collection system needs to be created	Uses existing tax collection structure	Collection system needs to be created; businesses need to be educated	Uses existing tax collection structure (typically County in CO)	Uses existing sales tax collection structure	Uses existing property tax collection structure	Uses existing lodging tax collection structure	Implemented by developer at time of entitlement	Annual Budget	Annual Budget
Who is affected?	• New residential and commercial development	• Developers • Contractors	• Employers • Employees	• Legal • Business • Real estate	• Residents • Businesses • Visitors	• Existing and future property owners as well as residential and commercial tenants	• Visitors	• Real estate developers • Home buyers	• Other city departments	• Other programs funded with CDBG
What is the revenue potential?	$	$$	$$	Varies	$$$	$$$	$$	$	$$	$
What are its advantages / disadvantages?	• Generates revenue at pace of development • Voter approval required	• Strong nexus to new residential, commercial and industrial development • Voter approval required	• Addresses both existing and new needs • Voter approval required • Links housing to employment	• Applies to broad set of documents • Weak nexus to housing	• Possible to generate high revenues • Voter approval required	• Possible to generate high revenues • Voter approval required	• Reasonable nexus exists • Lodging industry expects to use funds for tourism • Voter approval required	• Can be imposed voluntarily by developer at time of project initiation • Applies to new sales subject to developer agreement	• Provides greatest amount of flexibility in terms of utilization of funds • Competes with other city priorities	• CDBG allocation changes annually and often declines • Each fund has use restrictions so may not be able to address immediate needs • HOME and AHF already dedicated to affordable housing
Who uses it?	Cambridge, MA San Francisco, CA Berkeley, CA Boulder, CO Parker, CO	St. Louis, MO San Miguel County, CO	Denver, CO Aurora, CO Greenwood Village, CO	Indianapolis, IN Jackson County, MO Bucks County, PA Philadelphia, PA	Aspen/Pitkin County, CO St. Paul, MN Dayton, OH	Pitkin County, CO Boulder, CO Cambridge, MA Seattle, WA	San Francisco, CA Columbus, OH Snowmass Village, CO	Aspen, CO; Snowmass Village, CO Vail, CO Breckenridge, CO Telluride, CO Winter Park, CO	N/A	N/A

Source: Economic & Planning Systems

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Grand Junction
Housing Strategy

FINAL REPORT
September 21, 2021

GRAND JUNCTION HOUSING STRATEGY

Table of Contents

PURPOSE

This Housing Strategy builds upon the Grand Valley Housing Needs Assessment (HNA) by outlining strategies tailored to address needs identified in the HNA.

The recommendations presented in this report are intended to offer a balanced approach for promoting housing affordability and attainability within Grand Junction. This intent is supported by residents' expressed value of inclusiveness, which was evident in survey results and focus group findings, discussed in detail in Section V of the HNA, as well as Comprehensive Plan Principle 5, discussed in more detail below.

COMPREHENSIVE PLAN ALIGNMENT

Comprehensive Plan Principle 5: Strong Neighborhoods and Housing Choices. The City's Comprehensive Plan outlines the following objectives to achieve strong neighborhoods and housing choices:

1. Promote more opportunities for housing choices that meet the needs of people of all ages, abilities, and incomes.
2. Partner in developing housing strategies for the community.
   - Develop a targeted housing strategy to facilitate and incentivize the creation of affordable housing units for low-income residents and attainable housing for the city's workforce. Update the strategy periodically to address changing needs.
   - Explore options for providing incentives for projects that incorporate units affordable to income levels identified in the housing strategy.
   - Work cooperatively with Mesa County, the Grand Junction Housing Authority, Catholic outreach, Homeward Bound of the Grand Valley, Karis Inc., and other partners to pursue regional efficiency in all matters related to affordable housing:
     - pursuing funding regionally at all levels;
     - retaining and maintaining existing affordable housing stock;

  - publicizing and marketing affordable housing opportunities throughout the region, including rehabilitation and funding;
  - working to preserve viable affordable housing stock and ensure long-term affordability for new units built with financial assistance; and
  - providing supportive housing for at-risk and homeless populations.

3. Support continued investment in and ongoing maintenance of infrastructure and amenities in established neighborhoods.
4. Promote the integration of transportation mode choices into existing and new neighborhoods.
5. Foster the development of neighborhoods where people of all ages, incomes, and backgrounds live together and share a feeling of community.

The strategies outlined in this report support the vision of the Comprehensive Plan and align with plan principles and objectives. This Housing Strategy specifically satisfies the Comprehensive Plan directive to **"develop a targeted housing strategy to facilitate and incentives the creation of affordable housing units for low-income residents and attainable housing for the city's workforce."**

DEFINING AFFORDABLITY

The most common definition of affordability is linked to the idea that households should not be cost burdened by housing. A cost burdened household is one in which housing costs—the rent or mortgage payment, plus taxes and utilities—consumes more than 30% of monthly gross income. The 30% proportion is derived from historically typical mortgage lending requirements. Thirty percent allows flexibility for households to manage other expenses (e.g., childcare, health care, transportation, food costs, etc.).

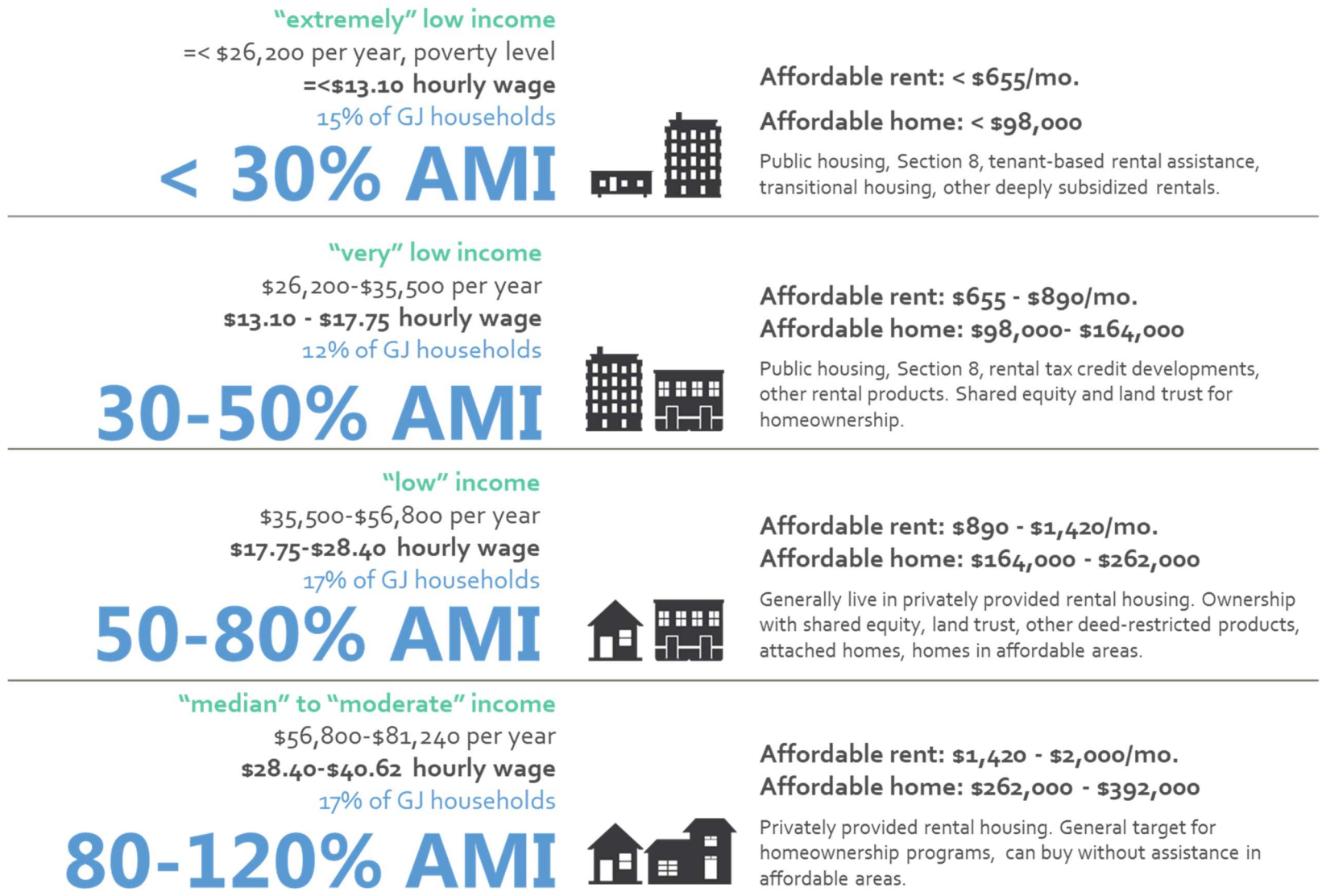
However, the term "Affordable housing" is often used to specifically describe housing that has some type of income restriction or public support or subsidy, such as public housing, HUD housing, Low Income Housing Tax Credits, etc. "Attainable" or "Workforce" housing are also common terms used to describe affordable options for moderate income households.

Figure 1 shows the income thresholds typically used to evaluate income qualifications for various housing programs, based on the Grand Junction MSA 2020 area median income (AMI). AMI is defined annually by HUD market studies. The figure provides AMI ranges and the housing types that typically serve the households in the AMI range.

REPORT ORGANIZATION

The Housing Strategy begins with a brief review of the top housing needs identified in the Grand Valley HNA, followed by an overview of existing programs and resources to address housing needs alongside a discussion of potential barriers to housing creation. Policy recommendations to address the identified issues follow.

Figure 1. Income Thresholds and Target Housing



Note: AMI = HUD Area Median Family Income, 4-person household. The 2020 AMI estimate for the Grand Junction MSA is $67,700.

Source: Root Policy Research and HUD 2020 income limits.

TOP HOUSING NEEDS

TOP HOUSING NEEDS IN GRAND JUNCTION

Housing needs across the Grand Junction Area are discussed in detail in the Grand Valley HNA and summarized herein. Housing pressures are unlikely to improve if the region continues to be a destination for economic development and population growth. Housing price increases have significantly outpaced incomes over the past decade resulting in rapidly declining affordability within both the rental and ownership markets. Due to the severe drop in the for-sale inventory, widening affordability gaps are particularly acute in the for-sale market, pushing ownership further out of reach for many households.

Top needs are summarized below to provide context for the subsequent recommendations.

Additional affordable rentals (or rental assistance), specifically for residents earning less than $25,000 per year. Rental affordability declined in both the county overall and in Grand Junction over the past decade, as rent prices rose faster than incomes. Grand Junction currently has a shortage of 2,168 units priced below $625 per month (30% AMI).

Starter homes and family homes priced near or below $250,000. Over the past decade, for-sale affordability and ownership rates have fallen in Grand Junction (and the county overall even with favorable interest rates). A large drop in inventory and low construction levels since the recession exacerbated price trends and contributed to even higher increases in recent years. Cash offers for affordably priced homes crowd out other buyers, while rising rents and home prices raise barriers to ownership (and financing).

Additional housing resources to address unique needs among special needs populations including residents with accessibility/mobility needs, older adults, people experiencing homelessness, and low-income households.

Diverse housing options to accommodate evolving needs of residents and a wider array of market preferences and special needs. Increasing the variety of product types (e.g., smaller homes, single family attached products, mobile/manufactured and prefab homes, as well as more multifamily housing) can help address affordability needs for middle income households and create opportunities for a more efficient market response to demand.

Another way to frame the top needs outlined above is to consider the key challenges to address including:

- Shortage of affordable housing;
- Barriers to homeownership;
- Unique needs of special needs populations;
- Housing instability and displacement; and
- Housing condition.

EXISTING PROGRAMS & RESOURCES

Financial resources to address housing needs in Grand Junction are limited. The City receives about $450,000 annually from the US Department of Housing and Urban Development (HUD) in the form of Community Development Block Grants (CDBG) which are allocated to infrastructure improvements in low- and moderate-income neighborhoods as well as housing and public service needs of low- and moderate-income persons and households. Over the past 5 years the City has expended approximately 23 percent of its CDBG allocation for affordable housing and housing-related services. The CDBG 2021-2025 Five-Year Plan anticipates at least this commitment of funds in the future. Expenditure has included: predevelopment costs, acquisition of vacant land, acquisition of existing units, rehabilitation of existing units, and purchase of major appliances for new residential units.

A crucial asset to the City in addressing ongoing hosing needs is its strong network of service providers and housing-related non-profits, including the Grand Junction Housing Authority. Figure 1 highlights some of the key providers and their primary housing programs.

This network of housing and service providers not only serves the needs of their individual clients but also work collaboratively to strategize their collective approach, discuss gaps and targeted needs, and share best practices. There is an active Homeless Coalition and an ad hoc Housing Coalition that meets periodically and contributed to the development of this Housing Strategy. Even so, the reach and impact of their services is constrained by the limited financial resources available.

Figure 1.
Grand Junction Housing Program Providers

Organization	Housing Programs/Services
Grand Junction Housing Authority	Affordable rental housing construction/property management, Housing Choice Voucher (and other voucher programs) administration, transitional housing program for homeless families with school-children, homeownership education and counseling, housing advocate and family stability program, family self-sufficiency program.
Housing Resources of Western Colorado	Affordable rental housing, housing counseling, homebuyer education, housing rehabilitation loan program, weatherization assistance program, and Self-Help Build Housing program (supports affordable home ownership construction).
Grand Valley Catholic Outreach	Permanent supportive housing, transitional supportive housing, rapid rehousing, utility assistance (one-time financial aid for qualifying households), day center for people experiencing homelessness, and affordable housing search assistance.
Homeward Bound of the Grand Valley	Year-round homeless shelter and services for people experiencing homelessness.
Karis, Inc.	Shelter, housing, and services for individuals experiencing homelessness, primarily youth.
Hilltop Community Resources	Provides a wide range of human services. Housing specific programs include shelter for victims of domestic violence and transitional housing and case management to youth transitioning from the foster care system.
Habitat for Humanity of Mesa County	Affordable homeownership construction and non-profit home improvement stores and donation centers.

Source: Root Policy Research.

EXISTING PROGRAMS & RESOURCES

Though the City does not directly administer housing programs it does play a key role in allocation of HUD and discretionary funds as well as regulating land use and development. The City recently adopted a forward-thinking Comprehensive Plan which governs the long-term vision for growth and development, services, and city priorities. Overall, the city's land use code poses relatively few regulatory barriers to residential development (see Appendix A).

Affordable housing inventory. The Low-Income Housing Tax Credit (LIHTC) program originated in 1986 under the Tax Reform Act and was part of an effort by the federal government to devolve the obligation of publicly-supported housing to states and local governments. Today, the LIHTC is the largest single producer of affordable rental housing in the country. At the most basic level, the LIHTC provides investors with a credit against their taxes in exchange for equity capital to support development of affordable rental units. States administer the program, including setting the criteria for scoring applications.

Grand Junction has 664 units developed using LIHTC, all of which are designated affordable to households earning less than 60% median family income (MFI). In addition, the city has 887 units of HUD-funded housing, including project-based Section 8, public housing, and other multifamily units. The City works to facilitate the development of affordable housing—including LIHTC—in Grand Junction through negotiations with developers, incentives, fee structuring and land donations.

There are also about 1,300 housing choice vouchers in use in Mesa County, with which income-qualified recipients (earning 50% AMI or less) can find market-rate units that meet their needs. It should be noted that vouchers and units are not necessarily additive as vouchers can be used in subsidized units, creating overlapping subsidies.

Despite these existing units and vouchers, the need continues to outpace supply: According to data from the Grand Junction Housing Authority, as of March 2021 there are 2,266 applicants on the waitlist for affordable housing units and/or vouchers.

Future resource opportunity. State resources, administered through Colorado Division of Housing (CDOH) may offer an untapped resource for future housing efforts in the City of Grand Junction: CDOH's budget is forecasted to double in the coming years based on recent legislative changes. Though the state is still determining their strategic priorities, much of the increase is expected to go into the Housing Development Grant program.[1] Grand Junction should be prepared to apply for funding and/or support local non-profit applications and should plan for financial or in-kind contributions. (While there is no required minimum local financial match from applicants, CDOH expects some local contribution in the form of funding and/or in-kind contributions).

[1] For more information on CDOH's existing programs, visit https://cdola.colorado.gov/housing

EXISTING PROGRAMS & RESOURCES

In addition to expanding local funding, CDOH is also receiving substantial federal resources as part of the CARES Act and American Rescue Plan Act. Details on state allocations and guidance on use of funds is still pending, but Grand Junction should continue to monitor developments and opportunities.

Recent legislative changes may also provide opportunities for Grand Junction. HB21-1271 provides funding and technical assistance to local governments to make regulatory and land use changes that promote affordable housing; and HB21-1117 authorizes inclusionary housing policies for both rental and ownership housing.

BARRIERS ANALYSIS & REGULATORY REVIEW

The following section summarizes market barriers to affordable/attainable development and evaluates regulatory factors that could contribute to the city's housing challenges.

As noted in the previous section, the City recently adopted a forward-thinking Comprehensive Plan and has relatively few regulatory barriers to residential development. Even so, this section identifies areas of opportunity that may facilitate the creation of attainable housing. The findings are also included in the policy recommendations in the subsequent section.

Market Barriers

Market barriers to affordable and attainable housing development are discussed throughout the HNA and are summarized below:

High cost of building materials. Shortages in raw materials, such as lumber, and supply chain disruptions have caused sharp increases in building costs over the past year. For builders, the volatility of commodity prices makes the planning process and costs difficult to manage. Though some commodity prices may stabilize in the wake of the COVID-19 pandemic, material costs are forecasted to remain high in the coming years.

High cost of land. As the area grows and continues to diversify its economic base, combined with a hot housing market and positive net migration, demand for raw land increases, raising land costs region-wide. In addition, given that most easy sites to develop are gone, lot development can add to cost and challenging soils, or other site-specific constraints make affordable housing development difficult to achieve.

Labor shortages. According to input gathered from stakeholders in the community, the local construction infrastructure is stretched thin—with shortages in occupations key to the housing industry such as framers, electricians, carpenters, roofers, and even engineers.

NIMBYism. As the area continues to grow, current residents' opposition to increased density is likely to increase. This is a problem in all communities, from Fruita to Clifton. There is a cultural preference for space and low-density housing in the region. This resistance to higher density creates uncertainty in the building process, given that pressure from public input can lead to a project not receiving timely or applicable entitlements that would allow for higher density housing.

Regulatory Review: Land Use & Zoning

The Zoning and Development Code for the City of Grand Junction was last updated in 2010 to align with the Comprehensive Plan adopted at that time. In conjunction with this strategy development Root Policy Research conducted a review of Grand Junction's zoning and development regulations to evaluate their impact on development activity and ultimately housing affordability. The review provides a high-level review

and comparison of the jurisdiction's zoning regulations against best practices and assesses if the jurisdiction's regulations could create barriers for housing affordability. The full regulatory review is included in Appendix A and includes:

- Zoning and land use best practices to remove barriers to housing affordability,
- Grand Junction's current land use and development code, including current zoning,
- The adopted Land Use Plan, and
- An evaluation of development impact fees for residential development.

Areas of opportunity identified in the land use and development review are summarized below:

- **Allow residential infill in traditionally single family districts.** The City of Grand Junction provides for a robust mix of housing types in residential and mixed use districts. To allow for residential infill development, the city should consider permitting duplexes/triplexes and rowhomes in lower density residential districts by right.

- **Consider relaxing minimum lot sizes and maximum densities.** The City of Grand Junction has relatively flexible land use development standards with minimum densities and in some instances no minimum lot sizes. However, there are development standards that are prohibitive for the development of housing products such as townhomes and duplexes—and limit the number of units in multifamily developments—through maximum densities. The City has an opportunity to increase development capacity and affordability by relaxing the lot size and density standards.

- **Adjust parking standards to align with the type and intensity of land use.** Although the city's parking requirements are not atypical, many cities are adopting lower parking standards for more urban areas, particularly for multifamily housing. For housing in areas of mixed use and served by transit, walking and/or biking, Grand Junction might consider adjusting those standards downward to maximize development potential and reduce overall project costs.

- **Formalize existing incentives and consider additional incentives for affordable housing development.** Consider adopting additional incentives for residential developments that meet the city's affordability goals such as deed restricted affordable units and reflects the vision of the community. Ensure available incentives, and fee waivers, are formal and documented in either city policy or ordinance to reduce subjectivity in the process and project long-term benefit to the community.

- **Explore the feasibility of an inclusionary zoning requirement.** Through the comprehensive planning process and the development of the Housing Needs Assessment, the City of Grand Junction has made strides in understanding the housing needs of the community which is the first step toward increasing the supply of housing and promoting housing affordability. The City should explore the economic feasibility of an inclusionary zoning ordinance to increase the long-term supply of affordable units.

RECOMMENDED STRATEGIES

The following recommendations are based on Root Policy Research's experience working with peer communities and best practices; they were developed in conjunction with Grand Junction City Council, City staff, and Grand Junction Area housing stakeholders. Figure 3 summarizes the recommendations in order of anticipated implementation timeline; detailed descriptions of each recommendation follow the figure.

Figure 3. Recommended Strategies

	Strategy	Need(s) Addressed	Timeline	Related Comprehensive Plan Objective
1	**Participate in regional collaboration regarding housing/homelessness needs and services.**	Shortage of affordable/ attainable housing; barriers to affordable ownership; unique needs of special interest populations, housing diversity	1-2 Years	Work cooperatively with Mesa County, GJHA, Catholic outreach, Homeward Bound of the Grand Valley, Karis Inc., and other partners to pursue regional efficiency in all matters related to affordable housing.
2	**Adopt a local affordable housing goal(s).**	Shortage of affordable/ attainable housing.	1-2 Years	Develop a targeted housing strategy
3	**Implement land use code changes that facilitate attainable housing development and housing diversity.**	Barriers to affordable ownership; shortage of affordable/ attainable housing; unique needs of special interest populations.	1-2 Years	Promote more opportunities for housing choices that meet the needs of people of all ages, abilities, and incomes
4	**Encourage development of accessory dwelling units (ADUs).**	Shortage of affordable/ attainable housing.	1-2 Years	Promote a variety of housing types that can provide housing options while increasing density in both new and existing neighborhoods
5	**Formalize existing incentives and consider additional incentives for affordable housing development.**	Shortage of affordable/ attainable housing.	1-2 Years	Explore options for providing incentives for projects that incorporate units affordable to income levels identified in the housing strategy.
6	**Allocate city owned land (and/or strategically acquire vacant or underutilized properties) for affordable and mixed-income housing.**	Shortage of affordable/ attainable housing.	1-2 Years	Promote more opportunities for housing choices that meet the needs of people of all ages, abilities, and incomes. Develop a targeted housing strategy.

Figure 3 (continued). Recommended Strategies

	Strategy	Need(s) Addressed	Timeline	Related Comprehensive Plan Objective
7	**Create a dedicated revenue source to address housing challenges.**	Shortage of affordable/ attainable housing; unique needs of special needs populations.	1-2 Years	Pursuing funding regionally at all levels.
8	**Provide financial support to existing housing and homelessness services and promote resident access to services.**	Housing instability and displacement; unique needs of special needs populations; barriers to homeownership.	2-4 Years	Promote more opportunities for housing choices that meet the needs of people of all ages, abilities, and incomes. Providing supportive housing for at-risk and homeless populations. Publicizing and marketing affordable housing opportunities throughout the region.
9	**Support acquisition/ rehabilitation that creates or preserves affordable housing.**	Shortage of affordable/ attainable housing; housing instability and displacement; housing condition.	2-4 Years	Retaining and maintaining existing affordable housing stock.
10	**Consider implementation of an inclusionary housing/linkage fee ordinance.**	Shortage of affordable/ attainable housing.	2-4 Years	Working to preserve viable affordable housing stock and ensure long term affordability for new units built with financial assistance.
11	**Explore designation of an Urban Renewal Areas (URA) and utilization of Tax Increment Financing for affordable housing.**	Shortage of affordable/ attainable housing.	4-6 Years	Pursuing funding regionally at all levels.
12	**Consider adoption of a voluntary rental registry program in conjunction with landlord incentives.**	Housing instability and displacement; housing condition; shortage of affordable/ attainable housing.	4-6 Years	Retaining and maintaining existing affordable housing stock.

Source: Root Policy Research.

STRATEGIES TO ADDRESS HOUSING NEEDS

STRATEGY 1. PARTICIPATE IN REGIONAL COLLABORATION REGARDING HOUSING/ HOMELESSNESS NEEDS AND SERVICES.

The Grand Junction Area has a strong network of housing providers already collaborating regionally (e.g., Homeless Coalition and an ad hoc Housing Coalition). These stakeholders desire to increase regional efficiency and advocacy in pursuing funding and in implementing for effective housing strategies throughout the region. The City should participate in the efforts of the ad hoc housing coalition and other opportunities to advance regional housing/homelessness efforts and funding.

Benefits. Presents a unified approach to regional housing issues; increases efficiency in applications for funding and allocation of resources and defines common goals.

Challenges. Political challenges and differing perspectives on regional strategies.

Expected outcomes and keys to success. Works best with well-connected and collaborative stakeholders.

Recommended actions for Grand Junction:

- Continue to participate in Homeless Coalition and ad hoc housing coalition meetings and discussions;
- Participate in a policy and action group which would help spearhead policy efforts regional resource allocation throughout the Grand Junction Area;
- Monitor/investigate new and innovative potential funding sources (e.g., CDOH programs, health foundations, COVID relief funding sources and others).
- Partner with local employers and advocate for employer sponsored/subsidized housing.
- Consider regular data updates for the regional Housing Needs Assessment (every 3-5 years).

STRATEGY 2. ADOPT A LOCAL AFFORDABLE HOUSING GOAL(S).

Formally adopting local affordable housing goals helps establish a target for the city to monitor progress. Goal structure varies by community; for example goals can be:

- Output oriented (e.g., 10% of all housing units will be affordable to households earning less than 80% AMI by 2040);
- Input oriented (e.g., the City will allocate 20% of housing trust fund resources to services for people experiencing homelessness); or
- Value oriented (e.g., increase the supply of attainable ownership housing available to those making less than 100% AMI).

Goals should be related to identified needs, reflect City priorities, and provide clear direction with measurable outcomes.

Benefits. Signals to development community the City's desire for affordable development; provides a benchmark for the City

in navigating negotiations with developers and/or establishing incentives.

Challenges. Political challenges in defining goal; if goal specifies income category, may reduce flexibility in future; outcome-oriented goals are not always in the city's control.

Expected outcomes and keys to success. Outcomes vary depending on the goal as well as the other tools in place to help the city achieve its goal. This works best when paired with other tools and strategies designed to support the goal.

Recommended actions for Grand Junction:

- Work with housing coalition and non-profit partners to identify specific housing targets over the next five years to inform affordable housing production goal.
- Consider committing to a goal related to the housing gap or related to annual production of affordable housing units. For example "Reduce the housing gap by 500" or "Create 500 new affordable units over the next 5 years." Note actual target should be informed by anticipated production (see previous bullet).
- Include clear definitions of "affordable" and "attainable" housing in targets.
- Track annual affordable housing production (or other metrics) to measure progress toward goal.

STRATEGY 3. IMPLEMENT LAND USE CODE CHANGES THAT FACILITATE ATTAINABLE HOUSING DEVELOPMENT AND HOUSING DIVERSITY.

Land use and zoning regulations that provide flexibility, clarity, and incentives for residential development are essential for promoting the development of affordable housing. Zoning regulations that negatively impact residential development affordability include restrictions such as minimum house and/or lot sizes, limited land zoned for moderate density (missing middle) options and/or multifamily, prohibitions on accessory dwelling units, and prohibitions on manufactured housing. Specific opportunities for improvement in Grand Junction's code are identified and attached to the strategy report as Appendix A.

Benefits. This aligns with the City's comprehensive plan and provide an opportunity to increase housing diversity and affordability.

Challenges. Changes in allowed density, product type and parking are often met with public opposition.

Expected outcomes and keys to success. Increase housing diversity and naturally occurring affordable/attainable housing stock. Works best in communities with additional development capacity and where community vision (i.e., Comp Plan) is aligned with code updates.

Recommended actions for Grand Junction:

- Allow residential infill in traditionally single family districts.
- Consider relaxing minimum lot sizes and maximum densities.
- Adjust parking standards to align with the type and intensity of land use.
- Actively rezone property to densities of R-8 (Residential 8 units per acre) or greater aligned with the 2020 One Grand Junction Comprehensive Plan.

See Appendix A for additional details.

STRATEGY 4. ENCOURAGE DEVELOPMENT OF ACCESSORY DWELLING UNITS (ADUS).

Accessory dwelling units (ADUs) are smaller independent living spaces on the same lot as a single-family home. ADUs can be attached to the home itself or be separate structures on the owners' property. They have minimal impacts on the character of single-family neighborhoods. Strategies to encourage their development and affordability include: eliminating parking requirements, assist with site planning and provide free off-the-shelf plans, short-turnaround approval process for ADUs, provide financial assistance for homeowners to create ADUs, waiving development fees for ADUs that will be restricted to low-income occupants, provide low- and moderate-income homeowners interest-free loans for an ADU project. In addition, some communities are moving to allow secondary ADUS. This should be considered for appropriateness in Grand Junction or within specific areas of Grand Junction.

Benefits. ADUs can be a relatively inexpensive way to create low-cost housing units, free up low-income housing, and increase density in single-family areas, while reusing existing infrastructure such as water and sewer.

Challenges. Requires additional staff capacity for development review.

Expected outcomes and keys to success. Can expand the housing stock and allow low-income owners to generate income from their property. Works better with a rental license program and regulation of short-term rental units.

Recommended actions for Grand Junction:

- Conduct focus group(s) or surveys among residents who have recently constructed ADUs to evaluate the overall process of permitting/constructing ADUs as well as the impact of potential incentives (as outlined in the description above).
- Consider creating an easy-to-follow guide for homeowners looking to build ADUs (example from San Marcos: www.sanmarcostx.gov/1567/Accessory-Dwelling-Units) and proactively communicate opportunity for ADUs to residents.
- Consider allowing secondary ADUS.
- Based on focus group/survey responses consider pilot program for ADU incentives.

STRATEGY 5. FORMALIZE EXISTING INCENTIVES AND CONSIDER ADDITIONAL INCENTIVES FOR AFFORDABLE HOUSING DEVELOPMENT.

Development incentives to encourage developers/builders to build affordable housing can take many forms:

- Permit or process-oriented incentives (e.g., fast track development approval; city-assigned, dedicated planning advocate to help move the development through the approval process; reduction in public meeting requirements;
- Regulatory incentives such as density or height bonuses (allows for more units to be built than allowed by right by zoning);
- Fee waivers/rebates (Colorado state law allows impact fees to be waived for affordable housing); and
- Tax incentives for affordable development (or land donation to affordable development.

Development incentives are tied to a contractual commitment to produce an agreed-upon share of affordable units (can be rental or owner). Most policies mandate set asides of between 10 and 30 percent of units affordable to 50% to 80% of area median income (AMI), depending on the market, and set affordability periods that range from 15 to 99 years. The average length of time for deed restrictions is 30 years.

Benefits. Places burden on developers to create (or contribute to) city's housing goals but does so by providing benefit (typically in the form of additional profit) to developers--can be a win-win for developers and city. Can be structured to incentivize any kind of development (e.g., missing middle), not just affordable development. Signals City's development priorities to developers.

Challenges. Requires staff capacity to monitor compliance; can be challenging to structure in order to create affordable units depending on existing zoning and development process. (For example, density bonuses only work if the entitlement density is low enough to entice developers to accept the incentive).

Expected outcomes and keys to success. When well structured, incentives can be relatively high impact (generate moderate number of units) for very little cost to the city. Works best in growing markets and in communities with additional capacity for development.

Recommended actions for Grand Junction:

- Evaluate informal incentives previously extended to affordable (or other) development over the past 5 to 10 years.
- Convene local developers (affordable and market-rate) to evaluate the market demand for potential incentives.
- Codify desired incentives in City codes or affordable housing policy focusing on incentives that increase the supply of affordable housing.

STRATEGY 6. ALLOCATE CITY OWNED LAND (AND/OR STRATEGICALLY ACQUIRE VACANT OR UNDERUTILIZED PROPERTIES) FOR AFFORDABLE AND MIXED-INCOME HOUSING.

Property acquisition costs, especially in developed areas of the city, is a major component of the cost of developing affordable housing. The city and other public agencies, such as Mesa County and the State, own properties which could potentially reduce costs and facilitate development of affordable housing. While much of this property is either already utilized for public facilities or is inappropriate for residential development, there may be opportunities to leverage additional affordable and mixed-income housing through better utilization of publicly owned property.

It is increasingly common for local governments to donate, discount, or lease vacant land or underutilized properties (e.g., closed schools, vacant or out-of-date public sector offices) for use as residential mixed-income or mixed-use developments. Some properties are acquired after businesses have been closed for illegal use or very delinquent taxes.

These properties are held in a "land bank" by the City and eventually redeveloped by nonprofit or private developers through a Request for Proposal (RFP) process. Land banks vary in forms from single parcels to multiple, scattered site properties, to large tracts of land. The land can be donated, discounted, or offered on a land lease to the selected developer who agrees to a specified affordability level or community benefit. A good starting point in this process for any community is creating an inventory of existing public land that could be used for housing sites in the future.

Benefits. Conducting an initial inventory of publicly owned land is a low/no-cost step. Land banking and donation can reduce future development costs (particularly if acquired when land costs are low) and maintains flexibility in meeting future needs because the land can be held and then used for acute needs as they arise. Converting vacant land or underutilized retail can also have tax benefits to the city (performing residential, even if with a lower property tax value, is better than vacant and abandoned land from a revenue perspective).

Challenges. Acquiring land can be costly (depending on market cycle); limited supply and can require quick response to land available (staffing/authority concern); and there is a risk that future needs will not align with expected land use.

Expected outcomes and keys to success. Outcomes depend on existing land inventory and committed resources though there is potential for high impact (substantial number of units). This works best in communities where there is land available to repurpose; when the city can acquire land at reasonable costs (e.g., during a down market); and when the city has strong partnerships with non-profit developers or existing land trust programs.

Recommended actions for Grand Junction:

- Inventory existing public land (including land owned by the City, the County, State, the schools district, and others) and evaluate feasibility for residential development.
- Establish partnerships with local affordable developers and land trusts who may be able to develop the land into affordable rental or ownership units.
- Evaluate funding sources for land/property acquisition that could be utilized to create or preserve affordable housing.
- Actively watch for property and land to acquire to repurpose (this could include vacant land, underutilized/vacant commercial, and/or small naturally occurring affordable multifamily housing).

STRATEGY 7. CREATE A DEDICATED REVENUE SOURCE TO ADDRESS HOUSING CHALLENGES.

Local funding or a "Housing Trust Fund" can have an impact on meeting housing needs. "Trust funds" have grown immensely in popularity with reductions in federal funding for housing. Revenue sources are varied and include: General Obligation Bonds, Real Estate Transfer Taxes (RETT), commercial and/or residential linkage fees, sales tax, jurisdictional general fund set-aside or cash-in-lieu from inclusionary zoning buyouts, and other types of taxes, generally those that are directly tied to demand for housing.

Benefits. Can be used on a variety of programs to address needs across the housing spectrum; flexible funding source without federal regulations.

Challenges. Does not always have political support; efficacy is tied to level of funding; requires staff capacity to manage and allocate resources.

Expected outcomes and keys to success. Can be very effective, depending on funding amount and priorities. Works best when City has clear housing plan/goals and has staff capacity to manage.

Recommended actions for Grand Junction:

- If possible, appropriate funding in the short-term for implementation of the Housing Strategic Plan.
- Establish working group to evaluate the potential for sustainable, dedicated local funding and determine the most appropriate source of funds. Often, a General Fund allocation is the easiest way to initiate a Housing Trust Fund, but a dedicated stream is ideal for the long-term.
- Conduct analysis of the cost of other prioritized housing strategies and/or related capital items.
- Determine priorities for the fund—what programs/policies should it support? Consider the other strategies outlined in this report that require funding for efficacy.

STRATEGY 8. PROVIDE FINANCIAL SUPPORT TO EXISTING HOUSING AND HOMELESSNESS SERVICES AND PROMOTE RESIDENT ACCESS TO SERVICES.

Some CDBG funds are currently allocated to support nonprofits that are providing housing, housing services, and/or services to people experiencing homelessness, but additional funding would increase capacity. Top priorities among stakeholders included:

- Services and housing for people experiencing homelessness;
- Homeowner rehab program (grants or loans to assist low-income homeowners with needed repairs; can be emergency repairs or maintenance needed to preserve homes).
- Foreclosure and eviction prevention (can include housing counseling generally for mortgage debt restructuring; short-term emergency rent and utilities assistance for renters; and/or landlord-tenant mediation).
- Home ownership education outreach/workshops to lower income citizens who may qualify to own a home.
- Down payment assistance (programs that help households attain homeownership through financial support for closing costs and down payments).

In addition to financially supporting existing programs, the City could also promote participation by ensuring there is an accessible online inventory of housing programs (local and state) and qualifications in an easy-to-access format and in multiple languages. Programs can also be affirmatively marketed to historically marginalized populations and those with historical disparities in homeownership.

Benefits. Preservation is much less costly than new development; prevents displacement of existing residents. Generally low cost and high impact; provides assistance to those who need it most and reduces public costs related to homelessness and other social services by preventing foreclosure and eviction. Creates access to homeownership and housing stability.

Challenges. Requires funding and administration as well as strong non-profit partners

Expected outcomes and keys to success. Improves existing housing stock; reduces foreclosures and evictions; increase homeownership and can help with workforce retention. Works best with a trusted non-profit partner.

Recommended actions for Grand Junction:

- Evaluate the potential for a database (and source of communication) of affordable housing options in the community and/or promote the state's affordable housing search platform (www.coloradohousingsearch.com)
- Use the City's website to help promote existing housing options and services in the community.

- Contingent on implementation of Strategy 7, include additional funds in annual program allocation (alongside CDBG allocations).

STRATEGY 9. SUPPORT ACQUISITION/ REHABILITATION THAT CREATES OR PRESERVES AFFORDABLE HOUSING.

In this strategy nonprofits or for-profit affordable housing developers purchase privately-owned but low-priced housing options, or subsidized units with affordability periods ending ("at risk" affordable housing). Owners make needed improvements and institute long- term affordability. This strategy can also support conversion of hotels/motels into affordable or transitional housing. At-risk housing stock may include private rentals with rising rents, manufactured housing parks, or lower-cost single- family homes and real estate owned (REO) properties. Rental properties can be maintained as rental or convert to cooperative ownership. Ownership properties can be resold to lower-income families or leased as affordable rentals. A City's role is often to provide financial resources to non-profits for the acquisition and rehab projects. This program can also be structured as rehab grants to existing multifamily owners in exchange for contractual affordability.

Benefits. Generates guaranteed affordability out of existing stock (less costly than new development); can be used for rental or ownership.

Challenges. Can be difficult to identify properties, though it can be structured at the city level as a resource pool for non-profits, which reduces the staffing and management burden on the city.

Expected outcomes and keys to success. Generates some affordable units. Works best with a trusted non-profit partner.

Recommended actions for Grand Junction:

- Establish partnerships with local affordable developers who would own/manage the units.
- Contingent on Strategy 7, dedicate local resources to an acquisition/rehab program.
- Design RFP process for entities who wish to access funds or prioritize CDBG spending for the purpose of acquisition and/or rehabilitation of housing resources.

STRATEGY 10. CONSIDER IMPLEMENTATION OF AN INCLUSIONARY HOUSING/LINKAGE FEE ORDINANCE.

Policies that require or incentivize the creation of affordable (income-restricted) housing when new residential and/or commercial development occurs, either within the same development or off-site. Some inclusionary housing ordinances allow the developer to pay fees "in lieu" of developing the affordable units. Policies can be implemented as required or voluntary and can include "off-sets" and/or incentives for the provision of affordable housing.

Benefits. No direct cost to city other than enforcement, has the ability to generate a substantial number of units.

Challenges. Regularly faces opposition from development community who view such ordinances as putting full burden of current housing challenges onto new development.

Expected outcomes and keys to success. Generates substantial number of units when structured well. Works best in communities with additional capacity for development and that are experiencing growth.

Recommended actions for Grand Junction:
With the recent passage of Colorado HB21-1117, Colorado communities can now implement inclusionary housing that applies to both rental and for-sale development. Given this recent change, the City should consider this as a 5+ year strategy:

- Monitor new inclusionary programs implemented throughout the state and continue to evaluate whether such a program would be effective and appropriate in Grand Junction.
- Evaluate the option of inclusionary housing every 2 years to consider whether the City desires to institute a program.
- Interview existing program administrators and an economic feasibility study of the potential affordable requirements

STRATEGY 11. EXPLORE DESIGNATION OF AN URBAN RENEWAL AREAS (URA) AND UTILIZATION OF TAX INCREMENT FINANCING FOR AFFORDABLE HOUSING.

Revenue generated by borrowing against projected growth in property tax revenues within designated redevelopment (urban renewal) areas. All or a portion of the tax increment can be set aside for affordable housing preservation and production.

Benefits. Can generate affordable units or provide monies for incentives in new units within targeted areas; leverages new and/or existing funding source.

Challenges. Can impact total TIF package as property tax revenue on affordable developments may be low. URA can be cumbersome, expensive and time-intensive to establish and manage.

Expected outcomes and keys to success. Generates modest volume of affordable units. Works well when affordable housing is paired with uses that generate higher future tax revenue (e.g., retail)

Recommended actions for Grand Junction:
Convene task force to evaluate the viability of URA designation and TIF priorities. Interview other communities where this approach is used to evaluate how it could apply in Grand Junction, such as Colorado Springs, Fort Collins, Loveland, and Denver.

STRATEGY 12. CONSIDER ADOPTION OF A VOLUNTARY RENTAL REGISTRY PROGRAM IN CONJUNCTION WITH LANDLORD INCENTIVES.

Having a rental registration or license program (a program in which landlords are required to obtain a license from the City) make it easier to promote best practices and resources to landlords, identify problem landlords, and implement a variety of renter protections (such as housing quality standards). Voluntary registration programs can be paired with landlord incentives; examples include:

- Access to security deposit insurance in exchange for accepting housing choice vouchers;
- Access to grants or interest free loans for rehab in exchange for keeping units affordable (income restricted); and
- Access to grants or incentives in exchange for converting short term rentals to long terms rentals.

Landlords participating on voluntary programs typically also receive access to city-provided resources such as template leases (in English and Spanish), fair housing training, landlord-tenant mediation services, etc.

Benefits. Promotes equity, relatively easy to implement, provides resources to landlords.

Challenges. Monitoring and compliance is difficult (requires staff capacity).

Expected outcomes and keys to success. Depends on structure of program. Can improve existing housing stock (quality inspections and rehab), can create additional affordable housing stock, can improve conditions for renters and better equip landlords. Works in any market

Recommended actions for Grand Junction:
Form task force to review best practice research on program design and evaluate priorities for program implementation. Consider community and landlord engagement to help refine policy proposal.

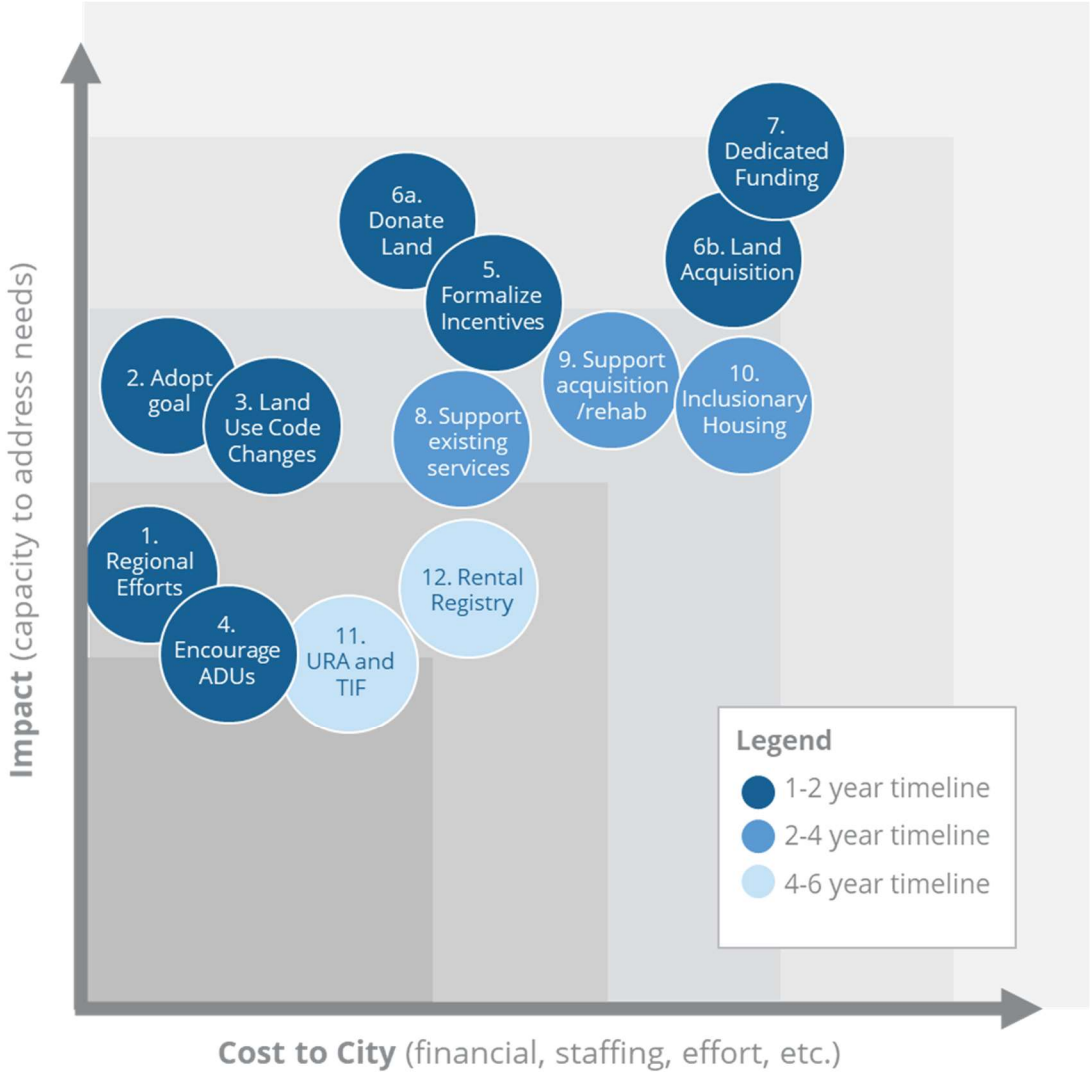
RELATIVE COST AND IMPACT OF STRATEGIES

Figure 4 plots the strategy recommendations along two axes to help gauge their relative cost and impact. It should be noted that "cost" is used broadly and can mean financial cost, staffing resources, political effort, etc. Note that cost and impact may differ from the figure depending on final policy/program design

Strategies in the lower left portion of the figure are generally low cost but also low impact. Cost increases as you move to the right (x-axis) and impact increases as you move up (y-axis). Strategies in the upper right are generally high cost but also high impact. Strategies are color-coordinated based on their implementation timeline.

This matrix should not be the only criteria for evaluating strategies but does provide some guidance in considering the most effective options given resource constraints.

Figure 4. Relative Cost and Impact of Recommended Strategies



Source: Root Policy Research.

CONCLUSION AND NEXT STEPS

As the City of Grand Junction continues to pursue implementation of the Comprehensive Plan—including building "Strong Neighborhoods and Housing Choices"—the strategies outlined above provide a roadmap for achieving desired outcomes and addressing identified housing needs.

A balanced housing stock accommodates a full "life cycle community"—where there are housing options for each stage of life from career starters through centenarians—which in turn supports the local economy and contributes to community culture. Encouraging the market to develop sufficient supply to meet demand as well as actions that help mitigate price increases and preserve both market-rate and publicly assisted housing affordability will help provide essential housing for residents of Grand Junction.

Implementation of the strategies will require the City to address housing challenges head-on, pursue new policies, programs, and funding sources, and work collaboratively with regional stakeholders and public-private partnerships.

APPENDIX A.

Land Use and Development Review

APPENDIX A.
Land Use and Development Review

The Zoning and Development Code for the City of Grand Junction was last updated in 2010 to align with the Comprehensive Plan adopted at that time. This appendix provides a high-level review of the jurisdiction's zoning regulations against best practices and assesses if the jurisdiction's regulations could create barriers for housing affordability.

The review includes zoning and land use best practices to remove barriers to housing affordability—discussed in the context of Grand Junction's current zoning ordinance and opportunities for improvement—focusing on zoning districts and permitting uses, development standards, parking standards, and incentives for affordable housing. The review also discusses the future land use plan presented in the Grand Junction Comprehensive Plan along with an evaluation of development impact fees for residential development. The section concludes with a summary of opportunities for Grand Junction; these opportunities are also discussed in the Grand Junction Housing Strategy.

Zoning Districts and Permitted Uses

In response to housing affordability challenges and lack of diversity in housing typology, jurisdictions across the country are increasingly modifying land use codes to allow missing middle housing—duplexes/triplexes, rowhomes, and Accessory Dwelling Units (ADUs)—in single family zones.[1] Missing middle housing refer to a diverse set of housing types that result in smaller, more affordable, and provide more density compared to single family homes. It is a best practice to include a broad range of mixed-use zone districts that occupy the majority of the spectrum of zone districts to permit a variety of housing types for middle income households. Additionally, permitting multifamily development across a wide variety of mixed-use districts more effectively produces communities that support neighborhood-serving retail and commercial operations and small businesses by allowing the market to supply services near households.[2]

Grand Junction's current code. The city has adopted ten residential districts, a variety of mixed-use and commercial districts, and form based residential districts. The ten residential districts provide for a range of residential development, in

[1] Affordability in this context encompass both income restricted as well as naturally occurring affordable housing.

[2] Elliott, Donald L. *A better way to zone: ten principles to create more livable cities.* Island Press, 2012.

addition to the mixed use districts, shown in Figure A-1. Residential districts range from rural densities to districts intended to discourage large lot development and encourage concentrated urban growth in community centers. According to the city's zoning ordinance, the purpose for the R-12, R-16, and R-24 districts are to, "allow a mix of residential unit types and densities to provide a balance of housing opportunities in a neighborhood."

Figure A-1.
Residential Use Table

Note:
A=allowed; C=conditions; Blank=nor permitted.

Source:
Chapter 21.04 Grand Junction Municipal Code.

	R-R	R-E	R-1	R-2	R-4	R-5	R-8	R-12	R-16	R-24	R-O	B-1	B-2	C-1	C-2	CSR	M-U	BP	I-O	I-1	I-2
Business Residence											A	A	A	A	A	A	A	A	A	A	
Two-Family Dwelling				A	A	A	A	A			A	C									
Single-Family Detached	A	A	A	A	A	A	A				A	C	C			A					
Multifamily						A	A	A	A	A	A	A	A	A			A	A			
Accessory Dwelling Unit	A	A	A	A	A	A	A	A			A		A								
Agricultural Labor Housing	A															A					
Manufactured Housing Park						A	A	A													
All Other Household Living						A	A	A													

Areas of opportunity. The City of Grand Junction provides for a robust mix of housing types in residential and mixed-use districts. To allow for residential infill development, the city should consider permitting triplexes and rowhomes in lower density residential districts by right.

Residential Development Standards

Flexibility in development dimensional standards provides opportunities for residential product diversity (e.g., multifamily, townhomes, and duplexes) and a mix of uses to encourage more affordable residential development—compared to traditional single-family zoning. Conversely, zoning regulations that negatively impact residential development affordability include minimum house and/or lot sizes, limited land zoned for missing middle options and/or multifamily, prohibitions on ADUs, secondary ADUS, restrictions on land zoned and available for multifamily and manufactured housing.

Grand Junction's current code. The residential development standards summary table in Figure A-2 below provides land development requirements in each district. Overall, these residential development standards allow for a wide range of housing types in the city. Minimum density requirements for R-5 to R-24 residential zones discourage large lot single family

detached housing development and may promote the development of missing middle housing types and promote affordability. These zones provide an alternative to the traditional single-family regulations in zones R-R to R-4. However, minimum lot sizes and densities may increase the cost of residential development and discourage missing middle housing.

Figure A-2.
Residential Use Table

Source:
Chapter 21.03 Grand Junction Municipal Code.

	R-R	R-E	R-1	R-2	R-4	R-5	R-8	R-12	R-16	R-24
Minimum Lot Size (min.)	5 acres	1 acre	30,000 sq. ft.	15,000 sq. ft.	7,000 sq. ft.	4,000 sq. ft.	3,000 sq. ft.	n/a	n/a	n/a
Lot Coverage (max)	5%	15%	20%	30%	50%	60%	70%	75%	75%	80%
Height (max)	35	35	35	35	40	40	40	60	60	72
Density (min. units per acre)	n/a	n/a	n/a	n/a	2	3	6	8	12	16
Density (max units per acre)	1/5 acres	1	1	2	4	6	8	12	16	n/a

Figure A-3 shows the development standards for mixed use and commercial districts. For mixed use and commercial districts, maximum heights and residential development densities are likely to have the most impact on the number of units constructed and the affordability of those units. Similar to mixed use minimum densities in residential districts, minimum densities along commercial corridors increase the opportunity for more residential units and helps provide access to transit.

Figure A-3.
Mixed Use and Commercial Development Standards

Source:
Chapter 21.03 Grand Junction Municipal Code.

	R-O	B-1	B-2	C-1	C-2	CSR	M-U	BP	I-O	I-1	I-2
Minimum Lot Size (min.)	5,000 sq. ft.	10,000 sq. ft.	n/a	20,000 sq. ft.	20,000 sq. ft.	1 acre	1 acre	1 acre	1 acre	1 acre	1 acre
Lot Coverage (max)	70%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Height (max)	40	40	80	65	65	65	65	65	65	50	50
Density (min. units per acre)	4	8	8	12	n/a	n/a	8	8	n/a	n/a	n/a
Density (max units per acre)	n/a	16	n/a	24	n/a	n/a	24	24	n/a	n/a	n/a

Areas of opportunity. The City of Grand Junction has relatively flexible land use development standards with minimum densities and in some instances no minimum lot sizes. However, there are development standards that are prohibitive for the development of certain housing products—townhomes and duplexes—and limit the number of units in multifamily developments—through maximum densities. There is an opportunity to examine the potential for reducing or eliminating these standards to increase development capacity and thereby affordability.

Parking Standards

Parking standards can vary based on use rates and existence of public parking lots in the area. The traditional standard of two parking spaces per dwelling unit is reasonable in low density residential districts, but many cities are adopting lower parking standards near transit, multifamily development, and mixed-use areas.

Some communities establish parking standards to account for lower vehicle ownership rates among certain types of households, such as seniors and low-income households. Senior apartments, assisted-care units, congregate care facilities, and studio and one-bedroom apartments are likely to have lower parking demand than developments of the same size. A zoning policy that requires an equal number of parking spaces per bedroom will result in an oversupply of parking.

Grand Junction's current code. Grand Junction requires the typical two parking spaces for single family and duplex units with one additional unit required per accessory dwelling unit (ADU)—for example, a duplex with an ADU would require five off-street parking spaces. For multifamily development, the number of spaces required is based on the number of bedrooms per unit. For one-bedroom units 1.25 spaces are required, two-bedroom units require 1.5 spaces, and three or more-bedroom units require 2 spaces. The city does allow projects to request an alternative parking plan but this can be cumbersome and add expense to a project.

Areas of opportunity. Although these requirements are not unreasonable, many cities are adopting lower parking standards for more urban areas, particularly for multifamily housing. Grand Junction should consider adjusting parking standards downward to promote affordability and greater land utilization.

Incentives for Affordable Housing

Incentives are formalized affordability requirements in exchange for development benefits such as fee waivers, expedited permitting, tax abatements, and density bonuses. To encourage the development of affordable housing, the code should recognize the difficult economics involved and should offer incentives. Common incentives include smaller lots, increased density in multi-family areas, reduced parking requirements, or waivers or reductions of application fees or development impact fees.

While zoning and subdivision incentives alone are often not enough to make development for lower levels of AMI economically feasible, they can be part of a broader package of incentives (for example, including financial incentives or land contributions) that make those projects feasible.

Grand Junction's current code. Grand Junction currently discounts transportation impact fees (50% reduction per additional story) in the city "redevelopment areas" to encourage development in those areas. Additionally, Grand Junction's Zoning and Development Code currently allows for the City Council to waive impact fees imposed on affordable housing development.

Areas of opportunity. Consider additional incentives for residential developments that meet the city's affordability goals and reflects the vision of the community.[3] The recently adopted Comprehensive Plan suggests the City, "explore options for providing incentives for projects that incorporate units affordable to income levels identified in the housing strategy." The city should ensure available incentives, including the existing fee waivers, are formal and documented in either city policy or ordinance to reduce subjectivity in the process.

A note about inclusionary zoning. In 2021, the Colorado General Assembly enacted House Bill 21-1117 which permits local governments to enact inclusionary zoning ordinances on rental units (for-sale was already allowed). Inclusionary zoning generally regulates new development or redevelopment to encourage the construction of new affordable units. Local governments must provide one or more alternative options to constructing the units such as a fee in-lieu or land dedication.

Additionally, in order to adopt an inclusionary ordinance, local governments must take one or more of a set of actions to increase the overall number and density of housing units. As specified in HB21-1117, these potential actions include:

- *Adopt changes to its zoning and land use policies that are intended to increase the overall density and availability of housing, including but not limited to:*
    - *Changing its zoning regulations to increase the number of housing units allowed on a particular site;*
    - *Promoting mixed-use zoning that permits housing units allowed on a particular site;*

[3] See Housing Strategy for additional details on specific incentive recommendations.

- *Permitting more than one dwelling unit per lot in traditional single family lots;*
- *Increasing the permitted households size in single family homes;*
- *Promoting denser housing development near transit stations and places of employment;*
- *Granting reduced parking requirements to residential or mixed use developments that include housing near transit stations or affordable housing developments;*
- *Granting density bonuses to development projects that incorporate affordable housing units; or adopting policies to promote the diversity of the housing stock within the local community including a mix of both for sale and rental housing opportunities;*

- *Materially reduce or eliminate utility charges, regulatory fees, or taxes imposed by the local government applicable to affordable housing units;*
- *Grant affordable housing developments material regulatory relief from any type of zoning or other land development regulations that would ordinarily restrict the density of new development or redevelopment;*
- *Adopt policies to materially make surplus property owned by the local government available for the development of housing; or*
- *Adopt any other regulatory measure that is expressly designed and intended to increase the supply of housing within the local government's jurisdictional boundaries.*

Areas of opportunity. Through the recent comprehensive planning process and the development of this housing needs assessment, the City of Grand Junction has made reasonable strides and efforts toward increasing the supply of housing and promoting housing affordability. The city should explore the economic feasibility of an inclusionary zoning ordinance to increase the supply of affordable units.

Future Development

Adopted planning documents including the Comprehensive Plan and Zoning Ordinance establish a vision for future development and a roadmap to achieve that vision through land use regulations. In addition to the most common regulatory barriers, the geographic zoning patterns and development trends influence housing choice and affordability.

The City of Grand Junction adopted the updated Comprehensive Plan in December 2020. The Comprehensive Plan provides insight into the vision for future residential development in the community. The following excerpts from the Plan provide population growth estimates, housing unit estimates, and the future land use plan to provide needed housing types.

- **Population growth estimates.** "Grand Junction is expected to continue to represent approximately 40 percent of Mesa County's population over the next 20 years. This would result in a population of approximately 90,000 people within City limits by 2040–an increase of 23,071 people. Similarly, the State Demographer has estimated that, by 2040, the population within the Urban Development Boundary will account for an additional 34,000 people for a total of approximately 124,000 in the City's planning area."

- **Housing unit estimates.** "Based on the projected population growth and the city's average household size of 2.29 people, approximately 11,400 additional housing units will be needed within City limits by 2040. Housing options that address a variety of needs such as cost, quality, age, and type are a key concern in Grand Junction.

  Grand Junction's housing supply will need to grow and diversify to meet the community's future needs. Today, Grand Junction has an estimated 27,990 housing units. This inventory is predominantly single-family homes: 62 percent of all housing units are detached. Of owner occupants, 85 percent live in single-family units compared to 32 percent of renters, while 55 percent of renters reside in apartment units."

- **Future land use.** "To support the community in meeting current and anticipated housing needs, the Comprehensive Plan policies and the Land Use Plan encourage the creation of more mixed-use, walkable neighborhoods and mixed-density neighborhoods with a wider range of housing types. Policies also encourage higher density development in areas located within urban intensification areas as well as priority growth areas such as the city's core, University District, Downtown District, and areas along transit corridors.

  The Land Use Plan is a tool to guide future development within the City and its Urban Development Boundary. It will be applied through day-to-day decision making as a means to help implement a shared vision for the physical growth of the City. The plan includes a map that depicts locations for different types of land uses and a description of each land use."

Figure A-4 shows a map of the Land Use Plan for the City of Grand Junction presented in the Comprehensive Plan. Medium to high density residential development is concentrated near downtown, near shopping and employment centers and along major transportation corridors.

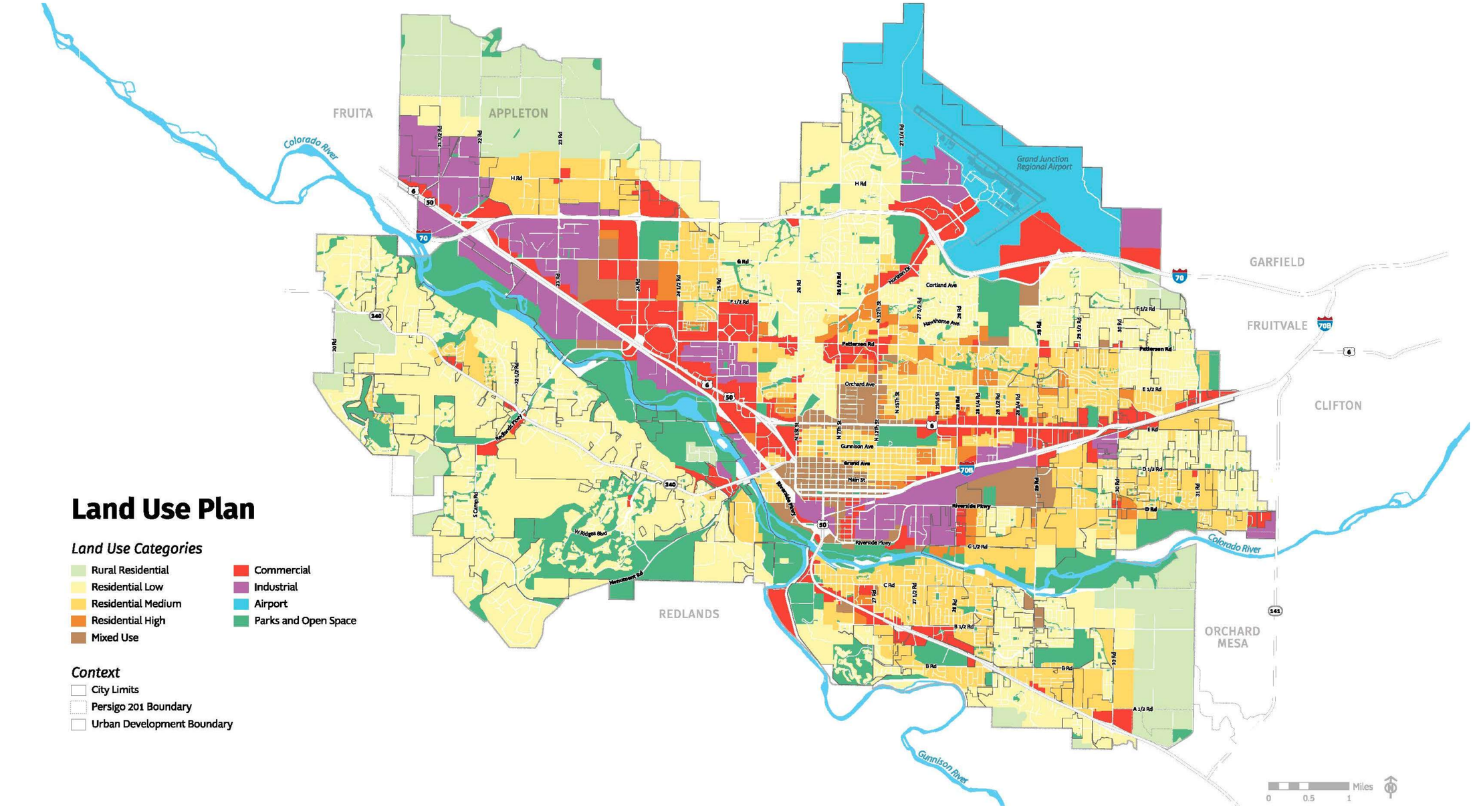
Development impact fees. Impact fees are imposed on new development to support the additional infrastructure required to service new development. Common impact fees include water, wastewater or sewer, transportation, fire, police, parks and recreation, and schools. Stakeholders indicated the City of Grand Junction's impact fees are prohibitive for multifamily

residential development. A comparative analysis of fees with other communities in Colorado was conducted to evaluate the city's fees, and the city's impact fees have not been identified as a barrier to development.

Areas of opportunity. The recently adopted comprehensive plan provides a roadmap for land use code updates to prioritize Plan Principle 5, "Strong Neighborhoods and Housing Choices." The plan outlines the following actions to achieve this principle.

- Promote more opportunities for housing choices that meet the needs of people of all ages, abilities, and incomes.
- Partner in developing housing strategies for the community.
- Support continued investment in and ongoing maintenance of infrastructure and amenities in established neighborhoods.
- Promote the integration of transportation mode choices into existing and new neighborhoods.
- Foster the development of neighborhoods where people of all ages, incomes, and backgrounds live together and share a feeling of community.

Figure A-4. Future Land Use



Source: City of Grand Junction

Summary of Areas of Opportunity

The following opportunities were identified through this land use and development review:

- **Allow residential infill in traditionally single family districts.** The City of Grand Junction provides for a robust mix of housing types in residential and mixed-use districts. To allow for residential infill development, the city should consider permitting triplexes and rowhomes in lower density residential districts by right.

- **Consider relaxing minimum lot sizes and maximum densities.** The City of Grand Junction has relatively flexible land use development standards with minimum densities and in some instances no minimum lot sizes. However, there are development standards that are prohibitive for the development of "missing middle" housing products—townhomes and duplexes—and limit the number of units in multifamily developments—through maximum densities. The City has an opportunity to increase development capacity and affordability by relaxing the lot size and density standards.

- **Adjust parking standards to align with the type and intensity of land use.** Although the city's parking requirements are not atypical, many cities are adopting lower parking standards for more urban areas, particularly for multifamily housing. For housing in areas of mixed use and served by transit, walking and/or biking, Grand Junction might consider adjusting those standards downward to maximize development potential and reduce overall project costs.

- **Formalize existing incentives and consider additional incentives for affordable housing development.** Consider additional incentives for residential developments that meet the city's affordability goals and reflect the vision of the community. The recently adopted comprehensive plan suggests the city, "explore options for providing incentives for projects that incorporate units affordable to income levels identified in the housing strategy." The city should ensure available incentives, including the existing fee waivers, are formal and documented in either city policy or ordinance to reduce subjectivity in the process.

- **Explore the feasibility of an inclusionary zoning requirement.** Through the recent comprehensive planning process and the development of this housing needs assessment, the City of Grand Junction has made strides toward increasing the supply of housing and promoting housing affordability. The city should explore the economic feasibility of an inclusionary zoning ordinance to increase the supply of affordable units.

- **Implement the comprehensive plan.** The recently adopted comprehensive plan provides a roadmap for land use code updates to prioritize Plan Principle 5, "Strong Neighborhoods and Housing Choices." The plan outlines the following actions to achieve this principle.
    - Promote more opportunities for housing choices that meet the needs of people of all ages, abilities, and incomes.
    - Partner in developing housing strategies for the community.
    - Support continued investment in and ongoing maintenance of infrastructure and amenities in established neighborhoods.
    - Promote the integration of transportation mode choices into existing and new neighborhoods.
    - Foster the development of neighborhoods where people of all ages, incomes, and backgrounds live together and share a feeling of community.

Grand Junction City Council

Workshop Session

Item #1.b.

Meeting Date: May 2, 2022

Presented By: Trenton Prall, Public Works Director

Department: Public Works - Engineering

Submitted By: Trent Prall, Public Works Director

Information

SUBJECT:

Truck Routes and Compression Brakes

EXECUTIVE SUMMARY:

The City of Grand Junction has currently identified recommended truck routes throughout the city. A map designating primary and secondary routes is available to the public in print and online. Staff is proposing adopting an ordinance that would allow for the enforcement of truck routes. Law enforcement could cite a driver for driving a truck in a non-designated area without proper reasoning and/or documentation. Local deliveries would be exempt. Another proposed ordinance prohibiting compression (aka Jake) brakes will also be discussed. Staff will share feedback from outreach efforts to industry.

BACKGROUND OR DETAILED INFORMATION:

The Grand Junction area is the regional economic center for much of western Colorado and eastern Utah. Trucks are the primary delivery system for the majority of consumer goods brought into the community. Locally, trucks provide additional services such as trash pick-up, construction of roads, schools, businesses and homes. Trucks share the roads with personal automobiles; however, the size and weight of trucks are a cause for concern for motorists, bicyclists, and pedestrians.

Truck Routes – To address these concerns, a plan was developed in the mid-1990s to identify a network of truck routes that support safe and efficient truck operations while satisfying the public need for adequate protection and separation. The City of Grand Junction has currently identified recommended truck routes throughout the city. A map designating primary and secondary routes is available to the public in print and online. The primary routes are recommended for use by trucks that have no origin or destination within the city, while secondary routes are designated as requested routes

for trucks until the closest point to their destination.

The primary objective of these truck routes is to provide for the safe, effective, and efficient movement of goods and services within and through the urban area. They are intended to direct truck movement to the major arterial system and minimize the intrusion of large trucks into residential areas. The routes are located on roads that are structurally able to withstand the heavier loads.

With the current growth of the city, the delineation between commercial, industrial, and residential areas has become closer and more blurred. This also increases the potential for conflict between trucks and regular vehicles, pedestrians, bicycles, and other micromobility-types of transportation. With global positioning systems recommending routes in real time prioritizing reducing travel times, there are occasions when trucks have utilized streets not intended for regular truck traffic. As these routes are only recommendations, a truck driver could not be ticketed or otherwise reprimanded for deviating from these routes.

Complaints and Truck Route Enforcement – Complaints about truck traffic are common. Many complaints are received regarding the United States Postal Service (USPS) contracted trucks that use G Road and 25 ½ Road to access the USPS facility on 25 ½ & Patterson at all hours for operations. Staff outreach to the USPS has been unproductive, yielding no solutions to the issue. In a 2018 letter addressing one of the complainants, USPS Colorado/Wyoming District Consumer Affairs Office wrote, “given the fact that there are no road or route restrictions, current access to the plant is legal and permissible.”

Several cities and municipalities throughout Colorado and elsewhere have adopted ordinances to enable law enforcement staff to enforce truck routes within their jurisdictions. More specifically, other home-rule municipalities within Colorado have adopted enforceable truck route ordinances including Rifle, Colorado Springs, Fruita, Loveland (Larimer County), Fort Collins (Larimer County), and Longmont.

Staff proposes adopting an ordinance that would allow for the enforcement of truck routes. Law enforcement could cite a driver for driving a truck in a non-designated area without proper reasoning and/or documentation. Local deliveries would be exempt.

Based on review and research of several existing truck route ordinances within the state, the following considerations should be taken when drafting a potential truck route ordinance for the City of Grand Junction:

- The definition of “Truck” should be carefully considered, specifying the class (length and weight) of vehicle.
- The specific streets (and extents) designated as truck routes should be explicitly defined within the ordinance language.
- Designated truck routes should be posted appropriately.

- Trucks should be permitted to use streets not designated as truck routes for local delivery, service, and access, provided they utilize the shortest possible route.
- Further restricted roadways beyond the aforementioned conditions should be posted appropriately.
- Truck drivers should be required to have in their possession evidence (logbook, manifest, delivery slip, etc.) to justify their vehicle's presence on a restricted or prohibited route.

For outreach to industry, staff met with the Colorado Motor Carriers Association on February 24. Comments were positive and requested clear definitions of a truck as well as exemption of local deliveries to subdivisions under construction. Specific outreach to the United States Postal Service was held on April 26, 2022.

Compression (Jake) Brakes
Jake Brakes got their name from Jacobs Vehicle System inc., the company that created them. This type of brake is technically called a compression release engine brake, but it has many different names, including Jacobs Brake, Jake Brake, Jake, and engine brake.

The use of engine compression brakes may cause a vehicle to make a loud "growling", "machine gun" or "jackhammer" like exhaust noise, especially vehicles having no mufflers, which has led many communities in the United States and Canada to prohibit compression braking within municipal limits. Drivers are notified by roadside signs with legends such as "Brake Retarders Prohibited," "No Engine Brake," "No Jake Brakes," "Compression Braking Prohibited," or "Unmuffled Engine Braking Prohibited," and enforcement is typically through traffic fines. Such prohibitions have led to the development of new types of mufflers and turbochargers to better silence braking noise.

Based again on citizen concerns, City staff is proposing a strengthening of the City's noise ordinance to specifically prohibit compression brakes.

Pending council authorization,staff suggests the following schedule:
May 20 - 1st Reading of Proposed Ordinance(s)
June 1 - 2nd Reading, Public Hearing and consideration of proposed ordinance(s)
July 1 - Ordinance(s) takes effect

FISCAL IMPACT:

Fiscal impact is minimal with law enforcement working through a complaint-based program. Warnings would be utilized for first time offenders, fines would be levied against recalcitrant offenders. Revenue generated would be contingent upon the number of tickets issued and the severity of fines. Assuming $250/ticket x 20 tickets annually, revenue for the year would be $5,000.

SUGGESTED ACTION:

For discussion. Pending Council direction, staff would propose first reading of ordinance(s) be scheduled for May 20.

Attachments

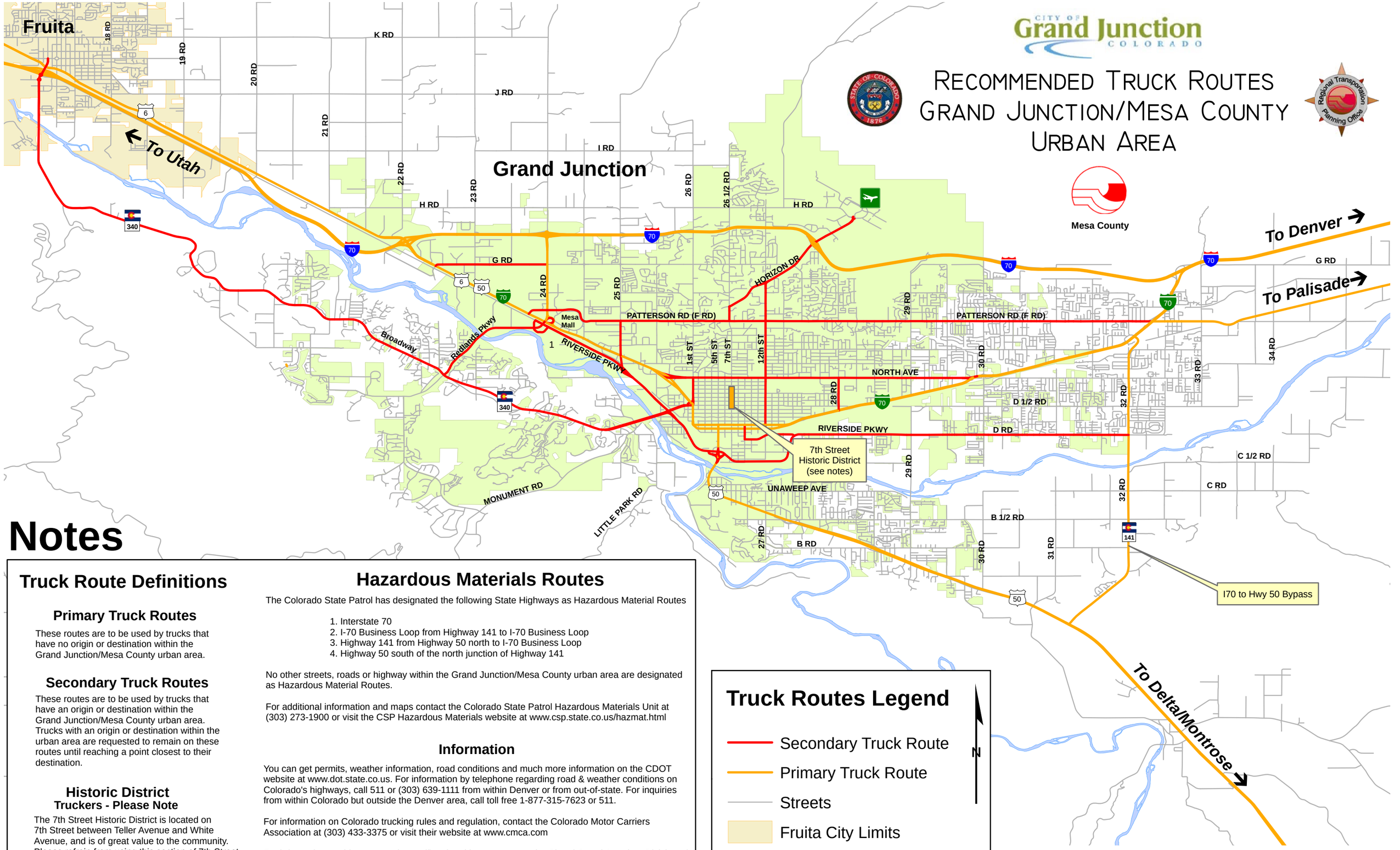
1. Current Recommended Truck Route Map
2. ORD-Truck Route 042122
3. ORD-Compression Brake 042222

Recommended Truck Routes
Grand Junction/Mesa County Urban Area

City of Grand Junction Colorado

Mesa County

Regional Transportation Planning Office



Notes

Truck Route Definitions

Primary Truck Routes

These routes are to be used by trucks that have no origin or destination within the Grand Junction/Mesa County urban area.

Secondary Truck Routes

These routes are to be used by trucks that have an origin or destination within the Grand Junction/Mesa County urban area. Trucks with an origin or destination within the urban area are requested to remain on these routes until reaching a point closest to their destination.

Historic District
Truckers - Please Note

The 7th Street Historic District is located on 7th Street between Teller Avenue and White Avenue, and is of great value to the community. Please refrain from using this section of 7th Street except for pick-ups and deliveries in the area.

Hazardous Materials Routes

The Colorado State Patrol has designated the following State Highways as Hazardous Material Routes

1. Interstate 70
2. I-70 Business Loop from Highway 141 to I-70 Business Loop
3. Highway 141 from Highway 50 north to I-70 Business Loop
4. Highway 50 south of the north junction of Highway 141

No other streets, roads or highway within the Grand Junction/Mesa County urban area are designated as Hazardous Material Routes.

For additional information and maps contact the Colorado State Patrol Hazardous Materials Unit at (303) 273-1900 or visit the CSP Hazardous Materials website at www.csp.state.co.us/hazmat.html

Information

You can get permits, weather information, road conditions and much more information on the CDOT website at www.dot.state.co.us. For information by telephone regarding road & weather conditions on Colorado's highways, call 511 or (303) 639-1111 from within Denver or from out-of-state. For inquiries from within Colorado but outside the Denver area, call toll free 1-877-315-7623 or 511.

For information on Colorado trucking rules and regulation, contact the Colorado Motor Carriers Association at (303) 433-3375 or visit their website at www.cmca.com

For information on this map or other traffic related issues, contact the City of Grand Junction, Division of Transportation Engineering at (970) 256-4110 or visit our website at www.gjcity.org.

Truck Routes Legend

- Secondary Truck Route
- Primary Truck Route
- Streets
- Fruita City Limits
- Grand Junction City Limits

N

Last Updated: 7/18/2011

ORDINANCE NO. _____

AN ORDINANCE ESTABLISHING CHAPTER 10.06 OF THE GRAND JUNCTION MUNICIPAL CODE REGARDING TRUCK ROUTES.

RECITALS:

The City of Grand Junction ("City") is charged with protecting the health, welfare, and safety of its citizens. Due to the City's size and expectation for growth, City Council finds it is necessary to regulate the orderly operation of trucks on the streets of the City.

Trucks are the primary delivery system for most consumer goods brought into the community. Trucks share the roads with automobiles, bicyclists, and pedestrians and due to the size and number of trucks on City roads, the City, with this ordinance seeks to facilitate the continued orderly transfer of goods and services by trucks and to preserve and protect the quality of life for other users of the streets. Considerations that favor the adoption of truck routes include: enhancing the safety of the streets; avoidance of unreasonable and/or unnecessary disturbance or reduction of property values due to truck noise, protection against the deterioration of streets not designated for truck traffic; minimizing pavement damage and the consequent maintenance and reconstruction costs in conjunction with truck traffic; and truck drivers/truck services knowing that the City recognizes the importance of and has due regard for efficient operations.

Colorado law (C.R.S. 42-4-111(g)) recognizes that local authorities may exercise reasonable police powers within their jurisdictions on streets and highways by designating truck routes and restricting the use of highways.

For the foregoing reasons, the City Council finds and determines that this ordinance, which establishes truck routes in the City, and which follows the guidance contained in the City's 2020 Comprehensive Plan and is supported by the foregoing Recitals, does designate suitable routes for through trucks and reasonable access for trucks to access in-City destinations.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION THAT:

Chapter 10.06 of the Grand Junction Municipal Code, which shall be in accordance with the *Recitals* hereof, is hereby established as follows:

Chapter 10.06 TRUCK ROUTES

10.06.010. Definitions.

The following definitions apply to this chapter.

Local delivery truck. Any truck defined herein having its origin and destination for pickup and/or delivery point(s) within the City.

Most direct route. The path or route from the point on the nearest Truck Route which is closest to the delivery or pickup location which is safe and suitable for use by the truck making the pickup and/or delivery.

Primary truck route. The route to be used by trucks defined herein that have no origin or destination within the City.

Secondary truck route. The route to be used by a truck defined herein that has an origin and/or destination in the City.

Through truck. Any truck, as defined herein, not having its origin, destination, pick up, or delivery point within the City.

Truck. Any vehicle, machine, tractor, trailer, or semitrailer propelled or drawn by mechanical and/or electric power and used upon the highways or streets in the transportation of property as defined by the Federal Highway Administration ("FHWA") as set forth in the FHWA 13-Category Rule Set that is of the Class Group 8 or higher. See Figure 1 FHWA 13 Vehicle Category Classification ("Truck.").

A type(s) of Truck(s) is(are) determined by vehicle characteristics that can be easily identified visually and are further described as follows:

Truck tractor units traveling without a trailer are considered single-unit trucks. Single unit trucks and single frame vehicles are not included within the definition of Truck for this chapter;

Truck tractor units consisting of two or more units one of which is a tractor or straight truck power unit are included within the definition of Truck for this chapter;

A truck tractor unit pulling other such units in a saddle mount configuration will be considered one single-unit and will be defined only by the axles on the pulling unit;

A Truck is further defined by the number of axles in contact with the road. Therefore, floating axles are counted only when in the down position; and

The term “trailer” includes both semi- and full trailers.

Trucks included in the Class Group 8 or higher are as follows:

Four or Fewer Axle Single-Trailer Trucks – All vehicles with four or fewer axles consisting of two units, one of which is a tractor or straight truck power unit.

Five-Axle Single-Trailer Trucks – All five-axle vehicles consisting of two units, one of which is a tractor or straight truck power unit.

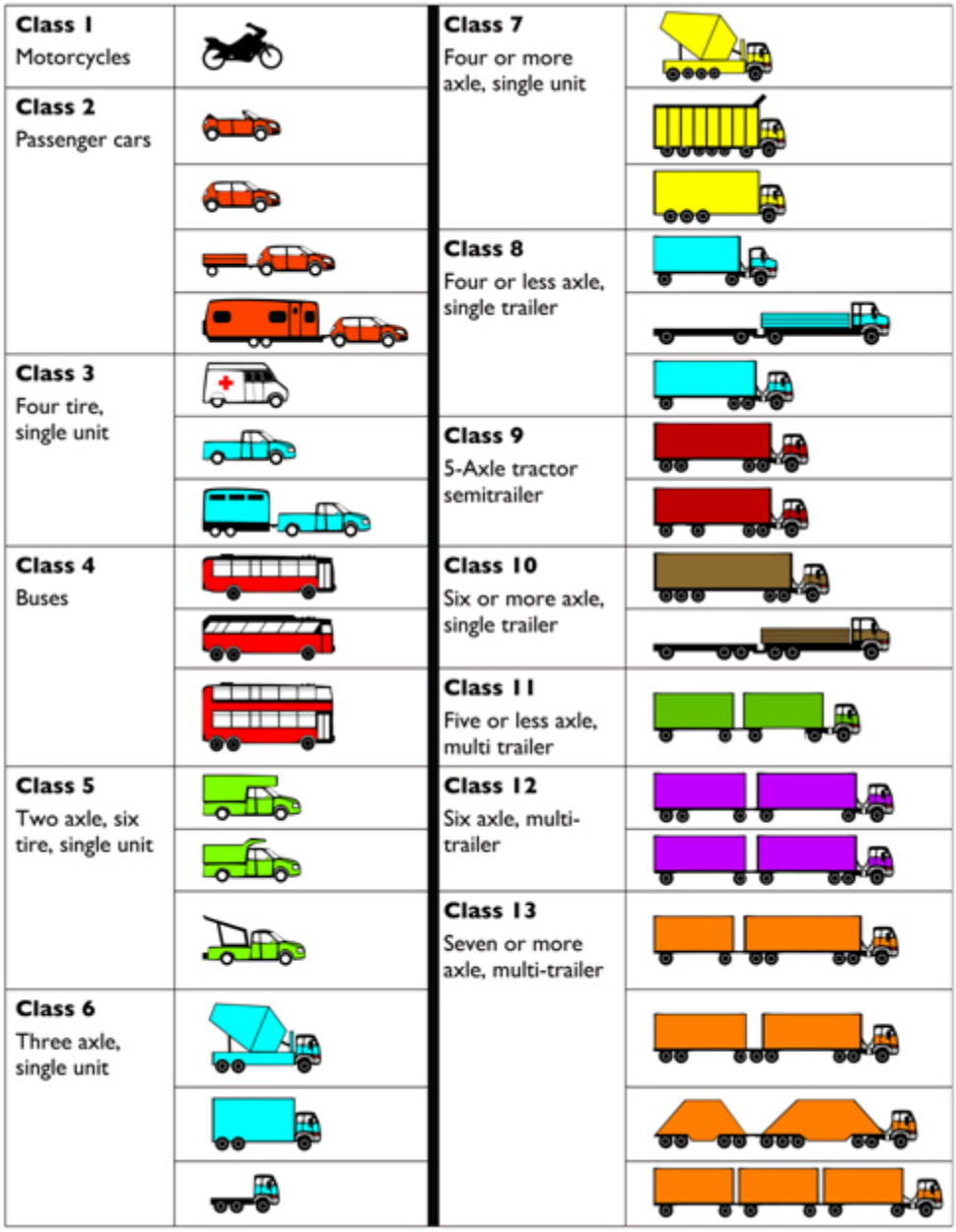
Six or More Axle Single-Trailer Trucks – All vehicles with six or more axles consisting of two units, one of which is a tractor or straight truck power unit.

Five or Fewer Axle Multi-Trailer Trucks – All vehicles with five or fewer axles consisting of three or more units, one of which is a tractor or straight truck power unit.

Six-Axle Multi-Trailer Trucks – All six-axle vehicles consisting of three or more units, one of which is a tractor or straight truck power unit.

Seven or More Axle Multi-Trailer Trucks – All vehicles with seven or more axles consisting of three or more units, one of which is a tractor or straight truck power unit.

Figure 1 FHWA 13 VEHICLE CATEGORY CLASSIFICATION



10.06.20 Truck Routes Established.

(1) There is established within the City the following Truck Routes. All Trucks within the City shall be operated only over and along the Truck Routes and on other streets as permitted by the exceptions. The following streets shall be used for Primary Truck Routes and Secondary Truck Routes as designated herein and on the Truck Route Map designated by the City Manager and published on the City's web site.

Primary Truck Routes:

Interstate 70 ("I-70")
24 Road south of I-70 to Highway ("Hwy") 6 & 50
Hwy 6 & 50
Hwy 6
Hwy 50
I-70 Business Loop ("I-70B")
Hwy 141 (32 Road)

Secondary Truck Routes:

Horizon Drive from Patterson Road to H Road
G Road between Hwy 6 & 50, I-70B and 24 Road
Patterson Road (F Road)
12th Street from Horizon Drive to Ute St.
25 Road from Patterson Road to Riverside Parkway
North Avenue from Hwy 6 & 50, I-70B west side to I-70B on the east side
S 1st Street south of North Avenue to Hwy 6 & 50, I-70B
28 Road south of North Avenue to I-70B
S 9th Street from I-70B to D Road
D Road east of S 9th to 32 Road
Hwy 340 (Broadway)
Redlands Parkway
Riverside Parkway

There are no local delivery truck routes designated within the City. Drivers of Trucks within the City who are or who purport to be operating as a local delivery truck, shall travel on the designated Truck Routes and may only deviate from that route to proceed to and from the origination, delivery or pickup point(s) and destination using the most direct route possible and available.

(2) The City Manager shall have the authority to designate all or portions of those streets, highways, public ways, and roadways upon which Trucks shall operate. The City Manager shall have the additional authority to restrict truck route operations. The designation and restrictions shall be based upon traffic engineering investigations and studies, public safety, environmental considerations, economic factors affecting trucking and the trucking industry, desires of the inhabitants and neighborhood characteristics of affected areas.

(3) The City Manager shall maintain maps designating Truck Routes. Copies of the maps shall be made available to trucking interests and the public through the City's web site. Any change to Truck Routes shall be published on the City's web site, no less than 14 days prior to the effective date of the change(s).

(4) The City Manager shall post with appropriate signs the Truck Routes. Truck Route maps shall be made available to all persons upon request. The posting of signs shall not be required for enforcement of this chapter.

10.06.30 Presumptions and exceptions.

(1) Any person operating a Truck on any street or highway within the City which is not designated as a Truck Route shall have in his/her possession for the inspection of police officers his/her logbook or evidence of his/her destination and point of origin to justify the presence of said Truck on such street. Failure to have such logbook or evidence in his/her possession shall not be a separate offense but shall create a presumption that such person is unlawfully operating the Truck.

(2) It is presumed that the person operating a Truck on any street or highway within the City has familiarized himself/herself with the Truck Routes and has taken the time to ascertain the most direct point from those routes to the pick up or delivery location prior to entering the City. Ignorance of the most direct route will not be a defense to a violation under this chapter.

(3) The driving of a Truck upon a street or highway not designated as a Truck Route and not on the most direct path from a designated Truck Route to the point of pick up or delivery will not be a violation of this chapter in any of the following situations:

a. The pick up or delivery of merchandise at a location not situated on the designated Truck Route, provided the Truck leaves, and returns to the designated Truck Route by the most direct route available and at no point does the Truck deviate from the most direct route;

b. Traveling to or from a service or repair shop for repairs or service to be performed on the Truck, provided the Truck leaves, and returns to the designated Truck Route by the most direct route available and at no point does the Truck deviate from the most direct route;

c. A Truck shall not be required to enter or exit directly onto the designated Truck Route if such entry or exit would be unsafe from a traffic safety standpoint as determined by the Chief of Police; and

d. The provisions of this chapter shall not be construed to prohibit the use of any street, alley, or other area by vehicles of any government agency or any public utility company while in the performance of official or normal duties.

e. Authorized emergency vehicles and vehicles used as emergency vehicles for the purpose of responding to a temporarily declared emergency.

10.06.040 Signage.

Truck Routes within the City shall be clearly designated by signs as Truck Routes as directed by the City Manager.

10.06.050 Violations.

Any person violating any provision(s) of this chapter or disobeying any signs or markings installed pursuant thereto shall be guilty of a traffic infraction. Every person convicted of an infraction for a violation of the provisions of this chapter shall be punished by a fine as follows:

1st violation is $250.00
2nd violation is $500.00
3rd or any subsequent violation is $750.00.

Severability. It is the intention of the City Council that the provisions of this ordinance are not severable. If any provision of this ordinance is declared unconstitutional or invalid by a court of competent jurisdiction such unconstitutionality or invalidity shall invalidate all the provisions of the ordinance.

Introduced on first reading this _____ day of _____ 2022 and ordered published in pamphlet form.

Adopted on second reading this _____ day of _____ 2022 and ordered published in pamphlet form.

_____

President of City Council

ATTEST:

_____
Laura Bauer
Interim City Clerk

ORDINANCE NO. _____

AN ORDINANCE PROHIBITING THE USE OF ENGINE RETARDING COMPRESSION BRAKES IN THE CITY OF GRAND JUNCTION

RECITALS:

The City of Grand Junction ("City") is charged with protecting the health, welfare, and safety of its citizens. City Council has considered whether the use of engine retarding compression brakes is inconsistent with the public health safety and welfare and with and after due deliberation finds that the use of a vehicle brake system that alters the normal compression of the vehicle's engine, commonly known as a "jake brake", disturbs and disrupts the public peace and quiet as the usage of such a vehicle brake system causes loud and/or unusual noise, and further that such noise adversely affects City residents' peace and enjoyment of their property. Therefore, City Council finds and determines that it is in the best interest of the public health, welfare, and safety of the City and its residents to prohibit the use of engine retarding compression brakes within the City limits.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION THAT:

The following definition is added to the Grand Junction Municipal Code ("GJMC") in Section 10.04.020.

Engine retarding brake. Any engine retarding brake system, transmission brake, or any other retarding brake system that alters normal compression, including but not limited to DYNAMIC BRAKE, JAKE BRAKE, JACOBS BRAKE, C-BRAKE, PACCAR BRAKE, or any other make or model of engine braking system, or other braking system(s) that is(are) activated or operated to alter the normal compression of the engine and subsequently release that compression.

and

Section 10.04.223 of the Grand Junction Municipal Code is hereby amended to include the following:

(3) **Engine Retarding Brake.**

(a) It shall be unlawful on any public street or highway for the driver of any vehicle to use or operate or cause to be used or operated within the City any engine retarding

brake, compression brake or mechanical exhaust device designed to aid in the braking or deceleration of any vehicle unless such use is necessary to avoid immediate physical harm to persons or property.

(b) Signage. The City shall erect signs at such intervals and locations as deemed appropriate by the City Manager, which signs shall state "ENGINE RETARDING BRAKE ORDINANCE ENFORCED" to advise drivers of the prohibitions established by this section. No sign stating "ENGINE RETARDING BRAKE ORDINANCE ENFORCED" shall be installed on a state highway without the approval from the Colorado Department of Transportation.

(c) Exceptions. Emergency vehicles shall be exempt from the application of the prohibition on use an of engine retarding rake.

All other provisions of Chapter 10.04 shall remain in full force and effect.

Introduced on first reading this _____ day of _____ 2022 and ordered published in pamphlet form.

Adopted on second reading this _____ day of _____ 2022 and ordered published in pamphlet form.

_____

President of City Council

ATTEST:

_____

Laura Bauer
Interim City Clerk

Grand Junction City Council

Workshop Session

Item #1.c.

Meeting Date: May 2, 2022

Presented By: Trenton Prall, Public Works Director

Department: Public Works - Engineering

Submitted By: Trent Prall, Public Works Director

Information

SUBJECT:

Union Pacific Railroad (UPRR) Downtown Quiet Zone

EXECUTIVE SUMMARY:

Currently, trains must sound horns at both the 7th Street and 9th Street crossings through downtown. The Downtown Development Authority (DDA) and the City hired a consultant to evaluate the feasibility of developing a quiet zone in 2020. With the construction of additional safety measures including improved signal circuitry, additional arms, and median work, UPRR would not be required to sound horns at each of the crossings, increasing quality of life for all downtown residents, businesses, and visitors. Staff is preparing to move forward with next steps and wanted to update Council on the topic.

BACKGROUND OR DETAILED INFORMATION:

Staff has received requests from downtown investors as well as informal requests from other business owners to explore the formation of a Train Horn Quiet Zone that would include the South 7th and 9th Street railroad crossings. The establishment of a Quiet Zone is a multi-step process and can be cumbersome due largely to the lack of earnestness of railroad company participation. In addition, the establishment of a Quiet Zone may also be costly as safety improvements, called Supplementary Safety Measures (SSMs), are generally required to be constructed in coordination with the railroad company.

The Federal Railroad Administration (FRA) requires that trains signal their approach to intersections with roadways by sounding a horn. The FRA also provides a process for municipalities to reduce horn noise at specified intersections, a process that leads to the establishment of a Quiet Zone. Establishing a Quiet Zone requires that every intersection within a half-mile radius of the target intersection be equipped with

supplemental safety measures (SSMs) or additional safety measures (ASMs) that reduce the level of accident risk without the sounding of a horn to the level of risk at that intersection with the sounding of the horn. The risk-reduction measures generally include additional gates, medians, light signals, and similar measures.

Since the publication of FRA Train Horn Rule (49 CFR 222) in 2005, a Quiet Zone has been considered for downtown, specifically centered on the intersections at 7th and 9th Streets. The City and the Downtown Development Authority (DDA) were prompted in 2020 by the proposal to develop a high-density apartment project at 630 South 7th Street and moved forward with a study to examine the prospect of a Quiet Zone. This process is likely to take multiple years (range of approximately from 24 to 48 months) to accomplish. The initial step is to conduct a study that provides an analysis of the existing crossing conditions and the range of safety measures available to comply with FRA standards as well as estimated costs for improvements. In 2020, staff hired the engineering firm Felsburg, Holt and Ullevig (FHU) that specialized in Quiet Zone establishment and produced the necessary initial safety measures study. The approximate cost for the initial work was $10,000, which was funded by the DDA.

Next steps would be for the City to meet with consulting representatives of the FRA on site for a Diagnostic Site Visit to verify the efficacy of the proposed SSMs. Upon coming to an agreement and reaching a 30% preliminary design for the SSM provisions, the City would file a design and estimate construction agreement with the Public Utilities Commission (PUC), as well as issue a Notice of Intent to establish a Quiet Zone to the FRA. For the 18-24-month period following the filing of the Notice Intent, the City would cooperate with the FRA and PUC to install the SSMs and to construct concurrent road improvements.

Much of this design and implementation can be taken on by the City, though it would also be possible to contract for this work. Upon installation of SSMs, the City would issue a Notice of Establishment of a Quiet Zone to the FRA; 21 days later, all train horns associated with the crossings would be required to be silenced. The only train noises that would regularly occur downtown after the Quiet Zone establishment would be track noises, low-decibel bells at intersections required to alert pedestrians, and horns associated with relatively infrequent use of railroad spurs. However, train engineers would continue to be able to sound the train horn if they perceived need.

The implementation of a Quiet Zone at 7th and 9th Streets would largely silence train horns throughout Downtown. Moreover, given the limited number of at-grade crossings in the City Center, this would significantly reduce train horn noise citywide, with no mandated horn use from approximately 29 Road to G Road at 22 ½ Rd. This change would be consistent with the vision for Downtown, including increased livability, amenability for further residential and mixed-use development, and improved and safe connections between Main Street and the Riverfront at Las Colonias.

Feedback is requested from Council as staff plans to move forward in the process.

FISCAL IMPACT:

The City has budgeted $100,000 for 2022 to advance the design and permitting for improvements that would be constructed in 2023.

SUGGESTED ACTION:

This item is for discussion purposes only.

Attachments

1. Grand Junction Railroad Crossing Quiet Zone Study-Final Report 11-20-20

CITY OF GRAND JUNCTION
RAILROAD CROSSING QUIET ZONE STUDY

FINAL REPORT

Prepared for:

City of Grand Junction
210 North 5th Street
Grand Junction, CO 81501

Prepared by:

Felsburg Holt & Ullevig
6400 South Fiddlers Green Circle
Suite 1500
Greenwood Village, CO 80111

FHU Reference No. 120411-01
November 20, 2020

FELSBURG HOLT & ULLEVIG

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I. INTRODUCTION

Felsburg Holt and Ullevig (FHU) was asked by the City of Grand Junction (City) to complete a railroad grade crossing Quiet Zone assessment at two (2) highway-rail grade crossings located within the City to produce a study report identifying possible crossing improvements for Quiet Zone compliance. The assessment consists of compiling an inventory of existing conditions at each at-grade crossing, discussing viable improvements that could be completed at each crossing location and evaluating the crossings for Quiet Zone compliance. Concept crossing improvement exhibits are provided for each viable option.

The assessment of the crossings is addressed in four separate sections of this report:

- Existing Conditions
- Quiet Zone Requirements / FRA Rule
- Development of Quiet Zone Concept Improvements
- Evaluation of Quiet Zone Concept Costs
- Implementation Plan and Funding Opportunities

The portion of rail corridor that is the subject of this study is along the Union Pacific Railroad (UPRR) track corridor. This UPRR line is oriented generally east-west at this location, and passes through these crossing roadways predominantly at a slightly skewed angle. There are two (2) highway-rail at-grade crossings along the UPRR tracks within the City's limits that are the subject of this assessment and study report. Those crossings are:

- South 7th Street
- South 9th Street

The two highway-rail at-grade crossings that are part of this Quiet Zone Study are shown on **Figure 1**.

Figure 1. Railroad Quiet Zone Study Area

II. EXISTING CONDITIONS

The UPRR track runs generally east-west through this portion of Grand Junction. Within the study corridor, the crossings at South 7th Street and South 9th Street are 3-track crossings, each with one mainline track, one siding track and one yard track. The track crosses both roadways at a slightly skewed angle.

The UPRR runs as many as 11 thru trains per day along this line, along with 2 Amtrak trains. Maximum train speed through the crossings is 35 MPH.

The U.S. DOT Crossing Inventory Summary Sheets for each study crossing can be found in **Appendix A**. Both of the FRA Inventory forms were last updated by the railroad in 2019.

A. Data Collection

Railroad corridor information was collected from the FRA and available railroad track charts, including current train movements, average train speed, and crossing circuitry. Quiet Zone evaluation typically considers the details of any reported accidents within the previous 5 years, at each crossing. Reviewing the FRA Accident Reports for the 7th Street and 9th Street crossings, neither crossing has any FRA Reported accidents within the last 5 years.

B. Highway-Rail Grade Crossings

Table 1 summarizes the existing conditions present at each of the highway-rail crossings within the study area. In addition to the roadway name and operating railroad, additional data includes the number of trains per day operating over the crossing, railroad milepost, railroad circuitry, existing crossing warning devices, and type of crossing surface currently in place. Each inventory indicates each crossing approach is equipped with active warning devices. Adjacent highway traffic signals, if present, are listed along with the distance to the crossing.

These two crossings, at 7th Street and 9th Street, are within ¼ mile from each other. There are no additional adjacent public at-grade crossings along the track from either crossing, that are within ¼ mile of the 7th Street or 9th Street crossings. This distance between the two crossings, will require that Quiet Zone establishment must occur concurrently. This requirement will be explained further in the Quiet Zone Improvements portion of this study.

Table 1. Existing Crossing Conditions

CROSSING DOT #	STREET	RR	MP	DISTANCE BETWEEN CROSSINGS (MI.)	TOTAL TRAINS	RAILROAD CIRCUITRY	GATES /LIGHTS	CROSSING SURFACE	ADJACENT TRAFFIC SIGNALS
253778A	7TH ST	UPRR	448.935	0.19	11 +2 ATK	CWT	YES	CONCRETE	NO
253776L	9TH ST	UPRR	448.750	0.19	11 +2 ATK	CWT	YES	CONCRETE	NO

III. QUIET ZONE REQUIREMENTS

The City of Grand Junction is currently evaluating options for establishing Quiet Zones along the UPRR track corridor through two crossings within the City's limits. This section of the report identifies the treatments necessary at the subject crossings to satisfy the requirements for the establishment of a Quiet Zone.

This portion of the report is based on the criteria for the establishment of Quiet Zones as outlined in the *Final Rule on Use of Locomotive Horns at Highway-Rail Grade Crossings* (*Final Rule*), which was made effective on June 24, 2005 by the Federal Railroad Administration (FRA). The *Final Rule* was last amended on August 17, 2006. On December 18, 2003, the FRA published an interim final rule that required the locomotive horn to be sounded while trains approach and enter public highway-rail crossings. The interim final rule provided exceptions to the above requirement, which enabled local communities to reduce train horn noise by creating "Quiet Zones" where the locomotive horn would not need to be routinely sounded if highway-rail crossings met certain safety conditions. The *Final Rule* facilitates the development of these Quiet Zones, requiring the implementation of Supplementary Safety Measures (SSMs) or Alternative Safety Measures (ASMs), so as to maintain safety at highway-rail crossings where locomotive horns have been silenced.

A Quiet Zone is a section of rail line that contains one or more consecutive public crossings at which locomotive horns are not routinely sounded. The *Final Rule* contains guidelines and minimum requirements for the establishment of a Quiet Zone. For the purposes of this report, all potential crossings must qualify in the New Quiet Zone category, as train horns are currently being sounded at the crossings, and the Quiet Zone would be established after the effective date of the *Final Rule*. These minimum requirements for a New Quiet Zone are as follows:

1. A New Quiet Zone must have a minimum length of ½ mile along the railroad right-of-way.

2. Each public highway-rail grade crossing within a New Quiet Zone must be equipped with active grade crossing warning devices. These devices are comprised of both flashing lights and gates which control traffic over the crossing, and must be equipped with Constant Warning Time (CWT) circuitry, if reasonably practical, and power-out indicators. Any necessary upgrades to or installation of active grade crossing warning devices must be completed before the New Quiet Zone implementation date.

3. Each highway approach to every public and private highway-rail grade crossing within a New Quiet Zone shall be equipped with a Manual on Uniform Traffic Control Devices (MUTCD) compliant advanced warning sign that advises motorists that train horns are not sounded at the crossing (W10-9P). Note that these signs are added immediately prior to the silencing of the train horns.

W10-9P

4. Each public highway-rail grade crossing within a New Quiet Zone that is subjected to pedestrian traffic and is equipped with automatic bells shall retain those bells in working condition.

5. Each pedestrian or pathway grade crossing within a New Quiet Zone shall be equipped with an MUTCD compliant advanced warning sign that advises pedestrians/pathway users that

train horns are not sounded at the crossing (W10-9). Pedestrian grade crossings subject to this requirement are independent of public at-grade vehicular crossings. Detached sidewalks within 25 feet of an active warning vehicular public highway-rail at-grade crossing with active warning, are not subject to this requirement.

A. Quiet Zone Implementation Options

The public authority that is responsible for the safety and maintenance of the roadway that crosses the rail corridor is the only entity that can apply for the establishment of a Quiet Zone. Private companies, citizens, or neighborhood associations cannot create or apply for the establishment of a Quiet Zone independent of local roadway authorities.

The focus of this report is to determine which Supplementary Safety Measures (SSMs) or Wayside Horns should be used to fully compensate for the absence of the train horn. These measures may be used to mitigate the silencing of locomotive horns at highway-rail grade crossings through a notification process to the FRA without the necessity for FRA review and approval.

The SSMs to be considered, as identified in the *Final Rule*, include the following:

- Gates with Raised Medians or Channelization Devices
- Four-Quadrant Gate System
- Conversion to One-Way Street with Gates across the roadway
- Temporary Closure (used with a nighttime-only quiet zone)
- Permanent Crossing Closure

SSMs are recognized measures that do not require further FRA review or approval prior to implementation. Photos showing these SSM treatments are provided in **Appendix C**. Alternative Safety Measures (ASMs) consist of improvements that fall outside the scope of SSMs, and may be proposed to FRA for consideration and approval. This requires an application to the FRA. The effectiveness rate of ASMs must be determined prior to FRA approval. It should be noted that the implementation of several ASMs may be required in order to reduce the risk below the threshold for the silencing of train horns.

Wayside Horns are FRA approved devices that may be used in lieu of locomotive horns at individual or multiple highway-rail grade crossings, including those within Quiet Zones. The wayside horn is a stationary horn located at a highway-rail grade crossing, designed to provide audible warning to oncoming motorists of the approach of a train. As per the *Final Rule*, a highway-rail grade crossing with a wayside horn shall be considered in the same manner as a crossing treated with an SSM. Wayside horn installation does not render a crossing truly 'quiet' as the wayside horn continues to sound, although at a lower decibel level, upon approach of a train. Quiet Zones that incorporate a Wayside Horn at one or more of the subject crossings, do not result in a true Quiet Zone, but does substantially reduce the noise level and range of noise, from that of a locomotive horn.

A comparison of train horn noise and wayside horn noise footprints are depicted in **Figure 2**. A highway-rail crossing with a wayside horn installation is shown in **Figure 3**. Locomotive horn noise and wayside horn noise exhibits are provided in **Appendix D**, showing the footprint at the subject crossings of 7th Street and 9th Street in Grand Junction.

Figure 2. Comparison of Train Horn vs. Wayside Horn Noise Footprint

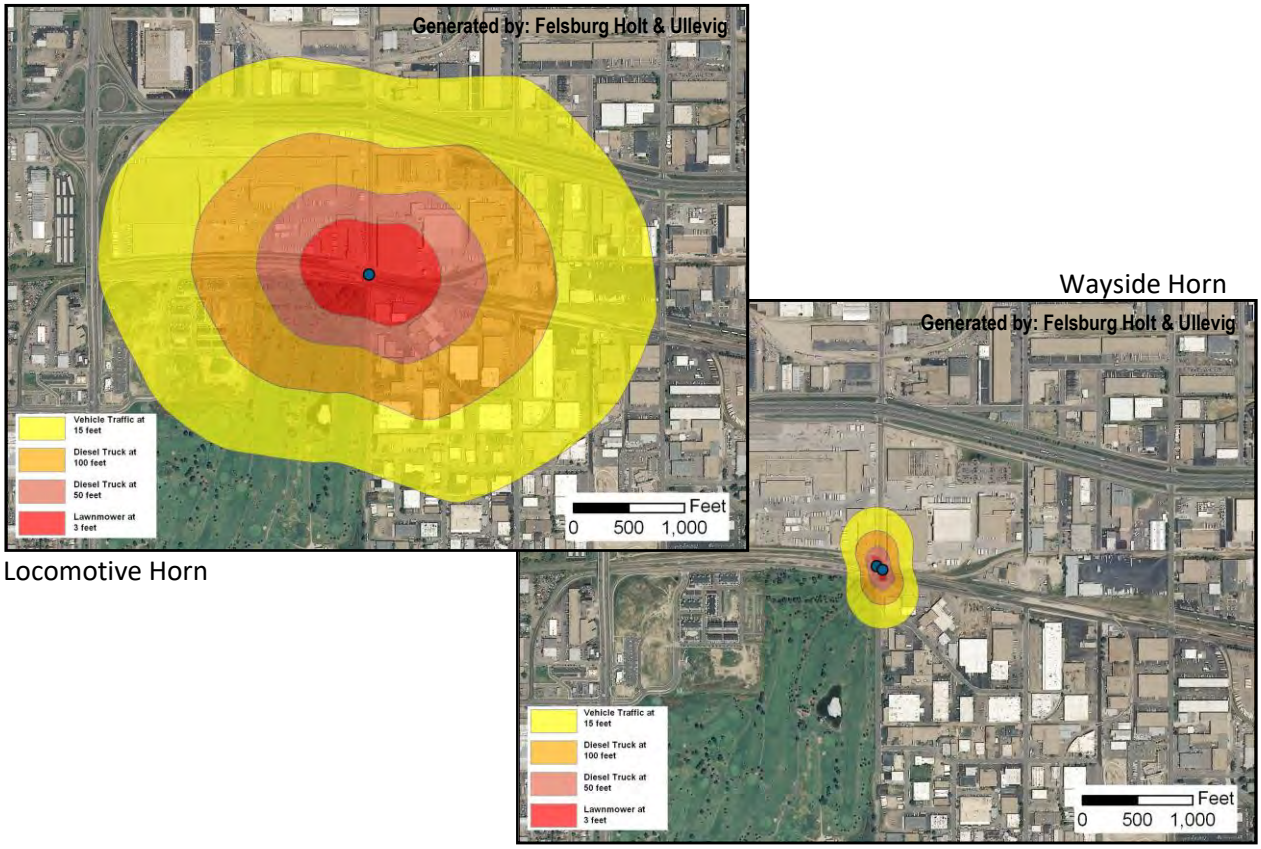


Figure 3. Highway-Rail Crossing Equipped with Wayside Horns

B. Quiet Zone Establishment

Per the *Final Rule*, there are two different methods for establishing Quiet Zones; public authority designation and FRA approval. In the public authority designation method, an SSM is applied at every public at-grade crossing within the proposed Quiet Zone. In this method, the governmental entity establishing the Quiet Zone would be required to designate the limits of the Quiet Zone, install the SSMs, and comply with the Notifications and information requirements set forth in the rule. No ongoing monitoring or reporting is required when standard SSMs are installed, provided the SSM continues to conform to the requirements of the *Final Rule*. An affirmation letter is required every 5 years to the FRA indicating that the crossing still has the required SSM installation in working order, and remains compliant with the *Final Rule.* The majority of Quiet Zones are established using SSM installation, as the timeline is defined, and the resulting Quiet Zone is permanent.

The FRA approval method provides a governmental entity the option to use a combination of SSMs and ASMs to address the crossings of interest. This method allows FRA to consider Quiet Zones that do not have SSMs at every crossing, as long as implementation of the proposed SSMs and ASMs in the Quiet Zone as a whole, would cause a reduction in risk to compensate for the absence of routine sounding of the locomotive horn. The FRA approval method has stipulations for monitoring the installed treatments and reporting on their effectiveness. ASMs are not typically used to establish Quiet Zones, because the timeline depends upon the treatment proposed and the review time needed by the FRA. Poor performance of an ASM can result in the requirement for additional crossing treatment or loss of the Quiet Zone.

In either method, a series of notices must be sent out to regulatory agencies and involved railroads. These notices include the Notice of Intent to Create a Quiet Zone, and the Notice of Quiet Zone Establishment. Flowcharts depicting the procedure for the establishment of Quiet Zones can be found in **Appendix B.**

C. Quiet Zone Improvements

The two subject highway-rail grade crossings within the City, were assessed for crossing improvements for implementation of a Quiet Zone. The crossings at 7th Street and 9th Street must be addressed for Quiet Zone establishment concurrently as a corridor, due to their proximity. Crossings within ¼ mile of each other must be pursued for Quiet Zone simultaneously. This is due to the general nature of the initiation of sounding of the locomotive horn, which occurs approximately ¼ mile in advance of a public at-grade crossing, depending upon train speed. Therefore, in the condition where two crossings are within ¼ mile, and only one crossing is established as a Quiet Zone, the locomotive engineer, by default, will violate that Quiet Zone on approach to the adjacent crossing, based solely on proximity, which in this example, has not been established as a Quiet Zone. For this reason, the *FRA Rule* requires crossings ¼ mile or less apart, to be pursued and established as a Quiet Zone, together.

Supplementary Safety Measures Evaluation -

The concept evaluation of Supplementary Safety Measures (SSMs) focused initially on the construction of raised medians or channelizing devices on the roadway approaches to the crossing, utilizing the SSM of Gates with Raised Medians or Channelization Devices. Other than permanent or temporary closure, this is typically the most cost effective SSM for the establishment of a Quiet Zone. In order to meet the requirements of a Quiet Zone, the installation of raised medians or channelizing devices needs to meet several criteria:

1. The median/channelizing device must extend 100’ from the railroad gate arm unless there is a public access or intersection, in which case the median/channelizing device must extend at least 60’ from the railroad gate arm.
2. No commercial accesses or intersecting public streets can be within 60 feet of the approach gate arm on either side of the crossing, and on either side of the roadway.
3. The raised median should be at least 3’ wide (4’ is desirable) to allow for avoidance signing on the approach end, with a standard 6” barrier curb.
4. Channelizing devices consist of a bituminous or concrete curb, or a synthetic tack-down option, on which hazard panels are placed.

For those locations where the construction of raised medians or channelizing devices is not practical or feasible, 4-Quadrant Gate installations or Wayside Horns are considered as optional SSM solutions.

IV. DEVELOPMENT OF QUIET ZONE CONCEPT IMPROVEMENTS

A. Development Procedure

The development of the concept improvements identified in this report started with a desktop review of the existing street configuration at each crossing and review of the existing crossing warning devices. Review also includes identification of the location of existing railroad crossing active control, as well as adjacent land use, and physical features.

Supplementary Safety Measures (SSM) contained in the *Final Rule* were evaluated for appropriateness at each location. Non-SSM treatments are not typically evaluated as part of the initial assessment, because the treatments vary widely and may or may not be viable for a given crossing. Where the road authority identifies the desire to evaluate a treatment that does not fully meet the requirements of the standard SSMs, additional consideration can be given to Modified SSMs. It should be noted that Modified SSMs are treated as Engineering Alternative Safety Measures (ASMs) by the Federal Railroad Administration (FRA). As a reminder, unlike the process for SSMs, where the local public authority can designate a Quiet Zone using the pre-approved SSM measures, ASMs follow a separate procedure whereby an application is made to the FRA for consideration and approval before a Quiet Zone can be implemented. The FRA has the authority and responsibility to decide whether a proposed ASM is as safe as the current condition with train horns sounding. ASM applications can be approved with conditions and monitoring requirements, or denied by the FRA, as they are not pre-approved.

Following is a brief description of each of the SSM measures available to the crossings along the UPRR track corridor through Grand Junction in accordance with the Final Rule:

Active Controls- For each crossing, certain basic active warning devices must be in place to establish a Quiet Zone. These include flashing lights and gates with constant warning time circuitry to provide a consistent message to drivers along the roadway when on approach to a crossing.

Raised Medians- Raised medians are the lowest cost measure for preventing higher risk behavior of drivers going around the gate arms. Medians should be used wherever possible, if viable for the Gates with Medians or Channelization Devices SSM.

Wayside Horns- The Wayside Horns are considered a one for one replacement for the locomotive horn without application to FRA for approval. Wayside Horns provide a smaller noise footprint of the horn sound. They are generally used where other SSMs are not feasible and where residential land uses or sensitive noise receptors are not in proximity of the crossing. Wayside horn circuitry must be synchronized with railroad circuitry for proper function of the Wayside Horn.

4-Quadrant Gates- This treatment includes installation of approach and exit railroad gates, placed on both the entrance and exit side of the tracks in each direction to prevent vehicles from either intentionally or unintentionally entering the track area while a train is approaching. A 4-quadrant gate installation is typically the most costly of the SSM measures.

Closed Crossing- The safest and least costly treatment is to physically close a crossing whenever possible and where adequate alternate routes are available for circulation. These are generally proposed on cross streets having the lowest through traffic volumes and least continuity across a community.

B. Track Crossing Treatments

The following discussion evaluates the 7th Street and 9th Street crossings for the SSM treatments of Gates with Raised Median or Channelization Devices and 4-Quadrant Gates. Following this discussion is a summary table of SSM options, and Concept Crossing Improvement exhibits showing the possible SSM treatment, and notes regarding roadway or equipment modifications that may be necessary.

South 7th Street (Option 1): 4-Quadrant Gate System

- A 4-Quadrant Gate installation could be utilized at this crossing for establishment of Quiet Zone.
- The existing crossing has short median islands that do not currently house railroad equipment.
- It is noted that UPRR applied to the Public Utilities Commission on June 5, 2020, to upgrade the existing circuitry at 7th Street to Constant Warning Time (CWT) GCP4000 circuitry in order to 'modernize the crossing to maintain safety.' This work was approved by the Commission on July 22, 2020, and UPRR filed their Notice of Completion of the work on September 28, 2020. These documents are included in **Appendix E**, for reference. Noting that the mainline, at a minimum, is treated with the most current CWT circuitry, the circuitry should not require replacement for Quiet Zone establishment.
- The existing railroad approach gates should not require replacement. Any upgrading of the approach gates in order to effectively communicate with the UPRR's recent upgrading of CWT circuitry would have to have occurred as part of the UPRR's recent work.
- It is also noted that this crossing contains 3 tracks, all of which are within the active railroad warning devices. The FRA Inventory Report for this crossing identifies the tracks as: 1 main track; 1 siding track; and 1 yard track. Typically CWT is required on the mainline track, as this track serves trains usually traveling at consistent speed through the crossing. On siding or yard tracks where train activity and speed are less consistent, CWT circuitry may not function properly, and is often not 'reasonably practical' to install. It is assumed that if CWT is reasonably practical on the yard track and siding track, that this circuitry exists, and was upgraded with the recent work by UPRR.
- Due to the skew of the crossing, railroad exit gates (on the downstream side of the crossing in each direction) cannot be placed such that the gate tip in the down position is within 2 feet of the approach railroad gate tip, in the down position, which is required for Quiet Zone establishment. Because the standard railroad gate installation is perpendicular to the roadway, as opposed to parallel to the tracks, in order to close the gap between the approach and exit gate tips in the down position, a raised median with 6" curb would be required on each approach, in the center of the roadway, between the gate tips.
- It is also recommended to provide raised curb in front of the railroad gates, where there is an adjacent drive cut, to discourage drivers from turning too quickly into the driveway, potentially damaging or running over the railroad gate.

South 7th Street (Option 2): Gates with Raised Medians or Channelization Devices

- Raised medians, at the minimum length of 60 feet from the railroad gate arm, could be considered at the 7th Street crossing.
- This crossing recently received upgraded CWT circuitry installed by UPRR (see discussion under 4-Quadrant Gate System, above). This circuitry would not require replacement with this SSM treatment, nor would the railroad approach gates require replacement. For this SSM, only roadway infrastructure would be required.
- The existing crossing has short median islands that do not currently house railroad equipment.

- South of the crossing, there are public accesses to parking facilities on the east and west sides of the roadway.
    - The parking facility to the east has two accesses, one of which is within 60 feet of the railroad gate. This closer access would need to be closed to public traffic, by removal of the drive cut, and placement of 6-inch curb and gutter. The second public access to this east lot could remain open and functional.
    - Access to the west parking lot, south of the crossing, is beyond 60 feet from the gate arm, and can remain open and functional.
- North of the crossing, there are drive cuts immediately north of the tracks to the east and west of the roadway, which appear to serve as both public accesses and maintenance access for UPRR.
    - The access to the east would need to be closed to public use, but could remain open for UPRR maintenance use. City Staff indicated former public use has been eliminated at this location. NO TRESPASSING signage could be added to discourage public use, as well as a narrowing of the drive cut with placement of additional 6-inch curb and gutter.
    - The access to the west would also need to be closed to public use, but could remain open for UPRR maintenance use. If public use is per easement or license from the railroad, negotiation may be needed to terminate this public use. This access could also be treated with NO TRESPASSING signage and narrowing of the drive cut.

South 9th Street (Option 1): 4-Quadrant Gate System

- A 4-Quadrant Gate installation could be utilized at this crossing for establishment of Quiet Zone.
- The existing railroad approach gates may not require replacement. This would require confirmation from UPRR.
- The existing crossing currently has Constant Warning Time (CWT) circuitry, so should not need upgraded circuitry for Quiet Zone establishment. This would require confirmation from UPRR. The PUC website was reviewed in the event circuitry upgrade occurred at the 9th Street crossing, similar to the recent upgrade at the 7th Street crossing; however, no recent filing was found.
- Due to the skew of the crossing, railroad exit gates (on the downstream side of the crossing in each direction) cannot be placed such that the gate tip in the down position is within 2 feet of the approach railroad gate tip, in the down position, which is required for Quiet Zone establishment. Because the standard railroad gate installation is perpendicular to the roadway, as opposed to parallel to the tracks, in order to close the gap between the approach and exit gate tips in the down position, a raised median with 6" curb would be required on each approach, in the center of the roadway, between the gate tips.
- It is also recommended to provide raised curb in front of the railroad gates, where there is an adjacent drive cut, to discourage drivers from turning too quickly into the driveway, potentially damaging or running over the railroad gate.

The raised median option is not viable at the 9th Street crossing. The public access on the southeast quadrant to the existing parking lot is within 60 feet of the railroad gate, and there are no alternative accesses to this lot which might allow for the existing access to be closed. Therefore, the raised median with approach gates concept is not presented for the 9th Street crossing.

It should be noted that a formal Field Diagnostic Review would be held with the railroad and agencies of jurisdiction when the City's pursuit of Quiet Zone establishment is imminent. This will allow the agencies

and railroad to review the crossings and provide any further refinement to the concepts presented herein.

Table 2 identifies the concept level options that were considered for each crossing within the study area.

Table 2. Quiet Zone Concept Improvement Options

STREET	RR	RAILROAD CIRCUITRY	GATES /LIGHTS	CROSSING SURFACE	SSM OPTIONS				NOTES/ISSUES
					RAISED MEDIANS	4-QUAD GATES	WAYSIDE HORNS	CHANNELIZING DEVICES	
7TH ST	UPRR	CWT	YES	CONC	✘				Requires closure of closest public access on SE quadrant within 60' of railroad gate
						✘			Most expensive option if all equipment requires replacement. If approach gates and signal bungalow can remain, cost is reduced.
							✘		Can be considered, but will not result in a true Quiet Zone; noise level is reduced but not eliminated
								✘	If median width is undesirable, channelizing devices can be installed. Medians do not appear to be an issue at this crossing.
9TH ST	UPRR	CWT	YES	CONC		✘			Most expensive option if all equipment requires replacement. If approach gates and signal bungalow can remain, cost is reduced.
							✘		Can be considered, but will not result in a true Quiet Zone; noise level is reduced but not eliminated

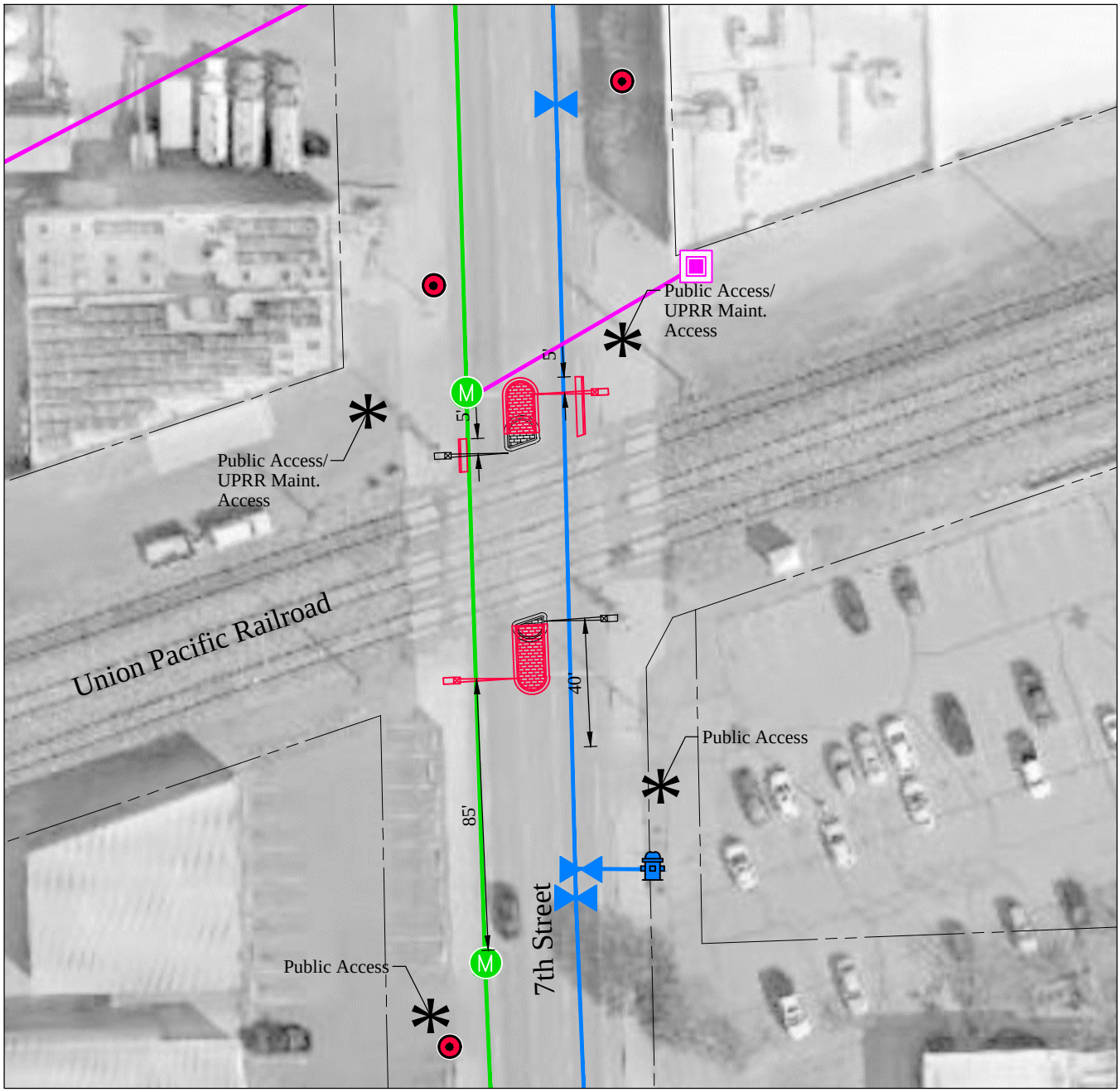
C. Concept Crossing Improvements

The following pages contain concept crossing improvement exhibits for each crossing shown on aerial base maps to provide identifying landmarks. Options showing Gates with Raised Medians and/or 4-Quadrant Gates are shown. Exhibits showing Gates with Channelizing Devices or Wayside Horns, although available for consideration, are not depicted in exhibits as part of this study. Photos of these types of installations are included in **Appendix C**.

UNION PACIFIC RAILROAD

7th Street
US DOT #253778A
3-Track Crossing
SSM: 4-Quadrant Gates (Option 1)

Concept Crossing Improvements



NOTES:

1. Has CWT Circuitry.
2. Add railroad exit gates.
3. Place exit gates perpendicular to roadway with stub median to close gap between gates in down position.
4. Railroad bungalow may require upgrade to accommodate exit gate operation.
5. Add signing/striping per MUTCD.

LEGEND:

- Existing Gate
- Existing Median
- Existing Stop Bar
- Proposed Gate
- Proposed Median
- Proposed Curb and Gutter

N W E S

SCALE: 1"=50'

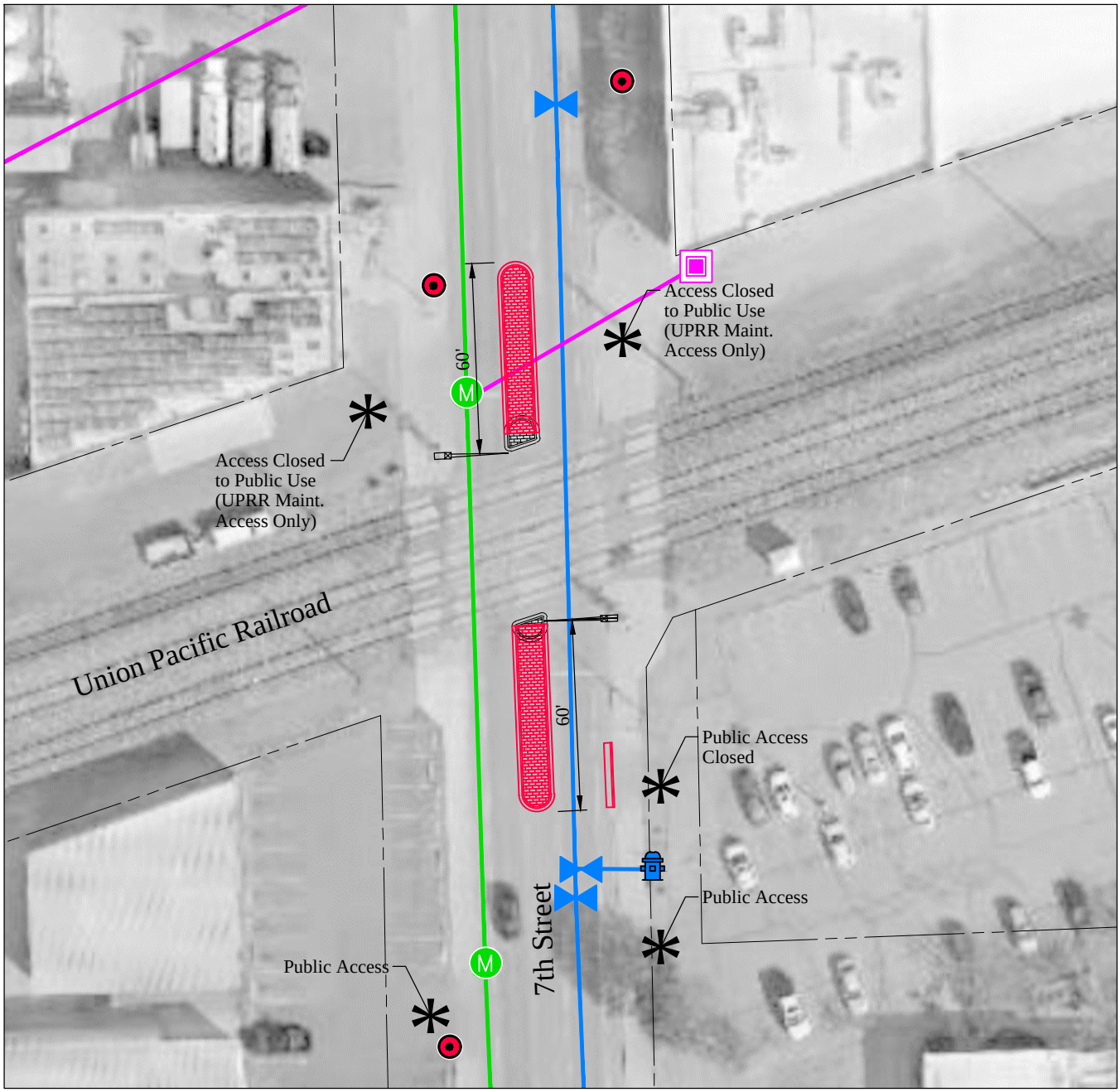
0 25 50

FELSBURG HOLT & ULLEVIG

UNION PACIFIC RAILROAD

7th Street
US DOT #253778A
3-Track Crossing
SSM: Gates with Raised Medians (Option 2)

Concept Crossing Improvements



NOTES:

1. Has CWT Circuitry.
2. Accesses north of tracks must be limited to UPRR maintenance only.
3. Southeast access within 60 feet of approach railroad gate must be closed.
4. Add signing/striping per MUTCD.

LEGEND:

- Existing Gate
- Existing Median
- Existing Stop Bar
- Proposed Gate
- Proposed Median
- Proposed Curb and Gutter

N W E S

SCALE: 1"=50'

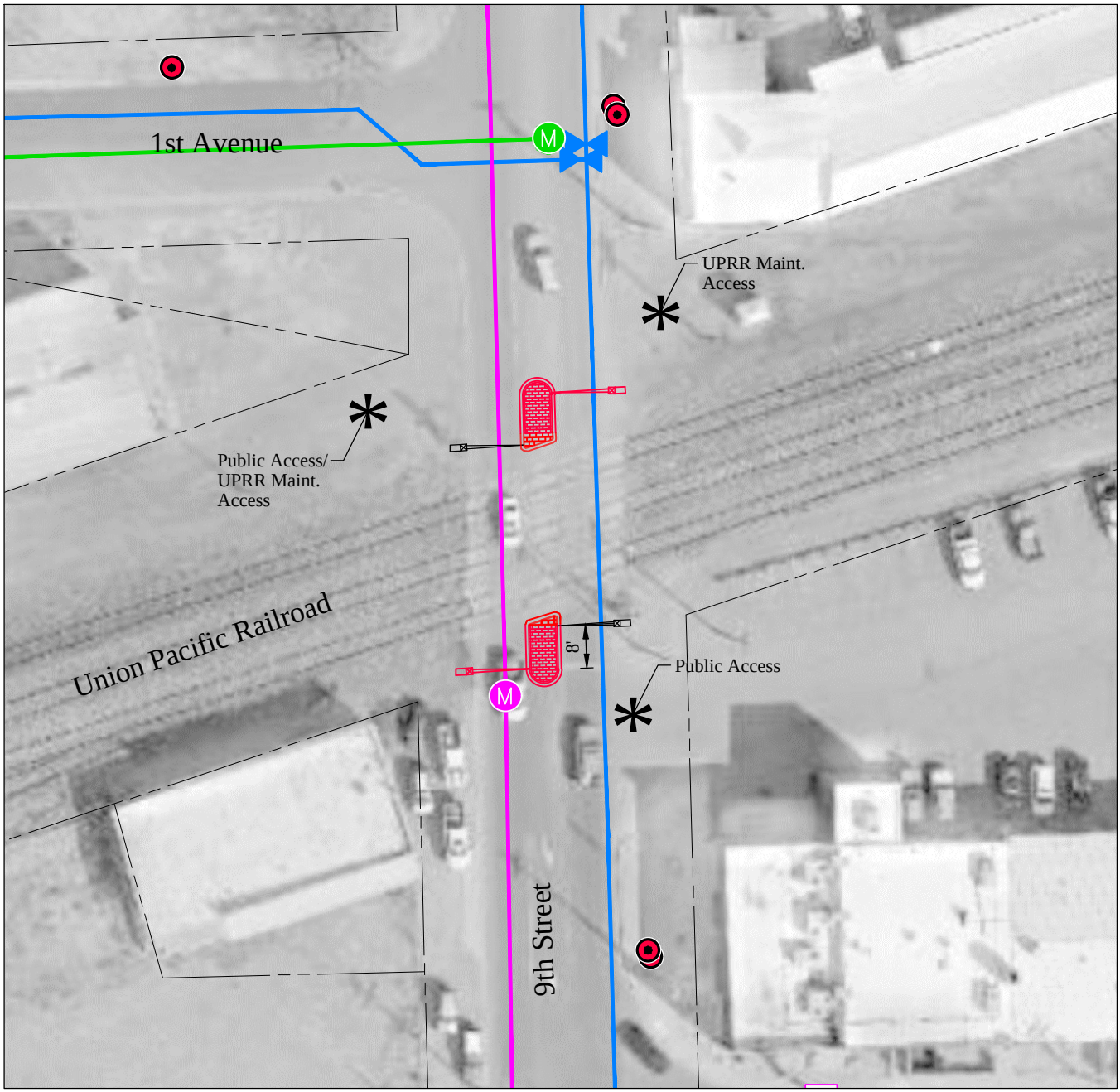
0 25 50

FELSBURG HOLT & ULLEVIG

UNION PACIFIC RAILROAD

9th Street
US DOT #253776L
3-Track Crossing
SSM: 4-Quadrant Gates (Option 1)

Concept Crossing Improvements



NOTES:

1. Has CWT Circuitry.
2. Add railroad exit gates.
3. Place exit gates perpendicular to roadway with stub medians to close gap between gates in down position.
4. Railroad bungalow may require upgrade to accommodate exit gate operation.
5. Add signing/striping per MUTCD.

LEGEND:

- Existing Gate
- Existing Median
- Existing Stop Bar
- Proposed Gate
- Proposed Median
- Proposed Curb and Gutter

N W E S

SCALE: 1"=50'

0 25 50

FELSBURG HOLT & ULLEVIG

V. IMPLEMENTATION PLAN

A. Oversight and PUC Regulated Costs

State jurisdiction over railroad safety is extremely broad, however most areas have been preempted by the federal government. The Public Utilities Commission (PUC) of Colorado has primary jurisdiction over all public highway-rail crossings in Colorado, including the opening and closing of at-grade crossings, upgrading of crossings, overpasses or underpasses, and the allocation of costs for grade separations, if requested. All economic jurisdictions over railroads that are part of the national railroad system come under the authority of the Surface Transportation Board.

Typically, applications to the PUC are required for highway-rail crossings if the roadway is being widened, if additional crossing elements (such as pedestrian walkways, bike trails, etc.) are being added to a crossing, when crossing warning devices are being installed or upgraded, or if there are operational changes on the part of the railroad or roadway. The following activities do not require a PUC application:

1. Replacement of the roadway crossing surface material (provided the surface is not being lengthened to widen the roadway)
2. Placement or replacement of approach signing or striping in accordance with MUTCD standards
3. Slight raising or lowering of the crossing to match approaches for smoothness

According to PUC regulations, costs for improvements to at-grade crossings are allocated to the road authority and railroad as follows:

(a) Whenever a highway, pathway, or sidewalk is removed at an existing crossing or constructed at a new crossing, or the highway, pathway, or sidewalk portion of an existing crossing is widened, the road authority shall bear all costs to remove, construct or widen crossing surfaces at the crossing including the cost of the crossing surface; the highway, pathway, and/or sidewalk approaches; and highway and/or pathway construction traffic control. Extensions of crossing surfaces for the addition of sidewalks to an existing crossing require only the addition of crossing surface panels for the sidewalks and do not require the entire crossing surface to be replaced.

(b) Whenever a track is removed at an existing crossing, or constructed at a new crossing, or the track portion of an existing crossing is widened, the railroad, railroad corporation, rail fixed guideway, transit agency, or owner of the track shall bear all costs to remove, construct or widen the track including the cost of the crossing surface; the highway, pathway, and or sidewalk approaches; and highway and/or pathway construction traffic control..

(c) In addition to projects described in paragraph (b) above, railroads, railroad corporations, rail fixed guideways, transit agencies, or owners of the track shall bear all costs of their initiated projects (e.g., capital improvement projects) involving crossings.

Costs for improvements to at-grade crossings for the purpose of Quiet Zone establishment initiated by public road authorities, are considered to be the responsibility of the road authority.

B. Funding Options

Federal Funding

Federal resources have broadened over the last 15 years to give additional consideration to funding railroad Quiet Zones, recognizing that these projects can improve quality of life for residents living in close proximity to at-grade highway-rail crossings.

The Federal Railroad Administration provides grant and loan options for funding a variety of projects, which can include crossing improvements in pursuit of Quiet Zone establishment. The FRA developed a portion of their website dedicated to grants and loans, which can be found here: https://railroads.dot.gov/grants-loans/grants-loans. This site regularly lists competitive discretionary grant programs, outlines the grant application process, and identifies the Department of Transportation's credit and loan programs. Specific opportunities that allow funding for Quiet Zone improvements include:

- *Rail Line Relocation & Improvement Capital Grant Program (RLR)* – provides funding for local rail line relocation and improvement projects that mitigate the adverse effects of rail traffic on safety, motor vehicle traffic flow, community quality of life, and economic development.

- *Better Utilizing Investments to Leverage Development (BUILD) Grants (previously known as Transportation Investment Generating Economic Recovery, or TIGER Grants)* – invests in road, rail, transit and port projects that achieve a significant local or regional impact. In Colorado, the Town of Windsor successfully pursued TIGER Grant funds in 2013 to provide railroad equipment upgrades and roadway improvements at 13 at-grade crossings for establishment of Quiet Zones.

- *Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program* – provides funding for capital projects that improve passenger and freight rail transportation systems in terms of safety, efficiency, or reliability. The City of Longmont successfully pursued, and received $4 million dollars in February 2020, to begin work on 5 of the City's 15 at-grade highway-rail crossings for Quiet Zone establishment.

- *Railroad Rehabilitation & Improvement Financing (RRIF)* - The Railroad Rehabilitation & Improvement Financing (RRIF) Program provides direct federal loans and loan guarantees to finance development of railroad infrastructure. Under this program the Federal Railroad Administration (FRA) Administrator is authorized to provide direct loans and loan guarantees up to $35.0 billion. Up to $7.0 billion is reserved for projects benefiting freight railroads other than Class I carriers. In Colorado, this loan program was successfully pursued by the Denver Union Station Project Authority in 2010 for $155 million for station improvements associated with RTD's FasTracks projects.

Currently the FRA is not accepting applications for its grant programs. However, their website can be monitored for future grant opportunities.

State Funding

There is no specific funding mechanism at the State level that is in place to fund Quiet Zone improvements. There are state funds in place for improvements related to crossing safety. There are also other funding mechanisms, such as the Safe Routes to School Program, which could be applied to crossing improvements at crossings meeting the conditions of the funding program. At-grade highway-

rail crossings which receive funding for other purposes, may result in improvements at crossings, which can contribute infrastructure or equipment needed for Quiet Zone compliance.

1. *Categorical Section 130 funds.* These funds are provided by the Federal Highway Administration (FHWA) and administered by State DOTs, specifically for the elimination of hazards at existing highway-rail at-grade crossings. Railroad Quiet Zones cannot be funded using Section 130 funds. However, crossings receiving upgrades or improvements under the program for the purposes of safety or hazard elimination, should be reviewed for Quiet Zone compliance, if desired by the road authority. Improvements completed at crossings for other reasons (i.e., safety, hazard elimination, or railroad maintenance) may result in having some or all of the features and equipment necessary for Quiet Zone establishment, or require only minor additional improvements that may be affordably funded by the road authority.

2. *Other categorical safety programs, such as the Safe Routes to School Program.* School districts and local governments are eligible to apply for Safe Routes to School infrastructure and non-infrastructure funds. Funding levels vary for infrastructure and non-infrastructure projects, and require a funding match from the local agency.

3. *Federal Aid Highway Funds.* Regular federal-aid highway funds may be used for safety improvements such as the installation of standard signs and pavement markings; the installation or upgrading of active traffic control devices; crossing illumination; crossing approach and surface improvements; new grade separations and the reconstruction of existing grade separations; crossing closures or the removal of existing crossings; and crossing closures by the relocation of highways and/or the relocation of railroads.

<u>Other Funding</u>

Other potential funding sources include local General Fund, Sales Tax revenue, Special Districts, Tax Increment Financing (TIF), Street Maintenance Funds, Development/Redevelopment Impact Fees and Federal earmarks. Some States have also been successful in pursuing use of Federal Stimulus Funding to be used for safety improvements which also positioned those crossings for Quiet Zone establishment. Use of federal funding does trigger compliance with the National Environmental Policy Act (NEPA). The cost to perform NEPA studies are not included in the concept level estimates included in this study.

Many communities experiencing redevelopment around or in close proximity to railroad crossings have considered implementation of developer impact fees directly associated with anticipated increased use of the railroad crossing. These fees can be used for crossing improvement study and design, safety improvements, and/or Quiet Zone assessment and establishment.

C. Improvements Discussion

Many communities interested in Quiet Zone establishment prioritize and phase crossing improvements over a period of time to allow for budgeting, planning and design, and to spread the costs out, making the overall pursuit more affordable. The following section discusses conditions to be considered with regard to crossing improvement options and the level of effort for each. Following this discussion, concept costs are provided, along with conclusions and next steps.

South 7th Street –

The 7th Street crossing of UPRR currently has predominantly industrial and commercial land use on all four quadrants. The existing roadway consists of two lanes, with a multi-direction center turn lane. Near the crossing, the center lane has small median curb islands. This crossing could be considered for the SSM treatment of Gates with Raised Medians or Channelization Devices. Public accesses north of the crossing, to the east and west, are likely used by UPRR for maintenance. These accesses could also be used by the public for access to the adjacent businesses. Because the adjacent businesses do have alternative access, it does not appear that restricting these accesses to UPRR maintenance use only, would unnecessarily or detrimentally affect circulation to these adjacent businesses. To the south, the closest public access on the southeast quadrant, is within 60 feet of the existing railroad approach gate. However, there is a second access to this same parking lot, further south, that could remain open. If the north access to this parking lot could be closed to public traffic, the City could consider adding raised medians to a length measuring 60 feet from the approach railroad gates, for Quiet Zone compliance. This would be the most cost-effective treatment at this crossing, and would not require replacement or upgrade of any railroad equipment.

In the event the accesses north of the crossing and/or the public access on the southeast quadrant cannot be closed to public use, a 4-Quadrant Gate installation would render the crossing at 7th Street, Quiet Zone compliant. The existing crossing has active warning, including approach railroad gates, flashers, cross bucks, a bell, and current technology constant warning time circuitry, per the UPRR's recent circuitry upgrade at this crossing. This crossing should only need the addition of the railroad exit gates to complete the 4-Quadrant Gate treatment. This does require input from the UPRR, to confirm the existing equipment and circuitry on the siding and industry tracks. Additionally, construction of 6-inch raised medians along the centerline on each roadway approach, would be needed to close the gap between the entrance and exit gates, in the down position.

South 9th Street –

The 9th Street crossing of UPRR currently has predominantly commercial land use on all four quadrants. The existing roadway consists of two lanes, with a multi-direction center turn lane. This crossing has public accesses within 60 feet of the approach railroad gates, north and south of the crossing. North of the crossing, desktop review shows UPRR maintenance access along with possible local access use, immediately north of the existing approach railroad gate. Additionally, 1st Street is technically within 60 feet of the approach gate, as FRA measures to the tangent point of the curve to any adjacent intersections or streets. South of the crossing, the CDOT access to the east, as well as the drive cut to the west are within 60 feet of the approach railroad gate arm. It does not appear that access changes can be made to make the Gates with Raised Medians or Channelizing Devices, a viable alternative at this crossing. Therefore, the current concept improvement shown is the 4-Quadrant Gate treatment. The existing crossing has active warning, including approach railroad gates, flashers, cross bucks, a bell, and constant warning time circuitry, per the current version of the FRA Inventory Report. This crossing should only need the addition of the railroad exit gates to complete the 4-Quadrant Gate treatment.

This does require input from the UPRR, to confirm the existing equipment and circuitry at each of the tracks (main, siding and industry). Additionally, construction of 6-inch raised medians along the centerline on each roadway approach, would be needed to close the gap between the entrance and exit gates, in the down position.

D. Concept Construction Costs

Conceptual costs for each alternative were generated using current unit costs for roadway items available from CDOT, as well as from recent bid tabulations from local contractors for similar work. Estimates for railroad items were taken from similar recent work estimates, or from conversations with railroad representatives. All opinions of conceptual costs are provided for information only and are intended for use in comparison with various improvement options by the reader.

Table 3 provides the Opinion of Conceptual Construction Costs for each concept improvement. Additional civil costs such as those for adjustments to adjacent public accesses, curb and gutter work, or stub medians needed in 4-quadrant gate installations, are included in the Civil Costs column, and are included in the associated Opinion of Concept Construction Cost.

Table 3. Opinion of Conceptual Construction Costs

				SSM Alternatives				Concept Level Construction Costs by Option								
STREET	**RR CIRCUITRY ***	**GATES/LIGHTS**	**CROSSING SURFACE**	**RAISED MEDIANS**	**4-QUAD GATES**	**WAYSIDE HORNS**	**CHANNELIZING DEVICES**	CWTCircuitry/NewBungalow	Upgraded Circuitry/Bungalow (1)	Raised Medians (60')	Channelizing Devices (60')	ApproachGates/Flashers/Bells	4-Quadrant Gates (2)	Wayside Horns	Civil Costs (C&G, drivecut, stub medians, etc.)	Opinion of Concept Construc-tion Cost
7th Street	CWT	YES	conc	X				$0	$0	$80,000	$0	$0	$0	$0	$40,000	$120,000
					X			$0	$0	$0	$0	$0	$200,000	$0	$40,000	$240,000
						X		$0	$40,000	$0	$0	$0	$0	$120,000	$0	$160,000
							X	$0	$0	$0	$60,000	$0	$0	$0	$40,000	$100,000
9th Street	CWT	YES	conc		X			$0	$40,000	$0	$0	$0	$200,000	$0	$20,000	$260,000
						X		$0	$40,000	$0	$0	$0	$0	$120,000	$0	$160,000

* CWT is Constant Warning Time circuitry which compensates for varying train speed. It is currently installed at both crossings, and is required for Quiet Zone compliance.

Construction Cost Range (Concept):	Low		High
7th Street and 9th Street Crossings	**$260,000**	**to**	**$500,000**
NOTE: *Worst case* scenario cost for 4-quadrant gate installation, assuming all railroad equipment requires replacement, is $500,000 per crossing.			

NOTES: (1) UPGRADED CIRCUITRY/BUNGALOW COSTS ARE INCLUDED WITH OPTIONS FOR WAYSIDE HORNS, IN THE EVENT WIRING OR HARDWARE UPDATES ARE NEEDED FOR EQUIPMENT COMMUNICATION BETWEEN THE EQUIPMENT AND THE EXISTING BUNGALOW. UPGRADED CIRCUITRY COSTS ARE ALSO INCLUDED FOR THE 4-QUADRANT GATE INSTALLATION AT 9TH STREET IN THE EVENT THE VERSION OF CIRCUITRY REQUIRES UPGRADING FOR COMMUNICATION WITH THE RAILROAD EXIT GATES. CWT AT 7TH STREET WAS RECENTLY UPGRADED BY UPRR AND SHOULD NOT NEED FURTHER IMPROVEMENT.

(2) 4-QUADRANT GATE COST ASSUMES THE EXISTING APPROACH RAILROAD GATES CAN REMAIN AND DO NOT NEED TO BE REPLACED OR UPGRADED.

It should be noted that railroad design and coordination costs now include a Preliminary Engineering (PE) Agreement with the railroad, to reimburse UPRR staff, or their consultant, for attendance at the Field Diagnostic Review Meeting, review of plan submittals, generation of design schematics, generation of railroad cost estimates, and assistance with railroad Construction & Maintenance (C&M) Agreements. This cost currently can range from $25,000 to $50,000 for this project, to include both crossings.

Civil (non-railroad) design, field work, and coordination costs can include: survey, utility locates, geotechnical investigation, environmental resource evaluation and clearance (if Federal or State funds are utilized), development of design plans, specifications, quantities and Engineer's Opinion of Probable Cost (EOPC), Public Utilities Commission Application(s) and coordination, Federal Railroad Administration Notification(s) and coordination, UPRR review submittals and response to comments, and generation of final Advertisement and Bid documents for construction. This cost can range from 15% to 20% of the construction cost for each crossing, depending on the level of effort. Crossings in close proximity, such as 7th and 9th Streets, do see some efficiencies, particularly for field work mobilization, which can reduce the overall civil design cost.

These railroad and non-railroad design and coordination costs are not included in Table 3, but are mentioned for the purposes of overall budgeting for this Quiet Zone project.

E. Conclusions and Next Steps

Generally, the following steps outline the order of tasks for the City moving forward with a Quiet Zone in the state of Colorado:

1. Determine which crossing or crossings the City would like to pursue for Quiet Zone establishment. In this instance, both crossings must be pursued concurrently.

2. Initiate contact with the railroad to enter into a Preliminary Engineering (PE) Agreement with the railroad, for reimbursement to the railroad, or the railroad's consultant, to attend meetings, review project documents, and provide railroad design and estimates.

3. Coordinate a Field Diagnostic Review with the Railroad, FRA, PUC, City and CDOT (if necessary) to confirm the current crossing warning devices, discuss safety issues, and review the concept crossing improvements proposed for Quiet Zone establishment.

4. Design any street-related improvements, signing, striping and adjacent traffic signal timing (if needed).

5. Provide 30% design plans to the railroad for review and comment. Upon receipt of railroad comments, address comments in a Comment-Response Memo, and advance plans to 90% design.

6. Submit a Public Utilities Commission application for the crossing(s) improvements, following 30% plan review by the railroad, and receipt of railroad comments. Applications typically are processed to final ruling from the Commission in 60 days (for uncontested applications).

The PUC notification and review period is 30 days. Notification is sent to the railroad, immediately adjacent property owners on each quadrant of the crossing, and any utilities in the vicinity of the crossing.

7. Submit 90% design plans to the railroad for review and comment, and formally request railroad design (if needed) and a railroad work items cost estimate from the railroad for crossing warning devices, circuitry or signal work that would need to be completed by the railroad for Quiet Zone compliance.

8. Send the Notice of Intent (NOI) to Create a Quiet Zone (for SSM installations) to the Federal Railroad Administration, with copies to the Railroad, PUC and CDOT for review.

   The SSM Notice review period is 60 days. Allowing time for receipt of comments and response to comments, if necessary, a reasonable estimate of total time is 90 days. Note that the SSM Notice of Intent can be sent concurrent with the PUC application if the PUC, Railroad and City are in agreement regarding the crossing improvements at a given crossing.

   Note that timelines for ASM installations vary greatly depending upon the ASM proposed. These installations do require ongoing monitoring and reporting. There are no known Quiet Zones currently that have been successfully established using Non-Engineering ASM solutions. Therefore, a timeframe for FRA review and approval for this process is unknown.

9. Following completion of the PUC application/ruling and the FRA notification/application process, the City must construct the approved crossing improvements and/or implement the approved safety measures, and the Railroad must install the approved railroad warning devices.

10. Following completion of construction and warning device testing at SSM installed crossings, the Notice of Quiet Zone Establishment is sent by the City to the FRA and all recipients that received the NOI. Following receipt of this notice, trains horns will cease sounding at the designated crossings 21 days followings FRA's receipt of the notice.

SSM installations are complete once construction is finished, and require only an Affirmation letter every 5 years to the FRA indicating that the crossing warning devices remain in place, are operating properly and the crossing remains compliant.

ASM installations have more frequent monitoring and reporting requirements to the FRA, depending upon the ASM installed. ASM installations may also require subsequent additional safety measures at the discretion of the FRA.

SSM installations that do not require railroad work (civil design improvements only) can achieve Quiet Zone establishment in as little as 3-4 months. SSM installations that do require railroad work (railroad equipment) can achieve Quiet Zone establishment in 12-24 months.

Modified SSM installations are processed as ASMs through an application. Depending upon the review and approval timeline of the FRA, these crossings can take 1-3 years to Quiet Zone establishment.

There is no known timeline to Quiet Zone establishment for Non-Engineering ASM solutions.

APPENDIX A U.S. DOT CROSSING INVENTORY SUMMARY SHEETS

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)*	B. Reporting Agency	C. Reason for Update *(Select only one)*	D. DOT Crossing Inventory Number
05 / 02 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☐ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☒ Admin. Correction	253778A

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
Union Pacific Railroad Company [UP]	COLORADO	MESA

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☐ In ☒ Near GRAND JUNCTION	SOUTH 7TH STREET *(Street/Road Name)* | * *(Block Number)*	FAU7455

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No	8. Do Other Railroads Operate Over Your Track at Crossing? ☒ Yes ☐ No
If Yes, Specify RR	If Yes, Specify RR ATK

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None ROCKY MOUNTAIN	☐ None Glenwood Springs	☒ None	*(prefix)* | 0448.935 | *(nnnn.nnn)* | *(suffix)*

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR *(if applicable)*	16. Crossing Owner *(if applicable)*
		☒ N/A	☐ N/A UP

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access *(if Private Crossing)*	21. Type of Train	22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☐ Transit ☒ Intercity Passenger ☐ Shared Use Transit ☐ Commuter ☐ Tourist/Other	☐ Less Than One Per Day ☒ Number Per Day 2

23. Type of Land Use
☐ Open Space ☐ Farm ☐ Residential ☐ Commercial ☒ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone *(FRA provided)*
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	*(WGS84 std: nn.nnnnnnn)* 39.0614230	*(WGS84 std: -nnn.nnnnnnn)* -108.5609990	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use *
30.B. Railroad Use *	31.B. State Use *
30.C. Railroad Use *	31.C. State Use *
30.D. Railroad Use *	31.D. State Use *
32.A. Narrative *(Railroad Use)* *	32.B. Narrative *(State Use)* *

33. Emergency Notification Telephone No. *(posted)*	34. Railroad Contact *(Telephone No.)*	35. State Contact *(Telephone No.)*
800-848-8715	402-544-3721	303-757-9425

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)*	1.B. Total Night Thru Trains *(6 PM to 6 AM)*	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
6	5	0	2	

2. Year of Train Count Data *(YYYY)*	3. Speed of Train at Crossing
2017	3.A. Maximum Timetable Speed *(mph)* 35 3.B. Typical Speed Range Over Crossing *(mph)* From 20 to 35

4. Type and Count of Tracks
Main 1 Siding 1 Yard 1 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☒ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
05/02/2019		253778A

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1)* *(count)*	2.C. YIELD Signs *(R1-2)* *(count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☒ None
0	0	0	☐ W10-1 _____ ☐ W10-3 _____ ☐ W10-11 _____ ☐ W10-2 _____ ☐ W10-4 _____ ☐ W10-12 _____

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count* 0 *)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☐ RR Xing Symbols ☐ None	☒ All Approaches ☒ Median ☐ One Approach ☐ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type _____ Count 2 Specify Type _____ Count 0 Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian _____	☒ 2 Quad ☐ 3 Quad ☐ 4 Quad ☐ Full *(Barrier)* Resistance ☐ Median Gates	Over Traffic Lane 0 ☐ Incandescent Not Over Traffic Lane 0 ☐ LED	☐ Incandescent ☒ LED ☒ Back Lights Included ☐ Side Lights Included	4

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☒ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☐ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☐ No	☐ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☒ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☐ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 2	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * _____ Length * 77

☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 500	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing ☐ (0) Rural ☒ (1) Urban	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☒ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid	☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☒ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	_____ MPH ☐ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2010 AADT 8900	04 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

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A. Revision Date *(MM/DD/YYYY)*	B. Reporting Agency	C. Reason for Update *(Select only one)*	D. DOT Crossing Inventory Number
05 / 02 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☐ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☒ Admin. Correction	253776L

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
Union Pacific Railroad Company [UP]	COLORADO	MESA

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☐ In ☒ Near GRAND JUNCTION	9TH STREET *(Street/Road Name)* | * *(Block Number)*	FAU7457

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No	8. Do Other Railroads Operate Over Your Track at Crossing? ☒ Yes ☐ No
If Yes, Specify RR	If Yes, Specify RR ATK

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None ROCKY MOUNTAIN	☐ None Glenwood Springs	☒ None	*(prefix)* | 0448.750 | *(nnnn.nnn)* | *(suffix)*

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR *(if applicable)*	16. Crossing Owner *(if applicable)*
		☒ N/A	☐ N/A UP

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access *(if Private Crossing)*	21. Type of Train	22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☐ Transit ☒ Intercity Passenger ☐ Shared Use Transit ☐ Commuter ☐ Tourist/Other	☐ Less Than One Per Day ☒ Number Per Day 2

23. Type of Land Use
☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone *(FRA provided)*
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	*(WGS84 std: nn.nnnnnnn)* 39.0621528	*(WGS84 std: -nnn.nnnnnnn)* -108.5576843	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use *
30.B. Railroad Use *	31.B. State Use *
30.C. Railroad Use *	31.C. State Use *
30.D. Railroad Use *	31.D. State Use *
32.A. Narrative *(Railroad Use)* *	32.B. Narrative *(State Use)* *

33. Emergency Notification Telephone No. *(posted)*	34. Railroad Contact *(Telephone No.)*	35. State Contact *(Telephone No.)*
800-848-8715	402-544-3721	303-757-9425

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

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6	5	0	2	

2. Year of Train Count Data *(YYYY)*	3. Speed of Train at Crossing
2017	3.A. Maximum Timetable Speed *(mph)* 35 3.B. Typical Speed Range Over Crossing *(mph)* From 20 to 35

4. Type and Count of Tracks
Main 1 Siding 1 Yard 1 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☒ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
05/02/2019		253776L

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1)* *(count)*	2.C. YIELD Signs *(R1-2)* *(count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☒ None
0	0	0	☐ W10-1 _____ ☐ W10-3 _____ ☐ W10-11 _____ ☐ W10-2 _____ ☐ W10-4 _____ ☐ W10-12 _____

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count* 0 *)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☐ RR Xing Symbols ☐ None	☐ All Approaches ☐ Median ☐ One Approach ☒ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type _____ Count 2 Specify Type _____ Count 0 Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian _____	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 0 ☐ Incandescent Not Over Traffic Lane 0 ☐ LED	☐ Incandescent ☒ LED ☒ Back Lights Included ☐ Side Lights Included	4

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☒ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☐ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☐ No	☐ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☒ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☐ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 3	☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * _____ Length * 50

☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 75	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing ☐ (0) Rural ☒ (1) Urban	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☒ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid	☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☒ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	_____ MPH ☐ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

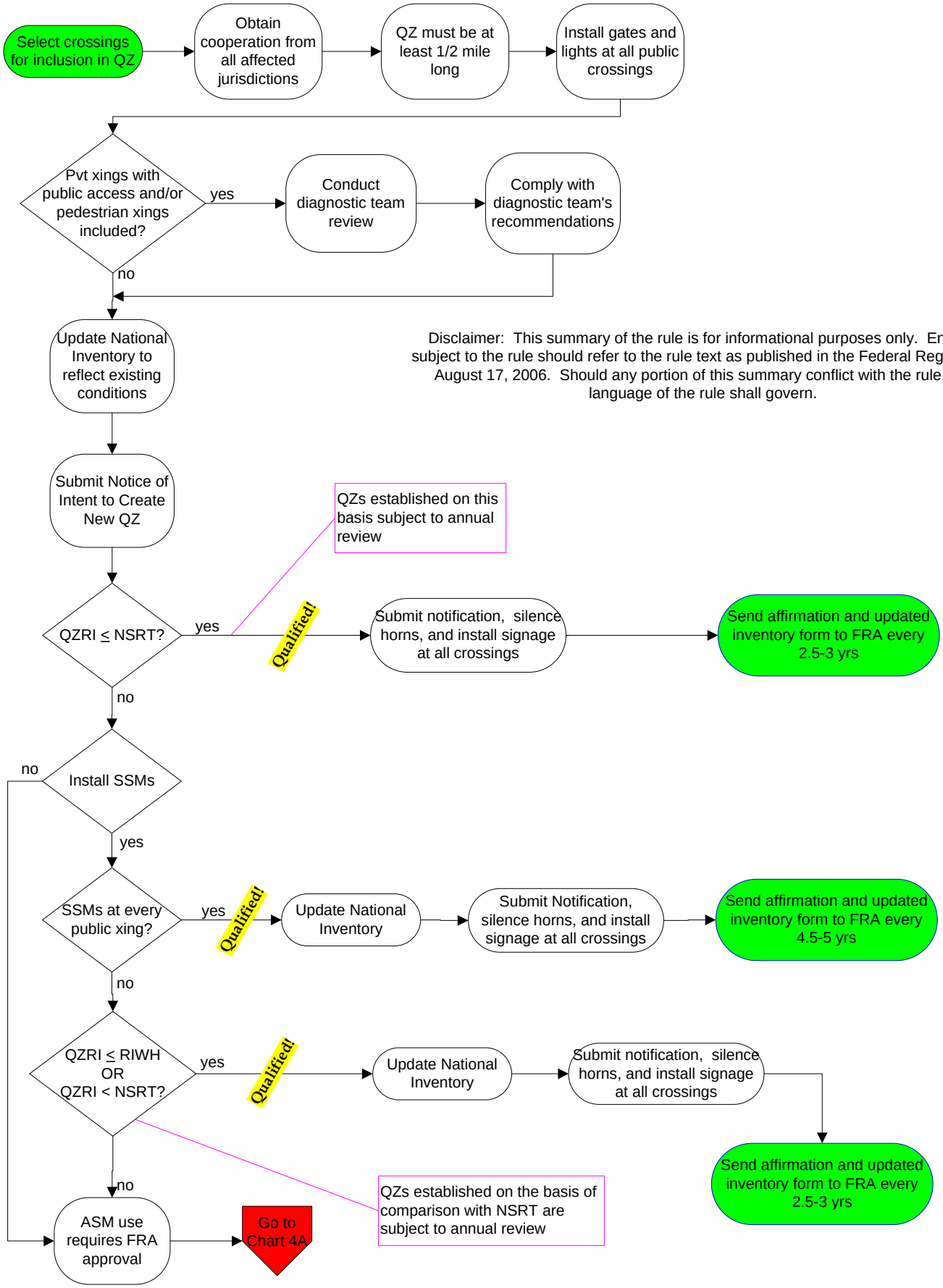
7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2010 AADT 1800	04 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

APPENDIX B QUIET ZONE SUMMARY FLOWCHART

Chart 3 - Creating a New Quiet Zone or New Partial Quiet Zone using SSMs



APPENDIX C SSM TREATMENT EXAMPLE PHOTOS

PERMANENT CLOSURE

Temporary Closure

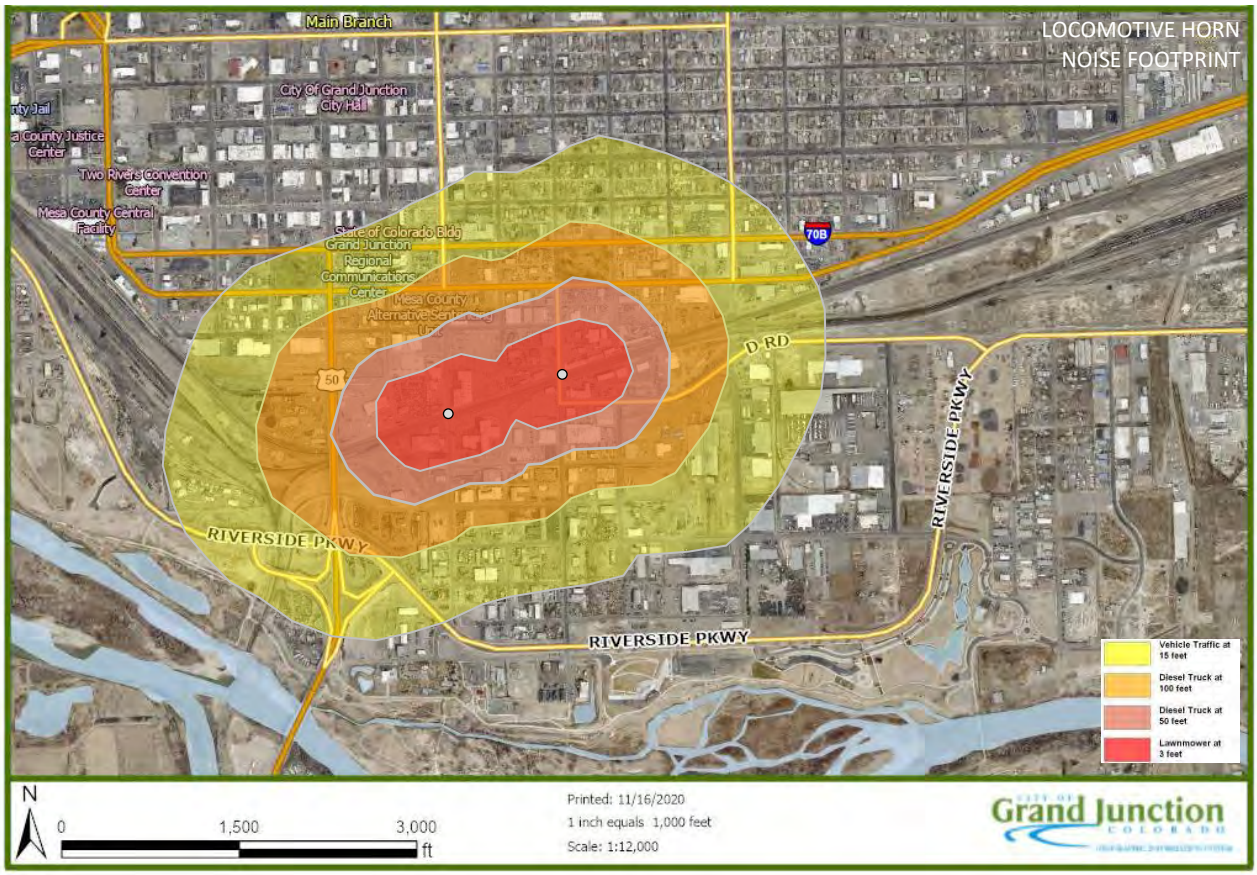
One Way Street with Full Width Gates

Four Quadrant Gates

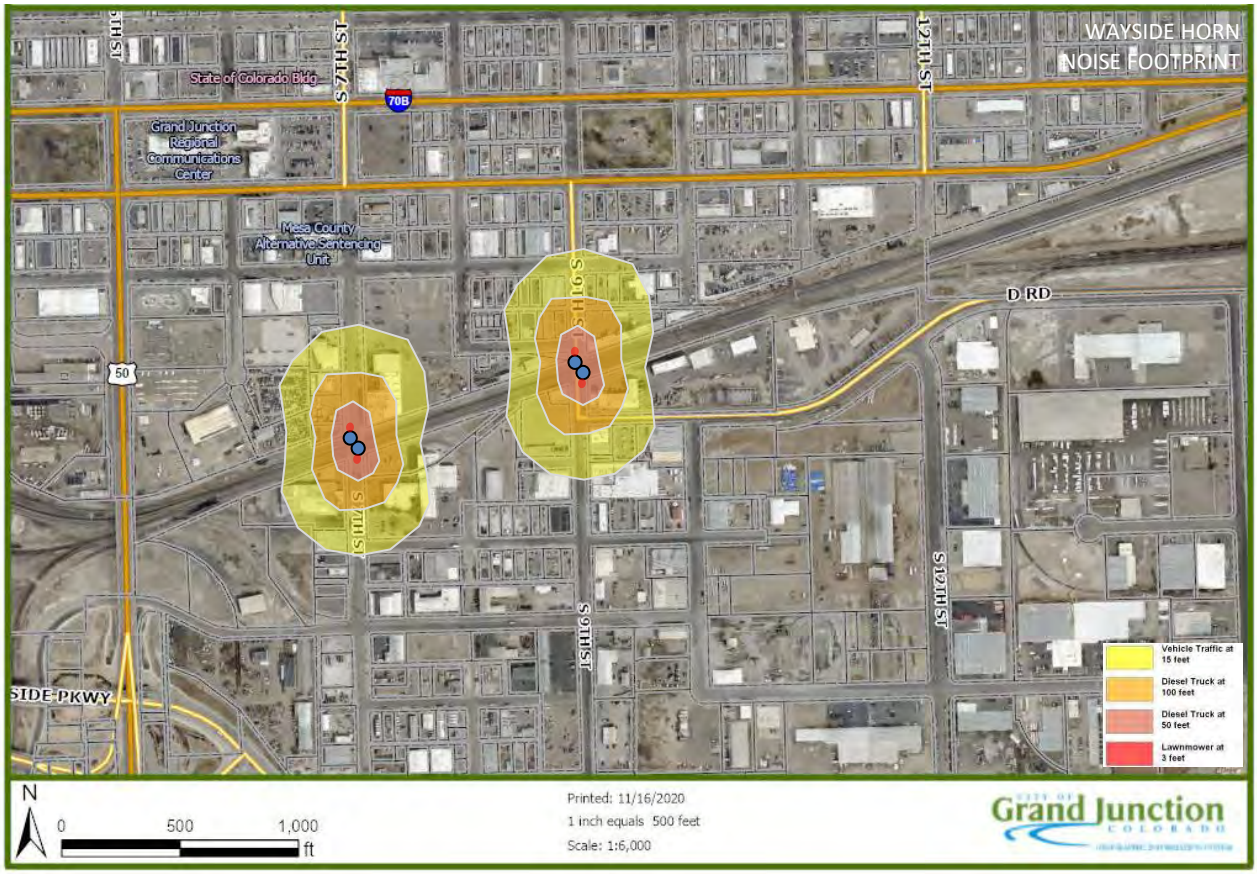
Raised Medians with Approach Gates

Channelizing Devices with Approach Gates

APPENDIX D LOCOMOTIVE/WAYSIDE HORN EXHIBITS FOR 7TH STREET AND 9TH STREET CROSSINGS



NOTE: Locomotive horn noise footprint represents approximate collective train horn sound distribution for trains moving in either direction through the crossing at consistent speed. This representation assumes relatively flat terrain and does not account for buffering or acoustic effects due to vertical elements.



NOTE: Wayside horns are calibrated to provide 92 db of horn sound at 100 feet in advance of the crossing.

APPENDIX E UPRR PUC DOCUMENTS FOR RECENT CIRCUITRY UPGRADE AT 7TH STREET

TRENT FROM

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. _____

IN THE MATTER OF THE APPLICATION OF UNION PACIFIC RAILROAD COMPANY FOR AUTHORITY TO UPGRADE CROSSING CIRCUITRY AT THE CROSSING OF UNION PACIFIC RAILROAD COMPANY'S TRACKS ON THE GLENWOOD SPRINGS SUBDIVISION LOCATED AT M.P. 448.93, U.S. DOT #253778A, LOCATED IN THE CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO.

APPLICATION

UNION PACIFIC RAILROAD COMPANY, hereinafter referred to as "Applicant" or "Union Pacific," hereby submits this application to the Colorado Public Utilities Commission, hereinafter referred to as the "Commission" or "PUC," for an order authorizing the replacement of one (1) PMD-2 circuit with one (1) GCP 4000 circuit at Union Pacific's crossing located on the Glenwood Springs Subdivision at 7th Street, M.P. 448.93, in the City of Grand Junction, County of Mesa, State of Colorado. There will be no changes to the subject crossing; only detection upgrades.

Following are Applicant's responses to the specific requirements concerning highway-rail grade crossing applications, as prescribed in *4 Code of Colorado Regulations* (CCR) 723-7-7002(b)(I-IX), 4 CCR 723-7204(a)(I), and 4 CCR 723-7-7204(a)(II) – (XVIII) and 4 CCR 723-7-7205 as required, including without limitation, acknowledgement that by signing the application, the Applicant understands that the filing of the application does not by itself constitute approval of the application for the requested action.

Consistent with Rule 7002(b), 4 CCR 723-7, the information below is provided within this application, or in an appropriately identified attachment to this application as indicated.

I. Information Required by Rule 7002(b)

A. Rule 7002(b)(I)

The name and mailing address of the applicant:

Union Pacific Railroad Company
1400 Douglas St., MS 1580
Omaha, NE 68179

B. Rule 7002(b)(II)

If the applicant is a corporation or limited liability company; the name of the state in which the applicant is incorporated or organized and the location of its principal office, if any, in Colorado:
Union Pacific Railroad Company is a Delaware corporation doing business in the State of Colorado.

C. Rule 7002(b)(III)

If the applicant is a partnership; the names, titles and addresses of all general and limited partners:

N/A

D. Rule 7002(b)(IV)

The name, address, telephone number, and e-mail address of the applicant's representative to whom all inquiries concerning the application may be made:

Lance Kippen
RailPros
2546 White Wing Rd.
Johnstown, CO 80534
lance.kippen@railpros.com

OR

Greenberg Traurig, LLP
Attn: Lindsay Aherne
1144 15th Street, Suite 3300
Denver, Colorado 80202
(303) 572-6500

E. Rule 7002(b)(V)

A statement that the applicant agrees to respond to all questions propounded by the Commission or its staff concerning the application:

Union Pacific agrees to respond to all questions propounded by the Commission or its staff concerning the application.

F. Rule 7002(b)(VI)

A statement indicating the town or city, and any alternative town or city, where the applicant prefers any hearings to be held:

Union Pacific prefers that any hearing in this matter be held at the offices of the PUC in Denver, Colorado.

G. Rule 7002(b)(VII)

A statement that the applicant understands that, if any portion of the application is found to be false or to contain material misrepresentations, any authorities granted pursuant to the application may be revoked upon Commission decision:

Union Pacific understands that, if any portion of the application is found to be false or to contain material misrepresentations, any authorities granted pursuant to the application may be revoked upon Commission decision.

H. Rule 7002(b)(VIII)

Acknowledgement that by signing the application, the applicant understands that:

1. The filing of the application does not by itself constitute approval of the application for the requested action;
2. If the application is granted, the applicant shall not commence the requested action until the applicant complies with the applicable Commission rules and any pre-construction conditions established by Commission decision granting the application;
3. If a hearing is held, the applicant must present evidence at the hearing to establish its qualifications to undertake, and its right to undertake, the requested action; and
4. In lieu of the statement contained in subparagraphs (b)(VII)(A) through (C) of this paragraph, an applicant may include a statement that it has red, and agrees to abide by, the provisions of subparagraphs (b)(VII)(A) through (C) of this paragraph.

Union Pacific acknowledges and understands that, by signing the application:

1. **The filing of the application does not by itself constitute approval of the application for the requested action;**
2. **If the application is granted, Union Pacific shall not commence the requested action until Union Pacific complies with the applicable Commission rules and any pre-construction conditions established by Commission decision granting the application;**
3. **If a hearing is held, Union Pacific must present evidence at the hearing to establish its qualifications to undertake, and its right to undertake, the requested action; and**
4. **Union Pacific has read, and agrees to abide by, the provisions of subparagraphs (b)(VII)(A) through (C) of this paragraph.**

I. Rule 7002(b)(IX)

An attestation which is made under penalty of perjury; which is signed by an officer, a partner, an owner, an employee of, an agent for, or an attorney for the applicant, as appropriate, who is authorized to act on behalf of the applicant; and which states that the contents of the application are true, accurate, and correct. The application shall contain the title and the complete address of the affiant.

See attached Attestation.

II. Information Required by Rule 7204(a)

A. Rule 7204(a)(I) – All crossing applications shall contain the following information:

1. The contact person name, mailing address and e-mail address to whom the Commission notice is to be sent:

    a) If the application is filed by a road authority, provide the above information for each railroad, railroad corporation, rail fixed guideway, or transit agency that owns the tracks affected by an application.

    N/A

    b) If the application is filed by a railroad, railroad corporation, rail fixed guideway, transit agency, or other person, firm, or corporation that will own the tracks, provide the above information for each road authority that owns the roadway affected by the application.

    Upon information and belief, this is a street maintained by the City of Grand Junction, Colorado.

2. The railroad and/or rail fixed guideway line name and milepost number where the crossing that is subject of the application is located.

    The subject crossing is on Union Pacific's tracks on the Glenwood Springs Subdivision located at 7th Street, M.P. 448.93, in the City of Grand Junction, County of Mesa, State of Colorado.

3. The National Inventory Number and the National Inventory Form for an existing crossing, or a statement that no National Inventory Number and/or National Inventory Form exist for a new crossing.

    National Inventory No. 253778A.

4. All accident reports for the crossing and/or a listing of all accidents for any rail fixed guideway tracks through the crossing, or a statement that no accident reports and/or listing of rail fixed guideway accidents exist for the crossing.

   Attached as Exhibit A.

5. A statement of the date that the required crossing safety diagnostic occurred, or a copy of written correspondence from Commission staff that a crossing safety diagnostic was not required.

   Not required; see Exhibit B.

6. A statement of:

   a) The existing number and character of trains (e.g., through movements, switching movements) passing through the crossing each day if the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing number, character, and timetable speed of trains as shown on the National Inventory Form if the form has been updated within three years from the date of the filing of the application;

      Please see the most recently filed U.S. DOT Crossing Inventory Form dated May 2, 2019 attached hereto as Exhibit C. This crossing sees approximately eight (8) total day through trains, five (5) total night through trains, and zero (0) switching trains.

   b) The five-year projection of increases or decreases of the number and character of trains using the crossing; and

      At this time, Union Pacific does not anticipate any increases or decreases in the numbers or characters of trains.

   c) The maximum timetable speed of trains using the crossing.

      The current maximum timetable speed of trains at this crossing is thirty five (35) miles per hour.

7. A detailed statement as to the nature of and need for the construction, alteration, abolition, installation, or modification for which approval is sought.

   Union Pacific wishes to modernize circuitry in the cabin, including the upgrade of constant warning time equipment. Union Pacific is changing the circuitry from motion sensor PMD units to constant warning GCP 4000. The plans and schematic attached hereto as Exhibit F contain additional details. These changes will modernize the crossing to maintain safety.

8. A statement of the scope of the project, including without limitation:

   a) The highway design, pathway design, crossing warning devices, and necessary traffic signal interconnection and preemption;

      No traffic signal, signal interconnect, or preemption is necessary. Exhibit F shows the scope of this signal upgrade project.

   b) The detailed itemized estimated cost of the proposed construction, alteration, abolition, or highway-rail pathway crossing warning device installation or modification;

      Union Pacific will cover 100% of the costs for this project and therefore requests that the PUC waive this rule.

   c) How the applicant proposes to provide for the cost, explaining the proposed apportionment between or among the parties in interest if applicable; and

      Union Pacific will provide for the cost of this circuitry upgrade.

   d) If the funds necessary for the project are currently available and encumbered.

      The funds necessary for the project are currently available and encumbered.

9. A statement of the estimated month and year for:

   a) The start date for the construction, alteration, abolition, or crossing warning device installation or modification;

      Union Pacific intends to initiate this project immediately upon the approval of this application by the PUC.

   b) The completion date for the construction, alteration, abolition, or crossing warning device installation or modification, and

      Union Pacific anticipates the completion date for this project to be thirty (30) days after the approval of this application by the PUC.

   c) The date for commencement of operations through the crossing for new crossings.

      N/A

10. A vicinity map that includes the proposed project limits (i.e., a map that includes the general area circumscribing the project).

See Exhibit D.

11. The names and mailing addresses of all persons, including adjacent property owners, public utilities, and local government agencies that may be interested in or affected by the application.

See list attached hereto as Exhibit E.

12. If the crossing is at-grade: a statement fully justifying why a separation of grades is not practicable under the circumstances.

N/A

13. A statement if the application is seeking preliminary approval of conceptual level design plans, or if the application is seeking final approval of final design plans.

N/A

14. A statement if the application includes a request to install a temporary safety measure.

N/A

B. Rule (7204)(a)(II) – Applications for all highway-rail crossings shall include:

1. The existing ADT volume and character of vehicles (including, but not limited to estimated percentage of heavy vehicles and a statement about whether school buses use the crossing) passing through the highway-rail crossing each day if the traffic volume on the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing ADT volume and character of vehicles passing through the highway-rail crossing each day as shown on the National Inventory Form if the traffic volume on the form has been updated within three years from the date of the filing of the application. If the ADT volume has not been updated within three years from the date of the filing of the application, the road authority will be responsible for paying for the cost of the updated ADT count;

As of 2010, the annual ADT volume is 8900, and the estimated percentage of trucks is 4%. Union Pacific is not aware of any school buses utilizing this crossing.

2. The five-year and twenty-year ADT volume projections of vehicles using the highway-rail crossing; and

   As Union Pacific does not intend for this project to alter the crossing in any way other than to upgrade the detection circuitry, Union Pacific respectfully requests the PUC to waive this rule.

3. The posted or unposted speed limit for the vehicles traveling through the highway-rail crossing.

   The posted speed limit for vehicles traveling through the highway-rail crossing is twenty-five (25) miles per hour.

C. Rule 7204(a)(III) – Applications for all pathway crossing shall include:

1. The existing or estimated number of pedestrians and bicycles passing through the pathway crossing each day and a statement if the number is based on an actual count or an estimate; and

   N/A

2. The five-year and twenty-year projections of the number of pedestrians and bicycles using the pathway crossing.

   N/A

D. Rule 7204(a)(IV) – Applications that include a request for temporary safety measures filed pursuant to paragraph 7203(f) shall include:

1. A statement of the temporary safety measure being sought;

   N/A

2. Schematic plans of the temporary measure to be implemented;

   N/A

3. The diagnostic notes including a list of all in attendance; and

   N/A

4. A statement that the diagnostic team is in consensus with the temporary safety measure being sought.

   N/A

E. Rule 7204(a)(V) – Applications for preliminary or final approval of new at-grade crossing shall include:

1. Detailed plans/drawings of a suitable scale, showing the at-grade crossing, including signing and striping, tracks, buildings, structures, property lines, and public highways within the right-of-way limits of the railroad, railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency;

   N/A

2. A profile drawing showing grade lines and proposed grade lines of approaches on the public highway or pathway, and the tracks being crossed that may be affected by the proposed or existing crossing;

   N/A

3. Proposed roadway classification (e.g., local road, collector, arterial, freeway) and a cross-section drawing of the road authority's standards for that roadway classification or cross-section drawing of the pathway;

   N/A

4. The following documentation for all existing crossings within one-mile of the proposed location of the new crossing in urban locations or within towns, or the two crossings nearest the proposed crossing in rural locations:

   a) The National Inventory Number and National Inventory Form;

      N/A

   b) All accident reports or a statement that no accident reports are available; and

      N/A

   c) The existing ADT volume and character of vehicles (including, but not limited to, estimated percentage of heavy vehicles and a statement about whether school buses use the crossing) passing through the highway-rail crossing each day if the traffic volume on the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing ADT volume and character of vehicles passing through the highway-rail crossing each day as shown on the National Inventory Form if the traffic volume on the form has been updated within three years from the date of the filing of the application. If the ADT volume has not been updated within three years from the date of the filing of the application, the

road authority will be responsible for paying for the cost of the updated ADT count.

N/A

F. Rule 7204(a)(VI) – Applications for preliminary or final approval to widen, narrow, or relocate an existing crossing shall include:

1. Detailed plans/drawings of a suitable scale, showing the grade crossing, including signing and striping, tracks, buildings, structures, property lines, and public highways within the right-of-way limits of the railroad, railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency;

   N/A

2. A profile drawing showing grade lines and proposed grade lines of approaches on the public highway or pathway and the tracks being crossed that may be affected by the proposed or existing crossing;

   N/A

3. Existing roadway classification (e.g., local, collector, arterial, freeway) and a cross-section drawing of the roadway authority's standards for that roadway classification or cross-section drawing of the pathway; and

   N/A

4. Proposed roadway classification (e.g., local road, collector, arterial, freeway) and a cross-section drawing of the roadway authority's standards for that roadway classification or cross-section drawing of the pathway.

   N/A

G. Rule 7204(a)(VII) – Applications for preliminary or final approval to close a crossing by removal of the tracks shall include:

1. Detailed plans/drawings of a suitable scale, showing the details of the crossing closure plan;

   N/A

2. A copy of the notice of proposed closure of the crossing as required under paragraph 7208(c); and

   N/A

3. Traffic volumes under (II) are not required.

N/A

H. Rule 7204(a)(VIII) – Applications to close a crossing by removal of the roadway or pathway shall include:

1. The following documentation for all existing crossings within one-mile of the proposed location of the crossing to be closed in urban locations or within towns, or the two crossings nearest the proposed crossing to be closed in rural locations:
    a) The National Inventory Number and National Inventory Form;

    N/A

    b) All accident reports or a statement that no accident reports are available; and

    N/A

    c) The existing ADT volume and character of vehicles (including, but not limited to, estimated percentage of heavy vehicles and a statement about whether school buses are using the crossing) passing through the highway-rail crossing each day if the traffic volume on the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing ADT volume and character of vehicles passing through the highway-rail crossing each day as shown on the National Inventory Form if the traffic volume on the form has been updated within three years from the date of the filing of the application. If the ADT volume has not been updated within three years from the date of the filing for the application, the road authority will be responsible for paying for the cost of the updated ADT count.

    N/A

2. Detailed plans/drawings of a suitable scale showing the details of the crossing closure plan; and

    N/A

3. The notice of proposed closure of the crossing as required under paragraph 7208(c).

    N/A

I. Rule 7204(a)(IX) – Applications for preliminary or final approval to install or change passive warning devices at crossings shall include:

1. A description of the type of warning device the applicant proposes to install; and

   N/A

2. Detailed railroad cost estimate of the crossing warning devices.

   N/A

J. Rule 7204(a)(X) – Applications for preliminary or final approval for installation of new active warning devices, replacement of existing active warning devices, or replacement of existing train detection circuitry at crossings shall include:

1. Detailed plans/drawings of a suitable scale, showing the crossing, including signing and striping, tracks, buildings, structures, property lines, and public highways within the right-of-way limits of the railroad, railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency;

   See plans and schematic attached hereto as Exhibit F.

2. A description of the type of warning devices the applicant proposes to install (reference may be made to recommended standards on highway-rail grade crossing warning devices as published in current editions of the MUTCD and/or the American Railway Engineering and Maintenance-of-Way Association's Signal Manual of Recommended Practice);

   Union Pacific is changing the circuitry from motion sensor PMD units to constant warning GCP 4000.

3. The detailed railroad cost estimate of the crossing warning devices; and

   Union Pacific will be covering 100% of the costs for this project and therefore respectfully requests that the PUC waive this rule.

4. The schematic diagram of the crossing warning devices (commonly referred to as the "front sheet") and shall specifically identify the equipment response time, advanced preemption time, minimum warning time, clearance time, buffer time, and total warning time.

   See plans and schematic previously referenced and attached hereto as Exhibit E.

5. A description of the type of four quadrant exit gate operating mode proposed (e.g., timed, dynamic exit gate vehicle detection, or timed/dynamic combination);

As there will not be any changes to the crossing itself as seen by the public, and will only be a change to the train detection device, Union Pacific respectfully requests the PUC to waive this rule.

K. Rule 7204(a)(XI) – Applications for preliminary or final approval involving installation of four quadrant gate active warning devices shall include:

1. A description of the type of four quadrant exit gate operating mode proposed (e.g., timed, dynamic, exit gate vehicle detention, or timed/dynamic combination);

N/A

2. For timed exit gate operating mode, the proposed exit gate clearance time, a description of the methodology used to determine the exit gate clearance time and the calculations performed to determine the exit gate clearance time;

N/A

3. For dynamic exit gate operating mode, a description of the type of vehicle detection proposed, a plan/drawing showing the proposed vehicle detector placement(s) and description and timings of how the vehicle detection will operate; and

N/A

4. A letter of concurrence from Commission staff regarding the proposed four-quadrant operations and timings, or a statement that Commission staff does not concur with the proposed four-quadrant operations and timings.

N/A

L. Rule 7204(a)(XII) – Applications for preliminary or final approval involving interconnection to traffic signals or queue cutter signals and preemption by active warning signals shall include:

1. A statement of the proposed preemption operations (e.g., simultaneous, advanced);

N/A

2. The traffic signal timings, including:

    a) The traffic signal cycle length;

N/A

b) Minimum green time for each signal phase and pedestrian phase;

N/A

c) Green times for each signal phase;

N/A

d) Yellow change times for each signal phase;

N/A

e) Red clearance times for each signal phase;

N/A

f) Walk times for each pedestrian phase;

N/A

g) Flashing don't walk times for each pedestrian phase;

N/A

h) The traffic signal phasing diagram including the preemption sequence; and

N/A

i) A statement of whether and what type of gate down circuitry will be used.

N/A

3. A list of and calculations for the following distances and timings:

a) Minimum track clearance distance;

N/A

b) Design vehicle designation and length;

N/A

c) Clear storage distance;

N/A

d) Preemption delay time;

N/A

e) Controller response time to preemption call;

N/A

f) Worst case conflicting vehicle time and worst case conflicting pedestrian time;
N/A

g) Maximum highway traffic signal preemption time;

N/A

h) Right-of-way transfer time;

N/A

i) Queue clearance time;

N/A

j) Clearance time;

N/A

k) Separation time;

N/A

l) Advance preparation time; and

N/A

m) Minimum warning time.

N/A

4. A letter of concurrence from Commission staff regarding the proposed preemption operations and timings, or a statement that Commission staff does not concur with the proposed preemption operations and timings.

N/A

M. Rule 7204(a)(XII) – Applications requesting cost allocation to the Highway-Rail Crossing Signalization Fund or projects for which the Colorado Department of Transportation has appropriated Section 130 Fund shall contain:

1. Specific information regarding the requested apportionment of costs between the railroad, railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency, the road authority, and the Highway-Rail Crossing Signalization Fund or Federal Section 130 Fund.

N/A

N. Applications for preliminary or final approval to change an existing crossing from a public crossing to a private crossing shall include:

1. The following documentation for all existing crossings within one-mile of the proposed location of the new crossing in urban locations or within towns, or the two crossings nearest the proposed crossing in rural locations:

    a) The National Inventory Number and National Inventory Form;

    N/A

    b) Copies of all accident reports or a statement that no accident reports are available for those crossings; and

    N/A

    c) The existing ADT volume and character of vehicles passing through the highway-rail crossing each day if the traffic volume on the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing ADT volume and character of vehicles passing through the highway-rail crossing each day as shown on the National Inventory Form if the traffic volume on the form has been updated within three years from the date of the filing of the application.

    N/A

2. Documentation (ordinance, ruling, etc.) showing that the road authority agency is proposing to remove the road from its network of ownership, operation, and maintenance; and

N/A

3. Documentation showing the person that will be owning, operating, and maintaining the private roadway.

N/A

O. Rule 7204(a)(XV) – Applications for preliminary or final approval to change an existing crossing from a private crossing to a public crossing shall include:

1. Proposed roadway classification (e.g., local road, collector, arterial, freeway) and a cross-section drawing of the road authority's standards for that roadway classification or cross-section of the pathway;

N/A

2. A statement that the existing crossing meets the standards of the proposed roadway classification or a statement that the roadway will be changed to meet the current roadway classification standards; and

N/A

3. Documentation (ordinance, ruling, etc.) showing that the road authority is accepting the road into its network for ownership, operation, and maintenance;

N/A

P. Rule 7204(a)(XVI) – Applications for preliminary or final approval to construct a grade separated crossing shall include:

1. Detailed plains/drawings of a suitable scale, showing the crossing, including signing and striping, tracks, buildings, structures, property lines, and public highways within the right-of-way limits of the railroad, railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency;

N/A

2. A profile drawing showing grade lines and proposed grade lines of approaches on the public roadway, highways, streets, or pathways and the tracks being crossed that may be affected by the proposed or existing crossing;

N/A

3. Bridge plan/drawings that show, at a minimum:

    a) The total length of the bridge structure;

    N/A

    b) The length of each individual span for multiple span bridge structures;

    N/A

    c) The location of all existing and any possible proposed future tracks in relation to the bridge structure;

    N/A

    d) The minimum vertical clearance from the top of rail or pavement to the bottom of structure;

    N/A

    e) The minimum horizontal clearance from centerline of track to face of pier of abutment if track is under the bridge structure; and

    N/A

    f) The cross-section of the bridge showing information regarding the roadway, pathway, or railroad configuration including, but not limited to, out-to-out distance, fencing, lane widths, walkway widths, and median widths.

    N/A

Q. Rule 7204(a)(XVII) – Applications for any preliminary approval of plans/drawings shall include:

1. The date by which all final plans/drawings for which preliminary or conceptual level plans/drawings were provided with the application will be filed for approval; and

    N/A

2. A waiver of the applicable statutory period I § 40-6-109.5, C.R.S. regarding the time limit for decisions.

N/A

R. Rule 7204(a)(XVIII) – Applications for a utility crossing shall include:

1. The contact person name, mailing address, and e-mail address to whom the Commission notice is to be sent:

    a) For each railroad corporation, rail fixed guideway, or transit agency that owns the tracks affected by an application filed by a utility; and

    N/A

    b) For each utility affected by the application filed by a railroad, railroad corporation, rail fixed guideway, transit agency, or other person, firm, or corporation that will own the tracks affected by the application.

    N/A

2. The railroad and/or rail fixed guideway line name and milepost number where the crossing that is subject of the application is located;

    N/A

3. A detailed statement as to the nature of and need for the construction, alternation, abolition, installation, or modification for which approval is sought;

    N/A

4. A statement of the scope of the project, including without limitation:

    a) The utility construction location;

    N/A

    b) The detailed itemized estimated cost of the proposed utility crossing construction, alteration, abolition, or modification;

    N/A

    c) How the applicant proposes to provide for the cost, explaining the proposed apportionment between or among the parties in interest if applicable; and

    N/A

d) If the funds necessary for the project are currently available and encumbered.

N/A

5. A statement of the estimated month and year for:

   a) The start date for the utility crossing construction, alteration, abolition, or modification; and

   N/A

   b) The completion date for the utility crossing construction, alteration, abolition, or modification.

   N/A

6. A vicinity map that includes the proposed project limits (i.e., a map that includes the general area circumscribing the project);

   N/A

7. The names and mailing addresses of all persons, including adjacent property owners, public utilities, and local government agencies that may be interested in or affected by the application:

   N/A

8. Detailed plans/drawings of a suitable scale, showing the utility crossing, tracks, buildings, structures, and property lines within the right-of-way limits of the railroad, railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency; and

   N/A

9. A profile drawing showing grade lines and proposed grade lines of the utility in relation to the tracks being crossed.

   N/A

III. Information Required by Rule 7205

A. Additional Application Contents for Cost Allocation Requests in Grade Separation Applications.

1. In the case of applications concerning highway-rail grade separations for which contribution from one or more railroad corporations is requested, the applicant shall, in addition to the information required by paragraph 7204(a), include the following additional information in the application in the following order and specifically identified either in the application or appropriately identified attachments:

    a) A complete description of the scope of the proposed separation project;

    N/A

    b) A preliminary set of construction plans, including engineering costs;

    N/A

    c) A preliminary engineer's cost estimate, including engineering costs;

    N/A

    d) The estimated costs of right-of-way, parcel by parcel, including railroad right-of-way;

    N/A

    e) A proposed construction timetable;

    N/A

    f) A list of affected railroad corporations;

    N/A

    g) A preliminary design of the theoretical structure for a reasonably adequate facility; and

    N/A

    h) A cost estimate of the theoretical structure, including the costs described in subparagaphs (III) and (IV) of this paragraph and including a 20 percent contingency.

    N/A

2. The railroad and/or rail fixed guideway line name and milepost number where the crossing that is subject of the application is located.

N/A

3. The National Inventory Number and the National Inventory Form for an existing crossing, or a statement that no National Inventory Number and/or National Inventory Form exists for a new crossing.

   N/A

4. All accident reports for the crossing and/or a listing of all accidents for any rail fixed guideway tracks through the crossing, or a statement that no accident reports and/or listing of rail fixed guideway accidents exist for the crossing;

   N/A

5. A statement of the date that the required crossing safety diagnostic occurred, or a copy of written correspondence from Commission staff that a crossing safety diagnostic was not required.

   N/A

6. A statement of:

   a) The existing number and character of trains (e.g., through movements, switching movements) passing through the crossing each day if the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing number, character, and timetable speed of trains as shown on the National Inventory Form if the form has been updated within three years from the date of the filing of the application;

      N/A

   b) The five-year projection of increases or decreases of the number and character of trains using the crossing; and

      N/A

   c) The maximum timetable speed of trains using the crossing.

      N/A

7. A detailed statement as to the nature of and need for the construction, alteration, abolition, installation, or modification for which approval is sought.

   N/A

8. A statement of the scope of the project, including without limitation:

    a) The highway design, pathway design, crossing warning devices, and necessary traffic signal interconnection and preemption;

    N/A

    b) The detailed itemized estimated cost of the proposed construction, alteration, abolition, or highway-rail or pathway crossing warning device installation or modification;

    N/A

    c) How applicant proposes to provide for the cost, explaining the proposed apportionment between or among the parties in interest if applicable; and

    N/A

    d) If the funds necessary for the project are currently available and encumbered.

    N/A

9. A statement of the estimated month and year for:

    a) The start date for the construction, alteration, abolition, or crossing warning device installation or modification;

    N/A

    b) The completion date for the construction, alteration abolition, or crossing warning device installation or modification; and

    N/A

    c) The date for commencement of operations through the crossing for new crossings.

    N/A

10. A vicinity map that includes the proposed project limits (i.e., a map that includes the general area circumscribing the project).

    N/A

11. The names and mailing addresses of all persons, including adjacent property owners, public utilities, and local government agencies that may be interested in or affected by the application.

N/A

12. If the crossing is at-grade: a statement fully justifying why a separation of grades is not practicable under the circumstances.

N/A

13. A statement if the application is seeking preliminary approval of conceptual level design plans, or if the application is seeking final approval of final design plans;

N/A

14. A statement if the application includes a request to install a temporary safety measure.

N/A

WHEREFORE, Union Pacific Railroad Company requests that the Public Utilities Commission enter an Order authorizing the installation or modification of crossing warning devices at the crossing of Union Pacific Railroad Company's tracks on the Glenwood Springs Subdivision located at 7th Street, M.P. 448.93, U.S. DOT Crossing No. 253778A, in the City of Grand Junction, County of Mesa, State of Colorado.

DATED at Denver, Colorado this 5th day of June, 2020.

Respectfully submitted,

Lindsay N. Aherne

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Attorneys for Union Pacific Railroad Company

ATTESTATION

The undersigned is authorized to act on behalf of the Applicant and attests, as required and pursuant to Commission Rule 4 *Code of Colorado Regulations* 723-7:7002(b)(IX), that she has read the foregoing Application and states, under penalty of perjury, that all facts regarding this Application are true and correct to the best of her best personal knowledge, information and belief.

Lindsay N. Aherne

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Attorney for Union Pacific Railroad Company

STATE OF Colorado)
) ss.
COUNTY OF Arapahoe)

Subscribed and sworn to before me this 4th day of June 2020.

MELISSA HOPE WATKINS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20074022556
MY COMMISSION EXPIRES

Notary Public

My Commission expires on
7/25/2023

Decision No. C20-0540

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. 20A-0246R

IN THE MATTER OF THE APPLICATION OF UNION PACIFIC RAILROAD COMPANY FOR AUTHORITY TO UPGRADE CROSSING CIRCUITRY AT THE CROSSING OF UNION PACIFIC RAILROAD COMPANYS TRACKS ON THE GLENWOOD SPRINGS SUBDIVISION LOCATED AT M.P. 448.93, U.S. DOT 253778A, LOCATED IN THE CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO.

COMMISSION DECISION DEEMING APPLICATION COMPLETE AND GRANTING APPLICATION

Mailed Date: July 24, 2019
Adopted Date: July 22, 2020

I. BY THE COMMISSION

A. Statement

1. This matter comes before the Commission for consideration of an application (Application) filed by the Union Pacific Railroad Company (UPRR) on June 5, 2020, requesting to upgrade the train detection circuitry from motion detection to constant warning time detection at the crossing of 7th Street with the UPRR Glenwood Springs Subdivision, railroad milepost 448.93, National Inventory No. 253778A in the City of Grand Junction, County of Mesa, State of Colorado.

2. The Commission gave notice of this Application (Notice) to all interested parties, including adjacent property owners pursuant to § 40-6-108(2), C.R.S. The Notice was mailed June 9, 2020.

3. No interventions were filed in this matter.

4. The Commission has reviewed the record in this matter and deems that the Application is complete within the meaning of § 40-6-109.5, C.R.S.

5. Now being fully advised in the matter, we grant the Application.

B. Findings of Fact

6. The Commission gave notice to all interested parties, including the adjacent property owners. No intervention was received opposing the Application.

7. UPRR requests authority to upgrade the train detection circuitry at the crossing of 7th Street in Grand Junction from motion detection to constant warning time. The warning time of 27 seconds currently at the crossing will remain with the circuitry change.

8. As grounds, UPRR is modernizing detection circuitry and wants to upgrade this crossing from motion sensor to constant warning time detection. This change will modernize the crossing and maintain safety. No other aspects of the crossing are proposed to be modified with this Application.

9. UPRR states in its Application there are currently approximately 13 trains per day using the subject crossing at a timetable speed of 35 miles per hour on the mainline. UPRR states that based on the latest vehicle volume information in the National Inventory Form from 2010, there are 8,900 vehicles per day using the crossing at 25 miles per hour with approximately four percent heavy vehicles.

10. There have been five property damage only accidents that have occurred at the crossing since 1975 with the last accident occurring in 1992.

11. UPRR does not provide a cost estimate for the proposed changes since UPRR will be fully responsible for the proposed changes, and no changes to the roadways and signal equipment at the crossings will be made with the exception of the train detection circuitry.

Given the limited nature of the changes proposed at the crossings, we will allow the omission of this information.

12. UPRR intends to start this project immediately upon approval by the Commission and be complete with the project 30 days after approval of the Application.

C. Conclusions

13. The Commission has jurisdiction in this matter under §§ 40-4-106(2)(a) and (3)(a), C.R.S.

14. No intervenor that filed a petition to intervene or other pleading contests or opposes the Application.

15. Because the Application is unopposed, the Commission finds that it will determine this matter upon the record, without a formal hearing under § 40-6-109(5), C.R.S., and Rule 1403, 4 *Code of Colorado Regulations* 723-1 of the Rules of Practice and Procedure.

16. We find that good cause exists and that the requirements of public safety are met by granting the Application consistent with the above discussion.

17. UPRR shall inform the Commission in writing when the project is complete and operational within ten days of completion. The Commission will expect this letter on or before August 31, 2020.[1]

18. UPRR shall provide an updated crossing inventory for the changed crossing conditions and shall file a copy of the updated crossing inventory form with the Commission

[1] The Commission understands there may be changes or delays in the construction schedule. While a request for extension is not required in the event completion of the construction project goes past August 31, 2020, UPRR should inform the Commission through an appropriate filing if delays are anticipated or significant.

concurrent with notice to the Commission of completion of the crossing work initially expected by August 31, 2020.

II. ORDER

A. The Commission Orders That:

1. The application (Application) filed by the Union Pacific Railroad Company (UPRR) on June 5, 2020, requesting to upgrade the train detection circuitry from motion detection to constant warning time detection at the crossing of 7th Street with the UPRR Glenwood Springs Subdivision, railroad milepost 448.93, National Inventory No. 253778A in the City of Grand Junction, County of Mesa, State of Colorado is deemed complete within the meaning of § 40-6-109.5, C.R.S.

2. The Application is granted.

3. UPRR is authorized and ordered to upgrade the train detection circuitry at the crossing at 7th Street in Grand Junction, Colorado.

4. UPRR shall inform the Commission in writing when the detection circuitry changes are complete within ten days of completion. The Commission will expect the letter by August 31, 2020. However, the Commission understands this letter may be provided earlier or later than this date depending on changes or delays to the construction schedule.

5. UPRR shall update the National Inventory Form for this crossing and file a copy of the updated crossing inventory forms in this proceeding by August 31, 2020.

6. The 20-day period provided for in § 40-6-114, C.R.S., within which to file applications for rehearing, reargument, or reconsideration, begins on the first day following the effective date of this Decision.

7. The Commission retains jurisdiction to enter further decisions as necessary.

8. This Decision is effective on its Mailed Date.

B. ADOPTED IN COMMISSIONERS' WEEKLY MEETING July 22, 2020.

(S E A L)

ATTEST: A TRUE COPY

Doug Dean,
Director

THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

JEFFREY P. ACKERMANN

JOHN GAVAN

MEGAN M. GILMAN

Commissioners

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. 20A-0246R

IN THE MATTER OF THE APPLICATION OF UNION PACIFIC RAILROAD COMPANY FOR AUTHORITY TO UPGRADE CROSSING CIRCUITRY AT THE CROSSING OF UNION PACIFIC RAILROAD COMPANY'S TRACKS ON THE GLENWOOD SPRINGS SUBDIVISION LOCATED AT M.P. 448.93, U.S. DOT #253778A, LOCATED IN THE CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO.

NOTICE OF COMPLETION

Union Pacific Railroad Company ("UPRR"), pursuant to Decision No. C20-0540, hereby notifies the Public Utilities Commission that construction related to this project, National Inventory No. 253778A in the City of Grand Junction, Colorado, was completed on August 18, 2020. The National Inventory Form for this crossing did not change as a result of the recently-completed signal modifications. Accordingly, UPRR hereby incorporates Exhibit C to its Application (the latest National Inventory Form).

Dated this 28th day of September, 2020.

Respectfully submitted,

/s/ Lindsay N. Aherne

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Attorney for Union Pacific Railroad Company

Certificate of Service

I hereby certify that on the 28th day of September, 2020, a true and correct copy of the foregoing NOTICE OF COMPLETION was filed electronically with the Colorado Public Utilities Commission and served on all parties of record.

/s/ Cindy Knowles