



# 2022 Pavement Management Program Recommendations



# Overview

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- Purpose and Need
- Principles
- Maintenance Types
- Process
- Condition Ranges
- Type/Condition
- Methodology
- Recommendations
- Funding
- Next Steps



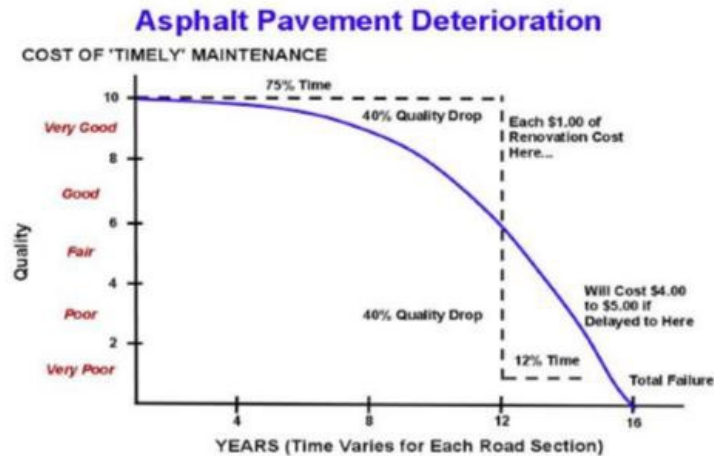
# Purpose and Need

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- To preserve and extend the useful life of paved surfaces throughout the City and optimize the available funds to meet the roadway network condition needs.
  - Maximize performance and safety standards of City roadways
  - Minimize overall long-term costs of managing the network roadway system.

# Principles

- Repairing streets when still in fair condition ultimately costs less over their lifetime than waiting until they have fallen in poor condition.



- Delaying until the road is in “Fair” condition or worse, the cost of rehabilitation becomes 4 to 5 times more expensive than for those roads in “Good” condition.

# Maintenance Types

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## Routine:

- Planned; cyclical
- Reactive to problems; performed after a deficiency occurs in the pavement
- Does not extend service life

## Examples:

- Crack sealing/filling
- Full depth crack repair with mastic material
- Joint sealing (concrete)
- Pothole patching
- Leveling low spots

# Maintenance Types

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## Preventive:

- Performed to protect the existing pavement through surface treatments
- Extends the service life
- Does not add any structural strength
- Proactive/applied to pavements in good condition

## Examples:

- Slurry Seal
- Chip Seal
- Microsurfacing

# Maintenance Types

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## Corrective:

- Reactive
- Extends the service life through structural enhancements
- Performed when deficiencies are so significant that preventive maintenance no longer is effective
- More extensive and more expensive

## Examples:

- Mill and Overlay (Resurfacing)
- Full Depth Reclamation
- Hot mix overlay (with or without leveling course)

# Process



**Figure 1-2 - The Pavement Management Process**

- System Configuration – Identify all roadways, their physical characteristics (length, width, etc.), pavement type, and road classification – link to GIS map.
- Data Collection/Field Survey – Condition is assessed based on surface distress (such as cracking, potholes, raveling, etc.) as well as severity (Low, Moderate, High) and is attached to the appropriate road segment and its count (e.g. number of potholes), square footage (area covered by cracking), and linear feet (length of specific crack) are added.
- Analysis and Reporting – Provide a quantitative performance score (Pavement Condition Index (PCI)) representing the surface condition of the pavement on a scale of 0 to 100 – the higher the score the better the condition of the roadway.



# Typical PCI Condition Ranges

PCI Range	Work Type	Rehabilitation Options
86-100 Good	Rejuvenation	Little or no maintenance E.g. Crack Seal, Reclimite, fog seal
71-85 Satisfactory	Global	Routine Maintenance E.g. Seals such as slurry seal
56-70 Fair	Critical	Non-structural overlay, cape seal
41-55 Poor	Conventional	Structural overlay Overlay, Mill and overlay
26-40 Very Poor	Conventional	Structural Overlay Overlay, Mill and overlay
11-25 Serious	Reconstruction	Reconstruction, rebuild, full depth reclamation
0-10 Failed	Reconstruction	Reconstruction, rebuild, full depth reclamation

# Type/Condition

- Commerce City has 260.89 miles of paved roads

## Distribution of Roads by Pavement Type

Pavement Type	# of Sections	# of Miles	# of Square Yards	% by # of Square Yards	Weighted Average PCI
Asphalt	2,861	250.73	4,818,180	93%	79
Concrete	54	10.16	381,047	7%	95
<b>Total</b>	<b>2,915</b>	<b>260.89</b>	<b>5,199,228</b>	<b>100%</b>	<b>80</b>

## Distribution of Asphalt Roads by Functional Class

Functional Class/ Paver Designation	# of Sections	# of Miles	# of Square Yards	% by # of Square Yards	Weighted Average PCI
Arterial & Collector/ B & C	759	94.17	2,121,064	44%	78
Local/ E	2,102	156.57	2,697,116	56%	79
<b>Total</b>	<b>2861</b>	<b>250.74</b>	<b>4,818,180</b>	<b>100%</b>	<b>79</b>

# Methodology

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- Asphalt roadways were divided into 2,861 sections and then evaluated based on Average PCI, as well as;
  - Current Traffic volumes
  - Roadway Classification
  - Snow routes
  - Proximity to schools, transit, parks, and commercial businesses
  - Economic development potential
  - Coordinated with SAWSD water line replacement schedule
- Several sections eliminated from this program because more extensive work (reconstruction) is needed

# Recommendations

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- Focus on roadways with PCI less than 70
  - Staff added some residential streets with PCI greater than 70
    - Based upon citizen concerns and staff observations
    - Example – Quebec Parkway with a PCI of 83
    - Example – Fairfax neighborhood which had a waterline replacement project that was completed in 2020.
- Most work is mill and overlay
- Street Reconstruction
  - Includes Elm Street between 69<sup>th</sup> Avenue and 72<sup>nd</sup> Avenue, and Dahlia Street between 69<sup>th</sup> Avenue and 70<sup>th</sup> Avenue
- Crack Repairs are completed continuously and coordinated with our Street Maintenance Department

# Recommendations

Maintenance Type	Street Name	From	To	PCI	Projected Cost	Fund
Mill & Overlay	BAX CT	E 67TH PL	E 68TH PL	59	\$ 8,363	Pavement Management
Mill & Overlay	BIRCH ST	E 69TH AVE	E 69TH PL	45	\$ 8,076	Pavement Management
Mill & Overlay	BIRCH ST	E 69TH PL	E 70TH AVE	32	\$ 9,693	Pavement Management
Mill & Overlay	CHERRY ST	E 69TH AVE	E 70TH AVE	61	\$ 27,345	Pavement Management
Mill & Overlay	CLERMONT ST	E 60TH AVE	RRX	71	\$ 8,795	Pavement Management
Mill & Overlay	CLERMONT ST	RRX	E 61ST AVE	57	\$ 13,921	Pavement Management
Mill & Overlay	CLERMONT ST	E 61ST AVE	E 63RD AVE	30	\$ 39,619	Pavement Management
Reconstruction	DAHLIA ST	E 69TH AVE	E 70TH AVE	8	\$ 63,925	Street Reconstruction
Mill & Overlay	DEXTER ST	E 69TH AVE	E 70TH AVE	30	\$ 22,189	Pavement Management
Mill & Overlay	E 101ST PL	HELENA ST	IDALIA ST	86	\$ 7,999	Pavement Management
Mill & Overlay	E 106TH AVE	FULTON ST	HAVANA ST	30	\$ 71,661	Pavement Management
Mill & Overlay	E 108TH AVE	WHEELING ST	WHEELING CT	86	\$ 4,800	Pavement Management
Mill & Overlay	E 112TH AVE	RRX	CL	21	\$ 8,347	Pavement Management
Mill & Overlay	E 112TH AVE	RRX	US HWY 85	62	\$ 10,797	Pavement Management
Mill & Overlay	E 112TH AVE	CL	HAVANA ST	24	\$ 11,617	Pavement Management



# Recommendations

Maintenance Type	Street Name	From	To	PCI	Projected Cost	Fund
Mill & Overlay	E 60TH PL	KEARNEY ST	KRAMERIA ST	72	\$ 36,100	Pavement Management
Mill & Overlay	E 60TH PL	NIAGARA ST	ONEIDA ST	73	\$ 26,351	Pavement Management
Mill & Overlay	E 60TH WY	FOREST DR	GRAPE ST	61	\$ 22,761	Pavement Management
Mill & Overlay	E 60TH WY	GRAPE DR	HUDSON ST	66	\$ 22,711	Pavement Management
Mill & Overlay	E 63RD AVE	CLERMONT ST	RRX	29	\$ 22,423	Pavement Management
Mill & Overlay	E 63RD AVE	RRX	DEXTER ST	76	\$ 17,048	Pavement Management
Mill & Overlay	E 63RD AVE	END	MONACO ST	62	\$ 24,785	Pavement Management
Mill & Overlay	E 69TH AVE	ASH ST	BIRCH ST	59	\$ 36,040	Pavement Management
Mill & Overlay	E 69TH AVE	CHERRY ST	DEXTER ST	59	\$ 16,737	Pavement Management
Mill & Overlay	E 69TH AVE	DEXTER ST	DAHLIA ST	49	\$ 16,605	Pavement Management
Mill & Overlay	E 69TH PL	ASH ST	BIRCH ST	33	\$ 25,247	Pavement Management
Mill & Overlay	E 69TH PL	LOCUST CT	MONACO ST	70	\$ 6,720	Pavement Management
Mill & Overlay	E 70TH AVE	ASH CT	BIRCH ST	60	\$ 25,283	Pavement Management
Mill & Overlay	E 70TH AVE	ASH ST	ASH CT	73	\$ 9,328	Pavement Management
Mill & Overlay	E 70TH AVE	BIRCH ST	BIRCH ST	73	\$ 2,287	Pavement Management



# Recommendations

Maintenance Type	Street Name	From	To	PCI	Projected Cost	Fund
Mill & Overlay	E 70TH AVE	BIRCH ST	CLERMONT ST	68	\$ 14,405	Pavement Management
Mill & Overlay	E 72ND AVE	ELM ST	RRX	65	\$ 44,363	Pavement Management
Mill & Overlay	E 72ND AVE	RRX	CL	38	\$ 4,713	Pavement Management
Mill & Overlay	E 72ND AVE	EUDORA DR	ELM ST	56	\$ 17,975	Pavement Management
Mill & Overlay	E 72ND AVE	HWY 6	EUDORA DR	22	\$ 16,131	Pavement Management
Mill & Overlay	E 72ND PL	KEARNEY ST	KRAMERIA DR	59	\$ 20,507	Pavement Management
Mill & Overlay	E 72ND PL	HWY 2	LOCUST ST	61	\$ 5,945	Pavement Management
Mill & Overlay	E 72ND PL	LOCUST ST	MONACO ST	64	\$ 9,916	Pavement Management
Mill & Overlay	E 72ND PL	MONACO ST	MAGNOLIA ST	64	\$ 8,843	Pavement Management
Mill & Overlay	E 72ND PL	MAGNOLIA ST	ONEIDA ST	78	\$ 31,032	Pavement Management
Mill & Overlay	E 73RD AVE	MONACO ST	MAGNOLIA ST	49	\$ 17,695	Pavement Management
Mill & Overlay	E 88TH AVE	E 88TH AVE	Rosemary St	54	\$ 18,089	Pavement Management
Mill & Overlay	E 88TH AVE	ROSEMARY ST	TAMARAC ST	26	\$ 69,209	Pavement Management
Mill & Overlay	E 96TH AVE	POTOMAC ST	CHAMBERS	60	\$ 285,606	Pavement Management
Reconstruction	ELM ST	E 69TH AVE	E 71ST AVE		\$ 184,388	Street Reconstruction



# Recommendations

Maintenance Type	Street Name	From	To	PCI	Projected Cost	Fund
Reconstruction	ELM ST	E 71ST AVE	E 72ND AVE	31	\$ 106,317	Street Reconstruction
Mill & Overlay	GLENCOE DR	E 69TH AVE	WEIMAN CT	61	\$ 14,099	Pavement Management
Mill & Overlay	GLENCOE ST	E 70TH AVE	E 71ST AVE	84	\$ 22,704	Pavement Management
Mill & Overlay	GRAPE DR	E 60TH WY	E 61ST WY	61	\$ 37,189	Pavement Management
Mill & Overlay	GRAPE DR	E 61ST WY	PARKWAY DR	43	\$ 14,797	Pavement Management
Mill & Overlay	GRAPE ST	E 70TH AVE	E 71ST AVE	83	\$ 26,196	Pavement Management
Mill & Overlay	GRAPE ST	E 71ST AVE	FAIRFAX DR	92	\$ 14,348	Pavement Management
Mill & Overlay	HELENA ST	E 101ST PL	E 101ST WY	58	\$ 8,771	Pavement Management
Mill & Overlay	IVANHOE ST	E 63RD AVE	E 63RD PL	64	\$ 15,347	Pavement Management
Mill & Overlay	IVANHOE ST	E 63RD PL	E 64TH AVE	47	\$ 16,867	Pavement Management
Mill & Overlay	IVY ST	E 63RD AVE	E 63RD PL	68	\$ 14,511	Pavement Management
Mill & Overlay	IVY ST	E 63RD PL	E 64TH AVE	54	\$ 15,076	Pavement Management
Mill & Overlay	JASMINE ST	E 68TH WY	E 69TH AVE	88	\$ 24,239	Pavement Management
Mill & Overlay	KRAMERIA ST	E 60TH AVE	E 60TH PL	73	\$ 10,420	Pavement Management
Mill & Overlay	LOCUST CT	E 69TH AVE	E 69TH PL	74	\$ 6,717	Pavement Management





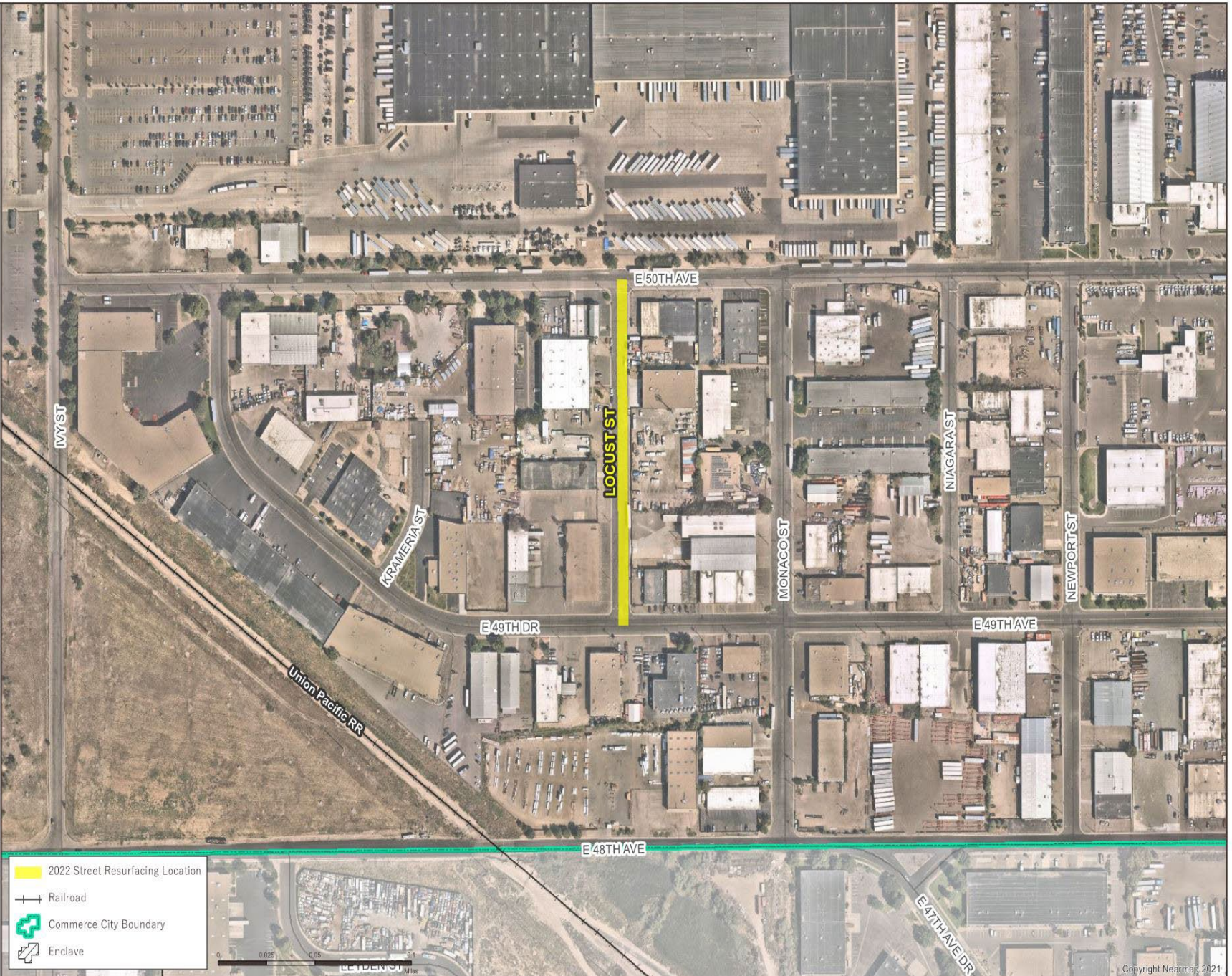
# Recommendations

Maintenance Type	Street Name	From	To	PCI	Projected Cost	Fund
Mill & Overlay	LOCUST ST	E 49TH AVE	E 50TH AVE	56	\$ 42,875	Pavement Management
Mill & Overlay	LOCUST ST	E 60TH AVE	E 62ND AVE	65	\$ 52,840	Pavement Management
Mill & Overlay	LOCUST ST	E 67TH AVE	LOCUST ST	72	\$ 17,579	Pavement Management
Mill & Overlay	ONEIDA ST	E 72ND AVE	E 72ND PL	69	\$ 13,745	Pavement Management
Mill & Overlay	ONEIDA ST	E 72ND PL	E 73RD AVE	65	\$ 10,701	Pavement Management
Mill & Overlay	QUEBEC PKWY	E 72ND AVE	HWY 2	83	\$ 589,524	Pavement Management
Mill & Overlay	ROSEMARY ST	E 86TH AVE	E 88TH AVE	58	\$ 27,936	Pavement Management
Mill & Overlay	WEIMAN CT	GLENCOE DR	E 70TH AVE	92	\$ 19,796	Pavement Management
				*Subtotal	\$ 2,498,982	
			Contingency	20%	\$ 499,796	
				Total	\$ 2,998,779	

Note: Subtotal includes mobilization, traffic control, and design.



# 2022 Street Resurfacing



	2022 Street Resurfacing Location
	Railroad
	Commerce City Boundary
	Enclave

**NORTH**

1 in = 0.04 miles

Scale: 0 0.025 0.05 0.1 Miles

# 2022 Street Resurfacing



-  2022 Street Resurfacing Location
-  Railroad
-  Commerce City Boundary
-  Enclave



 NORTH


1 in = 0.04 miles

Coordinate System:  
NAD 1983 Colorado  
State Plane Colorado Central

# 2022 Street Resurfacing



-  2022 Street Resurfacing Location
-  Railroad
-  Commerce City Boundary
-  Enclave

 NORTH

1 in = 0.04 miles

Coordinate System:  
NAD 83 / UTM Zone 13N  
Datum: North American Datum of 1983  
Spheroid: GRS 1980  
Projection: Transverse Mercator  
Units: Meter


# 2022 Street Resurfacing



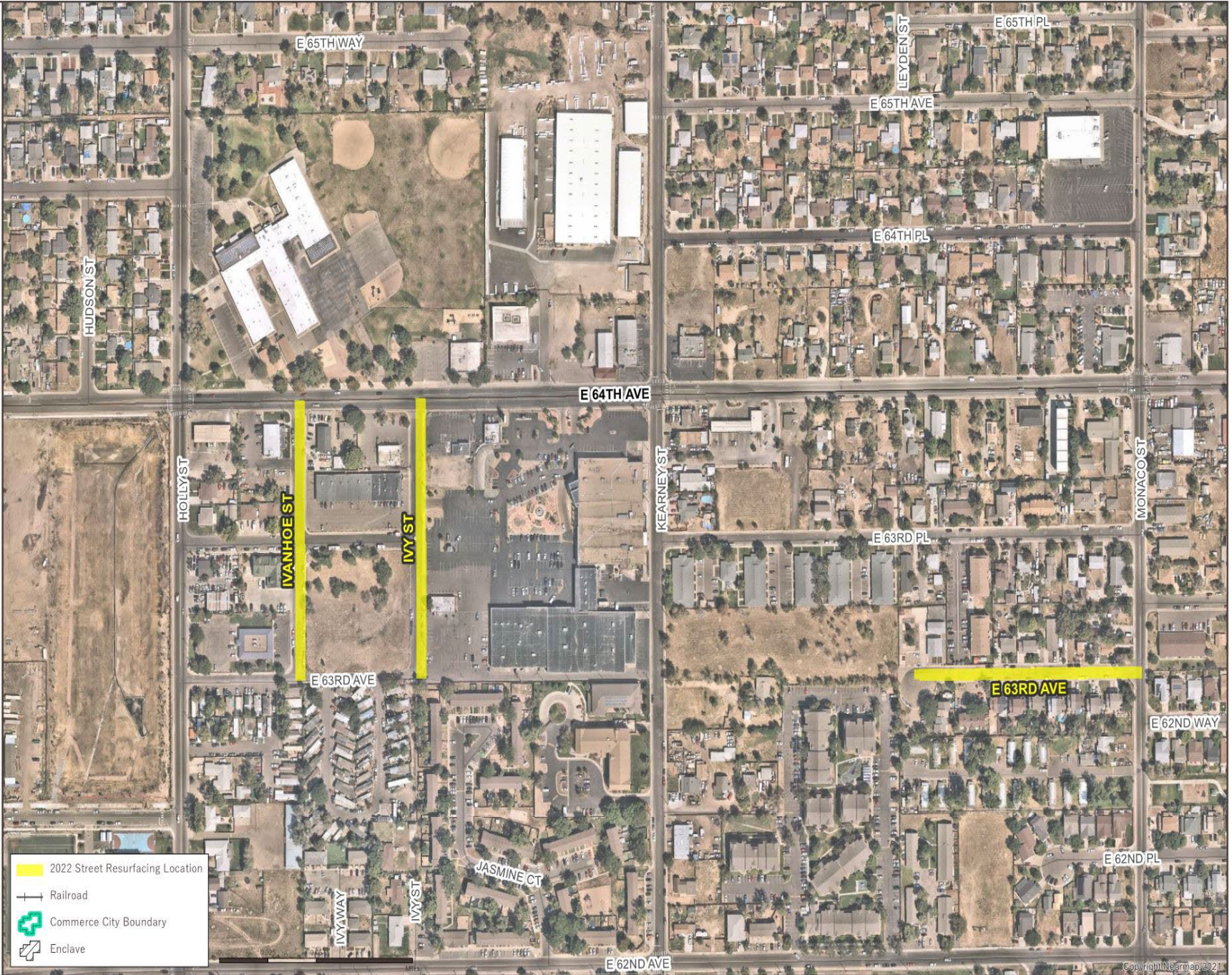
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**NORTH**

1 in = 0.04 miles

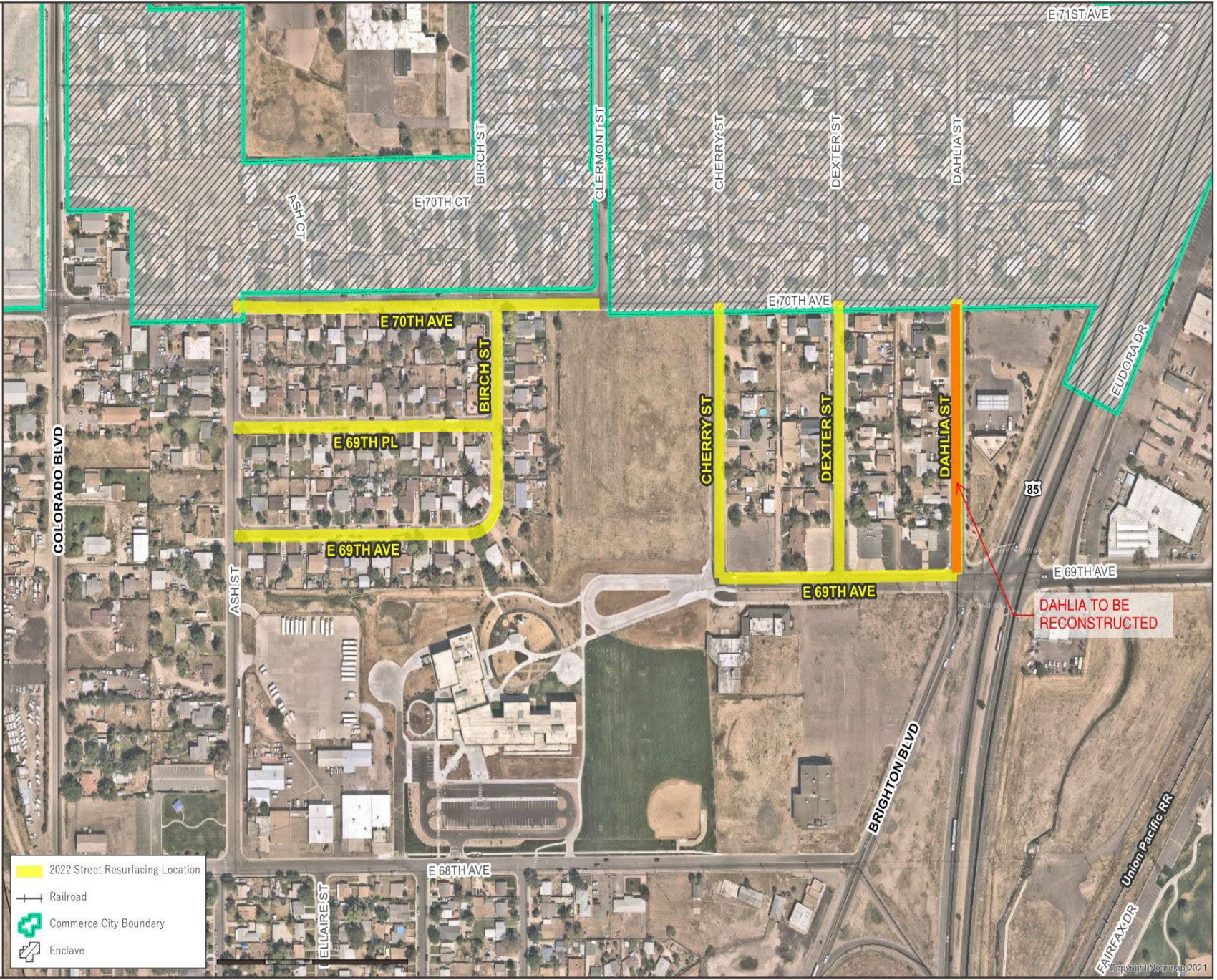


# 2022 Street Resurfacing



	2022 Street Resurfacing Location
	Railroad
	Commerce City Boundary
	Enclave

# 2022 Street Resurfacing



 2022 Street Resurfacing Location

 Railroad

 Commerce City Boundary

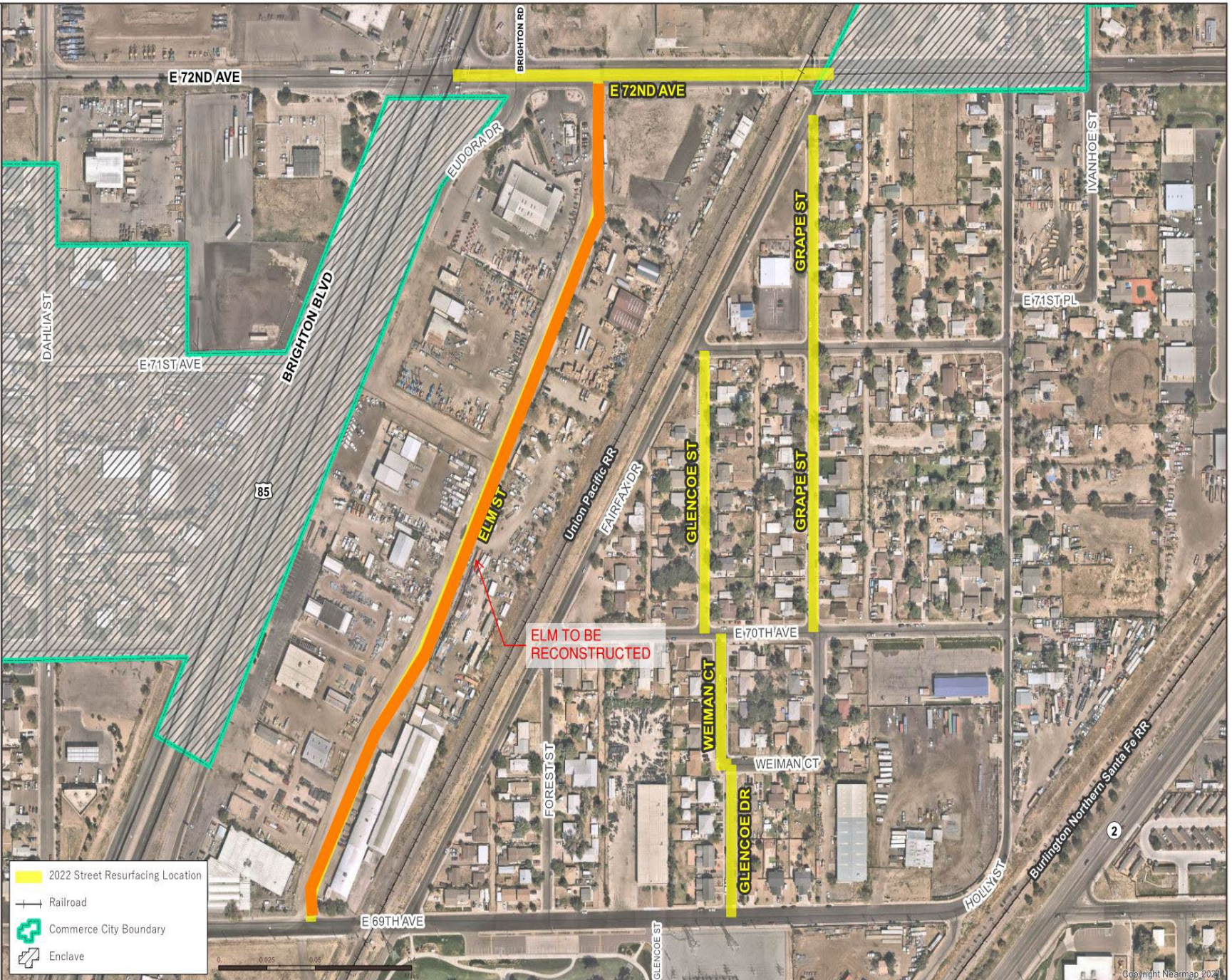
 Enclave




  
NORTH

1 in = 0.04 miles

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State Plane Colorado Central

# 2022 Street Resurfacing



- 2022 Street Resurfacing Location
-  Railroad
-  Commerce City Boundary
-  Enclave

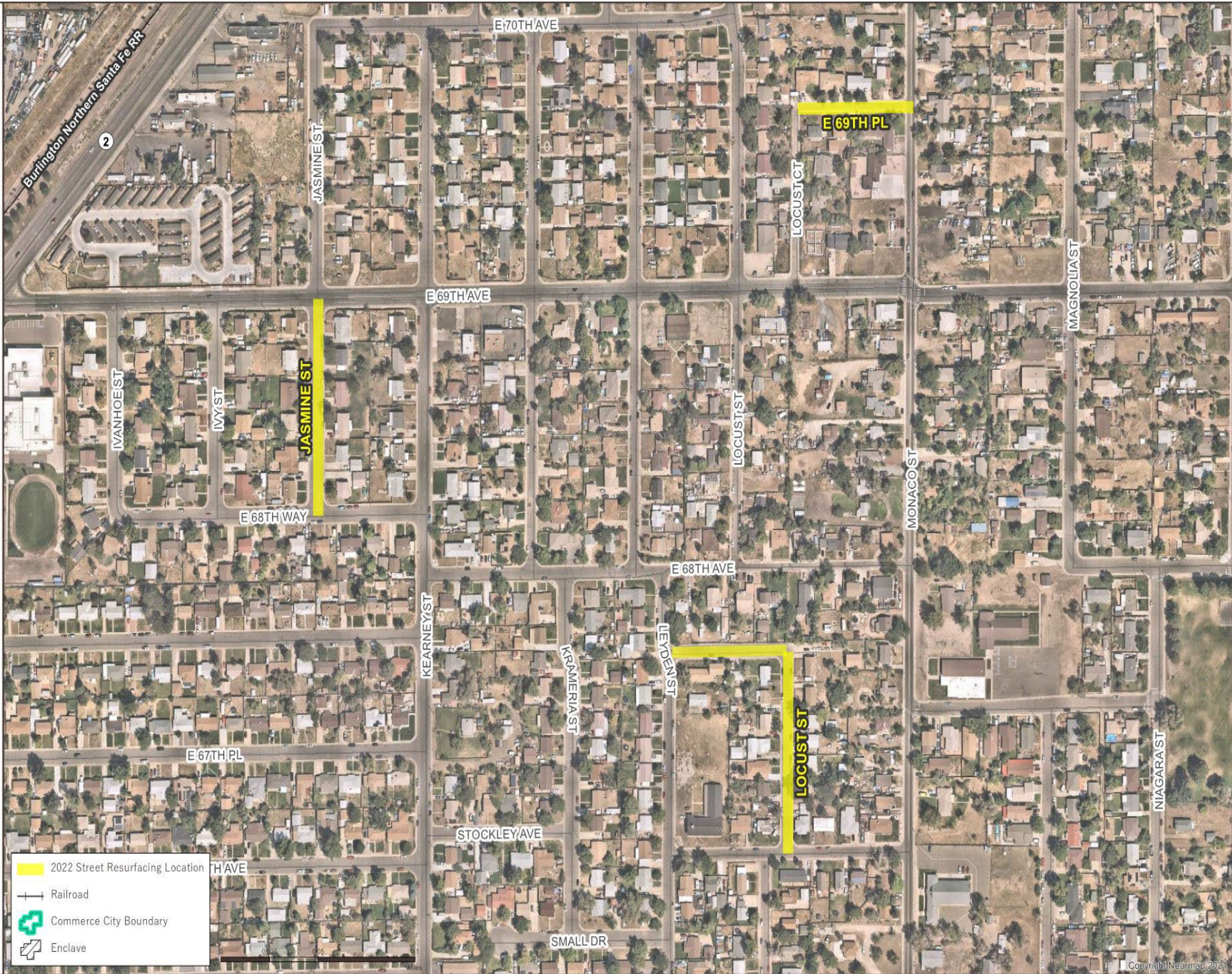


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Coordinate System:  
GCS 1983 UTM  
State Plane Colorado Central



# 2022 Street Resurfacing



-  2022 Street Resurfacing Location
-  Railroad
-  Commerce City Boundary
-  Enclave

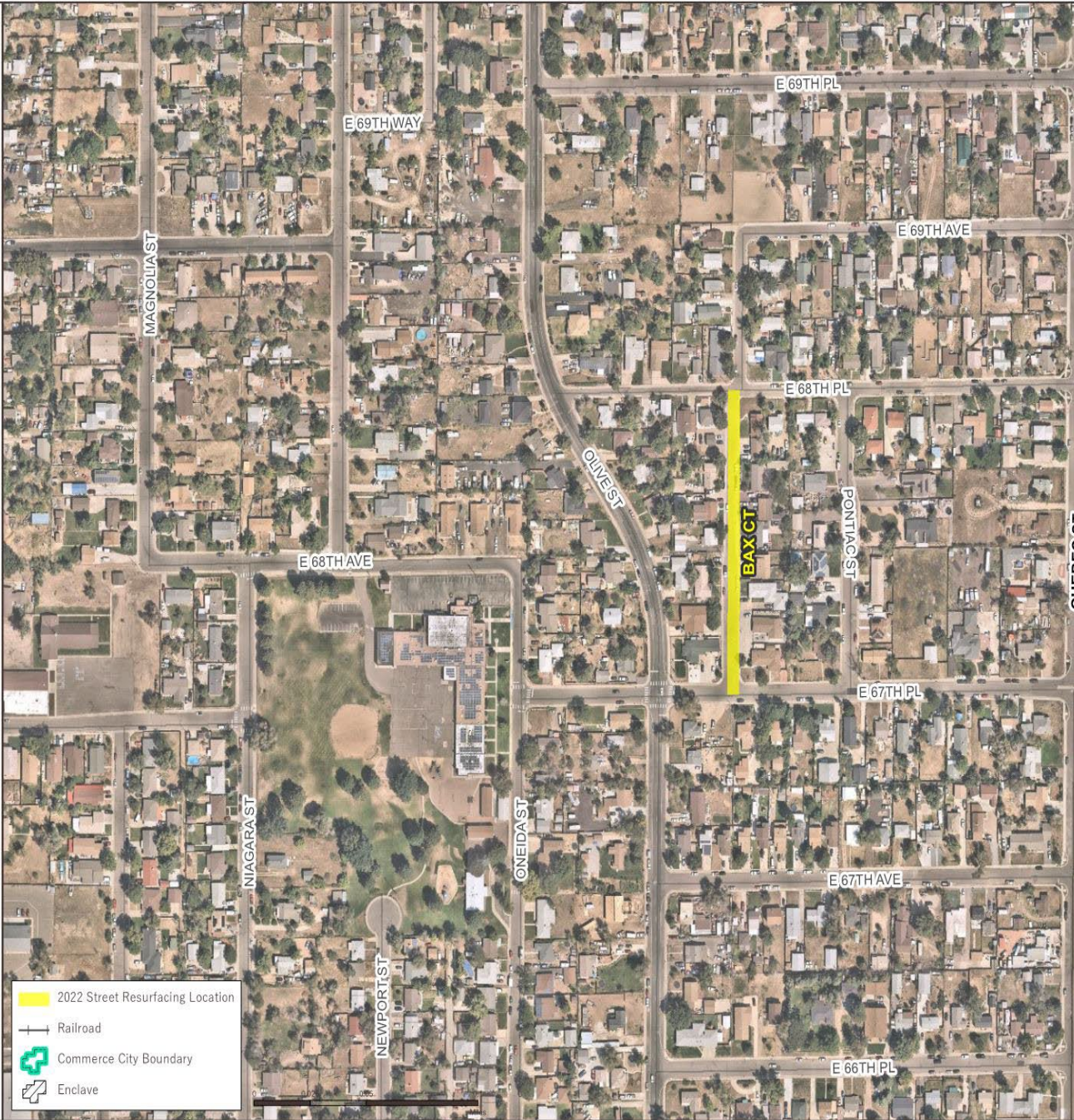


Map Date: 11/18/2021

# 2022 Street Resurfacing

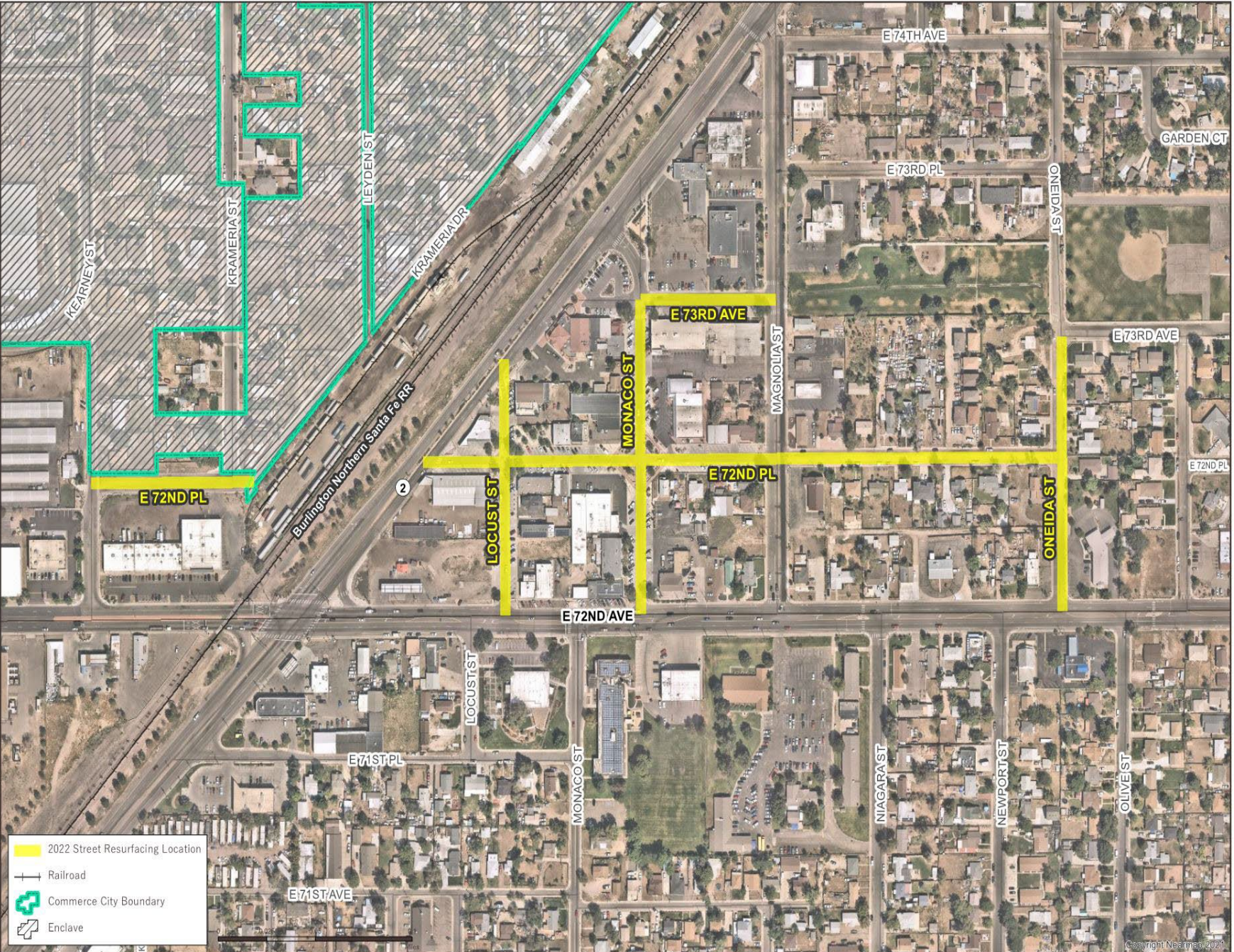
1 in = 0.04 miles  
NORTH

- 2022 Street Resurfacing Location
- Railroad
- Commerce City Boundary
- Enclave



Rocky Mountain Arsenal National Wildlife Refuge

# 2022 Street Resurfacing



- 2022 Street Resurfacing Location
- Railroad
- Commerce City Boundary
- Enclave

# 2022 Street Resurfacing



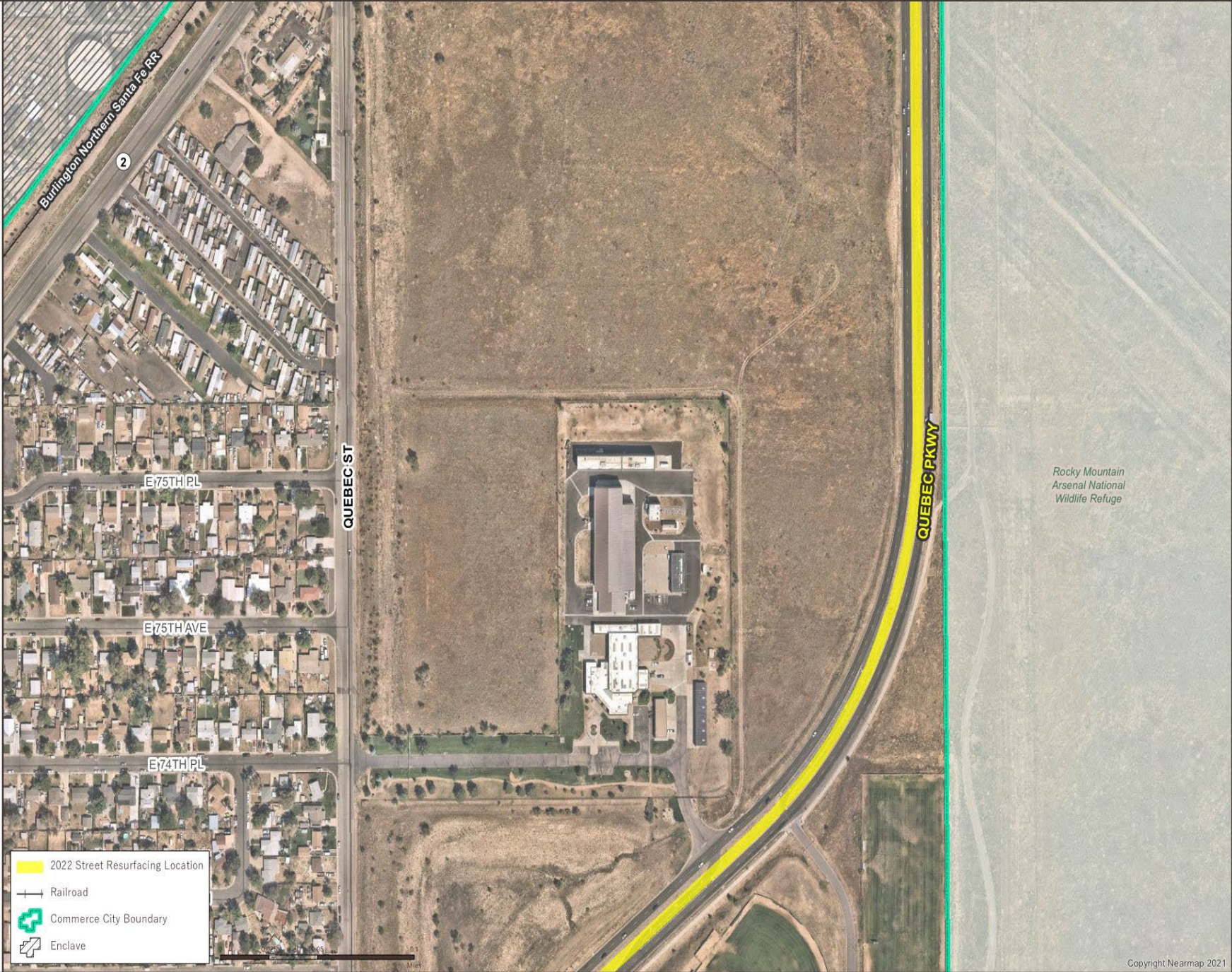
Rocky Mountain  
Arsenal National  
Wildlife Refuge

-  2022 Street Resurfacing Location
-  Railroad
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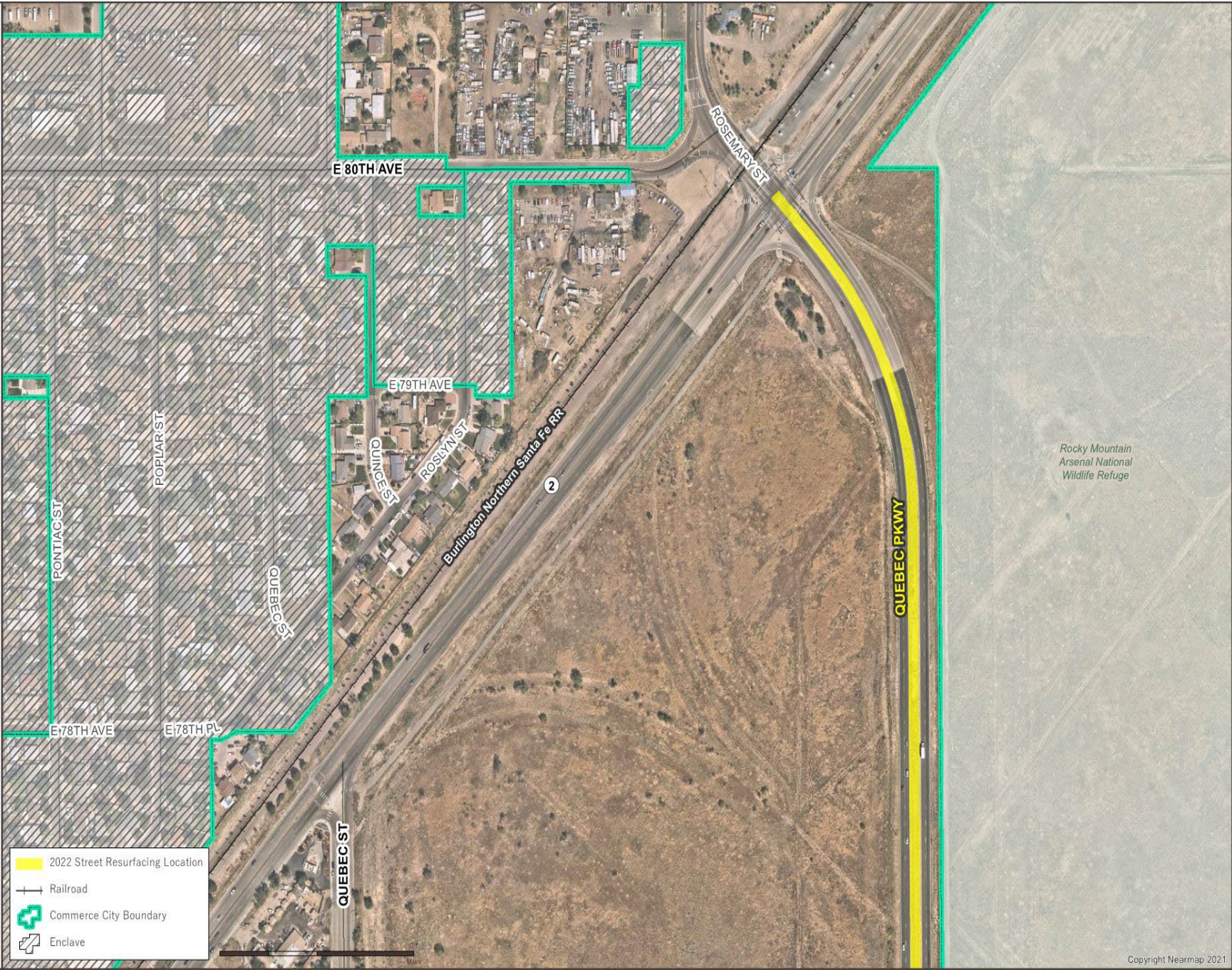
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


-  2022 Street Resurfacing Location
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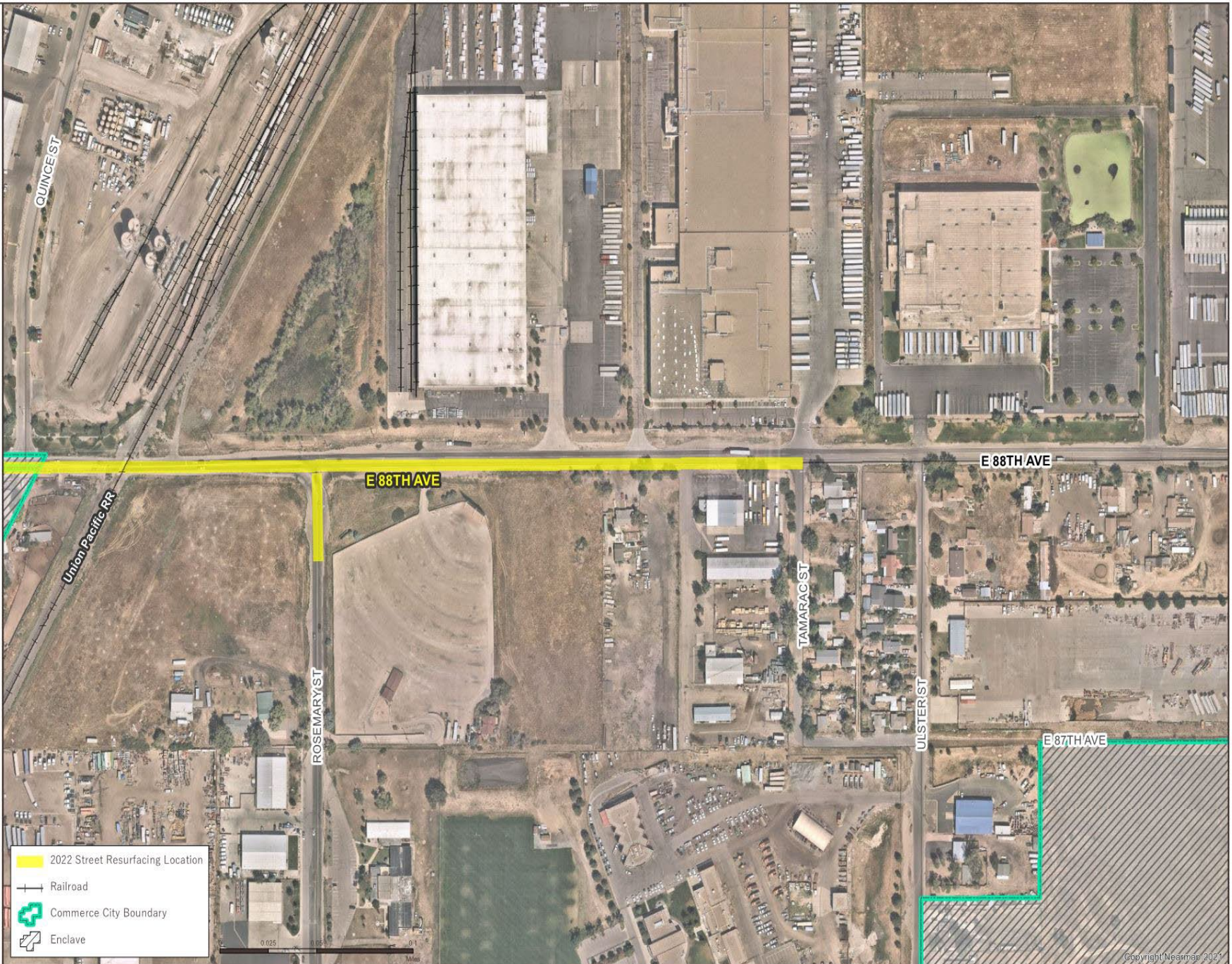
Rocky Mountain  
Arsenal National  
Wildlife Refuge

-  2022 Street Resurfacing Location
-  Railroad
-  Commerce City Boundary
-  Enclave


  
NORTH  
1 in = 0.04 miles

Coordinate System:  
GCS: NAD 83 - Colorado Central  
Datum: North American Datum of 1983  
Spheroid: Everest  
Prime Meridian: Central


# 2022 Street Resurfacing



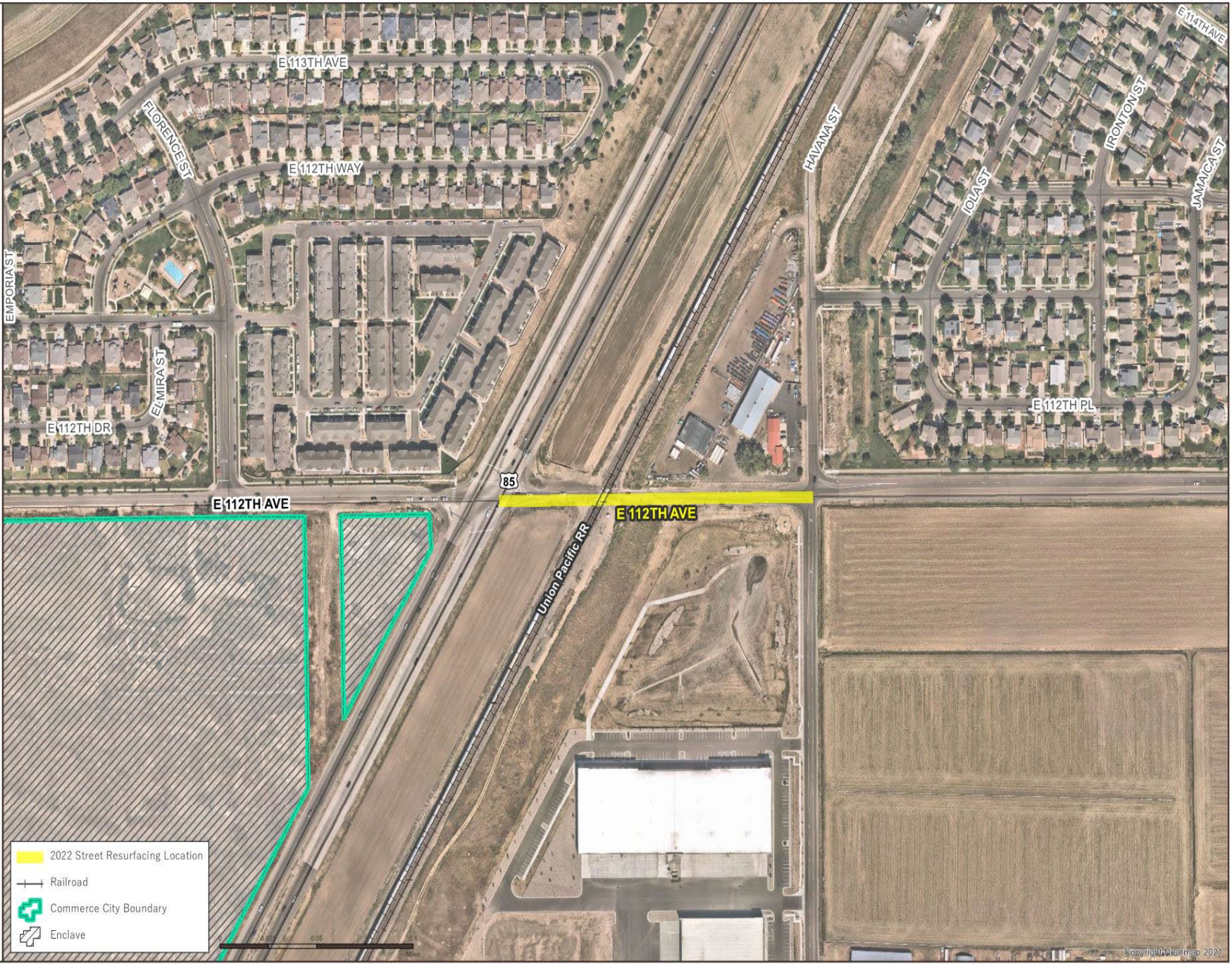
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 NORTH

1 in = 0.04 miles

 0 0.025 0.05 0.1 Miles

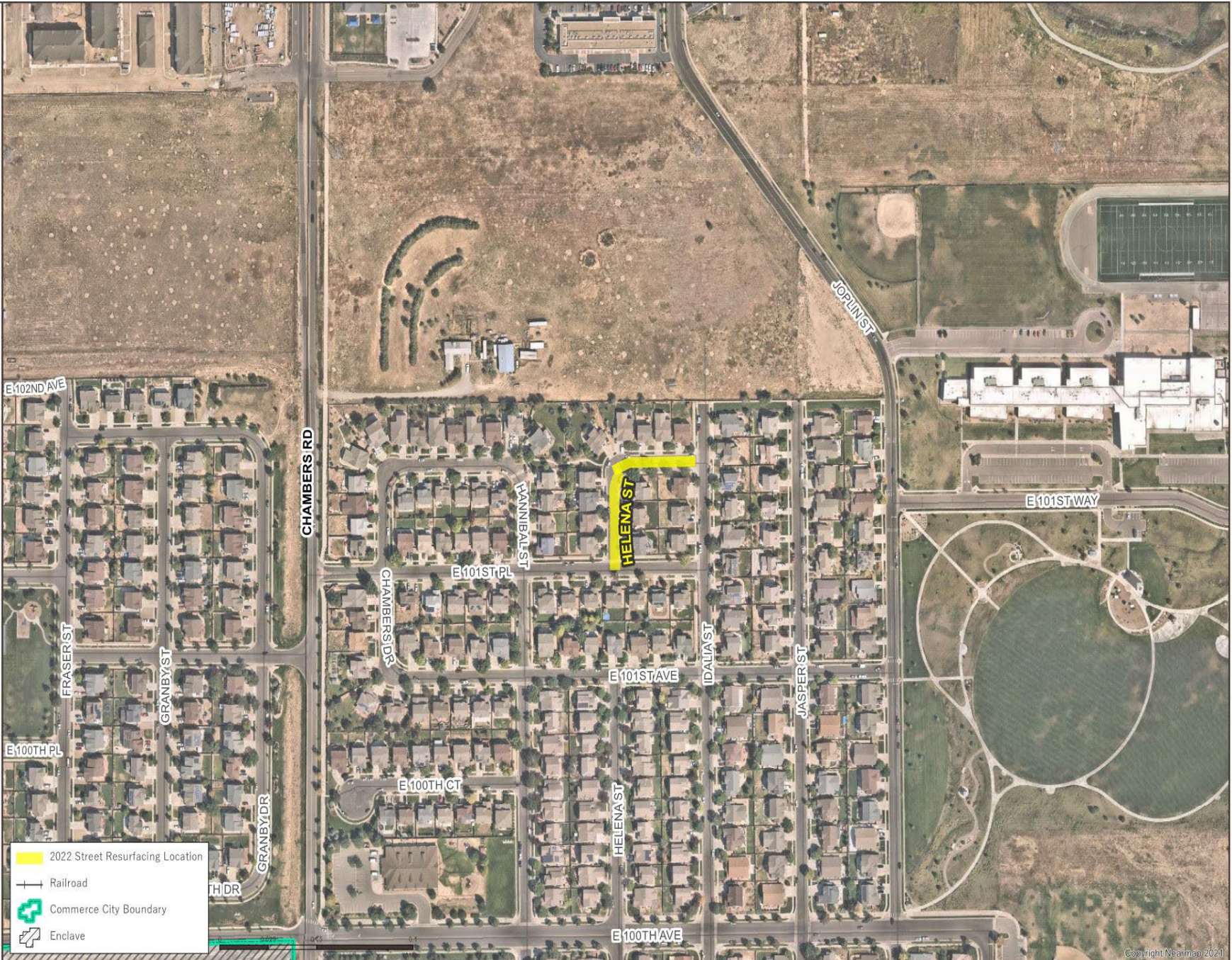
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# 2022 Street Resurfacing

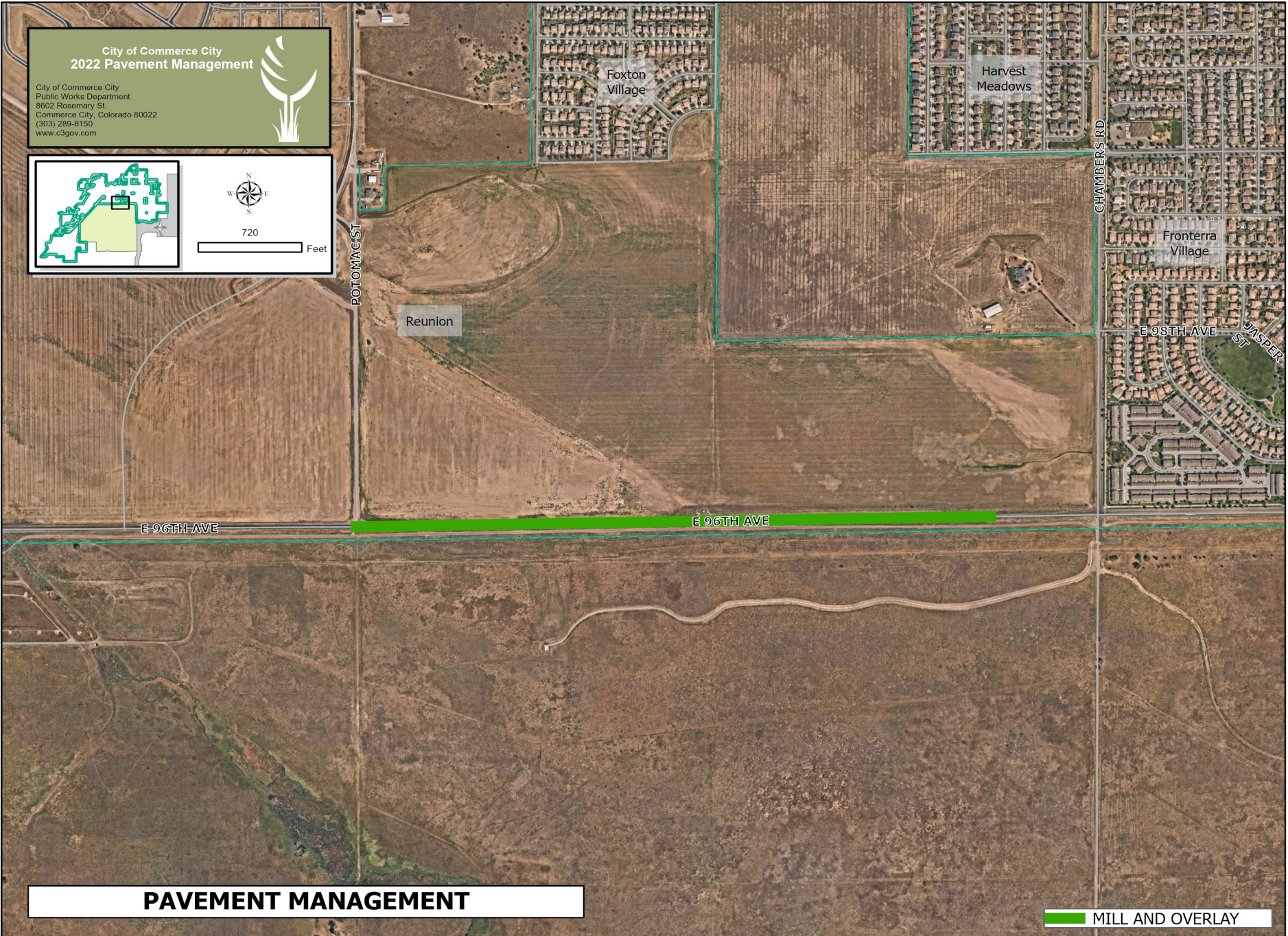


**City of Commerce City  
2022 Pavement Management**

City of Commerce City  
Public Works Department  
8602 Rosemary St.  
Commerce City, Colorado 80022  
(303) 289-8150  
www.c3gov.com



720 Feet



**PAVEMENT MANAGEMENT**

 **MILL AND OVERLAY**

# Funding

Improvement Type	Estimate Cost (\$)	Note
Mill and Overlay	\$2,573,223	Includes Traffic Control, Mobilization and 20% Contingency
Street Reconstruction	\$425,556	Includes Traffic Control, Mobilization and 20% Contingency
Total	\$2,998,779	

## Available Funding Sources

- 2022 Pavement Management Budget \$2,500,000
  - 2021 Pavement Management Budget Carryover \$ 4,694
  - 2022 Core City Infrastructure Improvements \$ 85,762
  - 2022 Street Reconstruction Budget \$ 500,000
  - Total Budget \$3,090,456
- Note: Core City Infrastructure Budget is \$250,000. We are proposing to use \$165K in Concrete Flatwork and \$85K in Pavement Management



# Funding per Area

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- Core City \$2,368,979
- Irondale \$ 138,281
- Northern Range \$ 491,518



# Next Steps

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- Advertise a request for bid for pavement management program
- Bring contract to City Council in May 2022
- Begin Work June 2022



# Questions?

