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CITY OF Grand Junction COLORADO

GRAND JUNCTION CITY COUNCIL
MONDAY, DECEMBER 13, 2021
WORKSHOP, 5:30 PM
CITY HALL AUDITORIUM AND VIRTUAL
250 N. 5TH STREET

1. Discussion Topics

a. City Market Site Proposed Redevelopment - The Junction

b. Lodging Tax Resolution Discussion

c. Boards and Commission Applicant Interview Process

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 www.gjcity.org/city-government/) 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: December 13, 2021

Presented By: Greg Caton, City Manager

Department: Community Development

Submitted By: Tamra Allen, Community Development Director

Information

SUBJECT:

City Market Site Proposed Redevelopment - The Junction

EXECUTIVE SUMMARY:

Richmark Real Estate Partners, LLC, is proposing the redevelopment of the 4.6 acres at 200 Rood Avenue where the shell of the previous 66,000 square foot City Market Grocery store currently exists. The site is in the heart of downtown Grand Junction and within the City's Downtown Development Authority. The project proposal includes a 256-unit for-rent apartment project. Based on current pricing, the project budget is estimated to be between $59,100,000-$61,700,000. Due to significant increases in construction prices, and unsupported market rents, Richmark is currently estimating a $7.5 million gap in funding to make the project economically feasible. Richmark will be seeking "gap" funding for the project and anticipates making a future request to the City and the DDA. City and DDA staff are also working with Richmark to draft a $3 million grant request to DOLA through their recent Housing Incentive Grant program.

BACKGROUND OR DETAILED INFORMATION:

Richmark Real Estate Partners, LLC, is proposing the redevelopment of the 4.6 acres at 200 Rood Avenue where the shell of the previous 66,000 square foot City Market Grocery store currently exists. The site is in the heart of downtown Grand Junction and within the City's Downtown Development Authority. The project proposal includes 256-unit for-rent apartment project. The grocery store closed in 2019 and has become a source of blight, a safe harbor for transients, and a source of disinvestment in Grand Junction's downtown. The City and DDA have long-standing adopted goals supporting and incentivizing housing in the downtown. This redevelopment is an opportunity to capitalize upon the successful work and energy of Main Street and build essential housing in the downtown that has largely been an idea that has languished for the last two decades. The site is easily accessible by bicycle or walking, is situated near both

services and employment centers and is across the street from an existing transit stop.

The Junction will demolish the existing grocery store and construct two highly amenitized, 4-story structures. The project is currently planned to include 127 studios, 71 – 1 bedroom units and 58 – 2 bedroom units. Construction of The Junction will reduce conditions of distress and disinvestment within the City's downtown, maximize the efficient provision of infrastructure and public services throughout the downtown.

The property was purchased by Richmark Real Estate Partners, LLC in September of this year. Based on current pricing, the project budget is estimated to be between $59,100,000-$61,700,000. Due to significant increases in construction prices, and unsupported market rents, Richmark is currently estimating a $7.5 million gap in funding to make the project economically feasible. Richmark will be seeking "gap" funding for the project and anticipates making a future request to the City and the DDA. City and DDA staff have also been working with Richmark to draft a $3 million grant request to DOLA through their recent Housing Incentive Grant program. Gruen Gruen + Associates, a 3rd party urban economist, and the Grand Junction Housing Authority have reviewed the financial feasibility and "gap" for their proposed project and their findings support Richmark's "gap" analysis (attached). Should public funding be committed, Richmark would dedicate 10% of the units (26) to be income-restricted to 80% of AMI with first priority given for rental of these units to first responders and School District 51 employees.

Gruen Gruen + Associates were also retained by Richmark to study the economic impacts of the project (attached). Their report indicates the one-time construction activity is forecast to support 554 job-years and generate approximately $31 million of labor income within Mesa County over the 18-month construction period. At build-out, the ongoing spending of households is forecast to support approximately 116 permanent jobs within the local economy with annual labor of approximately $3.9 million. On-going spending is forecast to generate total annual economic output in Mesa County of $14.7 million. The report also estimates annual revenue to the DDA of $170,436 through property tax increment and $202,248 in sales tax revenue to the City of Grand Junction.

Richmark recently completed a pre-application review with the City's Community Development Department staff. A site plan including conceptual renderings as well as a project description has been included for review.

FISCAL IMPACT:

This item is for discussion purposes. Fiscal impact will be determined after Council direction is received.

SUGGESTED ACTION:

For Discussion and Direction.

Attachments

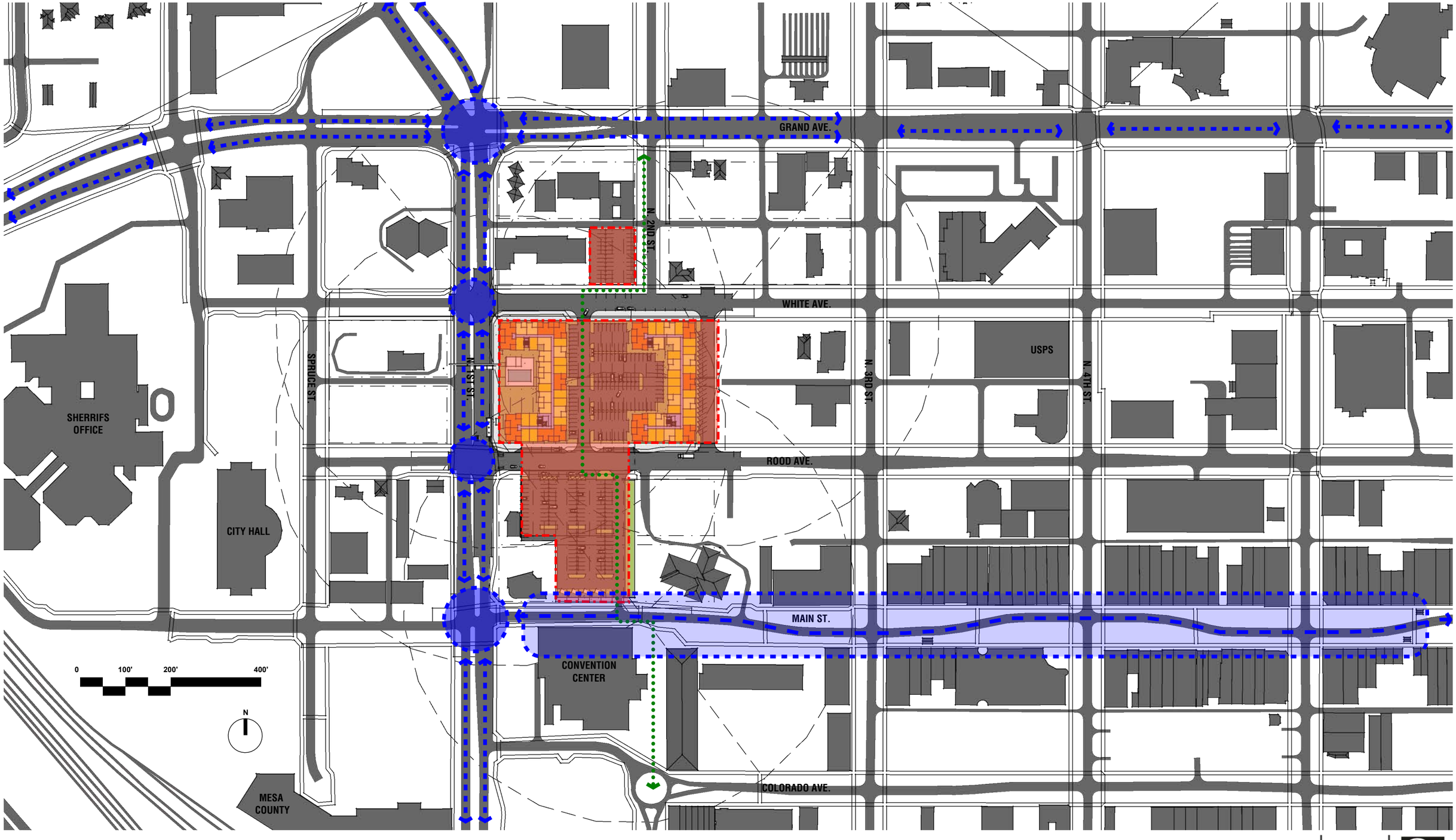
1. Review 1 - Concept Plans
2. Review 1 - General Project Report
3. C1580 City Market Feasibility Analysis
4. C1580 Impact Analysis
5. The Effect of New Market-Rate Housing Construction on the Low-Inc
6. City Market Redevelopment Proposal Review - GJHA
7. DDA Board of Directors Letter

11.10.2021

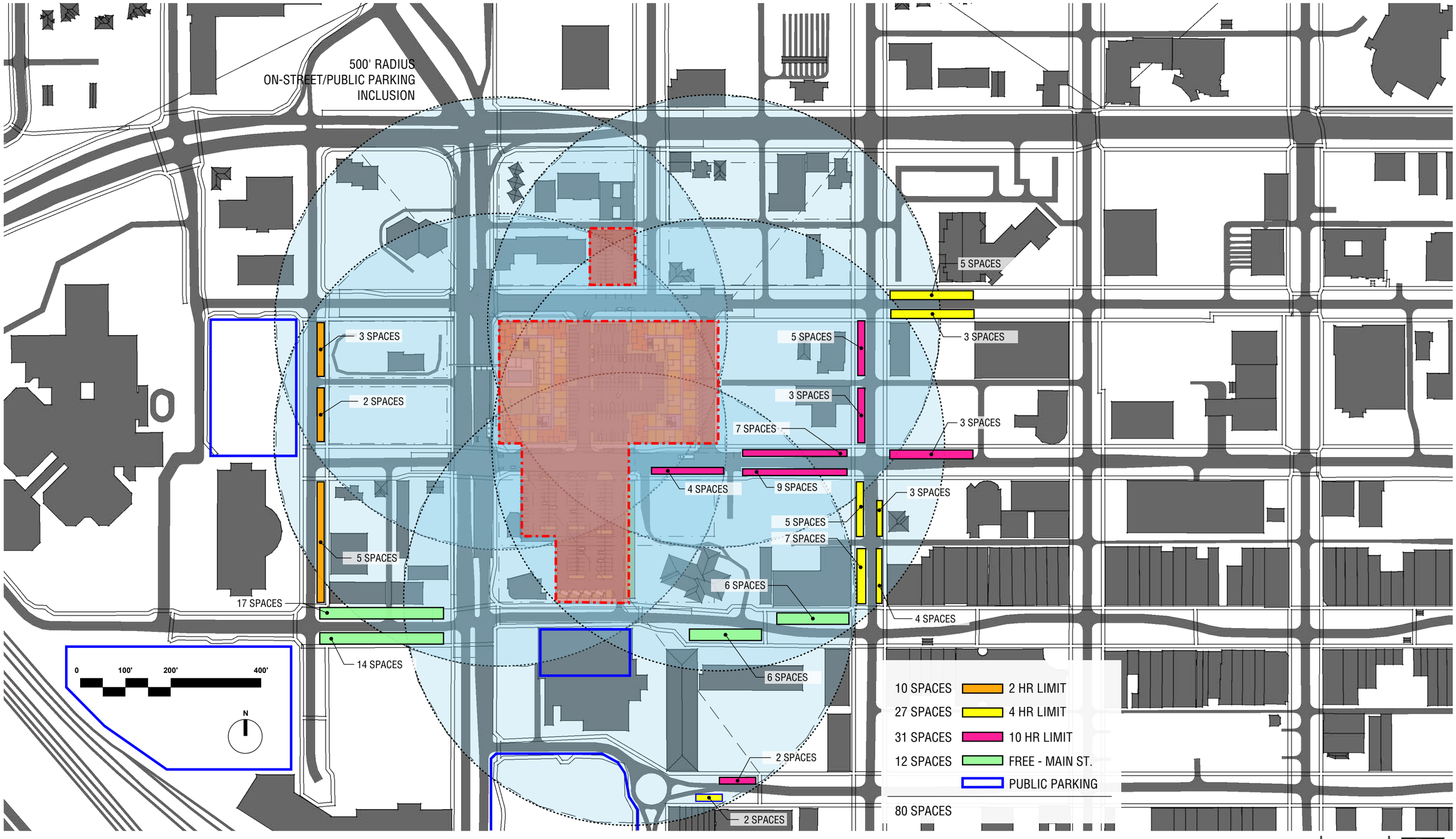
THE JUNCTION | MULTIFAMILY RESIDENCES | **GRAND JUNCTION, CO**

RICHMARK COMPANIES

VICINITY **MAP**



PARKING **MAP**


500' RADIUS
ON-STREET/PUBLIC PARKING
INCLUSION
3 SPACES
2 SPACES
5 SPACES
17 SPACES
14 SPACES
5 SPACES
3 SPACES
3 SPACES
7 SPACES
4 SPACES
9 SPACES
5 SPACES
7 SPACES
6 SPACES
6 SPACES
2 SPACES
2 SPACES
5 SPACES
3 SPACES
3 SPACES
3 SPACES
4 SPACES
0
100'
200'
400'
N
10 SPACES 2 HR LIMIT
27 SPACES 4 HR LIMIT
31 SPACES 10 HR LIMIT
12 SPACES FREE - MAIN ST.
PUBLIC PARKING
80 SPACES

SITE **PLAN**

UNITS

BLDG A					
	Units	Mix	Beds	Unit area	
Studio	50	41%	50	504	25,200
1BR	36	30%	36	648	23,328
2BR	35	29%	70	984	34,440
	121	100%	156		82,968
Common	lobby				1,488
	lounge				2,448
	Rooftop				-
Circulation	4			3408	13,632

BLDG B					
	Units	Mix	Beds	Unit area	
Studio	72	53%	72	504	36,288
1BR	35	26%	35	648	22,680
2BR	28	21%	56	984	27,552
	135	100%	163		86,520
Common	lobby				932
	Lounge				-
Circulation	4			3378	13,512

Total					
	Units		Beds	Unit area	
Studio	122	48%	122	504	61,488
1BR	71	28%	71	648	46,008
2BR	63	25%	126	1008	63,504
	256	100%	319		171,000
Common					4,868
Circulation					27,144
				Total	203,012
Average Unit size					668
Building Efficiency					84%

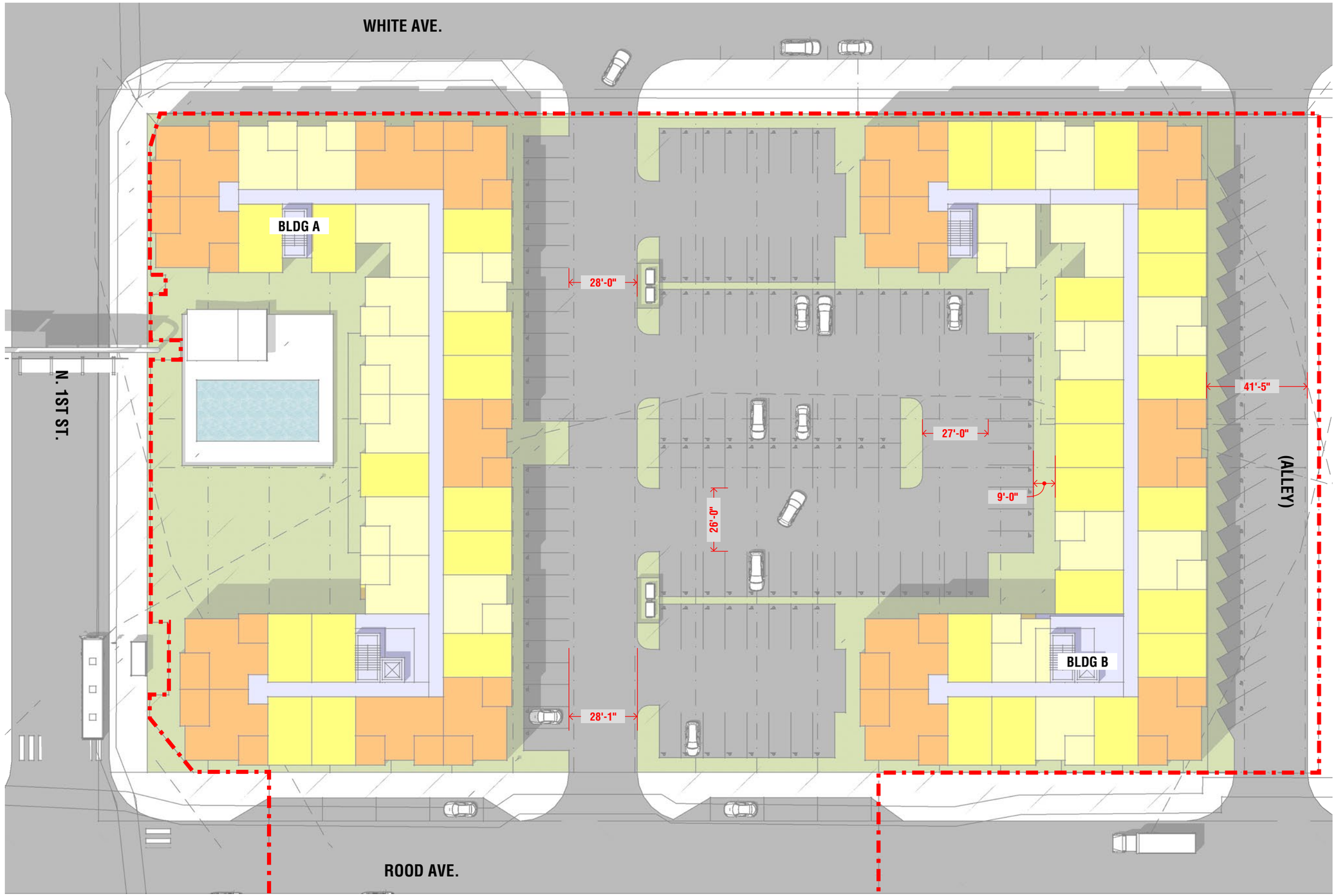
PARKING

REQUIREMENTS					
	Units	Beds		Ratio	Spaces
Studio	122	122		1.25	153
1BR	71	71		1.25	89
2BR	63	126		1.5	95
	256	319			**336**
RM preferred		1 space/bed			319
		1.5 space/unit			384
PROVIDED					
		North	Main	South	Alley
Spaces		39	120	135	22
				294	**316**
on-street				80	**390**
public (500' radius)				-	
Ratio		spaces/unit			1.23
		spaces/bed			0.99

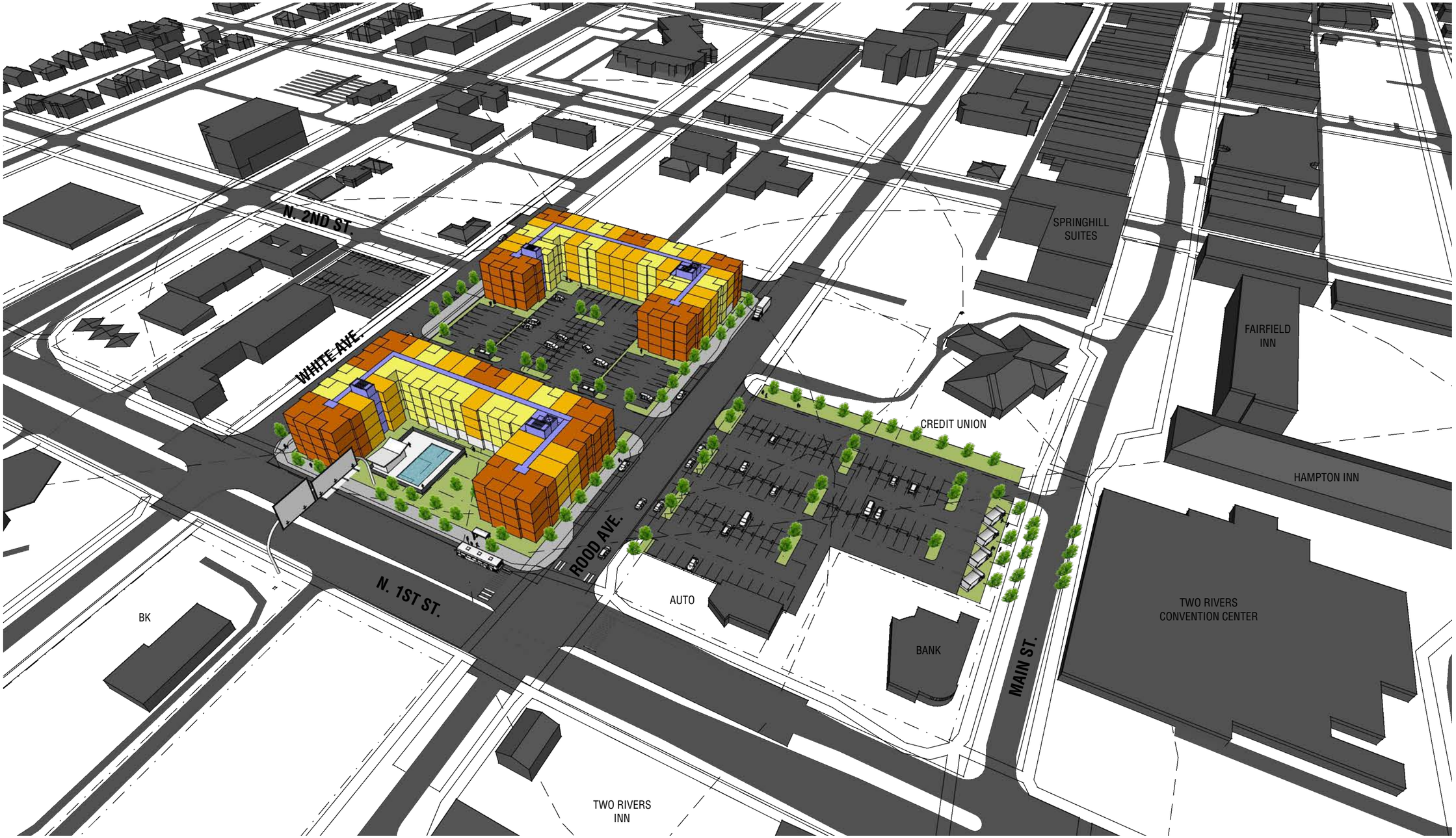
GROUND **PLAN**


WHITE AVE.
N. 1ST ST.
BLDG A
POOL & AMENITIES
FITNESS
LOUNGE
LOBBY
OFFICE
TRASH ENCLOSURE
28'-0"
27'-0"
26'-0"
9'-0"
41'-5"
(ALLEY)
ENTRY
BUS STOP
TRASH ENCLOSURE
28'-1"
BLDG B
FIRE/ WATER
FIRE/ WATER
ROOD AVE.
0
20'
40'
80'
N

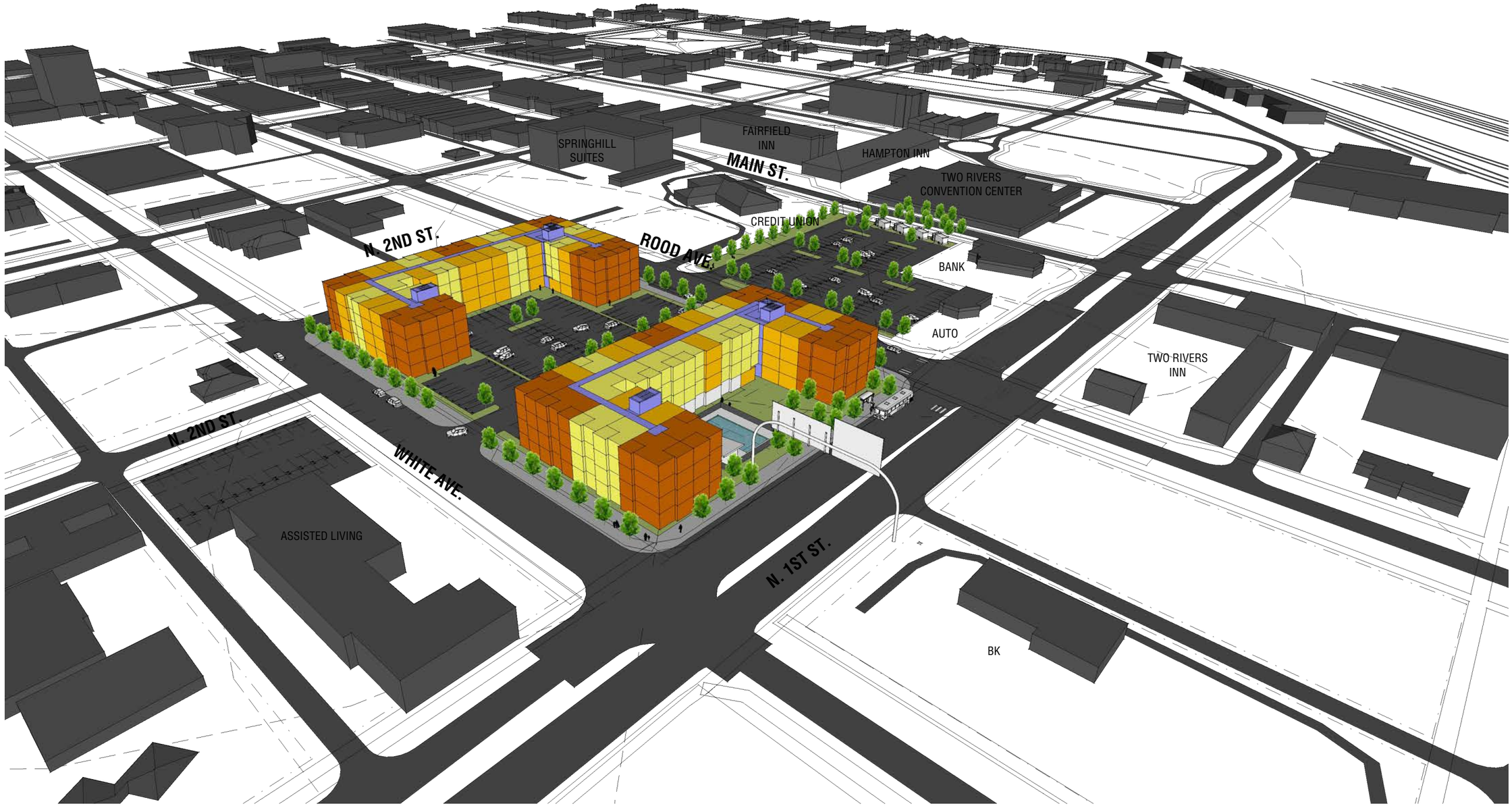
LEVEL 4 **PLAN**


WHITE AVE.
BLDG A
28'-0"
27'-0"
41'-5"
9'-0"
26'-0"
N. 1ST ST.
(ALLEY)
BLDG B
28'-1"
ROOD AVE.
0
20'
40'
80'
N

AERIAL **VIEWS**



AERIAL **VIEW**


SPRINGHILL SUITES
FAIRFIELD INN
HAMPTON INN
MAIN ST.
TWO RIVERS CONVENTION CENTER
CREDIT UNION
N. 2ND ST.
ROOD AVE.
BANK
AUTO
TWO RIVERS INN
N. 2ND ST.
WHITE AVE.
ASSISTED LIVING
N. 1ST ST.
BK

PERSPECTIVE VIEW FROM NORTHEAST

PERSPECTIVE VIEW FROM NORTHWEST

PERSPECTIVE VIEW FROM SOUTHEAST

PERSPECTIVE VIEW FROM SOUTHWEST

General Project Report
For
The Junction

Project Description (location, Acreage, Proposed Use):
The purpose of this application is to obtain comments from the City of Grand Junction for The Junction mulit-family development project located at 200 Rood Avenue and 327 North 2nd Street in Grand Junction, Colorado. The project location area is depicted below:

Dos Rios Project Location

The 4.81-acre size is the former City Market building which also includes a 0.28-acre parking lot north of the former City Market Building. The properties are being purchased by Richmark Companies.

The site is proposed to be re-developed into a multi-family apartment project which is anticipated to include two, four story buildings which will have a total of approximately 256 apartments. The apartments will include a mix of studio, one bedroom and two-bedroom units.

Building one, located on the west side of the site along 1st Street, will be four stories in height and will be approximately 85,000 square feet in size. Building two, located along the east side of the site, will be four storages in height and be approximately 87,000 in size.

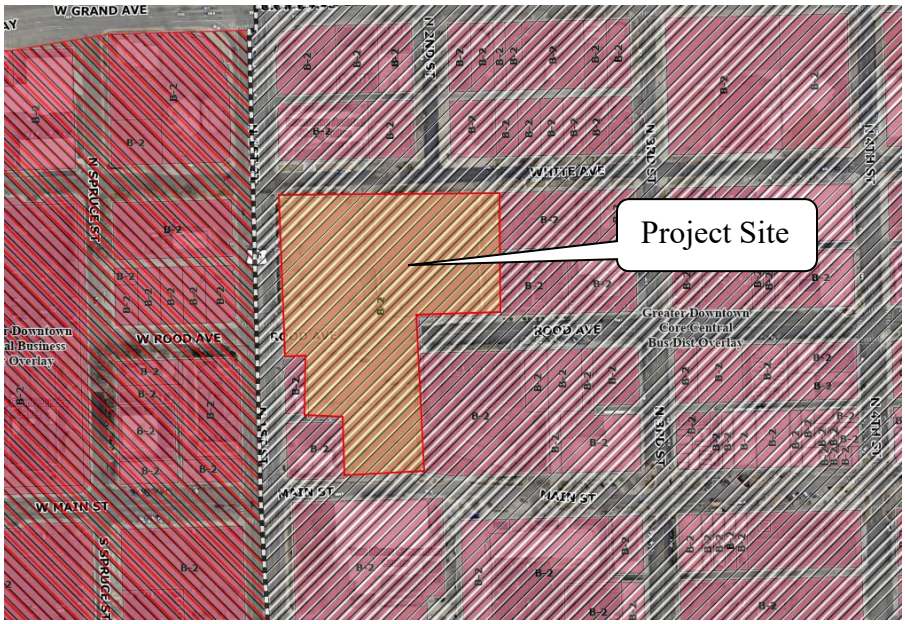
General Project Report
For
The Junction

The project is located within the Greater Downtown Central Business District overlay. The project has included several guidelines from this district, including placement buildings near street frontage property lines, parking behind the primary building areas.

The site includes parking for approximately 316 spaces within the site and approximately 80 on street parking spaces near the project site. A parking summary exhibit has been provided to identify the parking areas within and adjacent to the project site.

The project consists of several old 25' x 125' lots and a lot consolidation process may be needed for this project.

Surrounding Land Uses and Zoning:
The site is currently zoned B-2 and is located within the Greater Downtown Core Central Business District Overlay. Listed below is the City's zoning map with the project location identified.



City Zoning

Utilities
All utilities required to service the property are located on or near the project site.

Both 4-story apartment buildings will be provided with approved fire sprinkler systems. The specific location of Fire Department Connections is still being examined with the building architecture, but is anticipated to be located along the Rood Avenue sides of the buildings.

Fire flow analysis from the City of Grand Junction indicates the project should have approximately 6,000 to 4,000 gpm at 20 psi from hydrants adjacent to the site.

Stormwater Drainage

The project does not anticipate providing any stormwater detention as the existing site is almost completely impervious. If water quality treatment is required, it is anticipated to be provided in an underground system.

Schedule:

The applicant anticipates starting construction in the Spring of 2022.

FINANCIAL FEASIBILITY ANALYSIS OF THE PROPOSED CITY MARKET REDEVELOPMENT IN DOWNTOWN GRAND JUNCTION, COLORADO

Memorandum Report to

RICHMARK COMPANIES

From

GRUEN GRUEN + ASSOCIATES
Urban Economists, Market Strategists & Land Use/Public Policy Analysts

October 2021

C1580

Gruen Gruen + Associates

FINANCIAL FEASIBILITY ANALYSIS OF THE PROPOSED CITY MARKET REDEVELOPMENT IN DOWNTOWN GRAND JUNCTION, COLORADO

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Applying Knowledge, Creating Results, Adding Value

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LIST OF TABLES

GRUEN GRUEN + ASSOCIATES
MEMORANDUM

Date: October 11, 2021
To: Adam Frazier and Tyler Richardson, Richmark Companies
From: Gruen Gruen + Associates
Subject: Financial Feasibility Analysis of Proposed City Market Redevelopment

INTRODUCTION

This memorandum report by Gruen Gruen + Associates ("GG+A") summarizes our financial feasibility analysis of the proposed City Market Redevelopment in Downtown Grand Junction. The primary purpose of this analysis is to evaluate the financial feasibility of the proposed development program with- and without- the assistance you have requested. We understand an initial term sheet provided to the City of Grand Junction outlines several sources of requested assistance, including waiver of all municipal fees and construction use tax, a sale-leaseback for a portion of the site, and future payments from the Downtown Development Authority ("DDA") or City through 2039.

SUMMARY OF BASIC RESULTS AND CONCLUSIONS

Table 1 summarizes the investment results of the discounted cash flow analysis with- and without-the requested assistance.

TABLE 1: Summary of Annual Leveraged Internal Rates of Return (IRRs)

	Without Public Assistance	With Requested Public Assistance	Assistance Needed to Meet 18% IRR Hurdle
Present Value of Incentives [1]	$0	$7,873,901	$14,664,025
Leveraged IRR	4.1%	9.5%	18.0%
Cash-on-Cash Return [2]	2.9%	4.3%	7.4%

[1] Future DDA/City payments over time are discounted at 5.0% annual interest rate.
[2] Average over first five stabilized years.

Source: Gruen Gruen + Associates

The primary conclusion of the analysis is that the proposed redevelopment is not likely to support a market rate return on equity investment even with the requested assistance of $10.5 million over time (estimated to have a present value of about $7.9 million assuming a five percent annual discount rate on future DDA payments).

Without any assistance, the leveraged Internal Rate of Return (IRR) would be only four percent; a level of return insufficient to attract or justify equity capital investment. Even with the requested assistance the leveraged IRR improves to only 9.5 percent. This is a low rate of return given the risks involved, including but not limited to the risk that actual market rents (already assumed to be well above prevailing rents) may be lower than projected. The feasibility "hurdle rate" also would typically be much higher for a pioneering project/location that is unlikely to attract significant institutional interest to purchase the completed and leased property.

To achieve a more typical leveraged IRR of 18 percent, the amount of public assistance would need to be increased to about $14.7 million on a present value basis.

PROPOSED REDEVELOPMENT PROGRAM

We understand the 4.6-acre site at 200 Rood Avenue in Grand Junction is planned to be redeveloped into 256 rental housing units (apartments) in two separate multi-family buildings. The overall Floor Area Ratio (F.A.R.) is estimated at approximately 1.1 and the housing density is 56 units per acre.

Table 2 summarizes the proposed redevelopment program.

TABLE 2: Proposed Redevelopment Program

	200 Rood Ave.
Gross Site Area (in Acres)	4.6
Total Multi-Family Housing Units	**256**
Housing Density (Units / Acre)	56
Building Height(s)	4 stories
Construction Type	Type V
Gross Building Area in Square Feet	**211,556**
Floor Area Ratio (F.A.R.)	1.1
Rentable (Net) Building Area in Square Feet	**168,480**
Net-to-Gross Efficiency	80%
Average Unit Size in Square Feet	658
Vehicular Parking Spaces	313

Sources: OZ Architecture; Richmark Companies.

The two multi-family buildings are planned to contain total gross building area estimated at approximately 212,000 square feet. The amount of rentable (net) building area is estimated at approximately 168,500 square feet for a loss factor of approximately 20 percent. The average unit size will be about 660 square feet of space.

Table 3 summarizes the proposed housing unit mix by size.

TABLE 3: Proposed Housing Unit Mix

	Units	% of Total	Average Unit Size[1]
Studio	127	49.6	504
One-Bedroom	71	27.7	648
Two-Bedroom	58	22.7	1,008
TOTAL	**256**	**100.0**	**658**

[1] In rentable square feet.

Sources: OZ Architecture; Richmark Companies.

Approximately one-half of all units are planned to be studio/efficiency units with an average unit size of about 500 square feet. Seventy-one (71) units or about 28 percent of the unit mix will be one-bedrooms with an average unit size of about 650 square feet. Larger two-bedroom units, averaging about 1,000 square feet in size, will comprise 23 percent of the unit mix.

DEVELOPMENT COSTS

Total development costs before any contingency allowance are estimated at $58.4 million or about $228,000 per unit. This represents an overall cost of $276 per gross square foot. Table 4 summarizes the development cost estimate.

TABLE 4: Estimated Development Costs by Category

	PSF [1]	Per Unit	Total	*% of Total*
Land Acquisition	**$12**	**$10,156**	**$2,600,000**	***4.5***
Hard Costs:				
Sitework, Utilities and Demolition	$20	$16,469	$4,216,100	*7.2*
Vertical Construction	$191	$157,939	$40,432,300	*69.3*
Furniture, Fixtures and Equip (FF&E)	$3	$2,150	$550,400	*0.9*
Hard Costs	**$214**	**$176,558**	**$45,198,800**	***77.4***
Soft Costs:				
Architecture and Engineering	$9	$7,800	$1,996,800	*3.4*
Permit/Impact Fees and Use Tax	$10	$7,957	$2,037,000	*3.5*
Developer Fee	$9	$7,185	$1,839,300	*3.2*
Other Soft [2]	$5	$4,203	$1,075,900	*1.8*
Soft Costs	**$33**	**$27,145**	**$6,949,000**	***11.9***
Financing Costs [3]	$17	$14,113	$3,613,000	*6.2*
TOTAL DEVELOPMENT COST	**$276**	**$227,972**	**$58,360,800**	***100.0***
+5% Contingency Allowance	*$289*	*$238,665*	*$61,098,190*	

[1] Per square foot of gross building area.
[2] Legal and consulting fees; insurance, title and property tax; marketing; etc.
[3] Three-year interim/construction loan at 4.0% interest with 1.5% loan fee. See Table 8 for additional financing and investment paramaters.

Source: GG+A Review of Shaw and Richmark Estimates

According to Richmark, the redevelopment site will be acquired for $2,600,000 or about $10,200 per housing unit. Land acquisition represents a relatively small share (4.5 percent) of total development cost.

We understand the hard construction costs have been drawn from conceptual estimates provided by Shaw Construction. Horizontal and vertical costs are estimated to total about $174,000 per unit or $210 per square foot. An additional FF&E allowance of $2,150 per unit is included, for total hard costs of about $214 per square foot. The estimates provided by Shaw are typical of infill

redevelopment projects with dense multi-family construction and smaller unit sizes.[1] Horizontal costs to prepare the site represent about nine percent of total hard costs.

Soft costs (before any financing fees) are estimated at $6.9 million or approximately $27,000 per unit, representing 12 percent of the total development cost. Municipal permitting, plan review, impact fee, utility tap fees, and local construction use tax represent the largest category of soft costs at $2,037,000 or about $8,000 per unit.[2] Architecture and engineering fees are estimated at about $2.0 million; a reasonable budget assumption that represents less than five percent of hard construction costs. An additional developer fee of approximately $1.8 million is included, representing a fee equal to about four percent of the hard construction cost budget. All other soft costs (for expenditures related to legal, consultants, insurance and title, tax, marketing, etc.) are estimated to total just under $1.1 million or two percent of total development cost.

Financing costs of approximately $14,000 per unit or six percent of overall development cost are included. This assumes a three-year construction loan with a 4.0 percent annual interest rate and initial loan fees/points of 1.5 percent. (See Page 10 for additional financing and investment assumptions).

The estimate of total development cost does not include any cost contingency allowance. Applying a typical five percent contingency factor suggests a total proforma cost of $61.1 million or $239,000 per unit.

MARKET AND OPERATING PARAMETERS

Perspective on Apartment Rents

Limited new market-rate apartment inventory has been delivered over the prior 10 years although physical vacancy/availability remains very low.

The Railyard development, delivered in February 2021, is the only recent multi-family development of significance. The 196-unit property has reportedly been fully leased within about eight months and has a waiting list. CoStar indicates average asking rent of $1,330 or $1.45 per square foot. The unit mix and sizes are larger than proposed for the City Market site, with an average unit size of 919 square feet according to CoStar.

[1] For example: a proposed project that GG+A recently reviewed in Pueblo, Colorado had a hard construction cost budget of about $200 per square foot. This was for a similar commercial site redevelopment into a four-story wood frame apartment building with 220 units.
[2] The estimate reflects Plant Investment Fee and traffic impact fee credits equaling about $840,000.

Table 5 summarizes rents for apartment units within three miles of the redevelopment site, as well as "Fair Market Rents" by bedroom for Mesa County (estimated by the U.S. Department of Housing and Urban Development).

TABLE 5: Historical Apartment Market Trends

	Historical		10-Year	
	2011	2021	Change	AAGR
Market 3-Mile Radius:[1]				
Effective Rent Per Unit	$870	$1,080	$210	2.2%
Effective Rent Per Square Foot	$1.11	$1.36	$0.25	2.1%
Physical Vacancy Rate	5.7%	2.4%	-3.3 (pct points)	
Fair Market Rents (Per Unit):[2]				
Studio	$569	$682	$113	1.8%
1 BR	$571	$781	$210	3.2%
2 BR	$685	$1,026	$341	4.1%

[1] CoStar estimates for inventory within three miles of 200 Rood Avenue.
[2] HUD Fair Market Rents for Mesa County (2012 and 2022 fiscal years).

Sources: CoStar; HUD; Gruen Gruen + Associates.

Market rents have exhibited a long-term pattern of escalation although absolute and per-square-foot market rents generally remain very low. According to CoStar, rents per unit within three miles of the redevelopment site have increased from about $870 per month in 2011 to $1,080 per month in 2021. This equates to an average annual growth rate of 2.2 percent. On a per square foot basis, market rents have increased at a rate of 2.1 percent from $1.11 per square foot in 2011 to $1.36 per square foot in 2021.

Rents for the broader existing apartment inventory are low. For studio, one bedroom, and two-bedroom units throughout Mesa County, average market rents range from $682 for studio units to $1,026 for two-bedroom units according to HUD estimates.

Market and Affordable Rent Estimates

Table 6 presents an estimate of potential rents for the market rate units and "affordable" rents on the 10 percent of units proposed to be restricted to households at 80 percent of Area Median Income (AMI).

TABLE 6: Estimated Average Monthly Rents

	Market Rate [1]		Affordable [2]		TOTAL	
	Per Unit	PSF	Per Unit	PSF	Per Unit	PSF
Studio	$1,100	$2.18	$1,030	$2.04	$1,093	$2.17
One-Bedrooms	$1,300	$2.01	$1,103	$1.70	$1,281	$1.98
Two-Bedrooms	$1,600	$1.59	$1,324	$1.31	$1,571	$1.56
TOTAL	**$1,268**	**$1.93**	**$1,121**	**$1.70**	**$1,254**	**$1.90**

[1] 231 market-rate units.
[2] 25 below market units affordable to households at 80% AMI.

Sources: CoStar; Richmark Companies; CHFA; Gruen Gruen + Associates.

The financial feasibility analysis assumes (perhaps optimistically) that obtainable market rents in today's dollars will be significantly higher than prevailing market rents, including well above the rents attained by the newest Railyard development. Rents for the market rate units are assumed to average $1,268 per unit or $1.93 per square foot. Studio and one-bedroom units are assumed to rent for more than $2.00 per square foot on average, while two-bedroom units are assumed to rent for about $1.60 per square foot.

Rents for 25 below-market units are estimated based on the assumption that the units would be affordable to households with incomes of 80 percent of AMI. Rent and income limits for tax credit housing in 2021 (as published by the Colorado Housing and Finance Authority) are applied to these units. As a result, rents are lower than market rate units by about 12 percent. Affordable rents range from approximately $1.30 to $2 per square foot.

Additional non-rent income is included at $1,000 per unit annually to account for utility reimbursements, pet fees, application charges, and so forth.

Lease-Up and Occupancy

The existing multi-family rental inventory has remained extremely well occupied with little effective vacancy to accommodate demand. Information provided by the developer indicates that the project is anticipated to be fully occupied and leased within one year following completion of construction. The financial feasibility analysis assumes that 50 units are pre-leased (about 20 percent of units), and that 25 units are absorbed each month thereafter. Upon stabilization, a five percent vacancy rate and credit loss factor is applied to gross rental income.

Operating Expenses

The financial feasibility analysis is based on operating expense estimates including:

- Property management fee equal to three percent of effective gross income;
- Additional variable expenses (such as payroll, general maintenance/repairs, etc.) equal to 20 percent of effective gross income;
- Annual utility expenses of $700 per unit;
- Annual property taxes equal to $800 per unit (assumes taxable value of $150,000 per unit); and
- Annual insurance costs equal to 0.25 percent of replacement (hard construction) costs.

These assumptions represent total operating expenses equal to about 35 percent of effective gross income at stabilized occupancy, as summarized on Table 7.

TABLE 7: Estimate of Stabilized Operating Expense (in $2021)

		Annual Expense	
	% of EGI [1]	Per Unit	Total
Property Management Fee	3.0%	$457	$117,052
Payroll/Personnel	10.0%	$1,524	$390,175
Other Variable Expenses [2]	10.0%	$1,524	$390,175
Utilities		$700	$179,200
Insurance		$395	$101,081
Property Tax		$800	$204,800
TOTAL	**35%**	**$5,400**	**$1,382,482**

[1] Percent of Effective Gross Income.
[2] G&A, marketing, repairs and maintenance, etc.

Sources: Richmark Companies; National Apartment Association; Gruen Gruen + Associates.

Total annual expenses are estimated at over $1,382,000.

INVESTMENT AND FINANCING PARAMETERS

Table 8 summarizes the financing and investment parameters upon which the financial feasibility analysis is based.

TABLE 8: Financing and Investment Parameters

	Base Case
Timing:	
Construction Period	18 months
Investment Holding Period	10 years
Capital Stack:	
Equity	39.5%
Debt [1]	60.5%
Minimum Debt Coverage [1]	1.25x
Interim/Construction Financing:	
Annual Interest Rate	4.0%
Loan Fees/Points	1.5%
Duration	36 months
Permanent Financing:	
Annual Interest Rate	4.0%
Term	7 years
Amortization	30 years
Property Sale:	
Exit Capitalization Rate	5.5%
Cost of Selling	2.0%

[1] Supportable permanent mortgage at 1.25x debt service coverage.

Sources: Richmark Companies; Gruen Gruen + Associates.

Financial parameters include equity and debt terms, construction and permanent loan arrangements, and capitalization rates. The construction process is assumed to be completed in 18 months and the property is assumed to be held for 10 years. A construction loan is assumed to be obtained for 36 months at an interest rate of four percent plus loan fees of 1.5 percent. A permanent loan is assumed to be obtained to retire the construction loan once the property is leased and stabilized. The permanent mortgage is assumed to have an annual interest rate of 4.0 percent and a loan amortization schedule of 30 years over a seven-year term. The property is assumed to be sold in year 10 at a capitalization rate, or buyer's required yield on the purchase of the developed property, of 5.5 percent. The cost of selling the property is estimated at two percent of the value of the transaction.

RESULTS OF FEASIBILITY ANALYSIS

Table 9 summarizes the results of the financial feasibility analysis. The "base case" results are bracketed by two scenarios illustrating the potential effects of variations to (a) the sale year capitalization rate; and (b) the average rate of rent escalation over the cash flow projection.

TABLE 9: Results of Financial Feasibility Analysis

	Low (5.25% Cap Rate; 3.5% Rent Escalation)	**Base Case (5.5% Cap Rate; 3% Rent Escalation)**	High (5.75% Cap Rate; 2.5% Rent Escalation)
Investment Results:			
Internal Rate of Return	6.1%	**4.1%**	1.9%
Cash-on-Cash Return [1]	3.1%	**2.9%**	2.7%
Yield-on-Cost (Stabilized)	4.4%	**4.4%**	4.3%
Total Development Cost [2]	$61.1 M	**$61.1 M**	$61.1 M
Market Value (Year 10 Sale)	$63.2 M	**$58.0 M**	$53.4 M
Equity Investment	$24.1 M	**$24.1 M**	$24.1 M
Permanent Debt	$37.0 M	**$37.0 M**	$37.0 M
Permanent Debt Coverage Ratio [3]	1.25x	**1.25x**	1.25x

[1] Average over first five stabilized years.
[2] Land, hard, soft, and financing costs. Includes five percent (5%) contingency factor.
[3] Upon stabilized occupancy.

Source: Gruen Gruen + Associates

Under the base case scenario without factoring in the requested assistance the leveraged IRR would be well below a feasibility threshold at only 4.1 percent. The cash-on- cash return would be below the cost of debt at 2.9 percent and the yield on cost would be only 4.4 percent. The value of the completed and leased building even in year 10 (after several years of rent escalation) would still be less than the cost of developing the building.

Even with even more optimistic assumptions about rent growth (exceeding rent growth experienced historically) and a very low capitalization rate on the future sale of the property, the financial returns would be insufficient to attract and support equity investment. A more conservative and perhaps more realistic set of assumptions summarized on the right-hand column of Table 9 shows the proposed redevelopment would nearly be "underwater" and extremely infeasible with an IRR well below the cost of debt and returns not significantly higher than would be earned in an extremely safe

investment such as government or corporate bonds that would require no entrepreneurial and management efforts.

Estimated Size of Feasibility Gap

Table 10 summarizes the leveraged (i.e., equity) cash flows under the three scenarios.

TABLE 10: Leveraged Cash Flows and Size of Feasibility Gap

	Low (5.25% Cap Rate; 3.5% Rent Escalation)	Base Case (5.5% Cap Rate; 3% Rent Escalation)	High (5.75% Cap Rate; 2.5% Rent Escalation)
Year 1	($24,127,710)	($24,127,710)	($24,127,710)
Year 2	$11,306	$11,306	$11,306
Year 3	$2,507,561	$2,495,447	$2,483,333
Year 4	$560,643	$534,632	$508,747
Year 5	$655,095	$614,811	$574,916
Year 6	$752,854	$697,396	$642,739
Year 7	$854,034	$782,458	$712,257
Year 8	$958,756	$870,072	$783,514
Year 9	$1,067,143	$960,314	$856,552
Year 10	$31,338,810	$26,151,895	$21,481,046
Total (Profit)	$14,578,493	$8,990,620	$3,926,700
Leveraged IRR	*6.1%*	*4.1%*	*1.9%*
Size of Feasibility Gap @ 18% IRR Hurdle Rate [1]	**($13,342,278)**	**($14,664,025)**	**($15,866,801)**

[1] Leveraged (i.e., equity) cash flows discounted at 18% annual rate.

Source: Gruen Gruen + Associates

The basic conclusion is that the amount of upfront subsidy or public assistance may range (in order-of-magnitude) from $13 million to $16 million under the estimates and assumptions outlined above.

Feasibility Gap Compared to Initial Request for Assistance

We understand an initial term sheet provided to the City outlined several sources of requested assistance, including waiver of all municipal fees and construction use tax, a sale-leaseback for a portion of the site, and future payments from the DDA or City through 2039.

Table 11 summarizes the request and the estimated present value of the incentive package.

TABLE 11: Incentive Shortfall

	Nominal Value	**Present Value [1]**
Municipal Fee Waivers	$2,037,000	$2,037,000
Land Sale-Leaseback	$1,500,000	$1,500,000
DDA/City Payments (2023-2039)	$6,950,000	$4,336,901
TOTAL INCENTIVES	$10,487,000	**$7,873,901**
Estimated Upfront Feasibility Gap (Base Case)		($14,664,025)
INCENTIVE SHORTFALL		**($6,790,124)**

[1] Future DDA/City payments discounted to 2022 dollars at 5.0% interest rate.

Source: Gruen Gruen + Associates

If future DDA payments are discounted at five percent annually, the requested assistance would fill a present value funding "gap" equal to about $7.9 million. As reviewed previously, the financial feasibility analysis indicates the gap is much larger at about $14.7 million (under the base case assumptions for capitalization rate and rent growth). The difference implies a shortfall of nearly $6.8 million. That is, for the equity investor to obtain a hurdle rate or feasible return commensurate with the risks, considerably more assistance than outlined in the term sheet would be required. Assuming Richmark is prepared to implement the project in accordance with the term sheet, under the base case forecast anticipate a relatively low return on investment.

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THE ECONOMIC AND FISCAL IMPACTS OF THE PROPOSED CITY MARKET REDEVELOPMENT IN DOWNTOWN GRAND JUNCTION, COLORADO

Memorandum Report to

RICHMARK COMPANIES

From

GRUEN GRUEN + ASSOCIATES
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GRUEN GRUEN + ASSOCIATES
MEMORANDUM

Date:	October 15, 2021
To:	Adam Frazier and Tyler Richardson, Richmark Companies
From:	Gruen Gruen + Associates
Subject:	**Economic and Fiscal Impacts of Proposed City Market Redevelopment**

INTRODUCTION

This memorandum report by Gruen Gruen + Associates ("GG+A") presents estimates of the economic and fiscal impacts of the proposed City Market redevelopment on the local economy and City of Grand Junction.

The economic impact estimates relate to one-time construction activity and ongoing household spending (upon lease-up and occupancy of the apartment units). Estimates are presented in terms of employment, labor income, and output created in Mesa County.

The fiscal impacts refer to tax revenue benefits to the City of Grand Junction and its Downtown Development Authority. Estimates are made for City sales tax revenues and incremental property tax revenues.

SUMMARY OF IMPACT ESTIMATES

Table 1 summarizes the average annual economic impacts of project construction and operations on the Mesa County economy.

TABLE 1: Summary of Economic Impacts on the Mesa County Economy

	Total Economic Impact
One-Time Construction Activity:	
Job-Years Created [1]	553.5
Total Labor Income	$31,305,551
On-Going Permanent Activity:[2]	
Annual Employment	116.1
Annual Labor Income	$3,898,330
Annual Output	$14,732,917

[1] One job-year equals one construction-related job for period of one year.
[2] Related to household spending.

Sources: Bureau of Economic Analysis (BEA), *RIMS II Multipliers*; Gruen Gruen + Associates

The one-time construction activity is forecast to support 554 job-years and generate approximately $31 million of labor income within Mesa County over the 18-month construction period.

At build-out, the on-going spending of households is forecast to support approximately 116 permanent jobs within the local economy with annual labor income of about $3.9 million ($34,000 per job). On-going spending is forecast to generate total annual economic output in Mesa County of just under $15 million.

Table 2 summarizes the estimated fiscal impacts the occupants of the proposed project will generate.

TABLE 2: Summary of Fiscal Impacts

	Annual Revenues
City of Grand Junction Sales Tax	$206,248
DDA Property Tax Increment [1]	$170,436
Total	**$376,684**

[1] Relative to 2020 assessed value of the existing City Market property; assumes 100% share of new increment stays with DDA.

Source: Gruen Gruen + Associates

City of Grand Junction sales tax revenue is estimated at $206,000 annually upon full occupancy of the project. Annual property tax increment is estimated at $170,000 upon completion of the development.

Total property tax increment and sales tax revenue over the first 20 years following completion of the development is estimated at $9,152,000. This assumes five percent escalation to assessed value upon each two-year reassessment, and 2.5 percent annual escalation to household spending and sales tax.

METHODOLOGY AND TYPES OF ECONOMIC IMPACTS ESTIMATED

The economic impacts quantified in this report are presented in terms of:

1. Employment (full- and part-time jobs);
2. Labor income (wages, salaries and proprietor income); and
3. Output (the value of goods and services produced or sold).

Development of the project will cause an economic impact beyond the direct expenditures associated with construction and the on-going activities. Secondary or "multiplier" effects result from increased production in industries affected by direct changes in local economic activity. These secondary impacts are referred to as indirect and induced effects.

Direct Economic Impacts

Direct impacts are the number of jobs, income, and output produced in industries directly affected by construction and the on-going operations/occupancy of the development. For the one-time construction expenditures, the direct impact is measured by the number of jobs, income, and output in the economic sectors directly related to the construction process. The direct impact can be quantified in terms of the total local expenditure to construct the development. Direct impacts attributable to the on-going operations of the project are based upon the number of households expected to occupy the apartment units and their annual incomes.

Indirect Economic Impacts

Indirect impacts, sometimes referred to as "multiplier effects", relate to changes in the number of jobs, income, and output produced within a local economy, based on interdependencies among economic sectors. Businesses buy products and services from each other, creating indirect impacts on other businesses. In other words, a change in one industry or business "ripples" through other industries or businesses. In addition to these indirect or spillover effects, indirect impacts also include what is sometimes referred to as induced impacts, or the impacts of increased household spending. The one-time construction expenditures and the on-going operations each generate different indirect impacts because of the specific interdependencies among different sectors of the local economy. For example, a portion of the wages paid to construction workers (direct employment) and a portion of the wages paid to employees of firms providing goods or services to the contractor (indirect employment) will then be spent locally to purchase goods and services (induced effect) in the local economy. Similarly, tenants of the apartment units will be paying rent. A portion of this rent will be used to pay wages and salaries to on-site employees of the property (e.g., maintenance workers, leasing office staff) who, in turn, will spend some of their wages in Grand Junction for the purchase of additional goods and services.

The magnitude of multipliers depend upon the extent to which businesses purchase their inputs from other businesses located in the same area, as contrasted with the purchase of inputs from businesses located outside the geographic area. Multipliers vary among industries and among regions. Larger and more diverse geographic areas will tend to have larger industry multipliers because of a greater likelihood of linkages within the area; in other words, an industry's inputs will be provided by other businesses within the same geographic area.

Data Source

RIMS II multipliers from the Bureau of Economic Analysis (BEA) are utilized for Mesa County, Colorado. The dataset used is the most current 2019 regional data.

2021 Constant Dollars

The figures presented in this report are expressed in constant 2021 dollars. That is, the possible effects of inflation or deflation on future economic activities or tax revenues are not quantified.

PROJECT CHARACTERISTICS

Characteristics of the proposed development which are used in estimating the economic and fiscal impacts are summarized in Table 3.

TABLE 3: Project Characteristics

	200 Rood Ave.
Hard and soft construction cost [1]	$48,272,000
Construction period	18 months
Project Households @ 95% Occupancy	243
Average Household Income	$72,995
Total Annual Household Income @ Build-out	$17,737,680

[1] Excludes development-related expenditures that are unlikely to generate local economic impacts (such as land acquisition, development fee, and construction financing).

Sources: Richmark Companies; Gruen Gruen + Associates.

Hard and soft construction expenditures for the 256-unit development are estimated at approximately $48 million. Municipal fees are requested to be waived, and therefore are not included. Additionally, land acquisition costs, the developer fee, and construction financing costs are not included as direct expenditures (many if not all these expenditures could "leak" out of the local economy).

Upon 95 percent occupancy of the completed development, total annual household income (of project occupants) is estimated at more than $17.7 million. Table 4 summarizes the derivation of the household income estimate.

TABLE 4: Estimate of Annual Household Income

	Market Rate Units	Affordable Units (80% AMI)	Total / Average
Average Monthly Rent	$1,268	$1,121	$1,254
Rent as Percent of Income	20.0%	30.0%	20.6%
Average Annual Income	$76,080	$44,840	$72,995
Number of Households [1]	219	24	243
Annual Household Income	**$16,661,520**	**$1,076,160**	**$17,737,680**

[1] Assumes a five percent (5%) vacancy factor to be conservative.

Source: Gruen Gruen + Associates

Market rate housing units are projected to rent for $1,268 monthly on average. Assuming that rent payments represent 20 percent of before-tax income[1], the average annual household income of market rate tenants is projected at $76,080. Based on 2021 income and rent limits for Mesa County, the average household income of tenants that would qualify for the "affordable" units (restricted to 80 percent of AMI) is estimated at $44,840.

[1] 2019 American Community Survey data for Mesa County indicates that 58 percent of all renters with incomes above $50,000 expend less than 20 percent of their income on housing.

ECONOMIC IMPACT ESTIMATES

Table 5 summarizes the one-time economic impact of construction activity on the Mesa County economy.

TABLE 5: Average Annual Construction Impact[1] on Mesa County Economy

	Employment[2]	Income	Output
Direct Effects	197.2	$13,428,786	$32,181,333
Indirect/Induced Effects	171.8	$7,441,582	$23,966,783
Total Effects	**369.0**	**$20,870,367**	**$56,148,116**
Multiplier	*1.87*	*1.55*	*1.74*

[1] Construction is assumed over an 18-month period.
[2] Total full- and part-time jobs.

Sources: Bureau of Economic Analysis (BEA), *RIMS II Multipliers*; Gruen Gruen + Associates

Construction activity is forecast to support an average of 369 jobs per year during the construction period (18 months). Construction activity is forecast to directly support 197 jobs per year. The employment multiplier of 1.87 indicates that, for every 10 jobs directly associated with the construction process, an additional 8.7 jobs will be supported indirectly within Mesa County. Approximately 172 annual jobs are forecast to be supported indirectly by construction expenditures. The total annual labor income impact is estimated at approximately $21 million or approximately $57,000 per job. The income multiplier of 1.55 indicates that for every $1 in wages paid to workers directly associated with the construction process, an additional $0.55 in income will be generated elsewhere in the local economy. Total annual output is forecast to average $56 million throughout the construction process.

Table 6 summarizes the forecast average annual economic impact of household spending at build-out on the local economy.

TABLE 6: Annual On-Going Impact on Mesa County Economy

	Employment[1]	Income	Output
Induced Effects	**116.1**	**$3,898,330**	**$14,732,917**

[1] Total full- and part-time jobs.

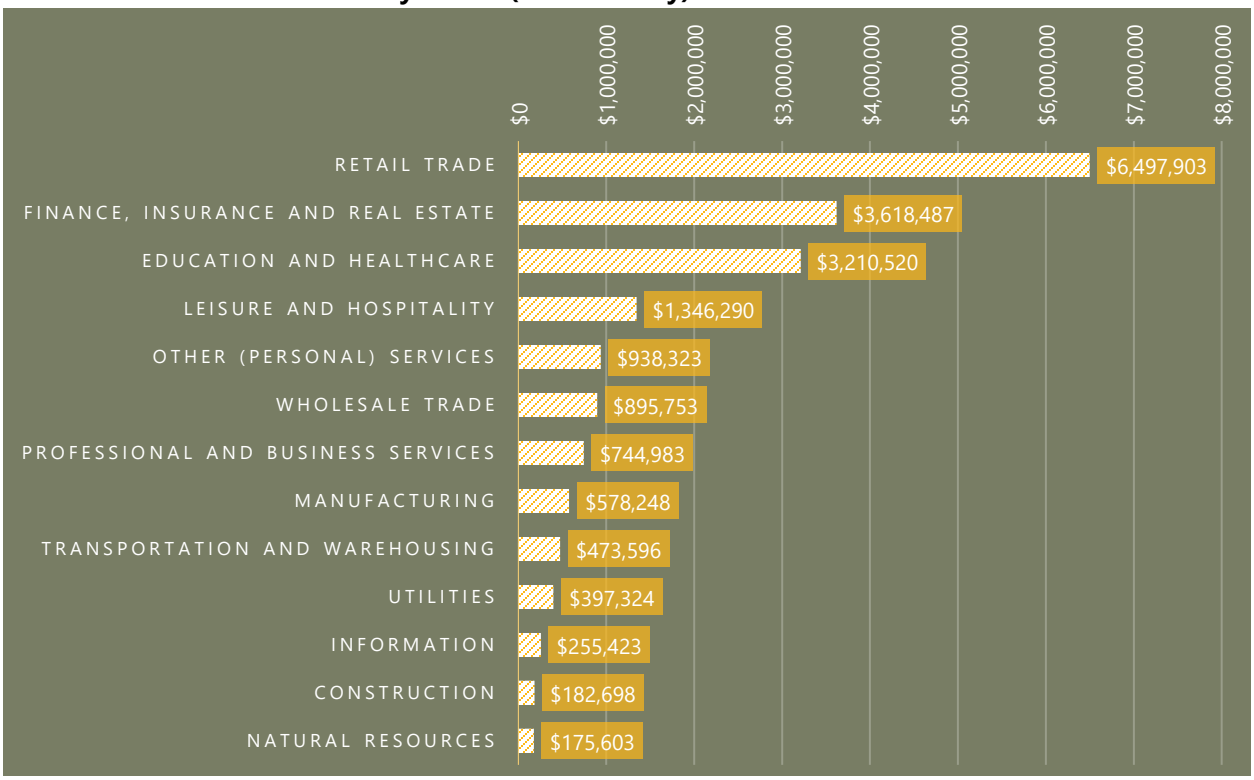
Sources: Bureau of Economic Analysis (BEA), *RIMS II Multipliers*; Gruen Gruen + Associates

The personal expenditures of project households at build-out are estimated to support 116 jobs and associated labor income of nearly $3.9 million ($34,000 per job on average) within the local economy.

The direct spending of households occupying units in the multi-family apartment building is estimated to generate approximately $14.7 million in economic output within Mesa County economy.

Figure 1 summarizes an estimate of annual gross sales supported by household spending.

FIGURE 1: Annual Gross Sales by Sector (Mesa County)



Most economic activity associated with household spending is concentrated in three sectors: retail trade, finance, insurance and real estate, and education and healthcare. Household expenditures are estimated to support nearly $6.5 million in retail trade sales, $3.6 million in finance, insurance and real estate services, and $3.2 million in educational and healthcare services.

FISCAL IMPACT ESTIMATES

The market value of the completed development is estimated at $47.8 million or $187,000 per apartment unit. Total assessed value is estimated at approximately $3,418,000 upon full assessment. Table 7 presents an estimate of annual property tax increment.

TABLE 7: Estimate of New Property Tax Increment within DDA

	200 Rood Ave
Market Value of Completed Development [1]	$47,800,000
Residential Assessment Rate	7.15%
Total Assessed Value at Full Assessment	$3,417,700
Current Asssessed Value [2]	($1,105,290)
Additional Assessed Value	**$2,312,410**
Current Mill Levy (Tax Rate)	7.3705%
Property Tax Increment (Annual)	**$170,436**

[1] Estimated land acquisition and hard construction costs.
[2] 2020 assessment for PIN 2945-143-12-016.

Sources: Mesa County Assessor; Gruen Gruen + Associates.

The property is currently on the tax roll with an assessed value of just over $1.1 million. The completion of the proposed redevelopment would represent a $2.3 million increase in the assessed value. Based on the current tax rate of about 7.37 percent, property tax increment (relative to the 2020 value) is estimated at about $170,000 annually.

Table 8 summarizes an estimate of City of Grand Junction sales tax revenue that will be generated by household spending.

TABLE 8: Estimate of Annual City Sales Tax Revenues

	Retail Trade	Eating & Drinking	Other	Total [2]
Countywide Gross Sales	$6,498,000	$887,000	$1,039,000	$8,424,000
City Capture Rate	*75.0%*	*75.0%*	*75.0%*	
Annual Gross Sales in City	$4,873,500	$665,250	$779,250	$6,318,000
Percent Taxable	*85.0%*	*100.0%*	*75.0%*	
Annual Taxable Sales in City	**$4,142,000**	**$665,000**	**$584,000**	**$5,391,000**
Effective Sales Tax Rate [1]	3.826%	3.826%	3.826%	
Annual City Sales Tax Revenue	**$158,464**	**$25,441**	**$22,343**	**$206,248**

[1] Includes City sales tax rate (3.25%) plus City share of County sales tax rates.
[2] Includes sectors subject to sales/use tax including Construction, Utilities, Entertainment/Recreation, and Accommodations.

Source: Gruen Gruen + Associates

Upon full occupancy of the project, gross sales in industry sectors that generate most sales tax revenues are estimated at $8.4 million annually within Mesa County. We assume that the City of Grand Junction will capture 75 percent of these sales,[2] indicating annual gross sales within the City of approximately $6.3 million. Not all sales generated directly or indirectly from household spending will be subject to sales tax (e.g., food for home consumption). Annual sales subject to City sales tax are estimated at $5.4 million.

The City imposes a 3.25 percent local sales tax. The City also receives a portion of the County tax rate on sales within City limits, amounting to an additional 0.576 percent tax rate.[3] Total annual City sales tax revenues are estimated at $206,000.

[2] In 2020, approximately 65 of taxable sales in Mesa County occurred within the City of Grand Junction.

[3] The City "share" of the County's two percent sales tax rate is 27.5 percent. The City share of the 0.37 percent add-on public safety sales tax rate is 6.97 percent.

Table 9 summarizes an estimate of the total sales tax and property tax increment that will be generated over the first 20 years following completion of the development.

TABLE 9: Total Property Tax Increment and Sales Tax over 20 Years

Year	Calendar Year	Property Tax Increment[1]	City Sales Tax[2]	Total
1	2023	$44,485	$51,562	$96,047
2	2024	$170,436	$206,248	$376,684
3	2025	$178,958	$211,404	$390,362
4	2026	$178,958	$216,690	$395,648
5	2027	$187,906	$222,107	$410,013
6	2028	$187,906	$227,660	$415,565
7	2029	$197,301	$233,351	$430,652
8	2030	$197,301	$239,185	$436,486
9	2031	$207,166	$245,164	$452,331
10	2032	$207,166	$251,294	$458,460
11	2033	$217,525	$257,576	$475,100
12	2034	$217,525	$264,015	$481,540
13	2035	$228,401	$270,616	$499,016
14	2036	$228,401	$277,381	$505,782
15	2037	$239,821	$284,316	$524,136
16	2038	$239,821	$291,423	$531,244
17	2039	$251,812	$298,709	$550,521
18	2040	$251,812	$306,177	$557,989
19	2041	$264,402	$313,831	$578,234
20	2041	$264,402	$321,677	$586,079
	20-Year Total	**$4,161,505**	**$4,990,385**	**$9,151,890**

[1] Tax increment relative to 2020 assessment of existing City Market property. Assumes 5% escalation to assessed value every two years.
[2] Assumes 2.5% annual escalation to household spending and therefore sales tax revenues.

Source: Gruen Gruen + Associates

Total property tax increment over the first 20 years is projected to total nearly $4.2 million. This assumes five percent escalation to assessed value upon each two-year reassessment. Total City sales tax revenue is projected to total nearly $5.0 million over 20 years, assuming 2.5 percent annual escalation to household spending (and therefore sales tax revenue). Total revenue over the first 20 operating years of the development is estimated at $9,152,000.

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The Effect of New Market-Rate Housing Construction on the Low-Income Housing Market

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The Effect of New Market-Rate Housing Construction on the Low-Income Housing Market

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ABSTRACT

Increasing supply is frequently proposed as a solution to rising housing costs. However, there is little evidence on how new market-rate construction—which is typically expensive—affects the market for lower quality housing in the short run. I begin by using address history data to identify 52,000 residents of new multifamily buildings in large cities, their previous address, the current residents of those addresses, and so on. This sequence quickly adds lower-income neighborhoods, suggesting that strong migratory connections link the low-income market to new construction. Next, I combine the address histories with a simulation model to estimate that building 100 new market-rate units leads 45-70 and 17-39 people to move out of below-median and bottom-quintile income tracts, respectively, with almost all of the effect occurring within five years. This suggests that new construction reduces demand and loosens the housing market in low- and middle-income areas, even in the short run.

JEL Classification Codes: R31, R21, R23

Key Words: housing supply; housing affordability; filtering

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1 Introduction

Housing costs have risen rapidly relative to income over the past 60 years in the United States, particularly in large and economically successful cities (Albouy, Ehrlich, and Liu 2016). This trend has important economic implications—Hseih and Moretti (2019) suggest that rising costs slow aggregate economic growth by limiting the number of workers in high-productivity cities, while Albouy, Ehrlich, and Liu (2016) and Ganong and Shoag (2017) find that the pattern increases real income inequality.

A heated debate on how to reduce housing costs has emerged, and one frequently proposed solution is relaxing land-use regulation and increasing housing supply.[1] While the effect of such policies is obvious in a simple model of homogenous housing units, housing is highly differentiated—new construction is predominately expensive and quite different from units that are affordable to lower-income households. If the housing market is highly segmented, with few households searching or moving across dissimilar housing types, an increase in the supply of expensive new units could have little effect on the market for lower-income housing. The strength of this relationship is crucial to policymakers considering reforms that increase market-rate construction, who must weigh benefits against costs such as objections from neighbors, concerns of gentrification, and reduced political capital for subsidized units or housing vouchers (Been, Ellen, and O'Regan 2019). However, there is little related empirical evidence, especially in the short- or medium-run most relevant to the current debate.[2]

In this paper, I use a large sample of address-level individual migration histories to provide evidence that new market-rate construction substantially loosens the market for middle- and low-income housing by inducing a series of moves that reduces demand for these areas. The effect occurs within a few years of the new units' completion. I begin my analysis with a simple model of new housing construction in a market with three quality tiers or submarkets, in which new high-quality construction lowers prices for lower quality units through a "migration chain" mechanism.[3] Some households who would have otherwise

[1] See, for example, Minneapolis and Oregon's recent prohibitions of single-family zoning or the California State Senate's rejected proposals (including State Bills 827 and 50) to loosen local zoning restrictions.

[2] Rosenthal (2014) shows that new units "filter" to become more affordable as they depreciate over the course of decades but does not study their effect on existing units or the broader housing market.

[3] Grigsby (1963) develops an initial theory of housing submarkets, and Rothenberg et al. (1991) further develop the idea into a model of a system of interconnected submarkets.

occupied cheaper units move into new units, reducing demand and lowering prices for the units they leave vacant. The process iterates when a second round of households moves into the units the first round left vacant and so on, eventually reducing prices in low-income areas.[4] However, whether this chain actually reaches such areas in the real world depends on two key factors. A chain has some chance of ending in each round, whether it is due to household formation, a unit being used as a second home, out-of-metro migration, or landlords not reducing rents enough to fully fill vacancies. The longer a chain lasts, the more likely it eventually draws households out of lower quality housing. Second, the stronger the migratory connections between lower quality housing and new housing, the more likely that a chain reaches a lower quality unit in any given round.

Next, I use individual address history data from Infutor Data Solutions to conduct three related empirical exercises. I first broadly consider migratory connections between neighborhoods in 12 major metropolitan areas (CBSAs) and find strong connectivity between census tracts with slightly different characteristics. Individuals originating in, say, the fifth income decile frequently move to the fourth or seventh decile, but rarely the tenth or first. This pattern implies that distinct submarkets exist, but that even quite different areas are connected by a short series of common moves.

In my second exercise, I sharpen focus to the connectivity between new construction and low-income areas and exploit the data's granularity to track moves at the building level. I identify 686 large new market-rate multifamily buildings in central cities and track 52,000 of their current residents to their previous building of residence. I then find the tenants currently living in those buildings and track them to their previous residence, iterating for six rounds and, in order to focus on local connectivity, keeping only within-CBSA moves in each round. About 20 percent of new building residents moved in from tracts with below CBSA-median income, and that proportion rises steadily to 40 percent in round six. Similar patterns emerge for other characteristics, suggesting strong connections between submarkets that are inconsistent with a highly segmented market in which new construction does not affect low-income areas. The results also highlight the geographically diffuse nature

[4]Kristoff (1965) was perhaps the first to formulate this mechanism. Similar results occur in richer models, such as Sweeney (1974), Braid (1981), and Nathanson (2019).

of migration chains—only 30 percent of round six originates within the CBSA central city.

The first two exercises show connectivity that strongly suggests that new construction will affect middle- and low-income areas, but they do not provide a quantitative estimate of this effect. To fill this gap, I run a more detailed simulation that allows migration chains to end in each round and households to move whether or not a new unit is built. This simulation allows me to estimate an intuitive metric of a new unit's effect on other submarkets (defined according to tract characteristics). I define the number of "equivalent units" a new unit produces in a submarket—say, below-median income tracts—as the probability that its migration chain reaches such an area before ending. The intuition behind this metric is simple: inducing a household to leave a submarket is similar to building a new (depreciated) unit in that submarket. The chain reduces demand by one, while building a unit increases supply by one. I focus on this quantity-based outcome because the diffuse nature of migration chains makes estimating a price effect difficult, and it also fits naturally in the policy debate, where "inclusionary zoning" ordinances require developers to build some income-restricted units for each market-rate unit.[5]

While I cannot directly observe either when chains end or where a household would have lived if a new building was never constructed, I use data on vacancy rates, household formation, and within- and across-metro migration to construct a range of reasonable assumptions. In my baseline specification, 100 new market-rate units create 70 equivalent units in below-median income tracts and 39 in bottom-quintile income areas. In my most conservative specification, in which chains end with a much higher probability, I find 45 and 17 equivalent units in below-median and bottom-quintile income areas, respectively. These figures compare favorably to the 5 to 20 income-restricted units that would be required by typical inclusionary zoning ordinances—the connectivity implied by the migration data is strong enough that migration chains frequently reach low-income areas even if they end at a relatively high rate. The effect also appears to cross racial lines. Even for tracts that are in the bottom quintile of percent white and below median income, estimates range from 23 to 49, though these areas are a small percent of the typical CBSA.[6] Effects should be fully

[5]Schuetz, Meltzer, and Been (2009) and Thadden and Wang (2017) provide summaries of inclusionary zoning policies in the United States.

[6]Note that these equivalent unit numbers in different housing types should be considered separately

felt within two to five years.

The results from each of these exercises suggest that new market-rate housing construction loosens the market for middle- and low-income housing, even in the short run. This points to an important role for policies that increase construction, as well as less formal interventions such as policymakers pushing development proposals through the often onerous approval process. However, a caveat is that I do not estimate price effects. Because the private market will not provide housing at below marginal cost, market-based strategies may not lower prices in neighborhoods with already very low prices. Alternative policies that either lower the cost of provision or subsidize incomes are likely necessary to improve affordability in such areas. Another limitation is that I study regional effects, and new buildings could have different effects on their neighborhood, where they may change amenities or demographic composition. Empirically, I only observe a housing unit's location, not characteristics or price, and my simulation requires assumptions on chain decay rate and where individuals would move in the absence of construction. I present some evidence that selection within tracts is minor and explore a variety of alternative assumptions.

This paper contributes to the literature on housing construction and housing prices, sometimes called the filtering literature,[7] and recent empirical work is particularly relevant. Rosenthal (2014) and Weicher, Eggers, and Moumen (2016) find that new units slowly become more affordable over time, particularly after entering the rental stock. Anenberg and Kung (2018) use a neighborhood choice model to estimate extremely small price effects of new housing. Their result may be driven by the assumption that each new unit induces a new migrant to a city, which Nathanson (2019) relaxes in a calibrated spatial equilibrium model, finding a much larger effect. More broadly, Piazzesi, Schneider, and Stroebel (forthcoming) use a model of a segmented housing market to show that a localized shock's broader effect depends heavily on connections between the shocked area and the rest of the market.

I build on this literature by using novel methodology and granular data to show that new housing has large short-run effects on middle- and low-income submarkets. A small literature

rather than summed together, because a new unit in one type starts a migration chain that may nest an equivalent unit in another.

[7]The term *filtering* has been used to refer to the distinct concepts of housing units becoming more affordable over time and households moving through different housing units, as well as other mechanisms.

has also studied migration chains, sometimes called "vacancy chains." Kristoff (1965) and Lansing, Clifton, and Morgan (1969) construct chains by interviewing households and find substantial decreases in income with each round. More recently, Turner (2008) and Turner and Wessel (2019) use administrative data on Stockholm and Oslo, respectively, to show that the series of moves from new construction is concentrated in high-income areas. I build on these papers by providing a metric to quantify a chain's effect on lower-income submarkets, by considering that households may have moved in the absence of new construction, and by using a new U.S. data source to study a number of large cities.

Finally, a large literature, reviewed by Gyourko and Molloy (2015), focuses on the adjacent question of how regulation affects housing construction and prices. Studies generally find that regulation increases prices and reduces construction,[8] but typically must contend with small samples where large geographic areas are the unit of observation, as well as endogenous and heterogeneous policies. I contribute to this literature by studying the effect of construction directly, making results relevant to a large set of policies. Additionally, I estimate effects on granular submarkets and use new methodology that is driven by detailed migratory patterns rather than price variation across large geographies.

2 Conceptual Framework

2.1 Baseline Model and Migration Chains

In this section, I first present a highly stylized model of new housing construction that is quite similar to the graphical examples in Rothenberg et al. (1991). I then use the model to illustrate both the migration chain concept and the equivalent unit metric. Lastly, I discuss how adding realistic complications to the model—household formation, vacation homes, out-of-metro migration, landlord market power—would cause some migration chains to end in each round, potentially before reaching lower income submarkets, highlighting that the magnitude of new housing's effect on such areas is an empirical question.

Consider a self-contained housing market with a unit mass of households, each of which

[8]See, for example, Ihlanfeldt (2007), Glaeser and Gyourko (2003), Glaeser and Ward (2009), and Quigley and Raphael (2005). Saiz (2010) finds similar results for geographic constraints.

has income $\alpha \sim f$ and lexicographic preferences over housing types and other consumption. Households have a strict preference for housing type H over M over L. As a baseline scenario, suppose that there is a mass of housing units $\vec{S} = \{S_M, S_L\} = \{.5, \infty\}$ that are rented out by perfectly competitive absentee landlords with no costs who cannot observe α.

Equilibrium is a vector of prices $\vec{P} = \{P_M, P_L\}$ and household locations $\vec{Q} = \{Q_M, Q_L\}$ such that households prefer their housing type to any other housing unit within their budget, landlords have no incentive to change their rent, and $Q_M = S_M, Q_L \leq S_L$. Equilibrium prices are then given by $\vec{P} = \{F^{-1}(0.5), 0\}$, and the higher tier of housing units is occupied by households with $\alpha \geq F^{-1}(0.5)$, while the lower tier is occupied by those with $\alpha < F^{-1}(0.5)$. For example, if $\alpha \sim U[0, 1]$, $\vec{P} = \{0.5, 0\}$.

Next, consider the equilibrium that would occur in the alternative scenario where there are q units of top-quality housing type H in the market, yielding $\vec{S} = \{S_H, S_M, S_L\} = \{q, .5, \infty\}$. In order to fully lease the top tier units, landlords will set $P_H = F^{-1}(1-q)$. The households in the top-tier units then have $\alpha \in [F^{-1}(1-q), 1]$ and lived in the middle tier in the baseline scenario. Because this group is not occupying type M units in this scenario, landlords must lower P_M to $F^{-1}(0.5-q)$ in order to attract lower budget households to these units. This induces households with $\alpha \in [F^{-1}(0.5-q), F^{-1}(0.5))$ to live in the middle tier instead of the bottom tier. Finally, because supply in the bottom tier is infinite and the price is zero, P_L does not change.[9] Adding new units thus affects prices in all but the bottom tier and improves housing quality for some households originating in every tier of the market. Braid (1981) and Nathanson (2019) show a similar result in more complex models.[10]

In the world of the model, one can evaluate the effect of high-end housing construction by simply comparing prices and household allocations between the two scenarios. In practice, this is impossible because only one of the two scenarios is observed. Empirical economists typically attempt to approximate the comparison by constructing a natural experiment or parameterizing and estimating a model. The migration chain approach instead follows a

[9]The null effect of new construction on bottom tier prices is a consistent theme in the filtering literature and is often cited as a limitation of market-based strategies (e.g., Rothenberg et al. 1991). The intuition is either a minimum cost of housing or defining the bottom tier as homelessness.

[10]These papers further show that new housing of any type will lower prices for all types. This occurs because, for example, new middle-tier construction induces some households to move down from the top tier to take advantage of lower prices, and is sometimes termed *filtering up*. In my model, new housing only lowers prices in qualities below the new construction because of the assumption of lexicographic preferences.

sequence of household moves to identify a set of people who occupy a different housing unit than they would have in the absence of construction. The migration chain from a particular new unit can be formalized as a vector C of housing types. The first element is the housing type of the new unit, and the second is the type of unit that the household in the new unit would have occupied in the baseline scenario, which is M in this example. The third element is the baseline-scenario unit of the household occupying the unit vacated by the second round (type L in the example).

The migration chain contains important information about the effect of new construction on other housing types. For any particular type, the decrease in prices caused by new construction depends directly on how many households are induced to move out of that type. Moreover, in this simple model, inducing m households to move out of the middle quality tier and building m new units directly in that tier have exactly the price effect—both lower P_M to $F^{-1}(0.5-m)$. This provides the intuition for my equivalent unit metric, where I say that a migration chain creates an equivalent unit in a given submarket if it reaches that submarket before ending. However, I note an important limitation of the migration chain approach—it does not account for complications such as amenity or neighborhood composition changes caused by the new building, which could affect prices in a more complicated model.

2.2 Why Migration Chains End

There are a number of real-world frictions outside of the model that end chains in each round, potentially before they reach lower-income areas. Starting with the supply side, some chains may end because landlords with market power do not lower prices by enough to completely fill the vacancies created by the chain. This would appear in the model as, for example, middle-tier landlords only lowering prices to $P_M = F^{-1}(0.5 - q/2)$. Heterogeneous costs incurred from renters with different housing budgets or discriminatory motives could also lead landlords to not fill all vacancies.

Frictions on the household side of the model can also end chains. First, a housing unit could be a second home or investment property, in which case the owner does not vacate their other unit. In addition, chains could end because a new household forms to fill the new unit. Lastly, if new units induce households to move in from outside the metropolitan

area, the subsequent benefit of the chain will not accrue to the area. While sources of chain decay frequently appear in the policy debate, they have only been accounted for to a limited extent in the theoretical literature.[11] One simple approach is to assume that some percent d of chains end in each round. In the example where q new top tier units are built, this would imply that only dq of the new units are filled, and only d^2q of the vacancies subsequently created in the middle tier are filled. In this case, P_M only falls to $F^{-1}(0.5 - d^2q)$ instead of $F^{-1}(0.5 - q)$.

An important complication is that these events only end a chain if a household takes an action that they would not have in the counterfactual world with no construction. For example, the chain only ends with a second home if the owner would not have bought a second home in the absence of new construction. This makes decay harder to assess empirically.

3 Data

3.1 Infutor Data

My primary data source is individual address histories from Infutor Data Solutions, which was recently introduced to the academic literature by Diamond, McQuade, and Qian (forthcoming). Infutor constructs this information from numerous private and public record sources—such as U.S. Postal Service change of address forms, county assessor records, magazine subscriptions, and phonebooks—and largely sells the data for use in targeted advertisements. Addresses are reported at the unit level and, since they are intended for use in direct mailing, are quite high quality. Each address is accompanied by an estimated date of arrival, and the data contain some limited demographics (age, gender) on each individual.

Because the data contain limited information on housing unit characteristics, I classify units based on their census tract and characteristics from the 2013–2017 American Community Survey (ACS). In addition, because the data track individuals rather than households, I assume that each person occupies a distinct unit. Since children and very young adults are essentially not included in the Infutor data, this assumption largely leads to weighting

[11] Nathanson (2019) and Braid (1991) discuss the importance of indivisible housing units for their results, a concept that can be mapped into second homes, and also consider across-MSA migration.

couples more heavily than singles, which may be appropriate given that the former typically occupy larger units.

I examine selection with a number of exercises comparing the Infutor data to established data sources.[12] The Infutor data closely track the census over-25 population at the tract level, with a median of 0.88 observations per census individual. The coverage rate is quite similar across demographic groups, as shown in Figure 1, which plots the ratio of the Infutor and census populations against tract characteristics. The largest differences appear between tracts with different racial composition, with a coverage rate of about 80 percent in the least white tracts versus 95 percent in the whitest tracts.

Because my study primarily uses this data to track household migration, Infutor's coverage of moves is also important. The data miss a substantial number of moves—the annual individual migration rate in the Infutor data is 5.4 percent, compared to the 9.8 percent reported in the Census Bureau's 2018 Current Population Survey. This could occur both because of difficulty linking individuals across moves and because the Infutor data has poor coverage of highly mobile young adults. However, because my study uses each move separately, it only requires that the moves that do appear in the Infutor data are randomly selected. To examine this, I next compute the average annual migration rate at the county level in the Infutor data and compare it to census estimates (which are not available at the tract level). Appendix Figure A.1 plots the ratio of the two estimates against county characteristics. Coverage appears to be relatively uncorrelated with county characteristics. There is a slight correlation with county income, where the ratio is about 0.38 in low-income counties and 0.45 in high-income counties. This correlation could lead to an underestimate of the number of individuals who move into a given neighborhood from a lower-income neighborhood.

Another potential concern is that Infutor may not have the correct endpoints for moves. For example, if a household moves from A to B to C, the data could record the move as from A to C, overstating the connectivity between A and C. To examine this, I compute the difference in destination and origin county median household income for moves reported in

[12]Because my exercise concerns large metro areas, I restrict the sample in these exercises to counties that are part of a core-based statistical area.

Infutor and in the IRS Statistics of Income data. The distributions are extremely similar, as shown in Appendix Figure A.2. In my simulation exercise, I also run robustness checks in which I remove moves across very different neighborhoods.

3.2 New Market-Rate Buildings

I identify new market-rate buildings using the Infutor data. I first collapse the individual-level data by street address and keep buildings with over 16 individuals.[13] I then identify new buildings as those where over 90% of current residents moved in since 2009 and keep only those that were completed prior to 2017 and are within five miles of the central business district.[14] Because the policy debate concentrates on relatively expensive new buildings, I keep only those that are in census tracts that are above the core-based statistical area (CBSA) median in either median household income or income per capita. Finally, I drop buildings—such as student housing, post offices, affordable or subsidized housing, and homeless shelters—that meet the previous criteria but are not market-rate apartments. The algorithm identifies both rental and owner-occupied buildings, as well as some renovated buildings whose previous use was not residential.

In my primary specification, I include 12 of the largest metropolitan areas in the United States: New York City, Chicago, Dallas, Houston, Washington, Philadelphia, Atlanta, Boston, San Francisco/Oakland, Denver, Seattle, and Minneapolis.[15] I define each metropolitan area according to the most recent definition of CBSAs. As shown in Table 1, I identify 52,432 individuals in 686 market-rate multifamily buildings constructed since 2009. The buildings are relatively evenly distributed across cities, with Seattle, New York City, and Chicago having the most (all over 80) and Philadelphia and Boston the least (under 20), and individuals are distributed similarly. About 67 percent of new building residents originate from an address within the same CBSA, and half originate from within the same city.

Figure 2 plots the locations of new market-rate buildings in Chicago, as well as the origin

[13] Given the data's coverage rate of approximately 90 percent, this implies over 20 individuals live in the building.

[14] I hand-checked a number of recently completed buildings to determine that the 10th percentile of arrival dates in a building provides a very good estimate of when a building was completed.

[15] I omit some large metropolitan areas, such as Los Angeles, that do not have a well-defined city center.

addresses of their current tenants.[16] Unsurprisingly, new buildings appear to be concentrated near the central business district, with some slightly farther in wealthy north and northwest neighborhoods. Building residents appear to come from largely wealthy areas, and virtually none come from zip codes with median household income below $30,000.[17]

Table 2 provides details on the location and size of the sample of new buildings. The median number of Infutor individuals living in a building is 60, and the mean distance to the central business district is 1.95 miles. Unsurprisingly, the buildings are located in very high-income and high-rent tracts—the sample restriction that buildings must be in above-median income tracts is generally not binding. Lastly, the buildings' tracts have relatively high vacancy rates: 10 percent on average and over 15 percent for many. This may reflect either a high rate of second homes—ACS vacancy rates include only primary residences as occupied—or strong market power for landlords of new buildings.

4 Descriptive Exercises

4.1 Migratory Connections between Neighborhoods

Before examining new housing directly, I study general migratory connections between different types of neighborhoods. Because the distribution of income and race varies greatly across cities in the sample, as shown in Appendix Table A.1, I focus on migration across tracts within the Chicago CBSA (dropping tracts that are over 20 percent college students) and use moves between 2010 and 2017 to construct graphs similar to transition matrices.

Figure 3 plots distributions of destination tract characteristics conditional on origin tract characteristics. In Panel A, each box shows the median and interquartile range of destination median household income for migrants that originated in a given income decile. Whiskers show the 10th and 90th percentile. Individuals originating in top decile income tracts very rarely move to a below-median income neighborhood, and very few people from lower deciles migrate above the median. While this suggests that submarkets exist, they also appear to

[16] I add small amounts of noise to each marker to avoid precisely identifying addresses.

[17] Appendix Figure A.3 includes new building residents who originated anywhere in the Chicago CBSA and tells a largely similar story. Appendix Figure A.4 repeats the exercise in San Francisco, which shows a wider dispersion of both buildings and resident origins, consistent with its generally high incomes.

be permeable—individuals frequently move from the seventh decile to the ninth, the sixth to the fourth, et cetera. The top decile and lower deciles are connected through a series of moves, which is precisely what the migration chain mechanism requires. Panel B shows a similar pattern for median two-bedroom rent.

Panel C plots the same graph for the percent of households in a tract that are white. The least white tracts appear to be more separated from the remainder of the market than were either top or bottom income tracts. People originating outside of these tracts are extremely unlikely to migrate in. However, because individuals do migrate out of these tracts, they are still connected to the broader housing market, and this "outward" connectivity is actually what is required for migration chains to reach these heavily nonwhite neighborhoods. Finally, Panel D depicts median rent burden, which shows much more connectivity across deciles. Appendix Figure A.5 contains the same graphs for the San Francisco area, which are similar.

On the whole, these graphs show that even a housing market that is highly segregated on most measures exhibits substantial migratory connections between tracts with very different characteristics. This implies that there are meaningful connections between housing submarkets that may lead housing construction or other shocks in one submarket to affect others. However, the exercise classifies migrants according to average tract characteristics, which may disguise significant heterogeneity in households and housing units within a tract. It may be that transitions from, say, the sixth and ninth decile income tracts are actually driven by individuals moving from the most expensive unit in the sixth decile to an average unit in the ninth decile, leading the tract-level definition to overstate true connectivity. In my next exercise, I track moves at the building level to mitigate this problem.

4.2 Constructing Sequences of Origin Units

I now directly study the connectivity between new construction and low-income areas by constructing sequences of origin units from new buildings. The algorithm to construct this sequence of origin units is simple. I start with the 52,000 individuals currently living in the 686 new market-rate buildings described in Table 2. I then use the Infutor data to identify their origin housing units. I then identify the people currently living in the first round's origin buildings and iterate for six rounds. This exercise is distinct from the migration chain

simulation in the next section because it does not allow chains to end or individuals to move in the absence of construction.

While this exercise is intuitive, there are a few specification choices to note. First, in order to focus on connectivity within metro areas, I only include individuals who moved from within the new building's CBSA in each round of the chain.[18] This includes about 70 percent of tracked individuals, depending on the round. Second, note that I construct the next round of the chain based on who is currently living in the previous round's origin units, rather than who was first to occupy that unit after the previous round moved out. This provides a snapshot version of the sequence that may change depending on when measured. However, given that the sample spans only 2009 to 2017, this likely yields similar results to following the first person to move into a given unit after it is vacated.

Finally, I construct each round by taking all people in the previous round's origin building, not their specific origin unit.[19] When constructing the next round, I then weight the residents of that building so that they sum to one individual. Matching at the building level increases the probability that at least one person originated within the CBSA, allowing me to construct another round. In the event that no one in a building is tracked within the same metro, I proportionally distribute the weight from that building to other similar buildings that are tracked.[20] Sixty-seven percent of new building residents are tracked to a previous within-metro address, and 74 percent of buildings in the next round have at least one person tracked within-metro. This percent gradually falls to 52 percent by the final round as single-family residences and untracked individuals become more common.

4.3 Results on Sequences of Origin Units

Figure 4 shows the percent of individuals in each round that originated within the principal city. (Recall that only those who originated within the CBSA are included.) Seventy

[18] I also drop individuals who moved from tracts that are over 20 percent undergraduate students.

[19] To avoid major changes over time in building or neighborhood attractiveness, I restrict to people that moved into the building since 2009.

[20] Similar buildings must have the same principal city/suburban status as the untracked building, which helps account for selection on tracking rates between multifamily and single-family buildings. Because it is computationally easier to calculate the chain separately for each category in Figure 5, the characteristics that tracked and untracked buildings are matched on change with each computation. In each case, I require similar buildings to have the same in/out of category status as the untracked building.

percent of round one, the tenants of new buildings, moved from within the principal city. This is intuitive given the new buildings' central city locations. However, this percentage steadily declines to 30 percent in round six, close to the population average. This pattern highlights that the effects of the migration chain mechanism are geographically diffuse. While this implies that diverse regions will benefit, it also makes it less likely that any particular neighborhood will be strongly affected.

Figure 5 shows the percent of each round in five broad overlapping tract categories, defined according to the within-CBSA characteristic deciles shown in Appendix Table A.1. About 20 percent of new building residents originate in tracts with below-median household income, rising to 40 percent by round six. The percent of individuals originating in a bottom-quintile income tract increases from 7 percent to 15 percent from the first to sixth round, and the percent from tracts that are below-median income and in the bottom quintile of percent white starts at six and eventually rises to 14. Finally, almost none of the first round originates in below-median income and rent-burdened tracts, compared to 10 percent of the final round.[21] These migration patterns are not consistent with strong segmentation—even when tracing moves at the building level, it appears that a short series of moves connects new construction and low-income areas.

This approach mitigates one issue with selection within tracts, since each round of the chain is constructed using a building-to-building move, rather than average migration into a type of tract. However, the units in the sequence are still classified according to tract characteristics, which may not match actual unit quality. To diagnose the extent of this problem, I compare the likelihood that the average unit in, say, the fifth income decile is filled by a person moving from a lower-income tract to the same probability for a fifth-decile unit that is included in the sequence. Panel A of Appendix Figure A.7 shows that the units in the first round of the sequence—the origin units of the new building's residents—are somewhat less likely to be filled by a person from a lower income tract than the average unit. In the fifth income decile, the figure is about 30 percent, versus 36 percent in the full

[21] While the numbers are substantially larger for below-median income tracts, note that these tracts by definition make up a much larger percent of a CBSA. Appendix Figure A.6 normalizes each line by the percent of the CBSA's population that lives in each group of tracts. Below-median income tracts are still proportionally more represented in the first round, but the gap closes substantially by round six, when all categories fall between 0.6 and 0.8.

sample. However, as shown in Panel B, this gap falls to less than 1.5 percentage points by the third round. This suggests that units in the sequence are somewhat positively selected, particularly in the first round, but are relatively representative of the average unit in their tract.

5 Migration Chain Simulation Methodology

5.1 Framework

In this section, I simulate migration chains that end with some probability in each round and account for individuals who would have moved even in the absence of new construction. This is a more complicated exercise than the sequence of origin units just described, but the added structure allows me to quantify the effect of new housing on lower-income submarkets.

A migration chain C is a sequence of housing units. C_1 is a new unit, and C_2 is the unit that the person living in the new unit would have occupied had the new unit never been constructed. I call this the person's counterfactual location. For example, if the individual living in the new unit left a house on Willow Drive to move to the new unit, but would have moved from Willow Drive to Oak Lane even if the new unit had not been constructed, Oak Lane is the second element in C. The subsequent elements in C are then defined recursively from C_2.

This recursive structure is empirically convenient. To construct C_{i+1} given C_i, I first define O_i as the origin unit of the individual currently living in C_i. I then introduce the operator T, which maps an individual's origin unit to his counterfactual unit:

$$C_{i+1} = T(O_i).$$

In addition, I allow chains to end in each round with some probability $d(C_i)$ that depends on the current location of the chain. O_i is directly observable in the data, and I discuss my empirical implementation of T and d in the following subsections.

In order to quantify the effect of the chains, I say that a chain creates an "equivalent unit" in submarket k if it reaches that area before ending. The expected number of equivalent

units in k created by a new unit in h is then just the probability that the chain reaches k. Formally,

$$EU_h(k) = P(C \cap k \neq \emptyset | C_0 \in h).$$

I simulate a migration chain from each new unit and compute this probability empirically for a variety of submarkets. Again, the intuition is that inducing a household to move out of a submarket reduces demand for that submarket by one, which should have a similar effect on prices as building an additional (depreciated) unit in k. Note that if a chain from a given new unit reaches k twice, it is still only counted as one equivalent unit. This is because the second occurrence is included in the migration chain that an additional unit in k would produce.

The following two subsections describe my assumptions on counterfactual locations and the rate of chain decay. Because neither is directly observable in the data and prior literature provides little guidance, I use data on migration, household formation, and vacancy rates to construct a range of reasonable assumptions and repeat the simulation at several points within that range.

5.2 Counterfactual Locations and Submarket Definition

For this simulation, I classify each census tract in the sample into a submarket according to its within-CBSA deciles of median household income and percent white households, whether it is in the principal city of its CBSA, and whether it is in the top quintile of median rent burden.[22] This gives a maximum of 400 possible submarkets per metro area, but, on average, only 300 of those contain at least one tract. While I use this granular definition to run the simulation, I use larger groups when presenting results—below-median income or bottom-quintile income tracts, for example.

I first define counterfactual locations for individuals living in the new buildings. The simplest assumption would be that no one would have moved in the absence of construction, yielding $C_2 = T(O_1) = O_1$. However, this assumption would likely underestimate the quality

[22]The Census Bureau defines rent burden as the ratio of gross rent to household income in renter-occupied housing units.

of C_2, as some people may have moved from their origin into a nicer unit anyway. To account for this, I instead assume that individuals would have moved up slightly in the absence of construction. Rather than choosing a specific unit, I define C_2 as a submarket.

For within-metro migrants, my baseline assumption is that the counterfactual submarket is one decile higher in the income distribution than the origin submarket and the same on other characteristics. This is approximately the median step up in income in Figure 3, though it overstates upwards mobility for people originating in high-income areas, making the assumption somewhat conservative. I also run the simulation under alternative assumptions that increase the income step size and vary the changes in other characteristics.[23]

Out-of-metro migrants are slightly more complicated. Depending on the specification, I assume that a certain percentage would have moved to the CBSA even in the absence of construction (as discussed in detail in the next section). For those who would have moved to the area anyway, I draw the counterfactual location from the distribution of counterfactual locations of within-metro migrants to the same new building.[24] In contrast, the migrants who were induced to move to the area represent the end of the chain.

After the first round, I modify the algorithm slightly. This is necessary because the T operator defines C_2 as a submarket, rather than a specific building. To construct the next round of the chain, I replicate the process and assumptions used in the first round of the chain, but use the distribution of origin units of recent (2009–2017) arrivals to that submarket instead of a specific origin building.

5.3 Chain Decay Rate

There are several reasons that a chain could end—second homes, household formation, migration from outside the CBSA, or landlord market power. While the prevalence of each force is observable, the exercise actually requires measurement of the marginal increase induced by new construction, which is not observable. I consider two distinct assumptions.

[23]Because the submarket definition is granular, there are some categories that no observed tract belong to. If the counterfactual location assumption leads to one of these empty submarkets, I assume that the counterfactual location is equal to the origin.

[24]I make the same assumption for individuals that are not tracked to their previous address in the Infutor data and individuals that originate in heavily college student (>20 percent) tracts.

First, as my baseline estimate, I consider a marginal increase in housing supply. I assume that a small change to the housing market does not affect major decisions like household formation and across-CBSA migration. On the other hand, landlord market power should moderate the effect of even small changes in housing supply. To be conservative, I also assume that second home purchases are always marginal to new construction. To capture these two forces empirically, I set the probability $d(C_1)$ of a chain ending in the first round equal to the vacancy rate in the block group containing C_1. In subsequent rounds, I set it equal to the average vacancy rate in C_i's submarket.

The intuition for this assumption is best illustrated by considering the new housing units, where this rate captures the units that are unfilled because landlords do not price them low enough or because they are not used as a primary residence (the ACS vacancy rate counts these as vacant), as well as matching frictions causing some units to be vacant at a given time. The intuition is similar in later rounds. When a chain induces households to move out of a submarket, landlords react by lowering prices, but not by enough to reduce the vacancy rate to its preshock level.

Second, I allow new construction to increase household formation and migration to the CBSA. This may provide a better approximation of large changes to housing supply. The Current Population Survey provides an estimate of the percentage of moves that are caused by new household formation, and I use Infutor to estimate the frequency of out-of-CBSA migration. I assume that new construction increases both of these forces by 25 percent, a very large effect that roughly doubles the decay rate.

Using the block group vacancy rate instead of the actual vacancy rate in a new building will be inaccurate if new buildings are quite different from their block group. This is a particular concern given claims of extremely high rates of second homes and investment properties in new luxury buildings.[25] To investigate this, I compare the vacancy rates in the

[25]This topic is hotly debated. A number of investigations have found that high numbers of new condos are either owned by shell corporations or do not claim tax exemptions as a primary residence. Logan (2018) finds that only 36 percent of units in 12 new Boston buildings claimed the city's property tax exemption for a primary residence. Solomont and Sun (2019) find that 16 percent of units in Manhattan condo buildings with over 30 units are owned by shell corporations, while over 30 percent did not claim a tax exemption for primary residences. However, these reports are unable to determine if such units actually sit vacant or if they are rented out. Scanlon et al. (2017) estimates that 70 percent of foreign-owned apartments in London were rented to locals. The city of Vancouver reported that 2,538 units in the city were subject to its "empty

tract and block groups containing the new buildings.[26] If new buildings have substantially higher vacancy rates than their surrounding area, this should lead to higher vacancy rates in their containing block groups than tracts. This is not true, as Table 2 shows that the distributions of block group and tract vacancy rates are extremely similar.

6 Migration Chain Simulation Results

6.1 Baseline Equivalent Unit Estimates

Figure 6 shows baseline estimates of the number of equivalent units in each migration round for five categories of tracts, aggregated from the smaller submarkets to ease presentation. One hundred new market-rate units create 70.2 equivalent units in below-median income tracts. The estimates are also large for areas that are even less similar to high-income areas, with 39.6 created in bottom-quintile income areas and 45.3 in areas that are below-median income and in the top quintile of rent burden. Even for tracts that are below median income and in the bottom quintile of percent white, the figure is 48.8, though these areas are a relatively small percent of the typical CBSA.[27] Most equivalent units are created in early rounds, especially for below-median income areas, and production subsequently slows smoothly. Appendix Figure A.8 repeats the plot but includes only equivalent units within the principal city of the CBSA. The number of equivalent units in each category drops by 20-30 percent, again highlighting that the benefits from new market-rate housing are diffuse throughout a metropolitan area.

Given average rental vacancies and time-on-the-market for home sales, these effects should be felt relatively quickly. Zillow reports that the average house was on the market for one

homes tax" in its first year, which is only about 3 percent of the 68,000 units constructed in Vancouver between 2000–2016.

[26]Because Infutor has imperfect coverage, I cannot use it to calculate the vacancy rate in a building.

[27]While there is, to my knowledge, no direct comparison for these results in prior literature, Lansing, Clifton, and Morgan (1969) perform a related exercise. After constructing migration chains through a direct survey, they estimate that for every 100 new housing units, 33 low-income households (defined, in 1969 dollars, as income less than $1,000 plus $500 times household size) will move. When I alter my estimation to count total moves from each category rather than equivalent units, I arrive at a similar figure of 43 moves from bottom income quintile and rent burdened areas, which form roughly the same percent of the population as Lansing et al.'s low-income definition.

month before selling in 2018, though this number reached 140 days in 2010.[28] The Federal Reserve Bank of St. Louis reports an average rental vacancy rate of 7 percent in 2018, with a peak near 11 percent in 2010.[29] Taken together, these numbers suggest an upper bound of one to three months for each round of the migration chain.[30] Since nearly all equivalent units in below-median income areas are created by round 15, these benefits should be felt within one to four years. For lower income areas, most equivalent units are created by round 20, which should be reached in two to five years.

One benchmark for these estimates is provided by the inclusionary zoning requirements for new housing developments in many cities. They mandate that developers fund a certain number (typically between 0.05 and 0.2) of income-restricted units per market-rate unit constructed (Schuetz, Meltzer, and Been 2009, Thadden and Wang 2017). While policies vary across cities, these units typically target a maximum income between 50 and 150 percent of area median income, making equivalent units in below-median income tracts a reasonable comparison. My estimates imply that a new market-rate unit has a significantly bigger effect on below-median income housing through market mechanisms than through inclusionary zoning requirements—generally at least three times as large. Demolitions of older, more affordable, housing units on the site of new construction provide another interesting benchmark. Since 100 new market-rate units create about 70 below-median income equivalent units, new construction must contain at least 14 new units for every 10 such units that are demolished in order for the equivalent units to outnumber the demolished units.

6.2 Alternative Specifications

In this section, I explore a number of alternative assumptions on chain decay and counterfactual locations in order to construct a range of reasonable equivalent unit estimates. While estimates change somewhat across simulations, they consistently suggest that new

[28] Zillow, "What Is the Average Time to Sell a House?" https://www.zillow.com/sellers-guide/average-time-to-sell-a-house/ (accessed July 2, 2019).

[29] Federal Reserve Bank of St. Louis, "Rental Vacancy Rate for the United States." https://fred.stlouisfed.org/series/RRVRUSQ156N (accessed July 2, 2019).

[30] These numbers represent an upper bound because multiple rounds of the migration chain can happen simultaneously. Suppose, for example, that one household that would have moved from Unit A to Unit B instead moves to the new building, leading another household searching at the same time to locate in Unit B instead of Unit C.

construction has a large effect on lower-income submarkets. The connectivity implied by the migration data is strong enough that migration chains frequently reach low-income areas even if they end at a relatively high rate or if households' counterfactual locations are a large step up from their origins.

First, recall that in the baseline specification I assumed that household formation and migration across CBSAs were unaffected by new construction. This is likely not the case for major expansions in housing supply. Since many proposed and enacted policies—such as the recent elimination of single-family zoning in the city of Minneapolis—could have a large effect on housing supply, I rerun the simulation allowing for new construction to affect these two forces. I draw a baseline average for new household formation from the 2018 Current Population Survey, which estimates that 11.5 percent of moves were to form a new household.[31] For across-metro migration, I refer to Table 1, which shows that 32.8 percent of people in my sample of new units originated from outside the metropolitan area. I then rerun the simulation assuming that these figures represent the average rates in each round of the chain and that new construction has a very large effect, increasing each force by 25 percent. This doubles the mean decay rate of 10 percent in the baseline specification. I use this as an upper bound on the decay rate, but I also consider the more extreme assumption that new construction increases each force by 50 percent.

Results appear in rows 2 and 3 of Table 3. Under the 25 percent assumption, below-median income equivalent units fall from the baseline of 70 to 45, a drop of 37 percent. The number in the lowest income categories falls by more—59 percent in the bottom income quintile—because the effect of a higher decay rate increases exponentially in each round and these types typically appear later in the chain. Under the more extreme 50 percent assumption, below-median income equivalent units fall to 31, and the number in the bottom income quintile falls to 9.3. While this exercise is speculative, it suggests that even a supply shock that sparked very large changes in household formation and migration would still have a meaningful effect on the housing market in below-median income areas. Even in the bottom income quintile, the equivalent unit count remains as large as many inclusionary

[31] While the data does not allow me to observe household formation within the chain, Turner (2008) directly observes household formation within chains in Stockholm and arrives at a similar figure of 12.7 percent.

zoning policies.

Next, I explore sensitivity to my counterfactual location assumption. The fourth row of Table 3 shows results under the alternative assumption that individuals would have moved up by two income deciles. The number of equivalent units in below-median income areas decreases by less than 10 percent, from 70 to 64, and the effect is similarly small in other categories. Of course, bottom-quintile income equivalent units fall to zero by assumption. When I instead assume that individuals would have moved up by one income and one percent white decile, the decrease is larger (about 40 percent) for areas that are below-median income and in the bottom quintile of percent white.

Third, I tighten restrictions on the underlying data. Including only new buildings that are above the seventh decile for both median household income and income per capita has minimal effect, as shown in row 6 of the table. In row 7, I eliminate moves to submarkets that are more than four income deciles higher than the origin submarket, reasoning that the housing units underlying these moves may not be reflective of their submarket more broadly. This reduces the number of equivalent units in below-median and bottom-quintile income areas to 55.1 (-21.5 percent) and 20.5 (-48.2 percent), respectively.

Finally, I classify housing units according to their census tract, which may not accurately reflect a unit's characteristics. As previously shown in Appendix Figure A.7, units are somewhat positively selected in early rounds. To account for this, I compute a transition matrix between submarkets using only the individuals that moved into the units in the first round of the chain. I substitute this matrix into the first round of the simulation and find that equivalent units fall by only 5-10 percent, as shown in row 8 of Table 3.

6.3 Heterogeneity across Cities and Mechanisms

Equivalent unit creation is driven by two key factors: connectivity between market-rate units and other submarkets and the decay rate. If neighborhoods are more connected, the migration chain will be more likely to move from wealthy areas to lower income areas. In contrast, the decay rate determines how many rounds the migration chain has to reach the area of interest. To illustrate the relative importance of these forces, I first plot bottom-income quintile equivalent units separately for each city in the sample in Figure 7. The

numbers underlying the figure are shown in the first column of Table 4. There is substantial dispersion around the average of 39.6, from about 18.2 in New York to 60.7 in Denver.

Next, I repeat the simulation with a constant decay rate of 0.9 in all cities. Results appear in the second column of Table 4. The difference between New York and Denver falls from 42.5 to 36.6, suggesting that connectivity is the more important difference between the two cities. However, this depends on the cities being compared—the gap between Atlanta and Minneapolis falls from 25.9 to 8. It appears that both factors can be quantitatively important for explaining differences across cities. Connectivity differences may reflect demographic composition as much as attitudes—the difference between the average tract in the top- and bottom-income quintiles in Minneapolis is $86,400, versus $117,100 in New York.

My definition of submarkets uses within-CBSA characteristic deciles, implying that each submarket has more housing units in larger CBSAs. Since within-submarket moves do not change the state variable in the simulation, this could depress equivalent units in larger CBSAs, consistent with New York and Chicago's low totals. To test this, I remove within-submarket moves from the simulation and rescale the probability of other moves proportionally. Column three shows that this has a small effect that is not larger in bigger CBSAs, likely because the submarket definition is relatively fine. Columns four through six repeat the above exercises with below-median income equivalent units.

6.4 Policy Discussion

These results, as well as the descriptive results from Section 4, suggest that new market-rate housing construction can improve housing affordability for middle- and low-income households, even in the short run. The effects are diffuse and appear to benefit diverse areas of a metropolitan area. Policies that increase market-rate construction are thus likely to improve affordability, even outside of the submarkets where new construction occurs. In addition to formal policies, these results also suggest that if policymakers expend the political capital required to get new housing proposals through the often subjective and onerous approval process, there are likely to be benefits throughout the region.

However, there are several shortcomings of market mechanisms, particularly in the lowest cost and most rent-burdened submarkets. Census tracts in the bottom quintile of median

household income and the top quintile of rent burden have an average vacancy rate of 12.8 percent, compared to 8.1 in the rest of my sample. Given that rents are generally already low in such neighborhoods, this suggests that reducing demand through the migration chain mechanism is unlikely to lower costs further, perhaps because rents have reached the minimum cost of housing. In addition to potentially small price effects, there may also be important amenity effects if the migration chain reduces population in these areas, such as reduced retail options, school closures, or increased crime. However, the relationship between income and vacancy rates differs across cities—in New York City, vacancy rates in low-income and rent burdened tracts are 9.7 percent versus 8.8 percent in other tracts, while the figures are 20.8 and 8.4 percent in Chicago. Market mechanisms will likely be more effective at reducing prices in low-income areas where vacancy rates are low.

Inclusionary zoning policies, which directly trade off market-rate construction and subsidized housing, provide an interesting perspective on the two policy approaches. Requiring developers to fund income-restricted units is a costly tax that anecdotally crowds out development (e.g., Dineen 2018), though a small academic literature has found null or small effects (Mukhija et al. 2010; Schuetz, Meltzer, and Been 2011). A back-of-the-envelope calculation suggests that if each required income-restricted unit crowds out more than 1.42 new market-rate units, the lost equivalent units in below-median income areas would outnumber the gain in income-restricted units. However, the income-restricted units offer benefits that market mechanisms do not. They can be rented for arbitrarily low prices, and they do not require a lag after a building's completion. In addition, policymakers can dictate the location of these units.

7 Conclusion

The short-run effect of new market-rate housing on the market for middle- and low-income housing is crucial to the current policy debate, where government intervention and market-based strategies are often pitted against each other. My results suggest that new market-rate construction loosens the housing market in such areas and, moreover, could do so in less than five years. This implies that market-based strategies can play an important

role in improving housing affordability for middle- and low-income households.

However, an important caveat to these results is that I focus on quantity-based metrics rather than prices. This a particular concern for housing that is already extremely low-cost, as market mechanisms cannot induce for-profit landlords to lower prices below marginal cost. Vouchers or policies that reduce the marginal cost of providing housing (such as property tax or utility rate reductions) may be necessary to lower prices in this segment of the market. In addition, while I focus on regional effects, new buildings could have very different effects on their immediate area, where they may change amenities or household composition in ways that affect prices. There is little existing direct evidence on either the price effects or the local effects of new construction, and both could be fruitful areas for future research.

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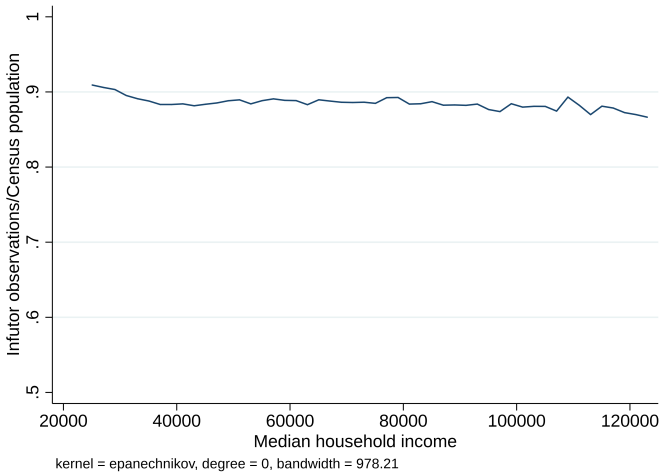
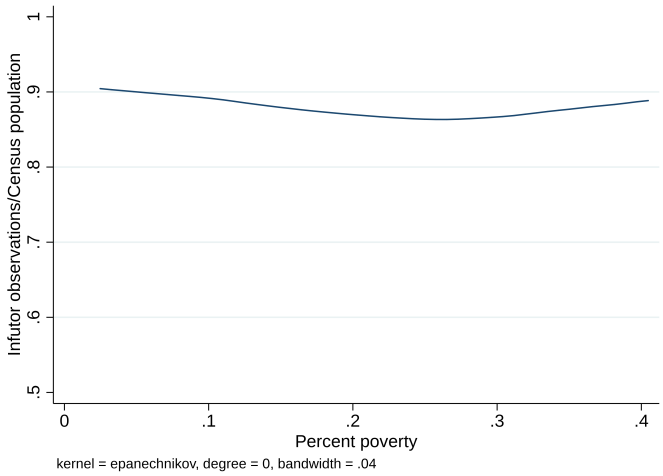
8 Figures

Figure 1: Infutor vs. Census Population (census tract level)

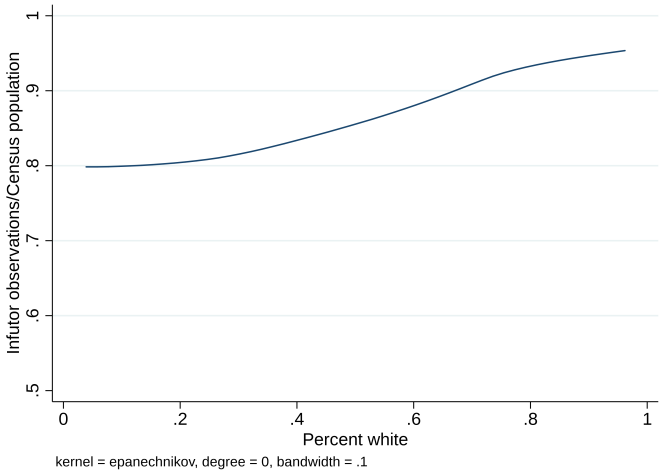
Panel A: Median Household Income



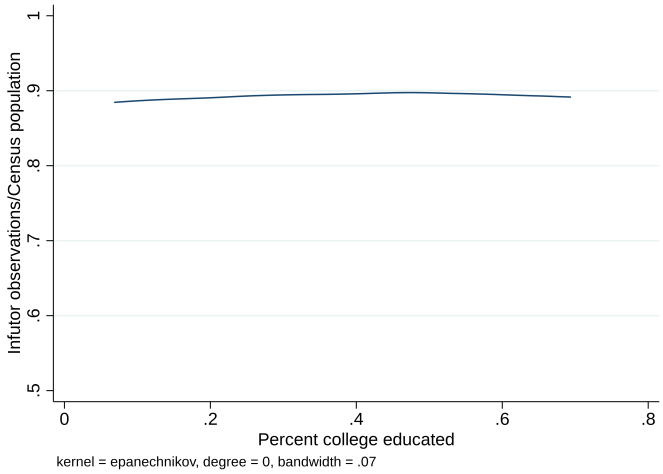
Panel B: Percent Poverty



Panel C: Percent White

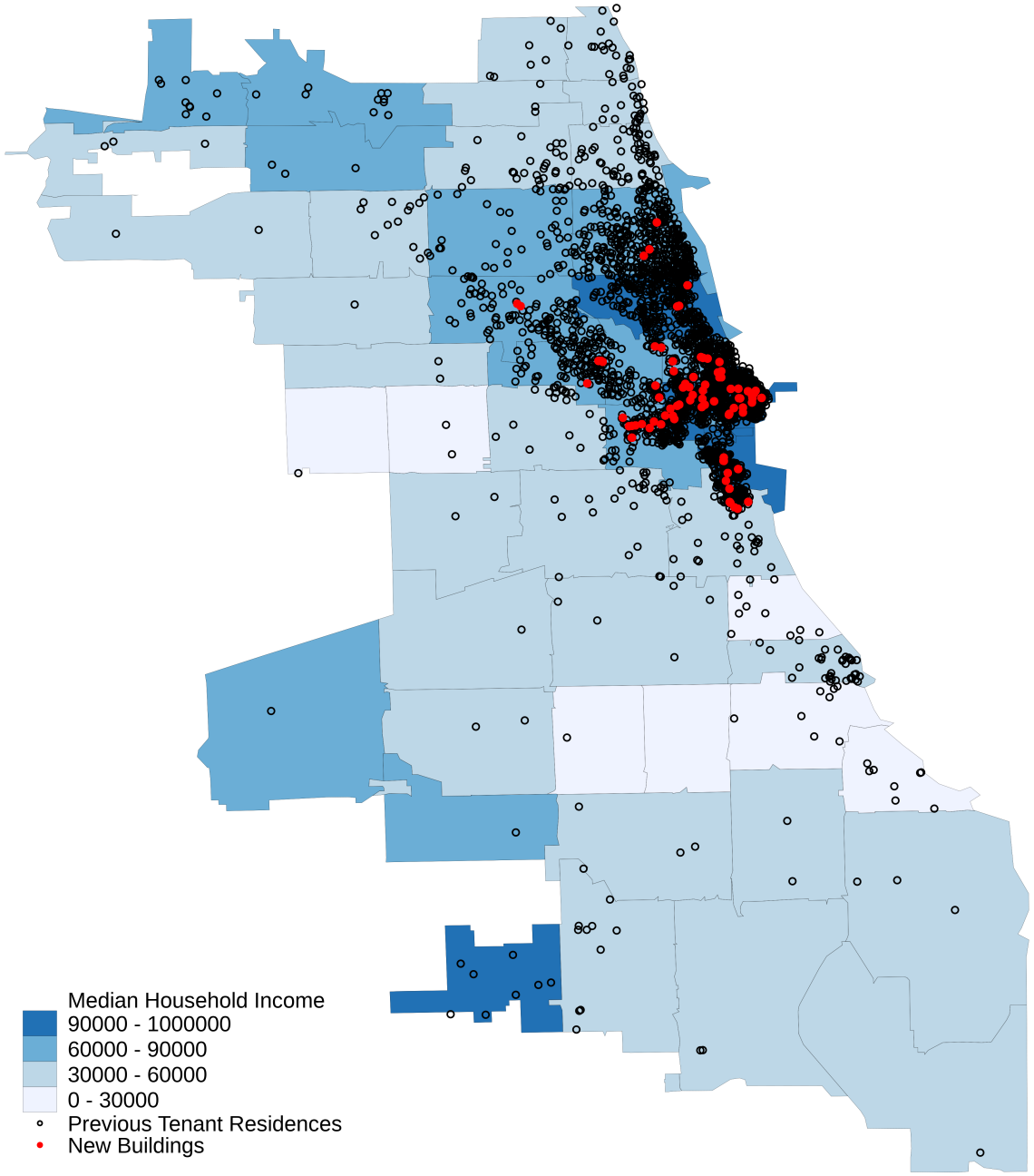


Panel D: Percent of Age 25+ with Bachelor's



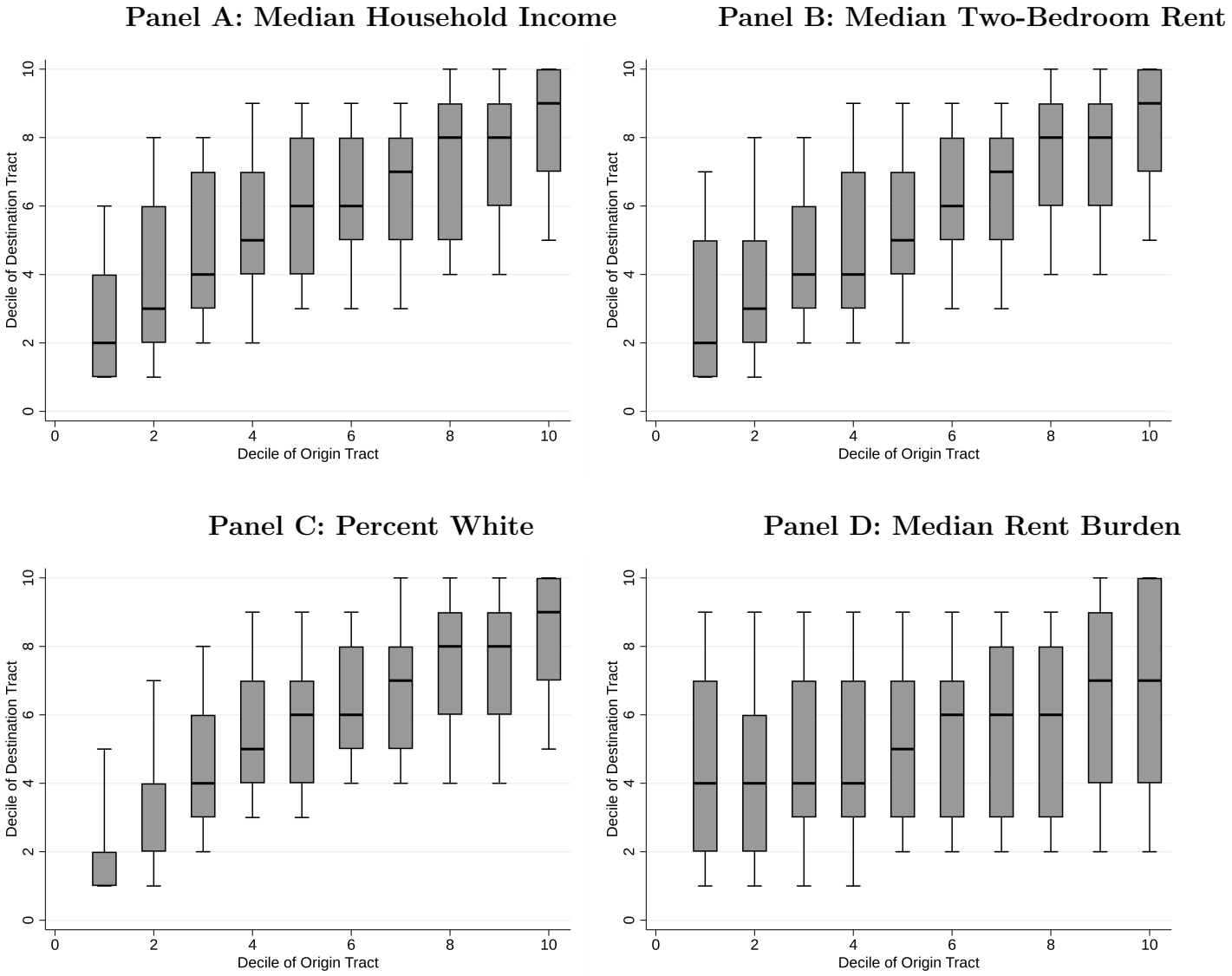
NOTE: Each panel plots a local polynomial regression of Infutor coverage (measured as the ratio of Infutor observations to census over-25 population) in a census tract versus the tract characteristic in the heading. Tract characteristics are drawn from the 2013–2017 ACS.

Figure 2: Prior Residence of Tenants of New Buildings in Chicago



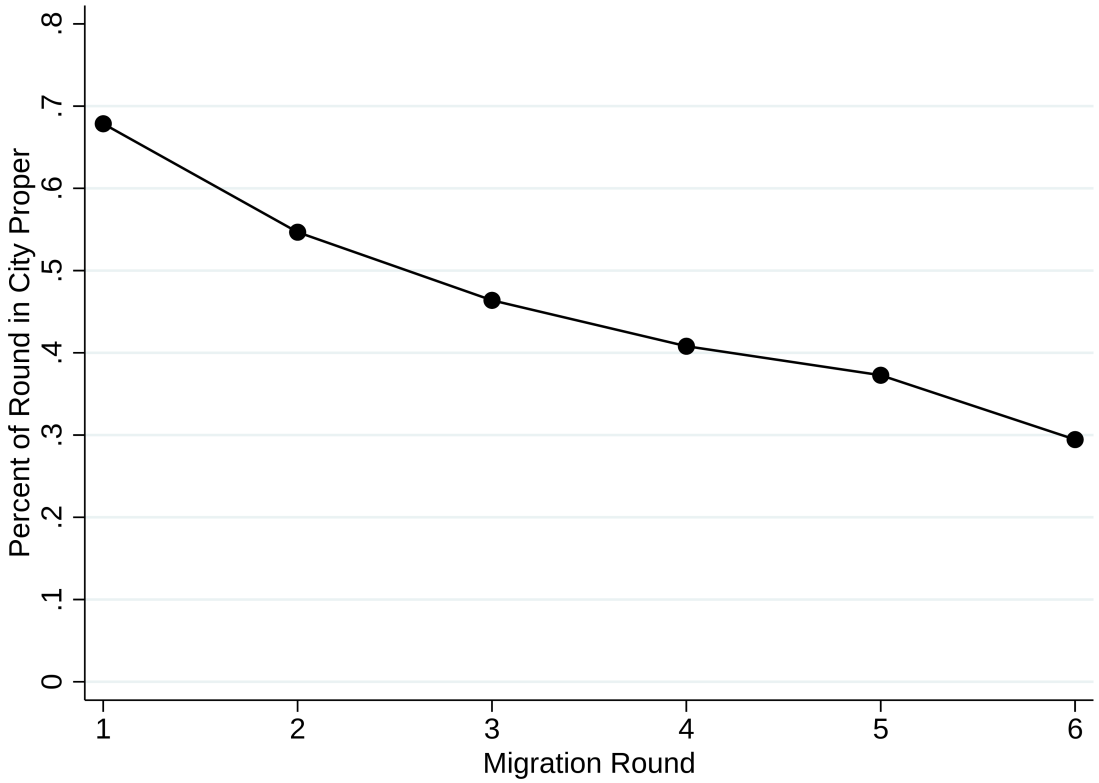
NOTE: Solid red dots represent the location of market-rate apartment buildings completed since 2010. Hollow black dots represent the previous residences of the current tenants in those buildings. The base map polygons are zip codes in Chicago proper, colored according to median household income in the 2013–2017 ACS. Only residents whose prior residence was within the city proper are included. Small amounts of noise are added to each marker to avoid precisely identifying addresses

Figure 3: Migration between Census Tracts in Chicago Metropolitan Area



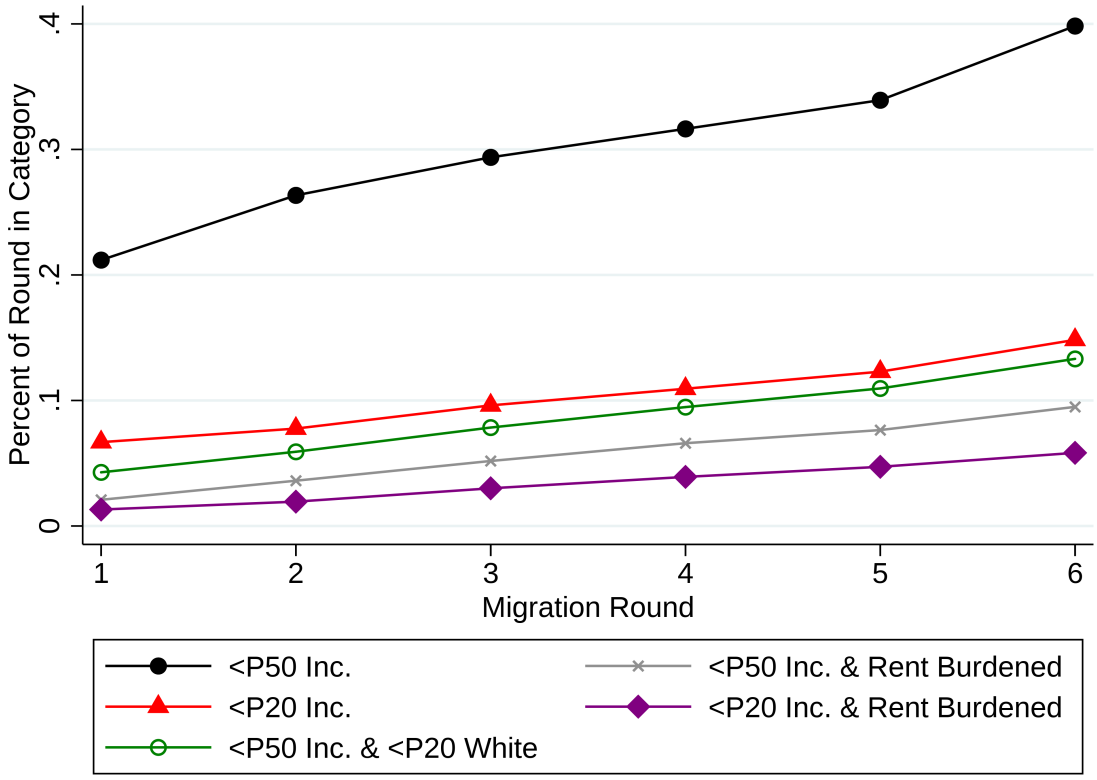
NOTE: This figure shows the distribution of destination neighborhood characteristics conditional on origin neighborhood characteristics for migrants within the Chicago CBSA in 2010–2017. Within each panel, each box plot represents migrants who originated in a tract of a given decile of the characteristic in the heading. The box then shows the median and interquartile range of the same characteristic in the destination tracts of those migrants. The whiskers represent 10th and 90th percentiles. Characteristic deciles are calculated within the CBSA.

Figure 4: Percent of Individuals Originating in CBSA Principal City by Migration Round



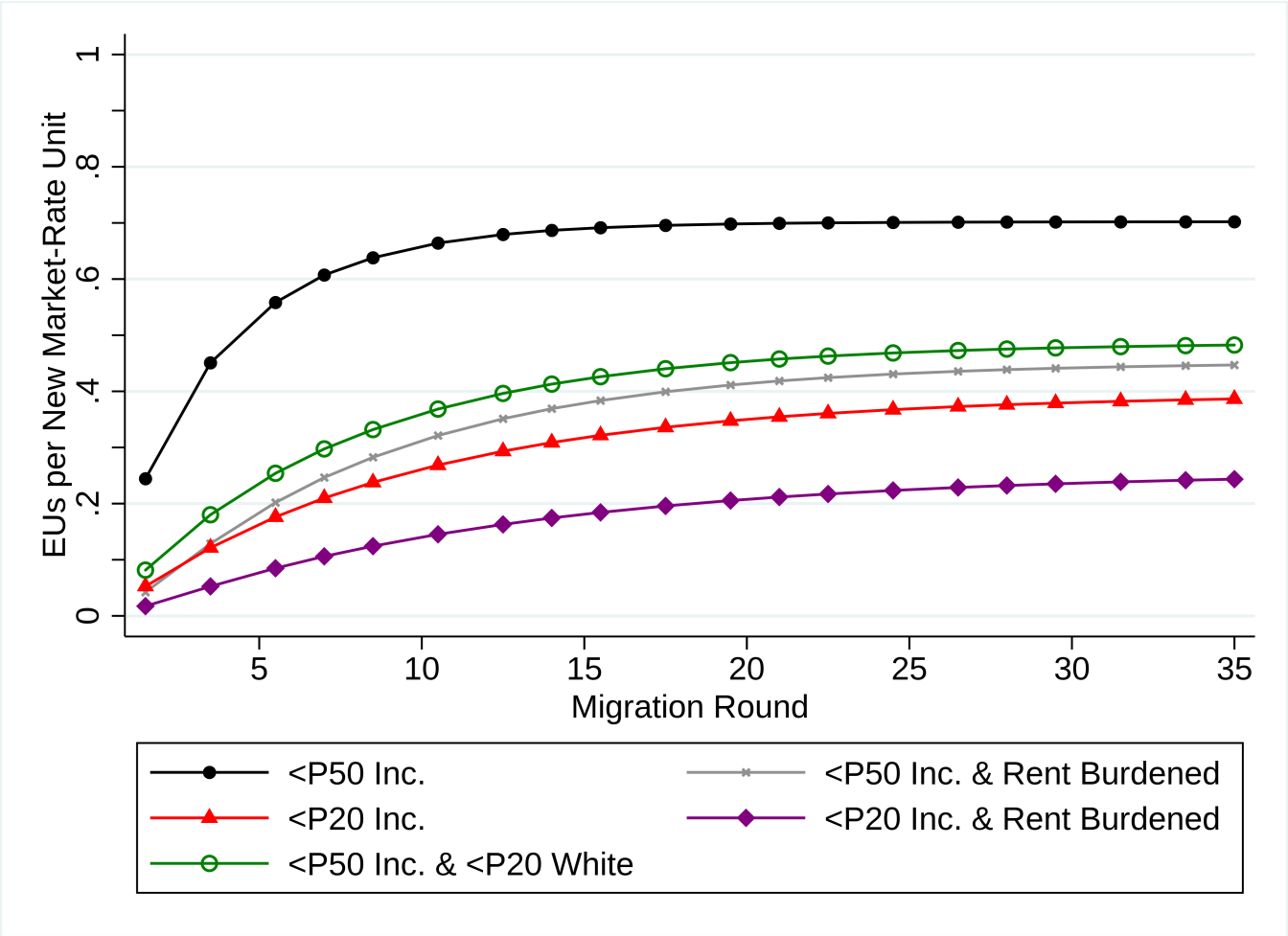
NOTE: This figure plots the percentage of the individuals in each round of the sequence of origin units that originated within the same city as the new building. Note that only migrants from the same metropolitan area as the new building are included in each round. Round 1 is the origin units of the individuals currently occupying the new unit; round 2, the origins of the individuals occupying round 1's origin buildings, and so on. Each subsequent round is constructed by observing the set of individuals currently living in the previous round's origin buildings, not their specific units, and the sequence is reweighted accordingly. The sequences begin with 52,000 individuals living in 686 new market-rate buildings.

Figure 5: Percent of Individuals Originating in Tract Categories by Migration Round



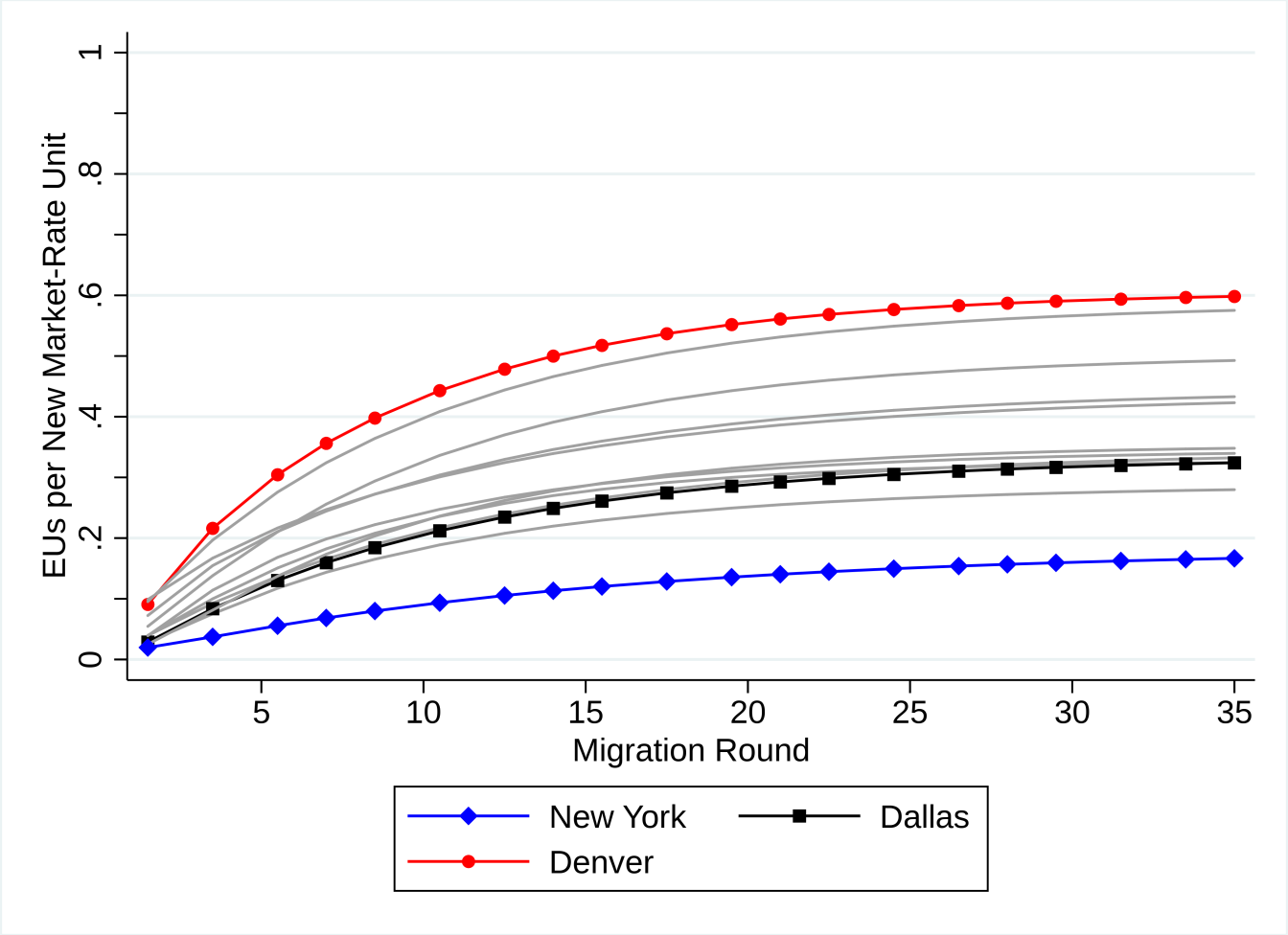
NOTE: This figure plots the percentage of the individuals in each round of the sequence of origin units that originated in a census tract with a given set of characteristics. Note that only migrants from the same metropolitan area as the new building are included in each round. Round 1 is the origin units of the individuals currently occupying the new unit; round 2, the origins of the individuals occupying round 1's origin buildings, and so on. Tract characteristics are taken from the 2013–2017 ACS, and all quantiles are computed within CBSAs. Income is median household income, and rent burdened is defined as in the top quintile of rent burden for the CBSA. Each subsequent round is constructed by observing the set of individuals currently living in the previous round's origin buildings, not their specific units, and the sequence is reweighted accordingly. The sequences begin with 52,000 individuals living in 686 new market-rate buildings.

Figure 6: Equivalent Unit Creation



NOTE: This figure shows the expected number of equivalent units created by a new market-rate unit, cumulative across rounds of the migration chain. An equivalent unit is created in a category when a migration chain reaches such an area for the first time, thus reducing demand for that category by one. Tract characteristics are taken from the 2013-2017 ACS, and all quantiles are computed within CBSAs. Income is median household income, and rent burdened is defined as in the top quintile of rent burden for the CBSA. Appendix Table A.2 shows the numbers underlying the figure.

Figure 7: Heterogeneity across Cities in Equivalent Unit Creation



NOTE: This figure shows heterogeneity across CBSAs in the number of bottom-quintile income equivalent units created by a new market-rate unit, cumulative across rounds of the migration chain. Each unmarked gray line represents a different metropolitan area, with Denver, New York, and Dallas highlighted as examples. Table 4 shows the numbers underlying the figure, as well as results under a number of alternative specifications.

Table 1: Number of New Buildings and Residents across Cities

City	New buildings	Infutor individuals	Percent from same CBSA	Percent from same city
Atlanta	44	3,641	0.687	0.484
Boston	16	1,238	0.700	0.375
Chicago	84	7,068	0.728	0.578
Dallas	76	6,670	0.687	0.487
Denver	49	3,270	0.539	0.411
Houston	69	5,906	0.711	0.584
Minneapolis	37	2,206	0.714	0.483
New York City	89	7,835	0.764	0.682
Philadelphia	12	694	0.642	0.423
Seattle	101	6,334	0.598	0.472
San Francisco	38	1,704	0.632	0.512
Washington	71	5,866	0.658	0.505
Sample	686	52,432	0.672	0.500

NOTE: This table shows the number of new buildings in each city and the number of individuals currently living in those buildings in the Infutor data. The buildings, which are detected using the algorithm described in Section 3, must contain over 16 individuals in the Infutor data, be built since 2009, and be within five miles of their CBSA's central business district and in a census tract with above median income for the CBSA. Individuals whose immediately previous address is in the same CBSA (city) as the new building are considered from the same CBSA (city).

Table 2: Building Characteristics

Percentile	Infutor individuals	Distance to CBD	Median household income decile	Income per capita decile	Median two-bedroom rent decile	Percent vacant (tract)	Percent vacant (block group)
Min	17	0.04	5	4	1	0.004	0.000
10	24	0.59	5	9	9	0.048	0.029
50	60	1.73	8	10	10	0.109	0.111
75	100	2.67	9	10	10	0.154	0.159
95	183	4.27	10	10	10	0.234	0.268
Max.	468	4.97	10	10	10	0.547	0.547
Mean	76.43	1.95	7.63	9.57	9.42	0.119	0.119
N	686	686	686	686	681	686	686

NOTE: This table shows characteristics of the new buildings. Distance to central business district (CBD) is given in miles. Median household income, income per capita, and median two-bedroom rent are determined using the building's census tract and the 2013–2017 ACS, and deciles of each are computed within CBSAs. Percent vacant is reported at both the tract and block group level and is also drawn from the ACS, which counts second homes as vacant.

Table 3: Equivalent Units under Alternative Specifications

Specification	**Number of Equivalent Units in:** <P50 Inc.	<P50 Inc. & Rent Burdened	<P20 Inc.	<P20 Inc. & Rent Burdened	<P50 Inc. & <P20 White
Baseline	0.702	0.453	0.396	0.258	0.488
Assume 25% marginal	0.453	0.191	0.167	0.088	0.231
Assume 50% marginal	0.308	0.101	0.093	0.043	0.135
Plus 2 income deciles	0.644	0.422	NA	NA	0.472
Plus 1 income, 1 white decile	0.694	0.408	0.352	0.212	0.281
Only high-income new buildings	0.693	0.449	0.391	0.255	0.481
Trim large transitions	0.551	0.305	0.205	0.127	0.327
Use round 1 transitions	0.655	0.406	0.357	0.230	0.440

NOTE: This table shows the number of equivalent units created under various changes to the baseline specification. Row 1 is the baseline, while Rows 2 and 3 show results under the assumption that 25% and 50%, respectively, of household formation and across-metro migration are marginal to the new construction, which substantially increases the decay rate. Rows 4 and 5 change the counterfactual location assumption from moving up one income decile to moving up two income deciles or one income and one percent white decile, respectively. Row 6 only includes new buildings that are above the seventh decile of both median household income and income per capita. Row 7 removes transitions in which individual's tract income increases by more than four deciles. Row 8 uses a set of transitions computed from the first round of the sequence of origin units, as shown in Figure 5, to compute counterfactual locations in the first round of the simulation, instead of the transitions computed from the full sample.

Table 4: CBSA Heterogeneity in Equivalent Units

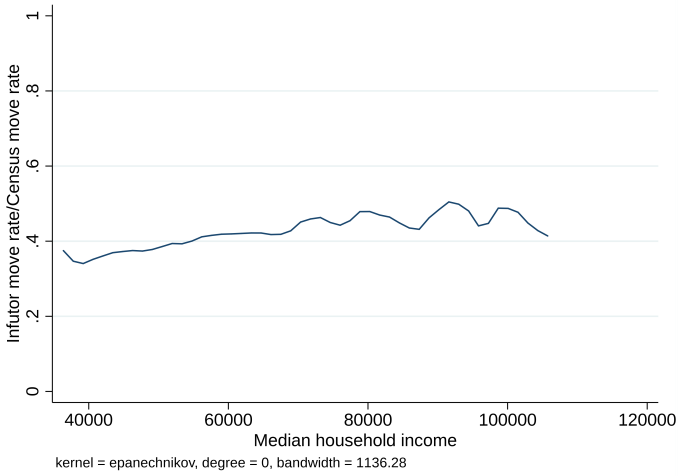
City	(1) <P20 Inc.	(2) <P20 Inc., decay=0.9	(3) <P20 Inc., no within moves	(4) <P50 Inc.	(5) <P50 Inc., decay=0.9	(6) <P50 Inc., no within moves
Atlanta	0.328	0.444	0.356	0.625	0.741	0.646
Boston	0.344	0.389	0.378	0.637	0.745	0.658
Chicago	0.287	0.363	0.310	0.604	0.706	0.625
Dallas	0.334	0.379	0.360	0.686	0.753	0.702
Denver	0.607	0.563	0.623	0.817	0.831	0.823
Houston	0.354	0.423	0.379	0.634	0.721	0.654
Minneapolis	0.587	0.524	0.607	0.844	0.848	0.849
New York	0.182	0.197	0.193	0.600	0.642	0.602
Philadelphia	0.346	0.416	0.373	0.711	0.765	0.728
Seattle	0.503	0.468	0.533	0.802	0.796	0.816
San Francisco	0.436	0.445	0.464	0.717	0.772	0.735
Washington	0.445	0.450	0.471	0.749	0.773	0.765

NOTE: This figure shows heterogeneity across CBSAs in the number of bottom-quintile and below-median income equivalent units created by a new market-rate unit. Columns 1 and 4 use the baseline specification, while columns 2 and 5 set the decay rate in every city to 0.9. Columns 3 and 6 eliminate moves within submarkets and proportionately redistribute the weight to other categories.

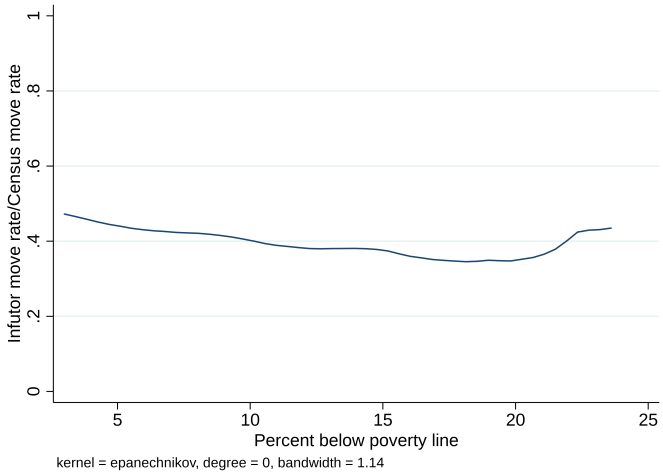
A Appendix Figures

Figure A.1: Infutor vs. Census Migration Rates (county level)

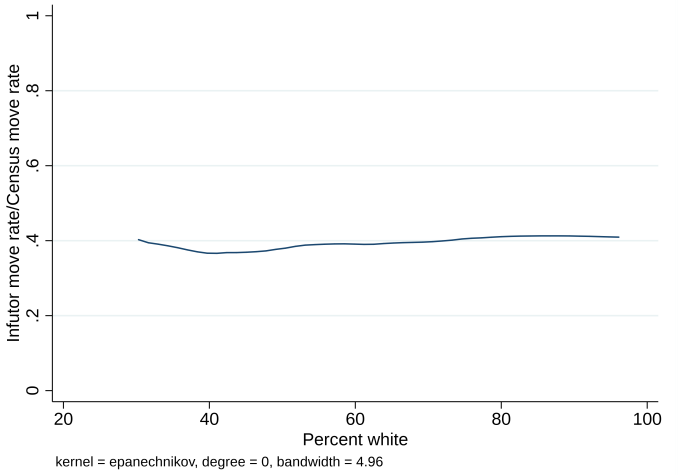
Panel A: Median Household Income



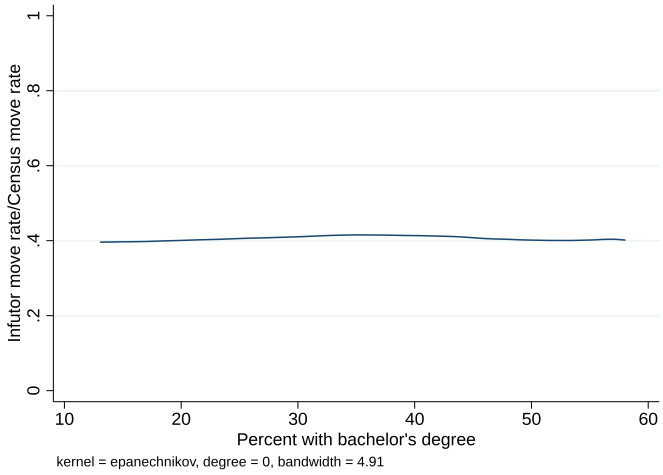
Panel B: Percent Poverty



Panel C: Percent White

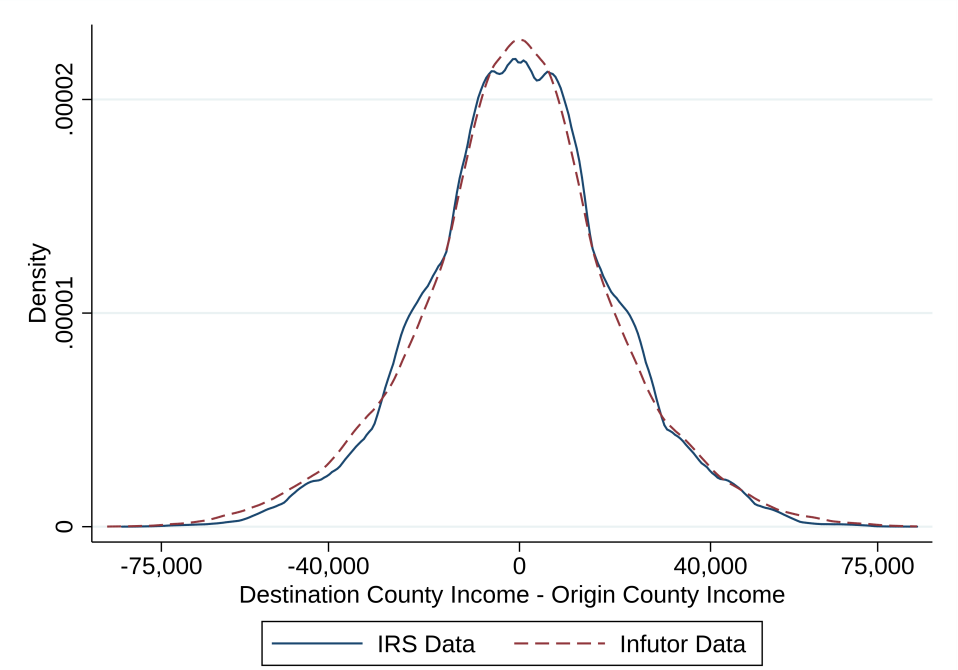


Panel D: Percent of Age 25+ with Some College



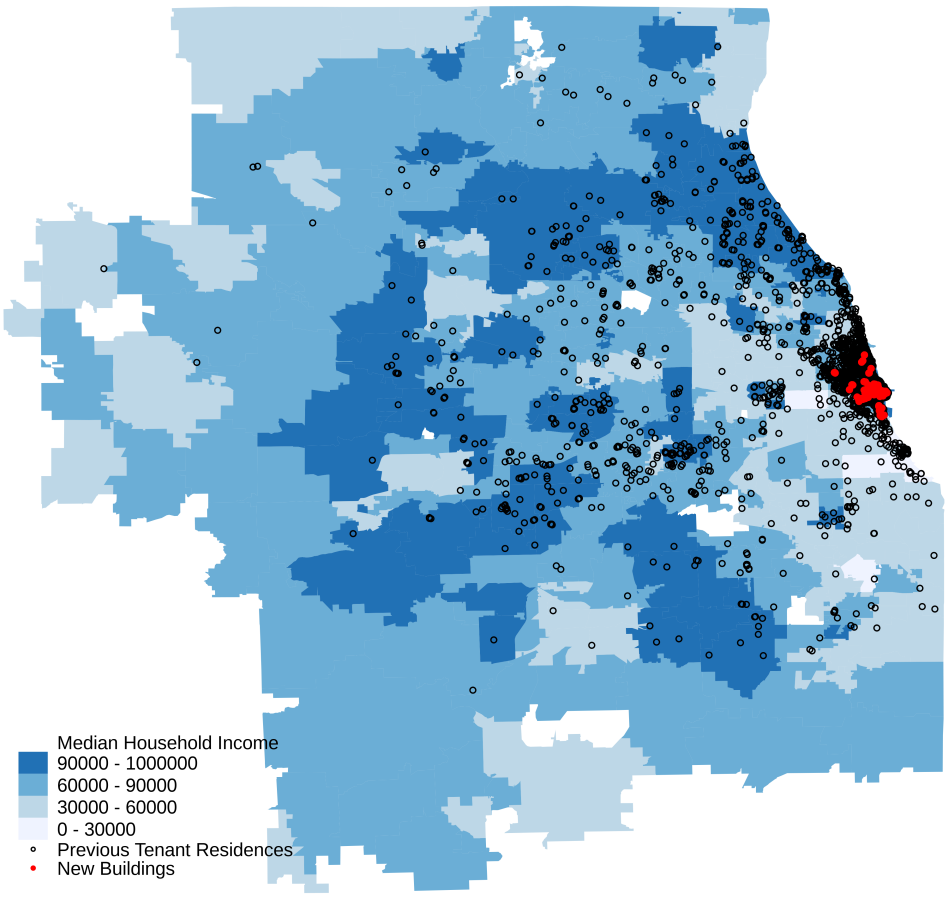
NOTE: Each panel plots a local polynomial regression of the ratio of Infutor to Census annual move rates (measured at the county level) against county characteristics. County characteristics and move rates are drawn from the 2013–2017 ACS.

Figure A.2: Difference between Destination and Origin County Income in Infutor versus IRS Data



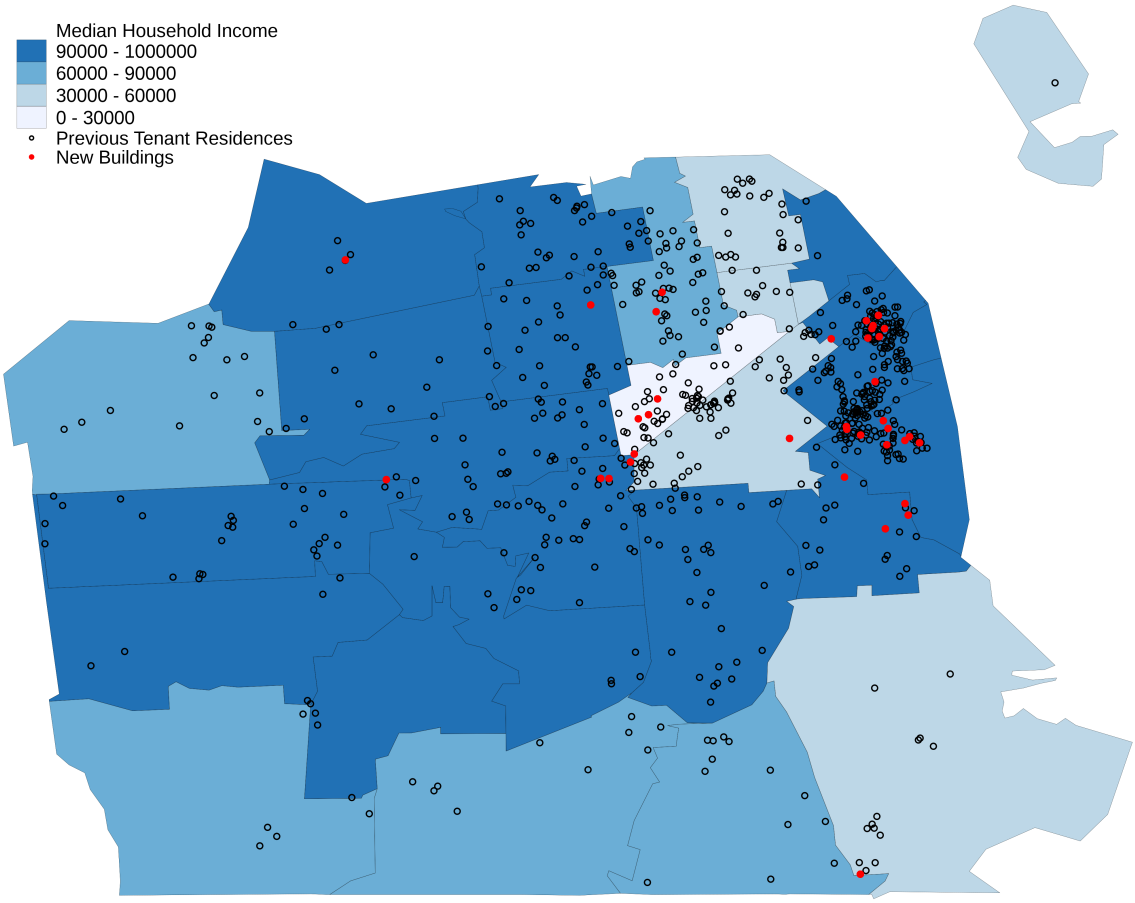
NOTE: This figure plots the distributions of destination county income and origin county income for moves in the Infutor data and 2018 IRS Statistics of Income data. County median household income is taken from the 2013–2017 ACS.

Figure A.3: Chicago Metro Origins



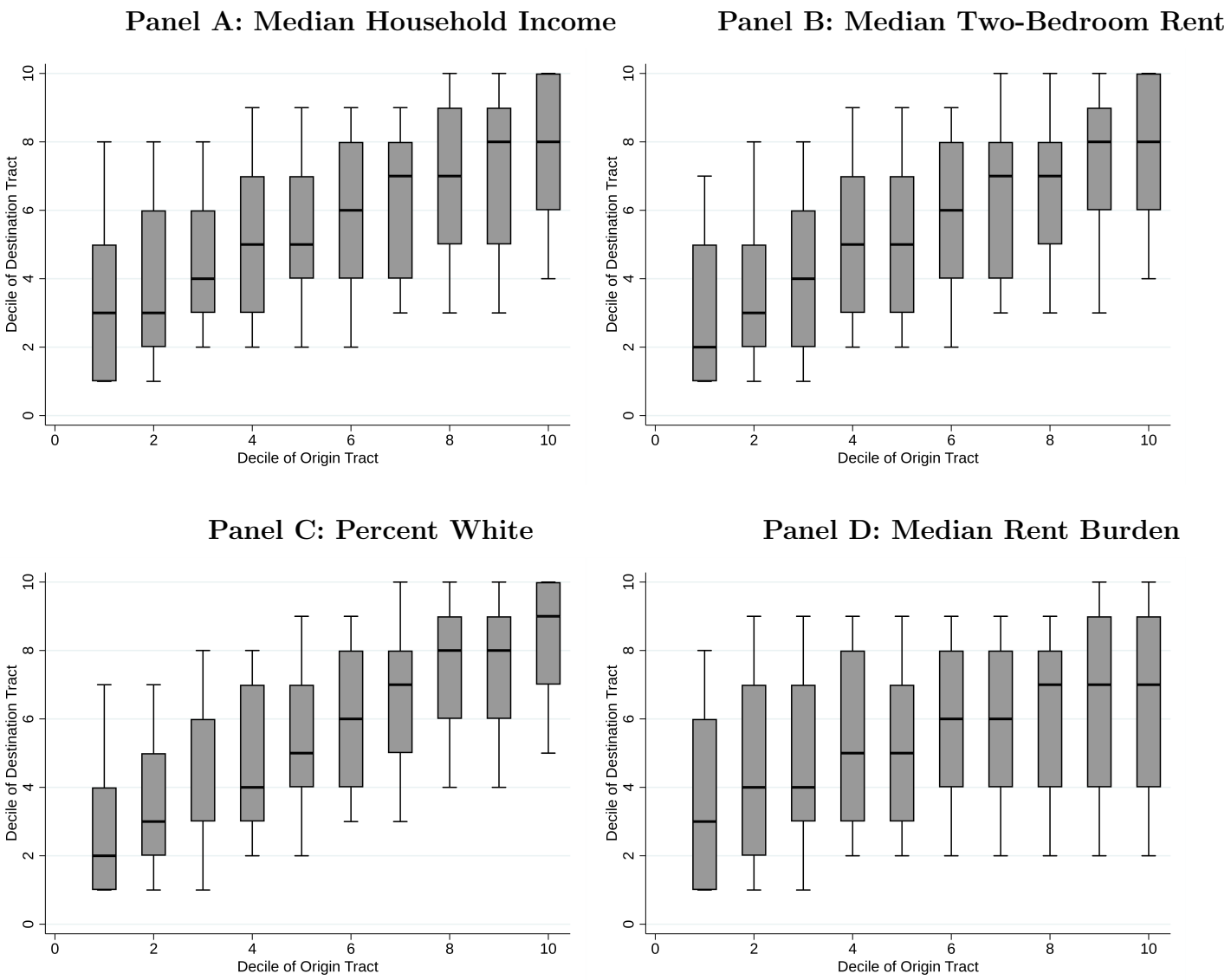
NOTE: Solid red dots represent the location of market-rate apartment buildings completed since 2010. Hollow black dots represent the previous residences of the current tenants in those buildings. The base map polygons are zip codes in the Chicago CBSA, colored according to median household income in the 2013–2017 ACS. Only residents whose prior residence was within the Chicago CBSA are included. Small amounts of noise are added to each marker to avoid precisely identifying addresses.

Figure A.4: San Francisco City Origins



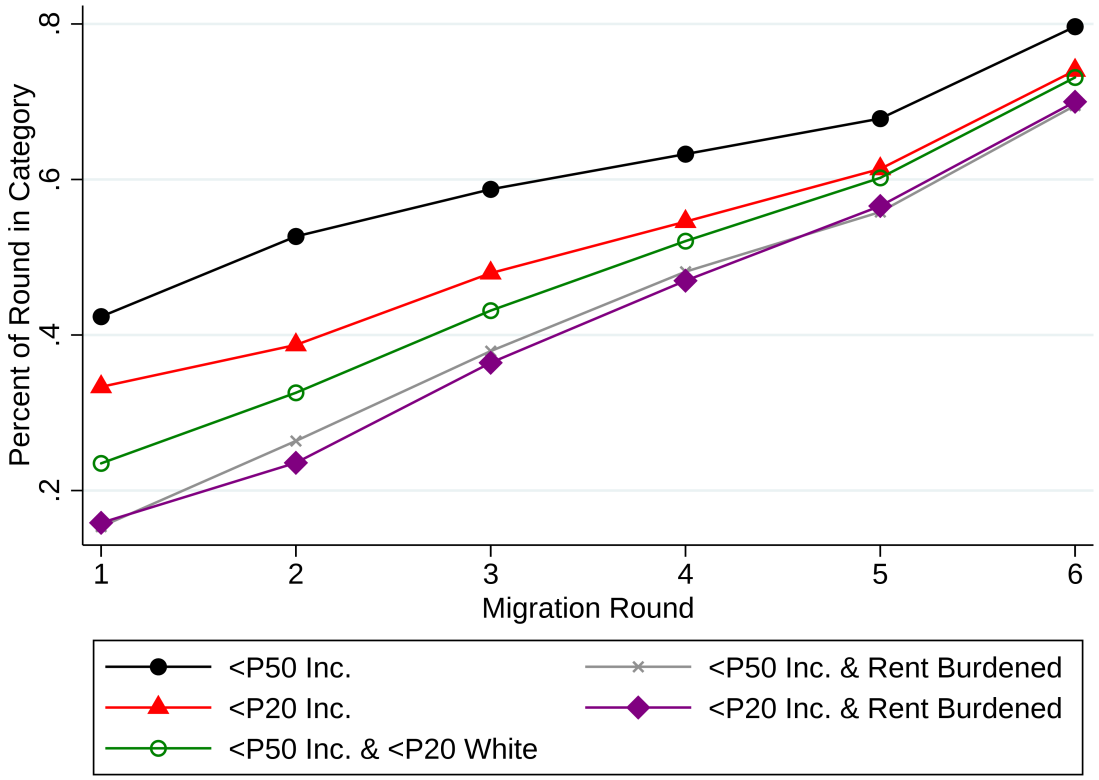
NOTE: Solid red dots represent the location of market-rate apartment buildings completed since 2010. Hollow black dots represent the previous residences of the current tenants in those buildings. The base map polygons are zip codes in San Francisco proper, colored according to median household income in the 2013–2017 ACS. Only residents whose prior residence was within the city proper are included. Small amounts of noise are added to each marker to avoid precisely identifying addresses.

Figure A.5: Migration between Census Tracts in San Francisco Metropolitan Area



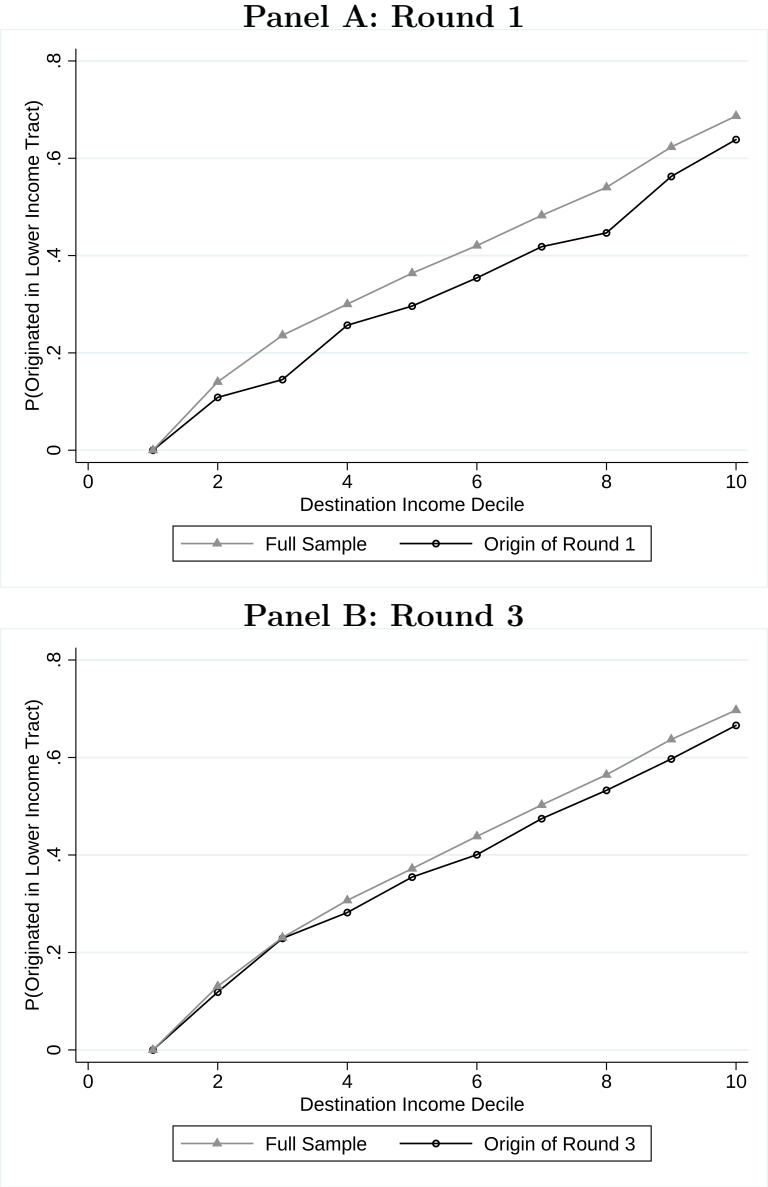
NOTE: This figure shows the distribution of destination neighborhood characteristics conditional on origin neighborhood characteristics for migrants within the San Francisco CBSA in 2010–2017. Within each panel, each box plot represents migrants who originated in a tract of a given decile of the characteristic in the heading. The box then shows the median and interquartile range of the same characteristic in the destination tracts of those migrants. The whiskers represent 10th and 90th percentiles. Characteristic deciles are calculated within the CBSA.

Figure A.6: Normalized Composition of Sequence of Origin Units



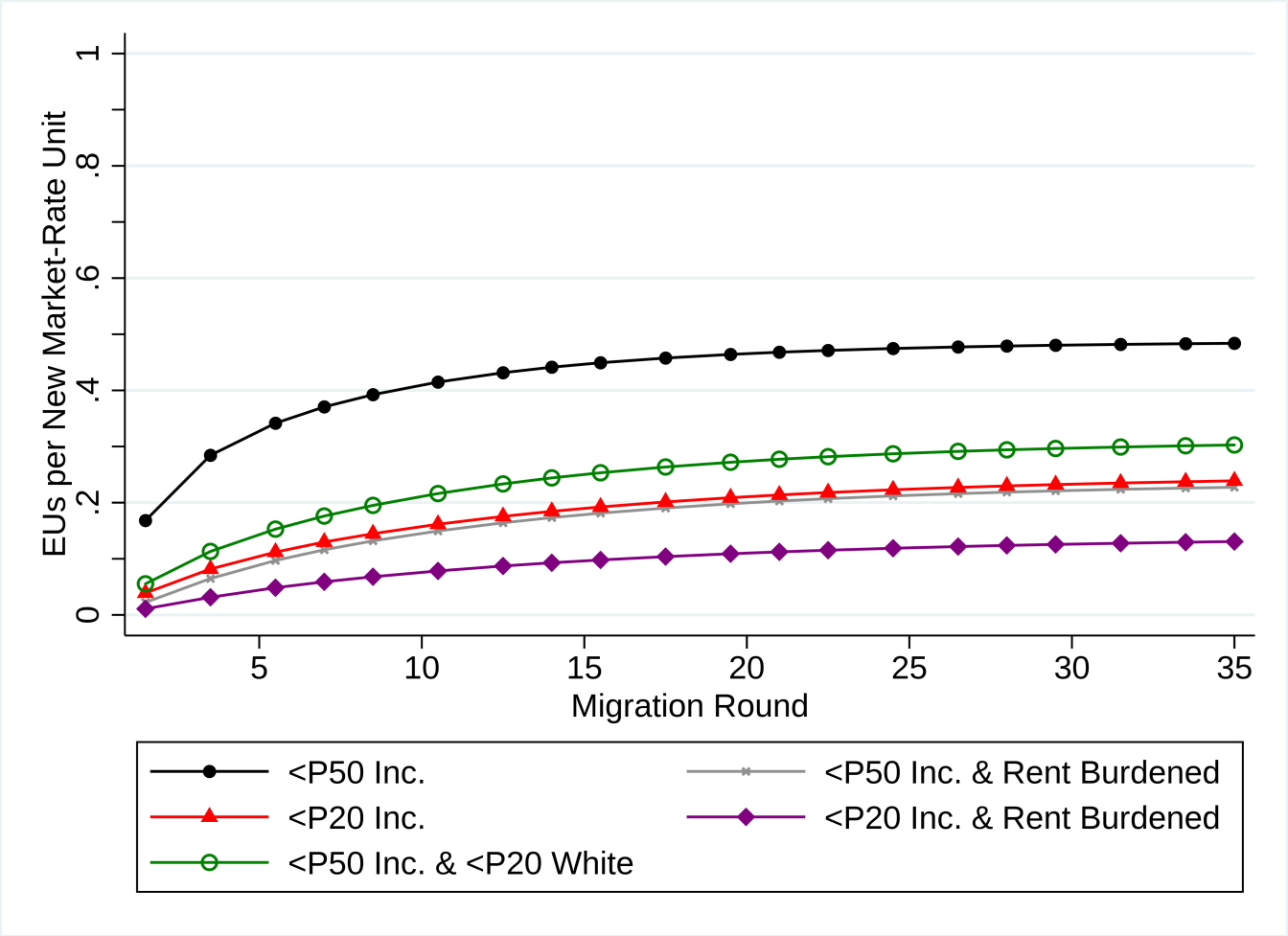
NOTE: This figure repeats Figure 5, normalizing each line by the percent of the CBSA population that lives in a given tract type.

Figure A.7: Percent of Units Filled by Individual from Lower-Income Decile for Full Sample versus Sequence of Origin Units



NOTE: Each line shows the probability that a unit in a given tract income decile was filled by a person who originated in a lower-income tract. The full sample line includes all units in the income decile, while the other line includes only units that were in round 1 (Panel A) or round 3 (Panel B) of the sequence of origin units.

Figure A.8: Equivalent Unit Creation within Principal Cities



NOTE: This figure repeats Figure 6, but includes only equivalent units in the principal city of each CBSA.

Table A.1: MSA Characteristic Deciles

	Median income			Percent white			Median rent burden		
MSA	P20	P50	P90	P20	P50	P90	P20	P50	P90
Atlanta	41,375	61,496	108,295	14.9%	51.0%	85.7%	24.7%	29.5%	40.1%
Boston	57,613	83,865	135,858	49.9%	78.9%	94.8%	25.2%	29.7%	39.9%
Chicago	40,024	62,601	113,019	9.5%	56.8%	87.6%	24.5%	30.1%	44.6%
Dallas	40,733	61,300	118,241	19.1%	48.8%	82.0%	24.3%	28.7%	38.1%
Washington	64,810	95,690	160,833	18.5%	50.4%	83.0%	24.2%	28.8%	40.2%
Denver	49,918	72,031	117,917	43.6%	73.3%	89.2%	24.9%	29.6%	38.5%
Houston	36,932	57,136	112,357	7.7%	34.5%	73.8%	24.2%	29.1%	39.1%
Minnneapolis	52,471	72,357	111,406	62.0%	81.4%	94.5%	24.0%	28.6%	37.7%
New York	45,677	72,657	129,479	8.1%	50.1%	87.1%	26.7%	32.3%	46.8%
Philadelphia	41,897	68,152	116,053	28.1%	74.0%	92.3%	25.0%	30.7%	46.0%
Seattle	55,530	79,040	117,500	50.9%	68.8%	86.0%	24.7%	29.2%	37.3%
San Francisco	62,731	96,210	157,045	17.5%	40.6%	74.0%	24.2%	29.2%	39.2%

NOTE: This tale shows CBSA deciles of the characteristics used to define submarkets. Characteristics are drawn from the 2013–2017 ACS.

Table A.2: Equivalent Unit Totals

Round	Number of Equivalent Units in: <P50 Inc.	<P50 Inc. & Rent Burdened	<P20 Inc.	<P20 Inc. & Rent Burdened	<P50 Inc. & <P20 White
5	0.539	0.186	0.164	0.077	0.238
10	0.659	0.313	0.262	0.141	0.361
15	0.690	0.379	0.318	0.181	0.422
20	0.699	0.414	0.350	0.208	0.453
25	0.701	0.432	0.369	0.225	0.470
30	0.702	0.442	0.380	0.236	0.478
35	0.702	0.447	0.386	0.244	0.482
100	0.702	0.453	0.396	0.258	0.488

NOTE: This figure shows the expected number of equivalent units created by a new market-rate unit, cumulative across rounds of the migration chain. An equivalent unit is created in, for example, a below-median income submarket when a migration chain reaches such an area for the first time, thus reducing demand for that submarket by one. Tract characteristics are taken from the 2013–2017 ACS, and all quantiles are computed within CBSAs. Income is median household income, and rent burdened is defined as in the top quintile of rent burden for the CBSA. These numbers are plotted in Figure 6.

GRAND JUNCTION HOUSING AUTHORITY

TO: Greg Caton, City Manager
Tamra Allen, Community Development Director

FROM: Jody M. Kole, CEO Grand Junction Housing Authority

DATE: October 15, 2021

RE: Richmark Properties Proposal for Downtown Grand Junction

GJHA was asked to review the financial aspects of a redevelopment proposal offered to the Grand Junction City Council with respect to the former downtown City Market location for multifamily rental property. We are happy to assist, but caution that our history of multifamily development over the past 45 years is limited to the affordable market, not the for-profit market. Motivations, benchmarks and expected rate of return differ between these two sectors. Naturally, this evaluation will view the proposed development from an affordability lens. We would recommend that the City also engage an expert from the for-profit housing sector or economic development entity to evaluate the proposed transaction and the request for public financial support.

Affordability:

Of the 256 apartments proposed, the unit mix, size and proposed rents are as follows:

Apartment Type	#	Proposed Monthly Rent *	Estimated Monthly Utilities*	Combined Housing Cost	Annual Income Needed***
Studios	115	$ 1,150	$ 132	$ 1,282	$ 51,280
One Bedroom	64	$ 1,300	$ 146	$ 1,446	$ 57,840
Two Bedroom	52	$ 1,525	$ 173	$ 1,698	$ 67,920
80% Studio	12	$ 1,030**	$ 132	$ 1,162	$ 46,480
80% One Bedroom	7	$ 1,103**	$ 146	$ 1,249	$ 49,960
80% Two Bedroom	6	$ 1,324**	$ 173	$ 1,497	$ 59,880
Total	256				

* In addition to paid rent, tenants pay for all utilities, directly or indirectly through landlord. Utility allowances are provided by GJHA for energy efficient apartments in Mesa County, Colorado, by Zeffert & Associates. Includes water, sewer, trash, gas & electric.

8 Foresight Circle Grand Junction, CO 81505 (970) 245-0388
(TTY) Dial 711 or 1 (800) 842-9710

EQUAL HOUSING OPPORTUNITY

** Industry Standard assumes all utilities are included in the total rent amount for the unit to be affordable. If additional utilities are paid by tenant, these units would not meet the 80% AMI threshold.
*** Annual income needed to be able to afford this monthly rent and utility rate without being Cost-burdened, or paying no more than 30% of monthly gross income for housing costs.

This unit mix, with 50% studio units, has not been common in the Grand Valley, and may affect the property's absorption rate. It is our understanding that a Market Study has not yet been completed for this development. Once one is completed, it may recommend some modifications. For example, such a large percentage of studio units might recommend a greater number of storage units, and such an active recreation community might suggest significant storage options for mountain bikes, kayaks, and the like.

It is our understanding that the City staff has requested that if any financial contribution were to be made by the City to this development, a minimum of 10% of the units be rent restricted and rented to households at or below 80% of the Area Median Income (AMI). Due to the fact that renter households typically have lower incomes than homeowner households, a restriction to 80% AMI is not effective in bringing rents within reach of a majority of Grand Valley renters.

The sponsors have included 25 units with lower rents. However, the industry standard is that when considering rent restrictions, all utilities and non-optional charges should be included in the maximum rent affordability calculation. For example, if the maximum rent permitted for a unit was $1,000 and the sum of all tenant-paid basic utilities was $125 per month, then the maximum rent payable to the landlord would be $875 per month, with no additional "charge-backs". Optional cable and internet would not be included in this calculation. This proposal has the tenants paying all utilities on top of the full rent amount and other additional charges. The model shows Utility Reimbursements to the landlord totaling $161,280 in the first year, in addition to utilities that are direct billed to residents. Clearly the objective that 10% of units be affordable at the 80% AMI level is not yet met. Also, not clear at this point is what form the affordability restrictions would take (deed restriction recommended), how and by whom the affordability restrictions would be monitored, how long the affordability commitment would be effective, and what consequences would be incurred should the restrictions not be met.

This proposal relies heavily on additional tenant charges which are not customary in this market, totaling $69,240 for items such as pet rent ($35 / month), admin. fee ($175), month-to-month premium ($150 / month) , early lease termination and move out fee ($150), application fee ($50) and storage ($25 / month). Customary charges include pet deposits, move-out charges for damages and late charges.

Construction Costs / Static Pro Forma:

Generally, the hard construction costs seem in line with GJHA's recent construction experience. We do not have experience with this level of demolition, so express no opinion on those costs included in the category "Horizontal Costs" which total $4,216,068. Some expense items seem unusual, such as a Misc. Soft Costs line item for "Travel and Contractor Appreciation" of $60,000. Initial marketing included in the construction costs is estimated at $109,000.

The level of amenities planned is higher than usually seen in this market, including a pool, pool deck grilling area, fire pit & cabanas, gym, club house and fireplace.

The Developer Fee to be earned by the sponsor of $1,839,312 is in line with market developments. A 5% contingency allowance on a project of this size also seems reasonable, but would not typically be charged on the Developer Fee payable to the sponsor, which in this case adds $91,966.

Operating Budget:

The operating expense detail is lacking in specificity at this point, and more information is necessary to assess the appropriateness of the line items. An annual marketing budget of $102,400 seems high. While one might debate individual line-items, an overall per-unit, per annum operating cost of $5,283 is a bit on the high side, considering that the landlord does not pay for utilities and takes an asset management fee on top of the operating expenses and net cash flow.

Ten Year Cash Flow:

Reviewing the cash flow projections provided, and based on two telephone conversations with Adam Frazier, it appears that upon completion of construction and conversion to permanent financing, the sponsors intend to withdraw from the project approximately $7 million, above the annual operating revenues. Additionally, the model suggests that they intend to place the property up for sale in year 10, generating approximately $21 million in sales proceeds above the then outstanding debt. Perhaps some of these funds could be made available to repay some of the public subsidies requested.

Market Demand / Need:

The recently released Grand Valley Housing Needs Assessment indicates that 51% of Grand Junction renter households earn less than $35,000, and 40% of Grand Junction renter households earn less than $25,000 per year. The proposed rents in this new development will be out of reach for the majority of Grand Junction renter households.

Additionally, the Housing Needs Assessment indicates that:

> "Most rental units in Grand Junction rent for between $875 and $1,875 per month – nearly three fourths of rental units fall within this range (74%). There are approximately 4,600 renter households who can afford rents in this range and over 8,000 units priced appropriately for them, leaving a surplus of almost 3,700 units."

This prompts the question of how many additional rental units in the upper end of this price range are needed and can be absorbed in this market, and whether a public subsidy would be warranted at this time. Perhaps a broader, deeper affordability commitment would make a public investment more consistent with the community needs identified in the Grand Valley Housing Needs Assessment.

DOWNTOWN
GRAND JUNCTION, COLORADO
Life Happens Here

December 6, 2021

Mayor McDaniel and Members of City Council

RE: 200 Rood Avenue Redevelopment

On behalf of the DDA and BID Boards of Directors (Boards) I write concerning the potential redevelopment of the property at 200 Rood Avenue (former City Market) by Richmark Companies ("Richmark").

While each Board has a different mission, we write collectively to encourage City Council to fully consider the economic benefits the Richmark project will bring to Downtown Grand Junction and the community at large. When you do consider those benefits, we anticipate that you will agree as we have, that the project is worthy of support.

Benefits of the project include approximately 250 units of housing in Downtown which will have an immediate positive impact by expanding the customer base for businesses and added diversification of patrons which could lead to new businesses in Downtown. It is estimated that the Richmark development proposal will fuel $5 million in sales tax revenue over a twenty-year period and add an additional $4 million in property tax increment. The project will also remake a long-blighted property at a visible entry into Downtown and in turn activate the revitalization of other blighted properties. These benefits are a few among many; a housing project of the scope and scale proposed by Richmark in Downtown is unprecedented.

While Richmark has not made a formal ask of the City, the DDA, and/or the BID, it is virtually certain that a project of this magnitude will require support from both the DDA and the City. Urban in-fill projects are expensive, complicated and complex. In order to be successful and to fully capitalize on the opportunities the project presents for economic development and growth the City and the DDA will need to participate, The City and the DDA have a long history of partnering on projects that are catalysts for growth. Recent examples include DDA participation in Las Colonias, Dos Rios and the remodel of the Grand Junction Convention Center. In each instance the DDA partnered with the City to make those projects viable and help spur economic growth in Downtown Grand Junction.

The City and Downtown have both identified housing in Downtown as a key component for sustainable economic growth and the Richmark project has the potential to move the needle in a major way and set a high bar for future housing infill projects in Downtown.

The DDA and BID look forward to working with the City on continuing to foster a vibrant Downtown environment. We hope that you will find a way to meaningfully assist with the Richmark project.

If you would like to discuss the project with the DDA and BID Boards, please let me or Brandon know.

Regards,

Doug Simons Jr.
Board Chair
Downtown Grand Junction DDA and BID

Grand Junction City Council

Workshop Session

Item #1.b.

Meeting Date: December 13, 2021

Presented By: Greg Caton, City Manager, John Shaver, City Attorney

Department: City Council

Submitted By: Greg Caton

Information

SUBJECT:

Lodging Tax Resolution Discussion

EXECUTIVE SUMMARY:

Resolution No. 45-18 (attached) was approved by the voters at the November 6, 2018 election. Resolution No. 45-18 provides guidance for the expenditure of the new lodging tax revenue; however, it further allows for the City Council to review and determine how the additional 3% lodging tax is expended.

At the December 13th work session, the City Council will discuss the Resolution and consider a request from the Grand Junction Regional Air Service Alliance (GJRASA) to use the funds for (i) marketing and advertising locally and regionally to expand air service, encourage additional passenger traffic and (ii) retain current air service as necessary and consistent with the GJRASA mission.

BACKGROUND OR DETAILED INFORMATION:

On November 6, 2018, voters approved a 3% increase to the Lodgers Tax (Lodgers Tax Increase). In relevant part, the ballot question allowed for the 1.75 % of the Lodgers Tax Increase to be spent to promote, market and obtain travel and tourism and tourism related activities. The voters authorized the City to annually budget .75% of the Lodgers Tax Increase to the Greater Grand Junction Sports Commission for marketing, promoting and sponsoring sporting activities, events, tournaments, competitions and exhibitions and 1.0% of the Lodgers Tax Increase to the Grand Junction Regional Air Service Alliance for marketing, supporting, and/or arranging for additional direct airline service to and from Grand Junction. Changes in any allocation(s) of the Lodgers Tax Increase are subject to future determinations by the City Council.

Due to staffing challenges, primarily pilot shortages, and other major disruptions in the

air service industry, all of which were compounded by COVID, the assumptions under which Resolution No. 45-18 was adopted have materially changed. In light of these significant changes, the Council will be reviewing the Resolution and the goals of the GJRASA. After due consideration, the Council may amend Resolution No. 45-18 regarding the expenditure of the Lodgers Tax Increase revenue in support of the GJRASA's mission.

FISCAL IMPACT:

N/A

SUGGESTED ACTION:

Council discussion and direction, if any, for staff to prepare a Resolution regarding utilization of Lodgers Tax Increase revenue for and in support of the GJRASA mission.

Attachments

1. Resolution No. 45-18

RESOLUTION NO. 45-18

A RESOLUTION SETTING A TITLE AND SUBMITTING TO THE ELECTORATE ON NOVEMBER 6, 2018 A MEASURE TO INCREASE AND RETAIN AND SPEND ALL LODGING TAX REVENUES AS DEFINED BY ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION

RECITALS.

In 1988 the City Council of the City of Grand Junction adopted Ordinance 2401 creating the Grand Junction Visitors and Convention Bureau (VCB). Since January 1, 1989 the VCB (now known as *Visit Grand Junction*) has capably served the City and the region by providing destination marketing, promotion and visitor services. With Ordinance 2401/People's Ordinance 34, the City imposed a 3% tax on the price paid for "lodging," which is defined as the providing of the right to use or possess, for consideration, any room or rooms for temporary occupancy, such as, but not limited to: a room in a hotel, guesthouse, hotel apartment and lodging houses, motel, ranch, resort, mobile home, mobile home park, bed and breakfast establishment, movable structure, auto camp, trailer court, inn, hostel or park under any concession, permit, right of access, lease, contract, license to use or other arrangement or otherwise, but shall not include rentals under a written agreement for occupancy for a period of 30 consecutive days or more.

The revenues derived from such lodging tax are used exclusively for promoting and marketing tourism and tourism-related activities.

In 2017 travel and tourism generated approximately $1.46 million in lodging taxes and $1.39 million in local sales tax revenues. They also bring jobs and economic prosperity: the travel industry alone provides Grand Junction more than 5,500 jobs and $139.9 million in wages. Grand Junction experienced $282.3 million in direct travel spending in 2017, with tremendous potential to grow beyond that sum.

Because the lodging tax is almost universally paid by business and leisure travelers, it imposes little if any burden on City residents. Using lodging tax revenues to fund travel, destination marketing, and visitor services also creates a positive nexus between the cost of providing those services and the users of those services, while providing a substantial economic benefit to the City by the infusion of funds from people who live outside the community.

Because the lodging tax rate was set nearly 30 years ago and has not increased since then, and because of a demonstrated need for new and additional services, including sports tourism marketing and support for direct air service to and from Grand Junction, the City Council has determined that the lodging tax should increase by 3%.

The purpose of this resolution is therefore to set a ballot question to increase the lodging tax and to seek voter authorization for the City of Grand Junction to retain and spend this important tax revenue for the use and benefit of *Visit Grand Junction,* of the Greater Grand Junction Sports Commission (GGJSC) and the Grand Junction Regional Air Service Alliance (GJRASA), so long as such funds are expended, as determined by the City Council, for promotion and marketing for travel and tourism-related activities

including but not limited to sports-related tourism and support for direct air service in Grand Junction.

The 1989 Lodgers Tax was imposed prior to the 1992 Taxpayer Bill of Rights (TABOR) and is therefore exempt from the provisions thereof; however, this 3% Lodgers Tax Increase must be approved by voters. The ballot question will allow voters to decide these important tax and spending questions.

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

1. The purpose of this resolution (Resolution) is to authorize the submission to the eligible electors voting at the election to be held on the first Tuesday of November 2018 (the Election), a ballot question to enact, levy and impose an increase in the Lodgers Tax at a rate of 3% (for a total Lodgers Tax of 6%) on the price paid for the leasing or rental of any occupied hotel room, motel room, lodging house, bed and breakfast, and other accommodation with the revenues derived from such lodging tax being used exclusively for promoting and marketing tourism and tourism related special events and activities all in accordance with the ordinances of the City of Grand Junction and this resolution and ballot question. The 3% increase shall be referred to herein as the "Lodgers Tax Increase."

2. If approved by the eligible electors voting thereon, the Lodgers Tax Increase shall be a voter-approved revenue change or an exception to limits on revenues and spending, without limiting the collection or spending of any other revenues or funds by the City under Article X, Section 20 of the Constitution of the State of Colorado (TABOR) or any other law.

3. If approved by the eligible electors voting thereon at the Election, the Lodgers Tax Increase shall become effective on January 1, 2019.

4. If not approved, the Lodgers Tax of 3% will remain in effect and remain an exception to the limits on revenues and spending under Article X, Section 20 of the Colorado Constitution (TABOR), having been imposed prior to the enactment of TABOR.

5. The definitions of the words contained in this Resolution, if not specifically defined herein, shall be as set forth in the Grand Junction Municipal Code (GJMC), which definitions are incorporated by reference into this Resolution as if fully set forth. The term "City" includes all lands within the corporate limits of the City of Grand Junction and all lands duly and lawfully annexed to the City.

6. At the time of making a tax return of the Lodgers Tax, every owner of every lodging property vendor shall continue to be entitled to withhold a processing fee to cover the expenses for the collection and remittance of the Lodgers Tax in accordance with GJMC 3.08.010 *et seq*; however, because the cost of processing is not expected to increase, no such processing fee shall apply to this 3% Lodgers Tax Increase amount.

7. Except for the foregoing change regarding the Vendors Fee, for the purposes of applicability, exemptions, collection, administration and enforcement of this Resolution and the Lodgers Tax, the provisions of GJMC 3.08.010 et. seq., as amended from time to time, shall be deemed applicable and incorporated into this Resolution.

8. Effective January 1, 2019, the City of Grand Junction shall budget and expend the revenue generated from the Lodging Tax Increase for the following purposes:
   a) Marketing, promoting, soliciting and sponsoring, in whole or in part, travel and tourism related activities, including but not limited to tourism-generating sporting activities, events, tournaments and competitions; and
   b) Marketing, promoting, purchasing and/or contracting for additional direct airline route(s) and airline service from existing or new carriers to and from Grand Junction; and,
   c) Destination marketing and destination management services such as branding, marketing and support of the products and services that draw people to the area.

9. To promote, market and obtain travel and tourism and tourism related activities, all as generally described above, the City may annually budget.75% of the Lodgers Tax Increase to the GGJSC and 1.0% of the Lodgers Tax Increase to the GJRASA, with changes in any annual allocation(s) subject to formal consideration by the City Council. However allocated in each and every year after the Lodging Tax Increase is effective, all revenue derived from the Lodgers Tax Increase shall be used solely for the purpose of promoting and marketing travel, tourism and tourism related activities, as determined by the City Council.

At the general election, to occur on November 6, 2018, the official ballot, including absentee and mail ballots, shall state the substance of the question to be voted upon and so stated shall constitute the ballot title, designation and submission clause, and each registered elector voting at the election shall indicate his or her choice on the question submitted, which shall be in the following form:

SHALL THE CITY OF GRAND JUNCTION LODGING TAX BE INCREASED BY ONE MILLION EIGHT HUNDRED FIFTY THOUSAND DOLLARS ($1,850,000) IN THE FIRST YEAR (2019), AND BY WHATEVER ADDITIONAL AMOUNTS ARE RAISED ANNUALLY THEREAFTER, BY THE ADOPTION OF AN ADDITIONAL THREE PERCENT (3%) TAX ON THE PRICE PAID FOR LODGING IN THE CITY, WITH THE ADDITIONAL THREE PERCENT (3%) TAX COLLECTED IN THE SAME MANNER AS THE CITY'S LODGING TAX; WITH ALL OR ANY PORTION OF THE NET PROCEEDS OF THE ADDITIONAL 3% LODGING TAX, AS DETERMINED BY THE CITY COUNCIL, BEING COLLECTED, RETAINED AND SPENT TO FUND PROMOTION AND MARKETING FOR TRAVEL AND TOURISM-RELATED ACTIVITIES SUCH AS AND INCLUDING BUT NOT LIMITED TO:

- MARKETING, TRAVEL AND TOURISM-RELATED ACTIVITIES THAT SUPPORT DESTINATION MARKETING OF THE AREA;

- MARKETING, SUPPORTING, AND/OR ARRANGING FOR ADDITIONAL DIRECT AIRLINE SERVICE TO AND FROM GRAND JUNCTION;

- MARKETING, PROMOTING, AND SPONSORING SPORTING ACTIVITIES, EVENTS, TOURNAMENTS, COMPETITIONS AND EXHIBITIONS;

EXCEPT THAT NO VENDOR PROCESSING FEE SHALL APPLY TO THE INCREASE AND SHALL THE REVENUES GENERATED BY SUCH TAX INCREASE AND PROCEEDS BE COLLECTED AND SPENT BY THE CITY AS A VOTER APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW?

YES ____

NO ____

Adopted this 18th day of July 2018.

Barbara Traylor-Smith
President of the Council

ATTEST:

Wanda Winkelmann
City Clerk

Grand Junction City Council

Workshop Session

Item #1.c.

Meeting Date: December 13, 2021

Presented By: Wanda Winkelmann, City Clerk

Department: City Clerk

Submitted By: Wanda Winkelmann

Information

SUBJECT:

Boards and Commission Applicant Interview Process

EXECUTIVE SUMMARY:

The purpose of this item is to discuss possible changes to the board and commission interview process.

BACKGROUND OR DETAILED INFORMATION:

In September 2020, a memo was provided to City Council about the Board and Commission program. Topics covered in that memo included the Board and Commission structure, recruitment/orientation for applicants, interviews and interview questions, term expirations, and certificates of appointments. Since that time, improvements have been made to the program to include starting the recruitment process four months prior to term expirations, inviting applicants to attend a board meeting prior to their interview, and eliminating the presentation of certificates at Council meetings (they are now presented at the appointee's first board meeting).

The Agenda Committee has requested a workshop to discuss additional improvements.

INTERVIEW TEAMS

Included in the September 2020 memo were options for the makeup of the Interview Team:

1. The makeup of the Interview Team could continue as it has in the past (three members of Council).
2. Amend the structure to include two members of Council and the Board Chair.
3. Amend the structure to include one member of Council, the Board Chair, and the staff liaison.

Recently, the Forestry Board Interview Team invited the board member who is the Colorado State Forest Service representative to participate in interviews. Feedback received from the Interview Team included comments that having this expert involved was very beneficial and helped the Team recommend appointees who were well-qualified and would add value to the Board.

ALTERNATES

The Zoning and Development Code assigns two alternate members to the Planning Commission (PC). Alternate members attend PC meetings and serve in the event a regular member is absent. When there is a vacancy, the first alternate shall be appointed to fill it and the second alternate shall become the first alternate.

The Grand Junction Municipal Code (Chapter 2.36) designates five members of the Forestry Board and up to two alternates.

For the Planning Commission and Forestry Board, formal assignments of alternates are made at City Council meetings.

The other boards and commissions do not have formal alternates. However, Interview Teams have been asked (where applicable) to name a candidate they would recommend for appointment in the event of a mid-year vacancy. This allows the boards to continue to function and avoids the need for a new recruitment process. To avoid confusion, staff has removed the term, "alternate" from the form completed by Interview Teams that lists the recommended appointees.

INTERVIEW QUESTIONS

Using a standard list of interview questions may be helpful to ensure all applicants are asked the same question and provides predictability for the Interview Team. As referenced in the September 2020 memo, questions could include:

1. Tell us about yourself and why you are interested in serving on this board.
2. How have your past experiences prepared you to serve on this board? Have you attended a board meeting?
3. Describe your involvement with issues pertaining to the City of Grand Junction.
4. What are your thoughts on the guiding documents (such as master plans, bylaws, etc.) adopted for this board?
5. Any questions for the interview team?

Staff looks forward to the discussion on December 13 regarding the Interview Process.

FISCAL IMPACT:

N/A

SUGGESTED ACTION:

For City Council discussion.

Attachments

1. September 2020 Memo Board & Commission Program

CITY OF Grand Junction COLORADO

CITY MANAGER'S OFFICE

Memorandum

TO: Mayor and Members of Council

FROM: Greg Caton, City Manager
Wanda Winkelmann, City Clerk

DATE: September 18, 2020

SUBJECT: Board and Commission Program

Over the past quarter of this year, City Council has been discussing ways to increase citizen involvement on boards and commissions. Recently, the membership on the Parks and Recreation Advisory Board (PRAB) was increased by two via Ordinance No. 4942, and staff has been asked to explore how changes could be made to the structure for alternates for the Planning Commission/Zoning Board of Appeals.

Boards and Commission Structure – In order to ensure a consistent review of the City's boards and commissions, including the number of members, it may be helpful for a periodic evaluation at a workshop to consider the following questions:

1. What does the board do? (Current functions)
2. Does the City need a board that does this?
3. If so, should any of the duties of the board be changed?
4. Can any of the duties of this board be consolidated with another board?
5. Is the size of the board appropriate?
6. Is the work done by the board beneficial and useful to the Council and/or the City?

The responses to these questions will assist City Council in determining whether it should:

1. Continue the board without alteration of duties or composition.
2. Continue the board with amendment to duties and/or composition.
3. Eliminate the board and its duties.
4. Eliminate the board and transfer of some or all duties to other existing board(s).

Recruitment/Orientation for Applicants – Staff begins the recruitment process for boards and commissions ninety days prior to term expirations. City Council has provided feedback that it would be helpful for applicants to receive some sort of orientation to a board/commission, and this could be accomplished by having applicants attend a board meeting prior to their interview. This orientation would be a scheduled agenda item, whereby the Chair provides a brief summary of the duties and answers questions. Applicants would receive exposure to how a meeting is run and hear about the current projects the board is working on.

A discussion was held at the August 31 workshop regarding a variety of approaches. An open house style session could be held to provide information about the various boards and commissions, the role of a board member, time commitment involved, etc. Staff liaisons would be present to answer questions and provide follow-up, thereby preparing citizens for service on a board or commission.

Interviews & Interview Questions – Feedback has been received that it would be helpful for Council to have a standard list of interview questions for applicants. Questions could include the following:

1. Tell us about yourself and why you are interested in serving on this board.
2. How have your past experiences prepared you to serve on this board? Have you attended a board meeting?
3. Describe your involvement with issues pertaining to the City of Grand Junction.
4. What are your thoughts on the guiding documents (such as master plans, bylaws, etc.) adopted for this board?
5. Any questions for the interview team?

Interview Team – Currently the Interview Team consists of three members of City Council. It has been suggested that it would be helpful to have the Chair (or Vice Chair if the Chair is re-applying) and staff liaison involved. Options for the Interview Team include:

1. The makeup of the Interview Team could continue as it has in the past.
2. Amend the structure to include two members of Council and the Board Chair.
3. Amend the structure to include one member of Council, the Board Chair, and the staff liaison.

Term Expirations – Terms for board and commission members expire throughout the year, essentially providing for year-long recruitment efforts. Terms could be changed so that they expire December 31 and therefore interviews would be held in September and October. Applicants could apply for more than one board and hopefully most that apply would receive an assignment.

Certificates of Appointment – Applicants are appointed at a City Council meeting and then are invited to receive “Certificates of Appointment” at the following meeting. This “Certificates” portion of the agenda has been confusing and could be replaced by having the specific board or commission Chair issuing the certificate at the applicant’s first board meeting. Pending no objection from Council, this step regarding certificates will be implemented in October and the “Certificates of Appointment” portion will no longer appear on Council’s agenda.

We suggest a Council discussion regarding these options to clarify how we move forward.