

Making It Pencil: The Math Behind Development

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TURNER FOR HOUSING
CENTER INNOVATION
UC BERKELEY

The “Making It Pencil” series unpacks the steps a developer undertakes to finance and build new housing, and how those steps are impacted by policy choices and market conditions.



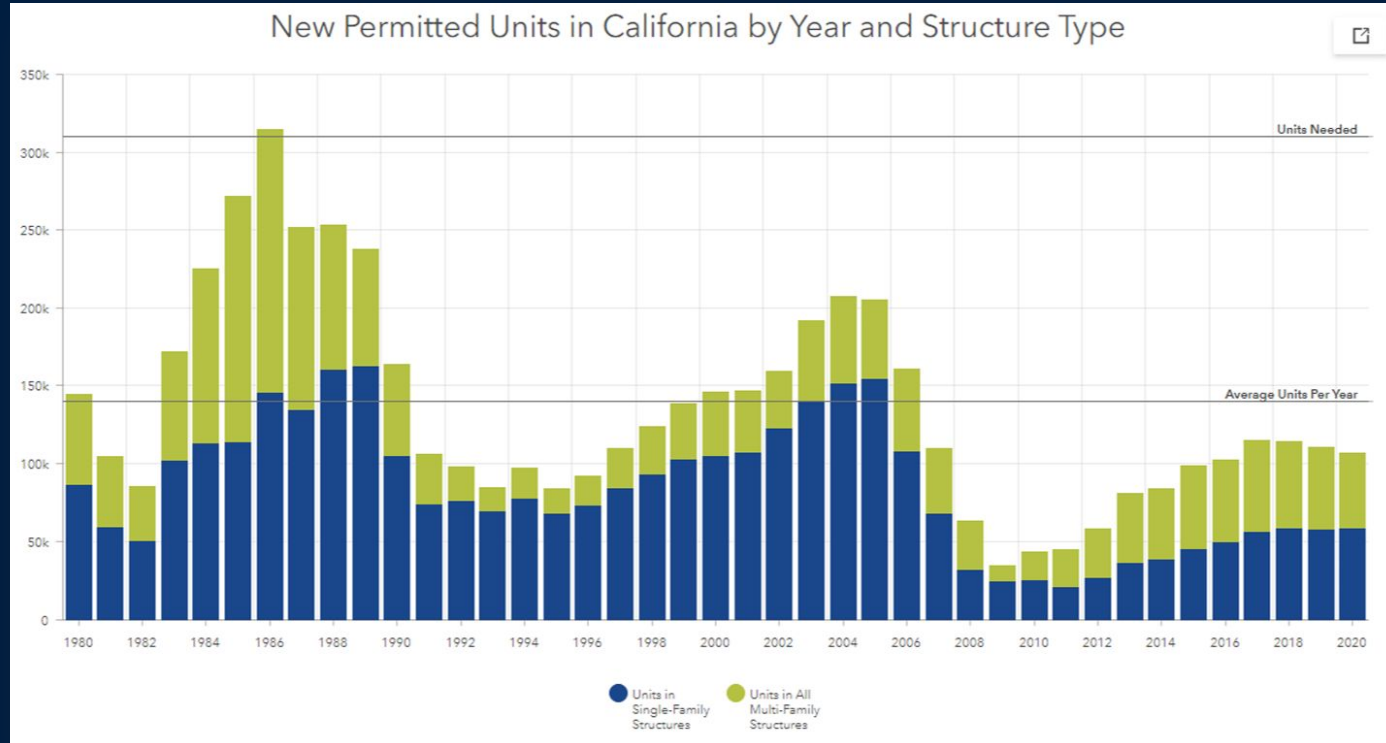
California permits are declining...

2021: 119k

2022: 119k

2023: 111k

HCD Goal: 180k
annually



...And far below most other states

Homes approved per 100,000 residents, 2022 through February 2023

Rank	State	Permits per capita
1	Idaho	1,083
2	South Dakota	1,077
3	Florida	1,066
5	Utah	1,052
6	Texas	984
7	North Carolina	984
39	California	329

Making it pencil: key questions

- How are costs for new construction calculated?
- Where does project funding come from and what does that funding “cost”?
- How are rents determined?
- How do policy choices impact new housing feasibility?



Welcome to Turner Terrace!

- Market rate, for-rent building
- East Bay location
- 120 units:
 - (24) studios
 - (60) 1 bdrm apartments
 - (36) 2 bdrm apartments
- 1:1 parking (1 space/unit)
- 1,500 square feet of retail
- 5 over 1 construction (stick over podium)



Project development conditions

The characteristics of our project site as well as local policies matter in determining the total cost to build Turner Terrace.

Pricing Factors

Turner Terrace

Cost Assumptions

- Land Price ⓘ
- Environmental review not required ⓘ
- No demolition ⓘ
- No environmental remediation ⓘ

Policy Assumptions

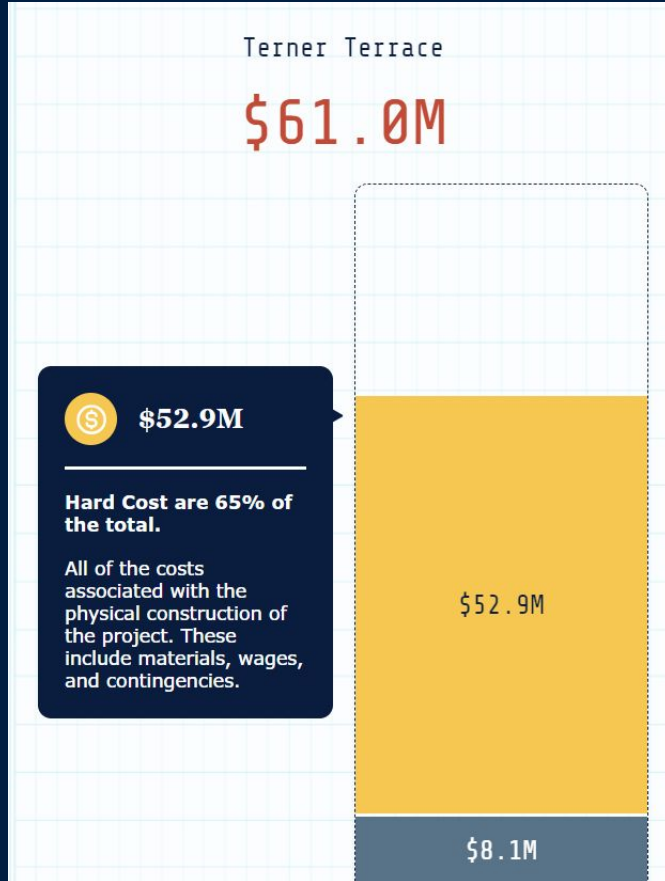
- No inclusionary zoning/linkage fee ⓘ
- No offsite infrastructure improvements ⓘ
- No exactions ⓘ

What does it cost to build Turner Terrace?



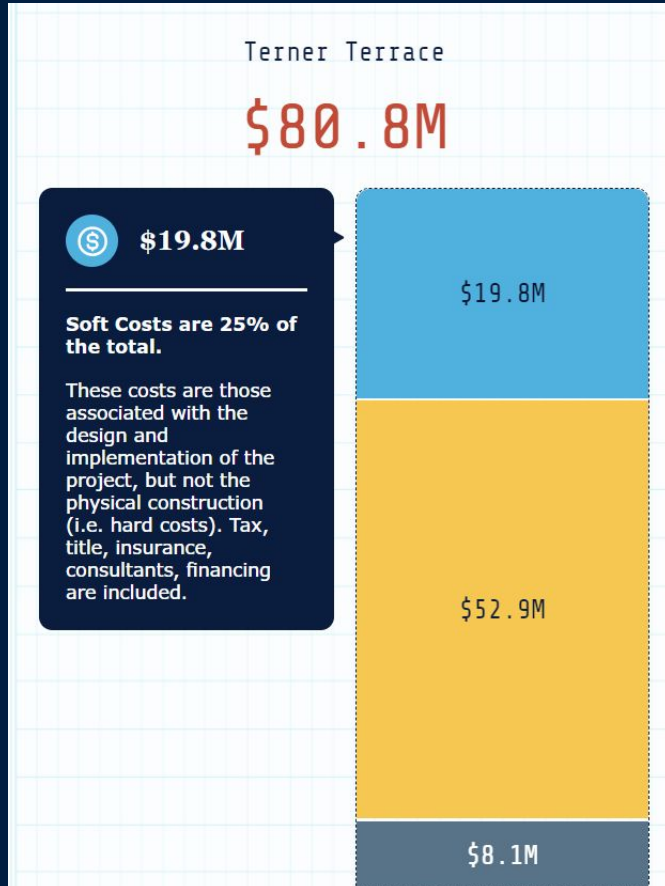
There are three main categories of cost for new residential development: hard costs, soft costs, and land costs

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Typical multifamily projects are more expensive today

Figure 1: Turner Multifamily Prototype Case Study Hard Costs 2019 and 2023 (in Millions)

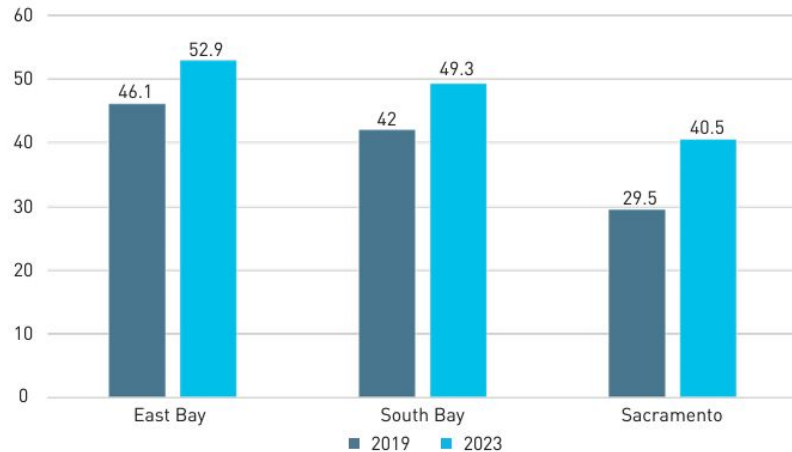
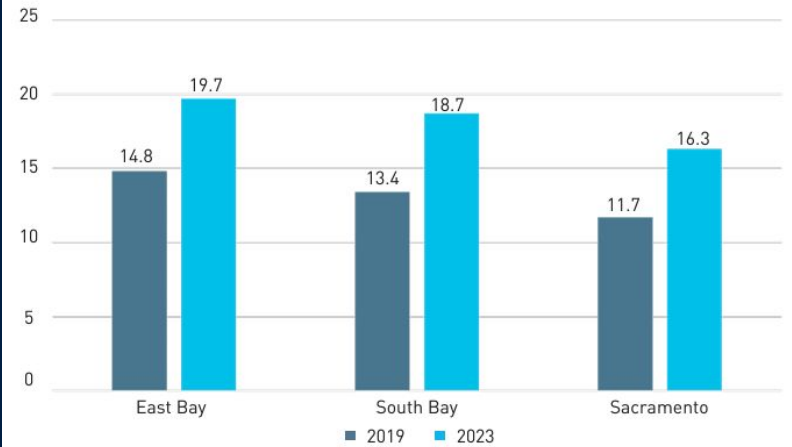


Figure 2: Turner Multifamily Prototype Case Study Soft Costs 2019 and 2023 (in Millions)



Making it Pencil

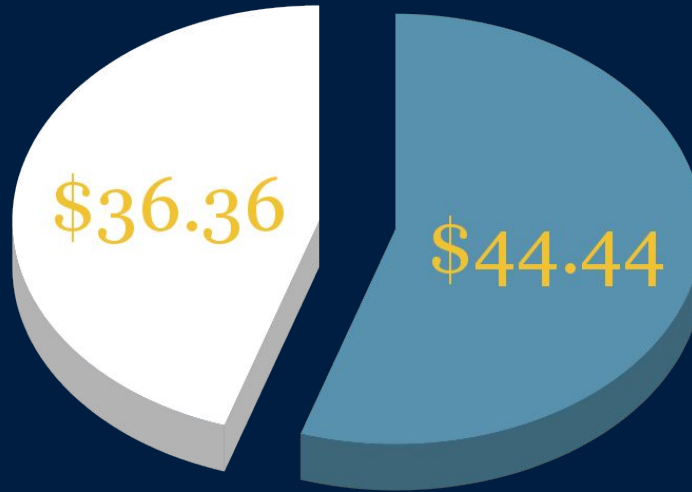
Now that we know the project cost, it's time to obtain financing

Developers get financing from two places: debt— which is generally in the form of a bank loan, and equity from a private investor



How much debt can we raise?

Financing breakdown for a 55% “Loan to Cost”
(in millions)

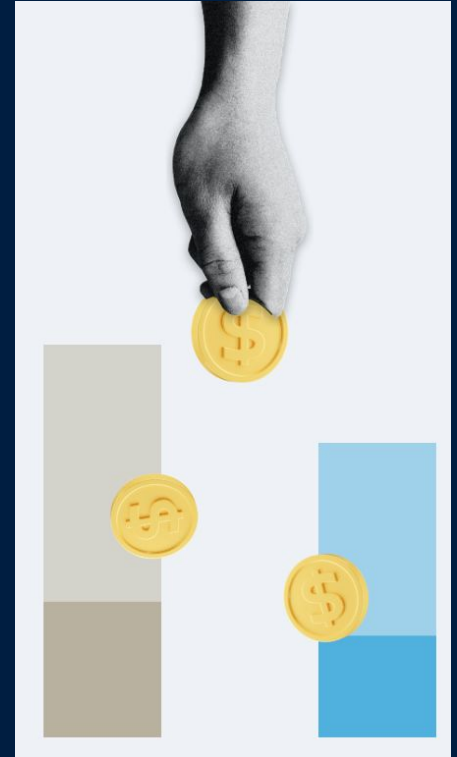


• Debt • Equity

Who could invest in Turner Terrace?

Housing competes for a global pool of capital.
Investors might be:

- **Private Equity companies** are private capital groups who invest in real estate of all kinds, including commercial and industrial projects.
- **Pension Funds** are groups who routinely invest in real estate as “high return” options to round out their overall member portfolios.
- **Insurance groups** put money into a broad portfolio of investments, including residential real estate.



Can we get an investor?

The simplest measure of how profitable a new project will be is to compare how much money Turner Terrace will make after expenses (Return on Cost) against the return of simply purchasing an existing, occupied building (Capitalization Rates).

Return on Cost (ROC) compares the cost to build and manage Turner Terrace against the revenue it will bring in from rents.

Capitalization Rates measures the return one can expect by purchasing a similar property nearby.

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Today, ROC needs to be around one percentage point higher than Cap Rates for investors to be interested in providing equity for new East Bay projects

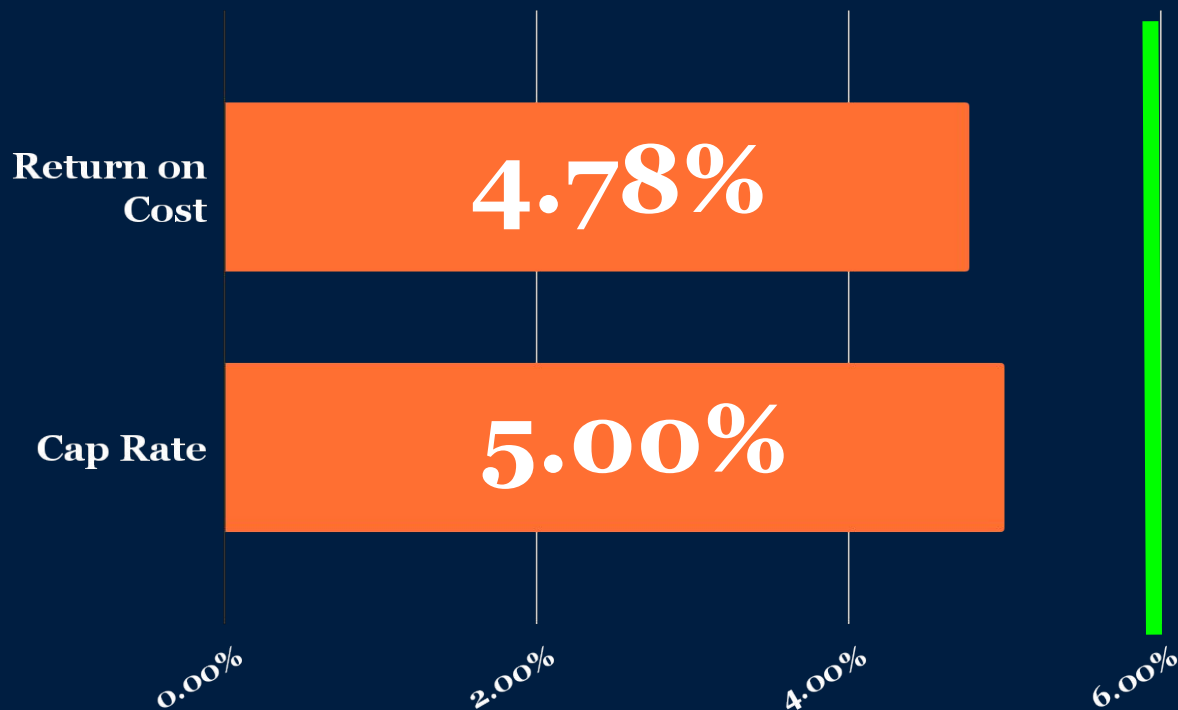
Can we get an investor?

Turner Terrace ROC to Cap rate comparison



Can we get an investor?

Terner Terrace ROC to Cap rate comparison



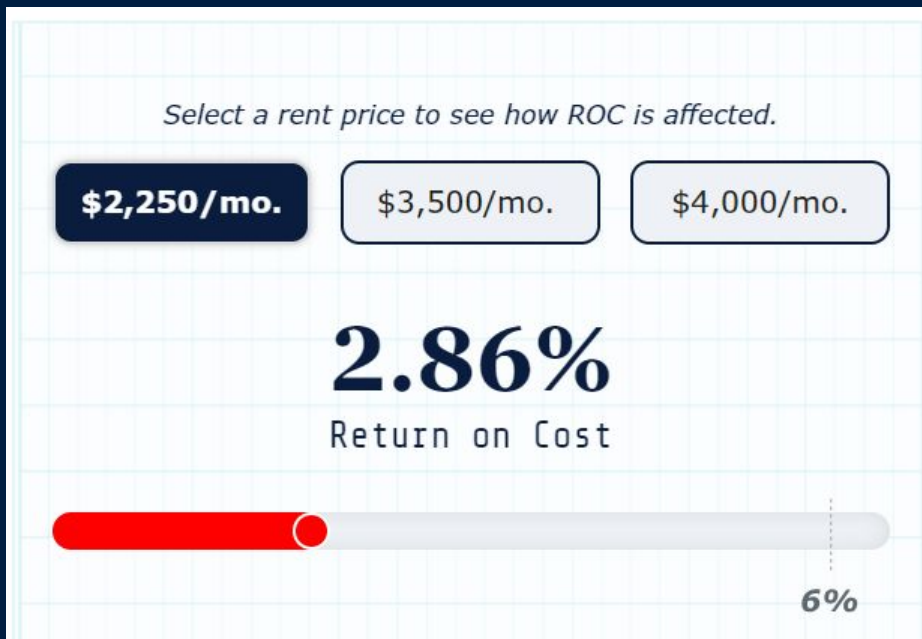
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Terner Terrace ROC to Cap rate comparison



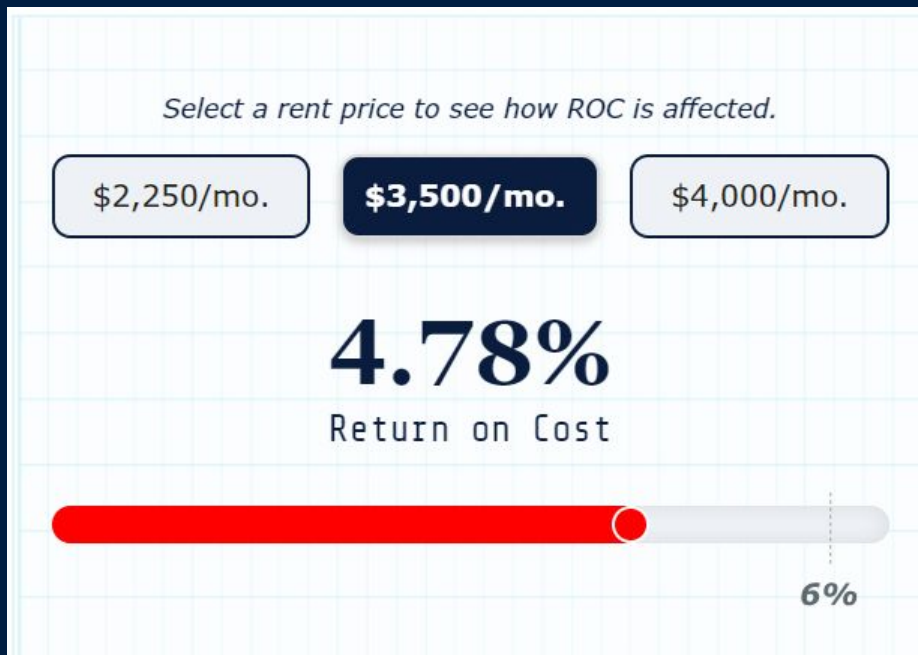
What rent levels will make Turner Terrace Pencil?

Testing 1 bedroom rents



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What can policymakers do?



Policy choices impact
project feasibility

What can policymakers do?



Policy choices impact project feasibility

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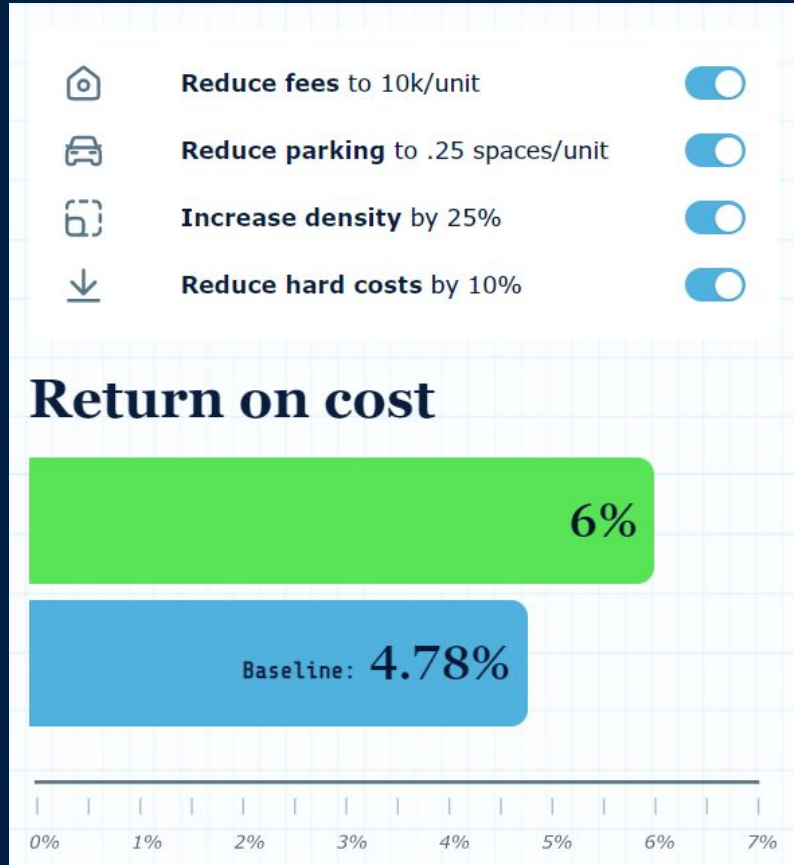
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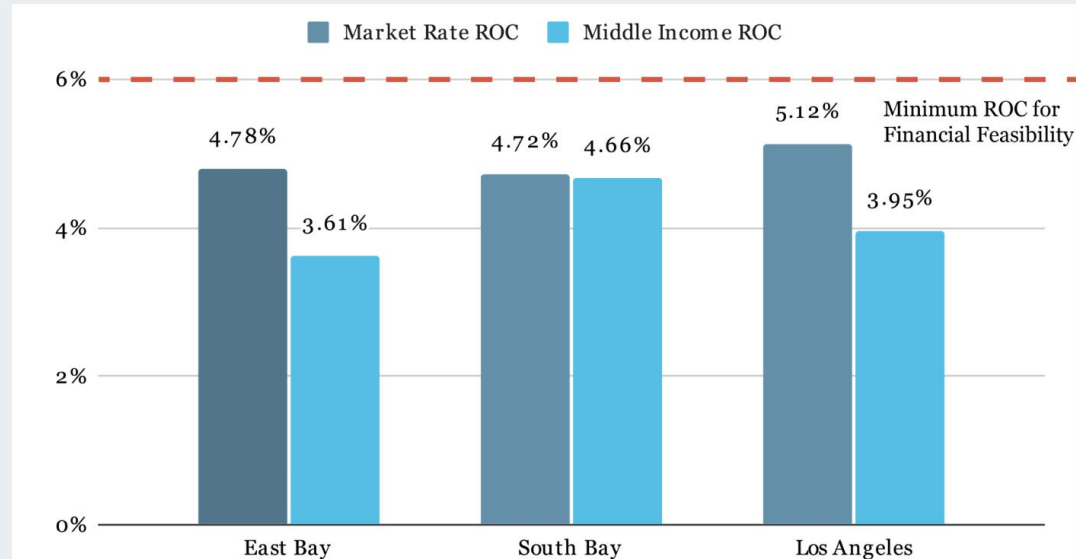
Policy choices impact project feasibility

Making it pencil: can housing for middle-income households to work?

- Testing policies for middle income affordability

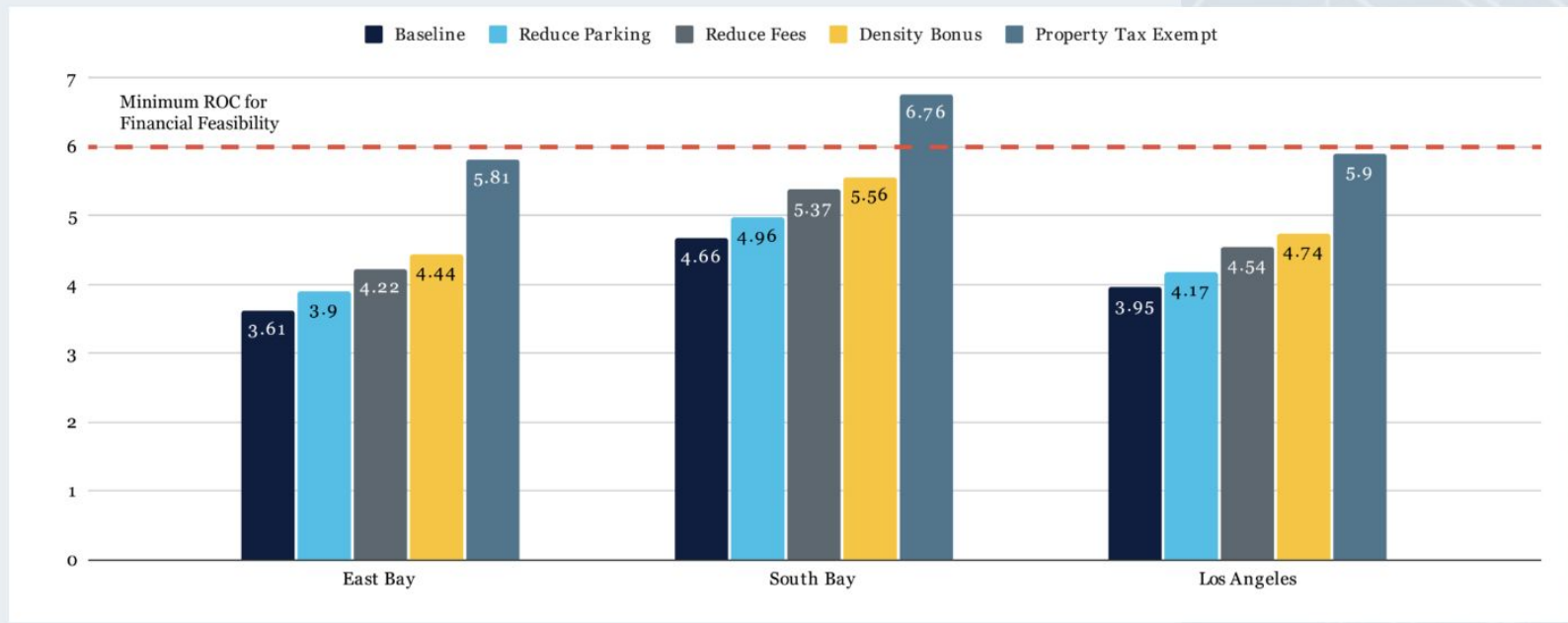
Middle-Income is even less financially viable than market-rate housing

Figure 2: Comparison of Return on Cost Between Market-Rate and Middle-Income Pro Formas



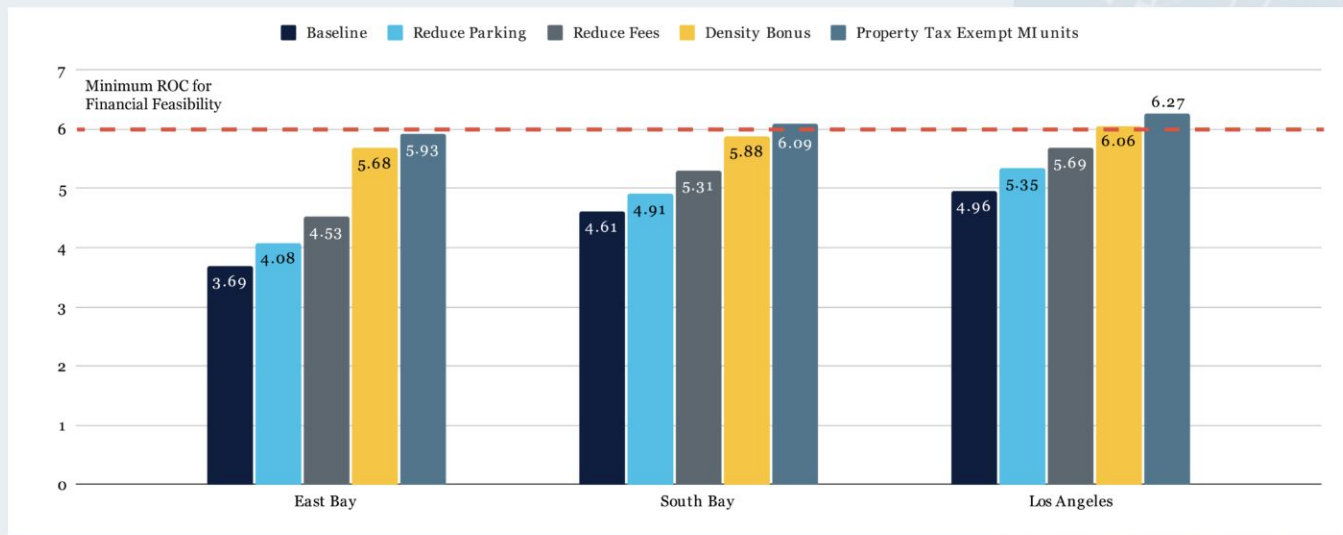
Policy changes can help

Figure 3: Middle-Income Return on Cost with Cumulative Policy Incentives



Mixed-Income is also sensitive to policy changes

Figure 4. Mixed-Income Return On Cost with Policy Incentives



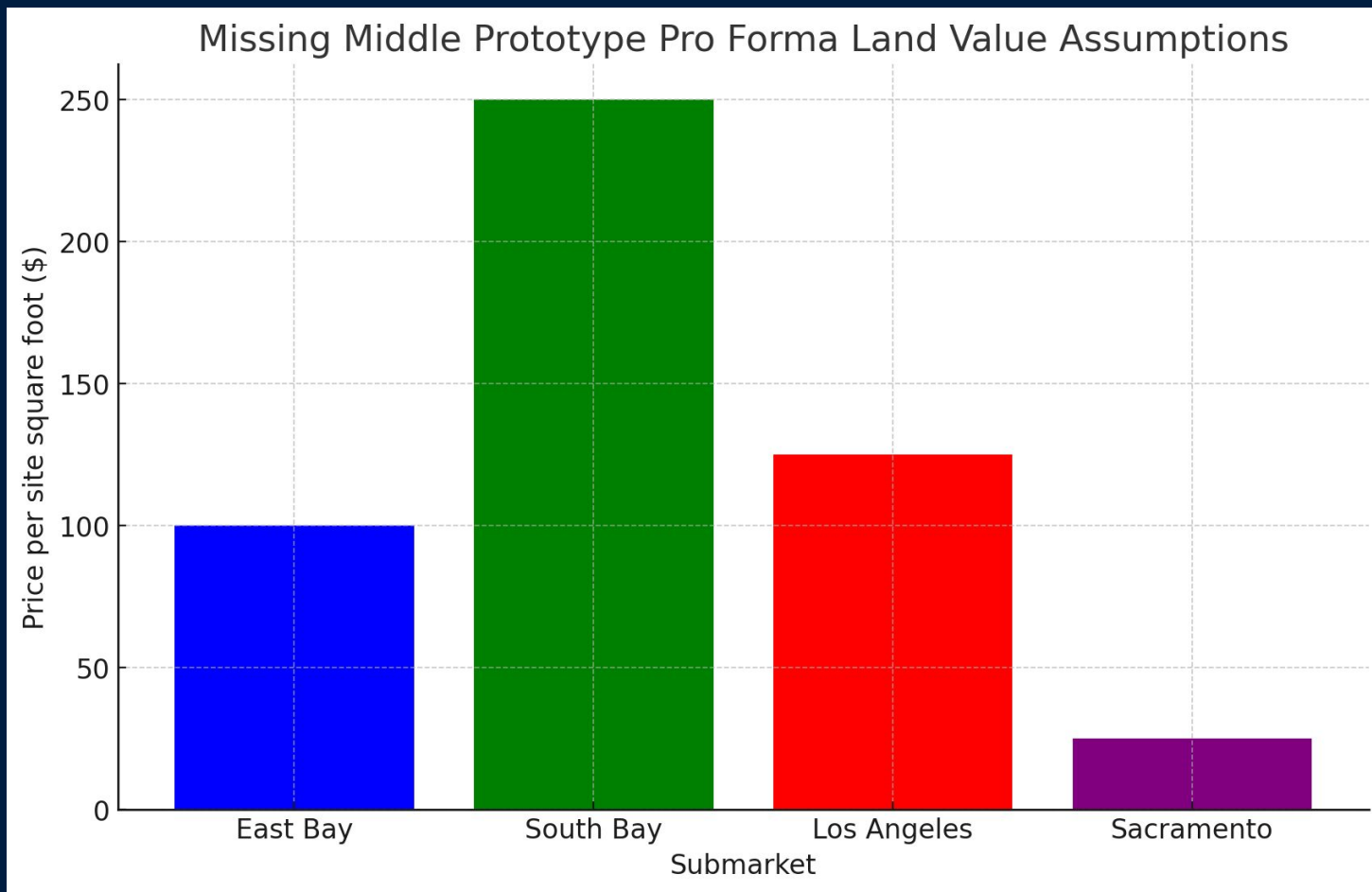
Making it pencil:
The Math Behind Development
Continued...
Missing Middle Housing

Missing Middle Housing (MMH)

“Making It Pencil”

- Four Distinct MMH Housing Types
 - For-sale duplex
 - For-sale fourplex
 - Rental fourplex
 - Rental ten-unit building
- Four Geographical Areas
 - East Bay
 - South Bay
 - Westside LA
 - Sacramento Core

Land Value Assumptions



Development Assumptions

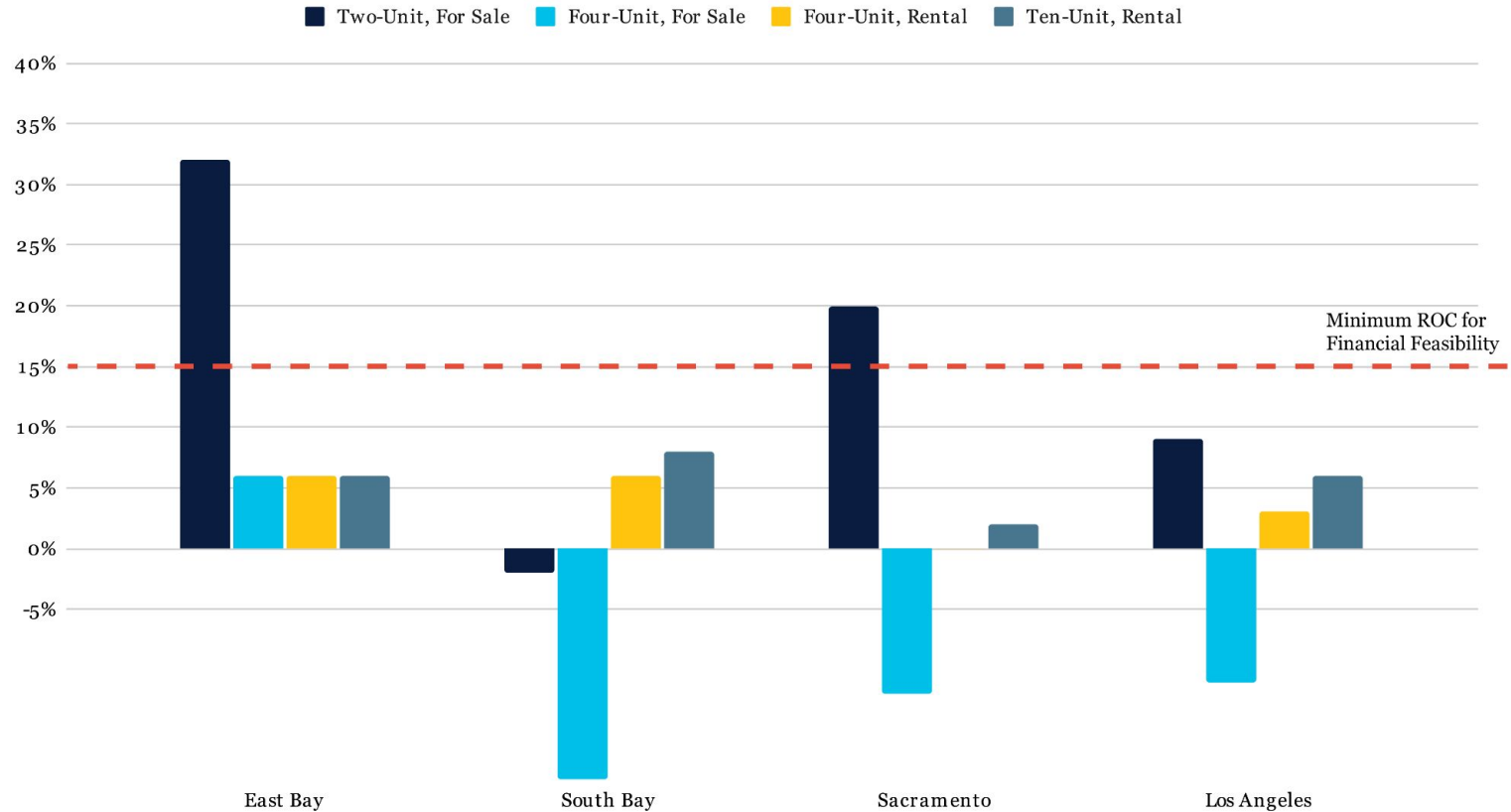
	For-sale, two-unit	For-sale, four-unit	Rental, four-unit	Rental, ten-unit
Unit size (in square feet)	1,250	1,000	800	600
Beds per unit	3	2	2	1
Baths per unit	2	1.5	1	1
Parking per unit	2	1	1	0.75
Site size (in square feet)	5,000	7,500	7,500	10,000

Finance Assumptions

- **No “Global Pool of Capital”**
- **“Comp” Challenges**
- **Vast IRR Range for investment**
- **Loan to Cost: 60%**
- **Interest Rate: 9.5% for construction loan, 6.5% for perm loan**
- **Debt Service Coverage Ratio (for rental properties only): 1.30**
- **Yield Expectation for Equity: 15% Internal Rate of Return**

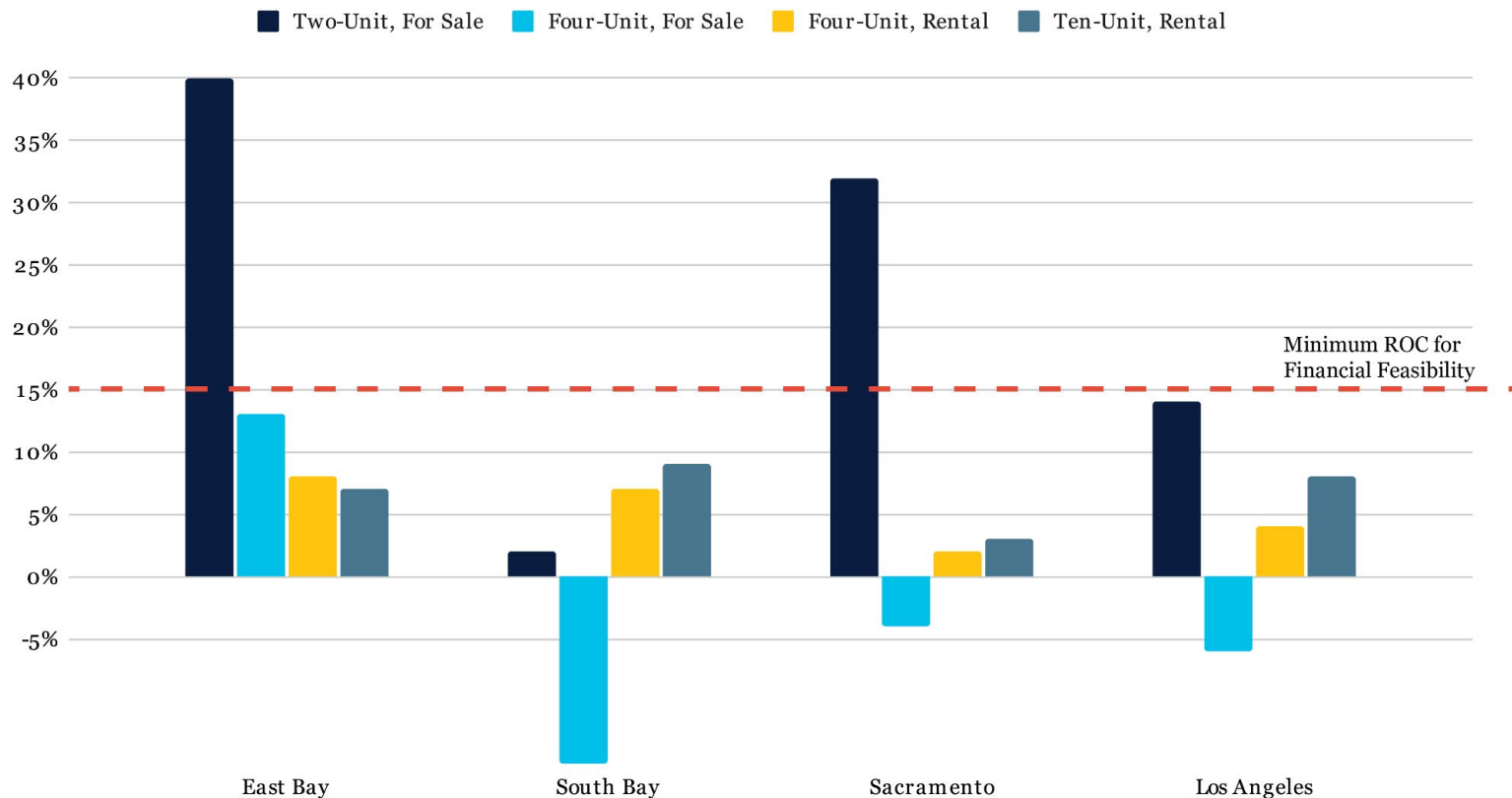
Now, Does it Pencil?

Missing Middle Case Study Internal Rates of Return



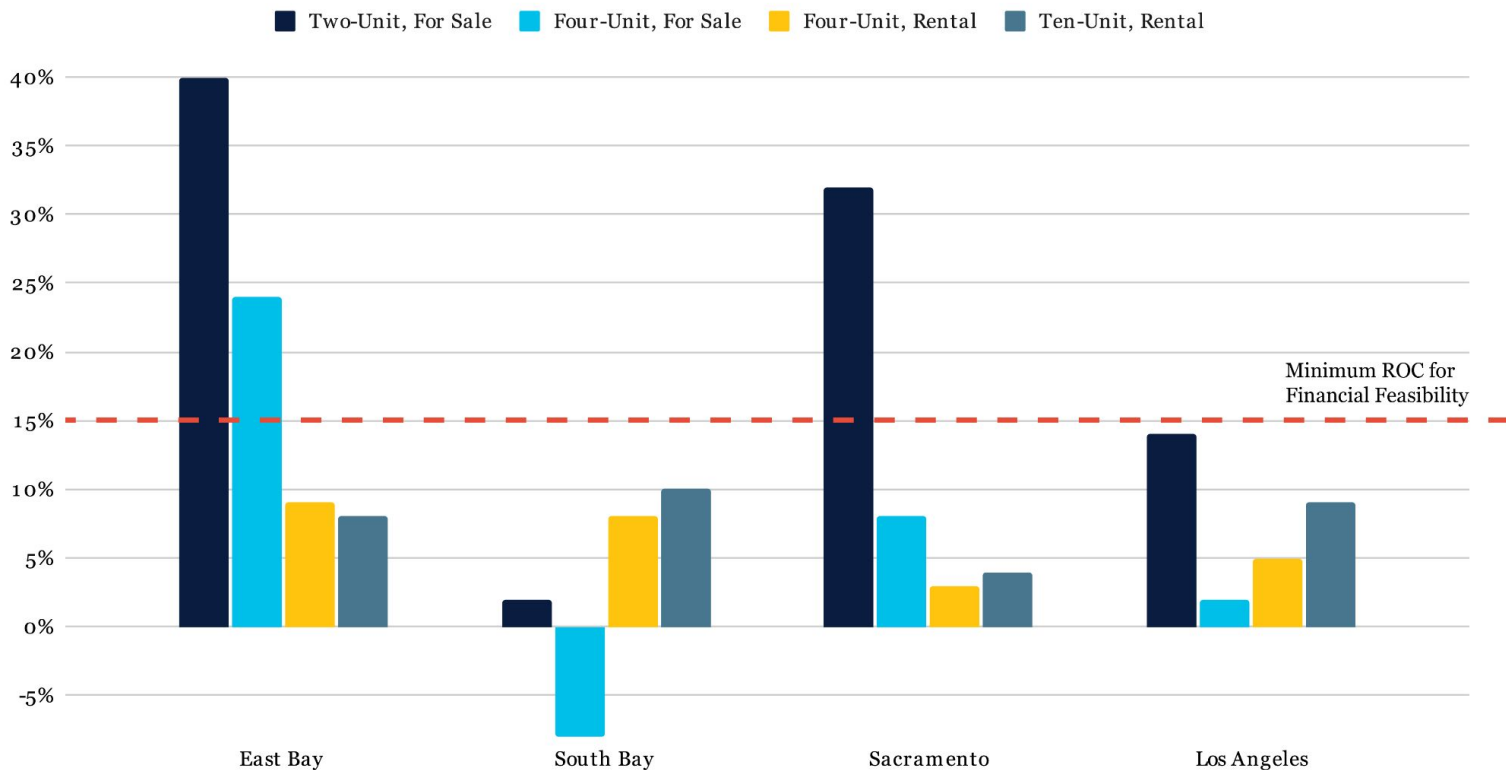
Policy Manipulation: Impact Fees

Missing Middle Case Study Internal Rates of Return - Impact Fee Reduction



Policy Manipulation: Impact Fees + Building Codes

Missing Middle Case Study Internal Rates of Return
- Impact Fee and Construction Cost Reductions



Recommendations

- **Loan To Cost for all development needs to increase**
- **Hard costs need to decrease - re-examine state and local building codes**
- **Study expanding the residential building code to more than 3 units**
- **Impact fee reform**
- **Financial support and innovation**
- **Improve SB 9, implement SB 10, and get ready for SB 684**

Thank you!

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Time for the Q&A
and Panel ->