

Downtown San Francisco Office Conversion Study

February 2023

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STUDY GOALS

In light of increased office vacancy in San Francisco's central business district, HR&A studied the feasibility of converting underperforming office space to create residential uses and spur economic recovery.

Guiding Questions

1. How can the **lowest performing office buildings** in the CBD be categorized by typology?
2. How does the value of these buildings now compare to the **potential value** of the buildings as multifamily rental, given conversion costs and requirements?
3. How do certain levers, like **impact fees and affordability requirements**, affect the financial feasibility of conversion?
4. How might these results change given **future office performance** scenarios?

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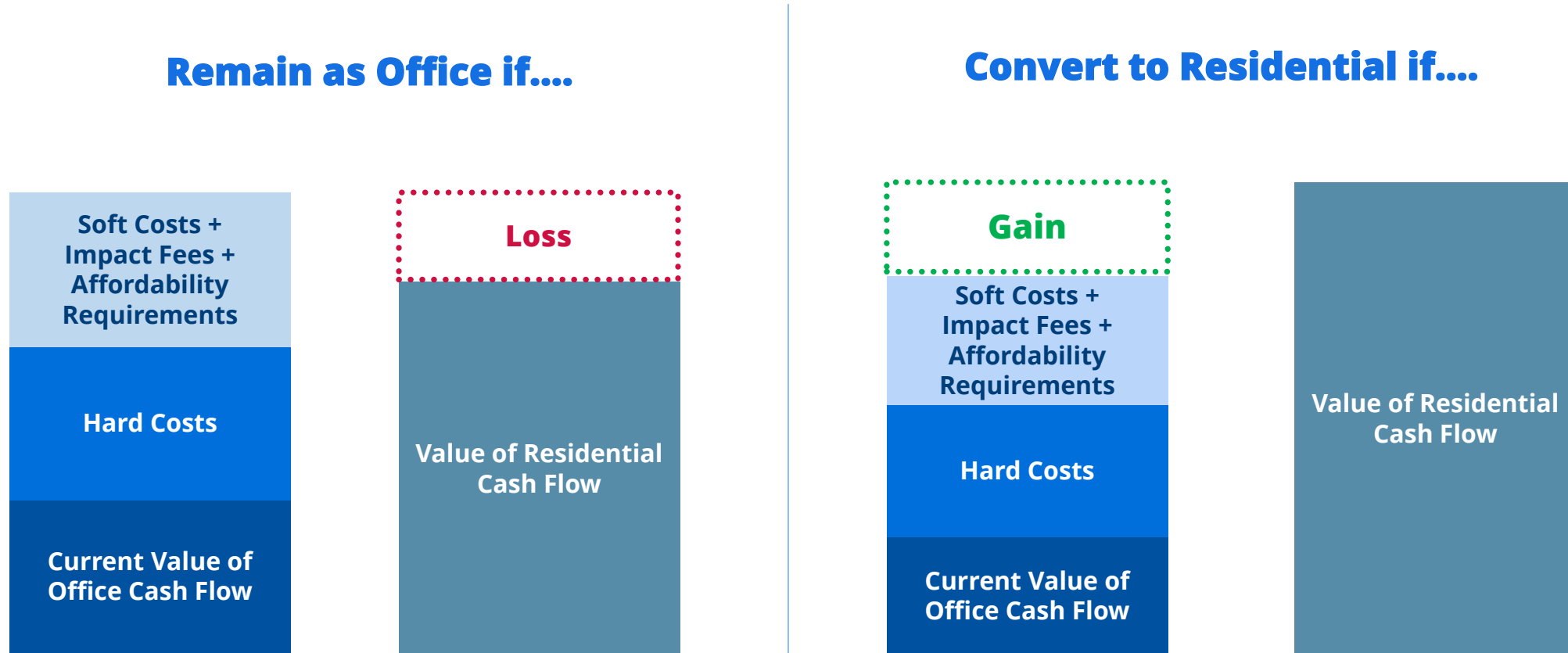
As a tool to inform policy, HR&A calculated the comparative value of a building's cash flows in scenarios where existing owners maintain an office use or convert to residential use.

Modeling Steps

- Identified 6 building typologies that represent, at a broad scale, underperforming office buildings (30% or higher vacancy) in San Francisco's Central Business District (CBD).
- For each typology, modeled a scenario in which the building remains as office and a scenario in which the building converts to residential rental.
- Calculated the NPV of the cash flows over 20 years, including the time to empty and convert the building, using different discount rates for maintain vs. convert.
- Compared the NPV of the cashflows to determine if the residual value of office cash flows is less than or greater than the residual value of residential cash flows.

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Our model assumes that conversions only happen when the future value of a residential building exceeds the existing office value plus the cost of conversion*.



**Individual owner decision making will be driven by this and countless other building specific factors, including existing debt and overall portfolio considerations.*

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KEY FINANCIAL DRIVERS

The decision to convert an office building to residential use is highly dependent on key inputs.



Floorplate Size

Larger floorplates tend to convert less efficiently and may require coring, resulting in lost square footage.



Development Costs

The total costs, including hard construction costs, soft costs, impact fees, affordability requirements and others for residential development – particularly high in San Francisco. Impact fees vary depending on the neighborhood.



Timing

A building's regulatory pathway to conversion and time to empty the building can impact project timing and subsequently decrease the likelihood of conversion.



Performance of Different Uses

The relative performance of office and residential in a given submarket determines the feasibility of conversion.

OFFICE TYPOLOGIES

Currently, underperforming office buildings in the San Francisco CBD can be broadly categorized based on building size.



	Type 1 High Rise Up To 12K Floorplate	Type 2 High Rise 12-20K Floorplate	Type 3 High Rise Over 20K Floorplate	Type 4 Low-Mid Rise 6-20K Floorplate	Type 5 Low-Mid Rise Over 20K Floorplate	Type 6 Low-Mid Rise Under 6K Floorplate
Underperforming Building Stock in CBD	12	20	3	8	3	8
Avg. Age*	88	57	77	103	99	105
Avg. Floors*	20	21	32	19	6	6
Avg. FAR*	13	16	14	9	4	6
Avg. Floorplate*	7,000	15,000	20,000	14,000	27,000	5,000

*Based on Gensler's study of 25 underperforming office buildings within San Francisco's CBD.

HR&A Advisors, Inc.

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KEY ASSUMPTIONS

We modeled 3 future office performance scenarios to capture uncertainty around the pace and scale of office and residential recovery in San Francisco.

Scenario 1

Existing conditions persist in both the office and residential markets.

Office Rent/SF	2022 Rents
Vacancy Low	45%
Office Investment	\$25/SF
Residential Rent/SF	\$6.50

Scenario 2

The office market partially recovers as buildings are repositioned and the residential market improves.

Office Rent/SF	10% decrease from 2022 rents
Vacancy Low	20%
Office Investment	\$100/SF
Residential Rent/SF	\$7.25

Scenario 3

The office market experiences further decline and the residential market improves.

Office Rent/SF	40% decrease from 2022 rents
Vacancy Low	75%
Office Investment	\$25/SF
Residential Rent/SF	\$7.25

The conversion case assumes that **all office space will be converted to residential. An efficiency factor was used for each building type to account for floorplate inefficiencies*

OTHER KEY ASSUMPTIONS

The model reflects assumptions about real world variables that will impact financial performance.



Building Emptying

In conversion cases, the model assumes that tenants will have to be phased out over **3 years** before construction can begin.



Office Repositioning

the model assumes that owners who maintain office use will invest in building upgrades to re-tenant the building and achieve lower vacancy, with more substantial investment in Scenario 2.



Taxes

Property taxes are included, but the analysis leaves out capital gains taxes, as those are highly specific to individual building owners' circumstances. The model assumes that a residential conversion leads to an "assessment event", increasing the taxable value.



Ownership and Debt

The analysis includes construction financing but excludes senior debt, which is dependent on ownership structure and the amount of time the property has been held.

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Key Findings

Current office and residential market conditions in San Francisco's CBD make residential conversions financially infeasible in most cases, given costs. Reductions in financial and regulatory barriers can improve feasibility.

- Given current office and residential market conditions (vacancy and rent) and very high development costs, conversion to multifamily rental is not generally financially viable for any underperforming office typologies now.
- However, individual office buildings with the **highest vacancy may have a pathway to convert under current conditions.**
- Reductions in **costs and affordability requirements** make conversions feasible in most cases for underperforming office spaces.
- If the **residential market improves** and the office market stays stagnant or declines, conversions become more financially viable and, in some cases, can occur without reducing the affordability requirement.

Overview of Baseline Scenarios 1, 2 & 3

Scenario 1: Current office and residential market conditions.

Scenario 2: The office market responds to current vacancy with reduced rents; the residential market improves.

Scenario 3: The office market declines significantly; the residential market improves.

Summary of Scenarios for Typologies

Typology	GSF	Scenarios	Scenario 1 Gap per Unit	Scenario 2 Gap per Unit	Scenario 3 Gain per Unit
Type 1	140,000	High Rise Up To 12K	(\$75,000)	(\$59,000)	\$140,000
Type 2	290,000	High Rise 12-20K	(\$124,000)	(\$115,000)	\$111,000
Type 3	750,000	High Rise Over 20K	(\$79,000)	(\$53,000)	\$113,000
Type 4	100,000	Low-Mid Rise 6-20K	(\$135,000)	(\$121,000)	\$94,000
Type 5	170,000	Low-Mid Rise Over 20K	(\$121,000)	(\$106,000)	\$99,000
Type 6	20,000	Low-Mid Rise Under 6K	(\$80,000)	(\$26,000)	\$49,000

Baseline Feasibility: Scenario 1

Given current office and residential market conditions (current vacancy and rent), conversion to multifamily rental is not financially viable for all underperforming office typologies.

Summary of Scenarios for Typologies

Assumptions		Typology	GSF	Scenarios	Maintain RLV/GSF	Convert RLV/GSF	Difference in RLV/GSF	Gap for Building	Gap per Unit
Office Vacancy	45%	Type 1	140,000	High Rise Up To 12K	(\$7)	(\$99)	(\$92)	(\$12,900,000)	(\$75,000)
Office Rent	2022 Rents	Type 2	290,000	High Rise 12-20K	\$26	(\$126)	(\$152)	(\$44,100,000)	(\$124,000)
Capital Investment	\$25/SF	Type 3	750,000	High Rise Over 20K	(\$44)	(\$141)	(\$97)	(\$72,800,000)	(\$79,000)
Residential Rents	\$6.50/SF	Type 4	100,000	Low-Mid Rise 6-20K	\$23	(\$133)	(\$156)	(\$15,600,000)	(\$135,000)
		Type 5	170,000	Low-Mid Rise Over 20K	\$12	(\$128)	(\$139)	(\$23,700,000)	(\$121,000)
		Type 6	20,000	Low-Mid Rise Under 6K	(\$132)	(\$224)	(\$92)	(\$1,850,000)	(\$80,000)

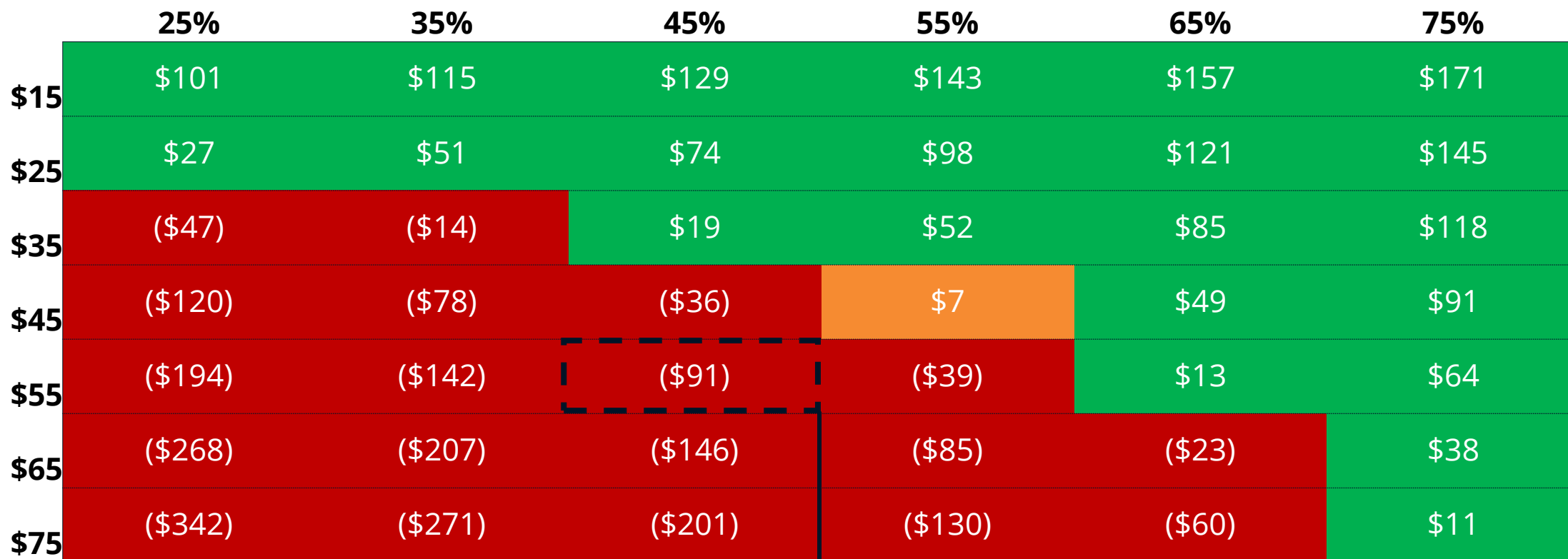
* The upcoming sensitivity analyses focused on Typologies 1, 2 and 4 as they are the most prevalent typologies in the CBD and as these typologies provides the mix of building types that the Client has requested HR&A focus on.

Scenario 1 Sensitivity Analysis: Type 1

Although conversion is broadly infeasible, if office market conditions stay the same, some Type 1 buildings with very high vacancy may make sense to convert now.

Typology	GSF	Scenarios
Type 1	140,000	High Rise Up To 12K

Difference in RLV/SF by Office Rent and Vacancy



Baseline Scenario 1 Condition Modeled for Typology 1: \$55/SF Rent

Scenario 1 Sensitivity Analysis: Type 2

Type 2 buildings face greater financial barriers to conversion due in part to their better performance as office space.

Typology	GSF	Scenarios
Type 2	90,000	High Rise 12-20K

Difference in RLV/SF by Office Rent and Vacancy



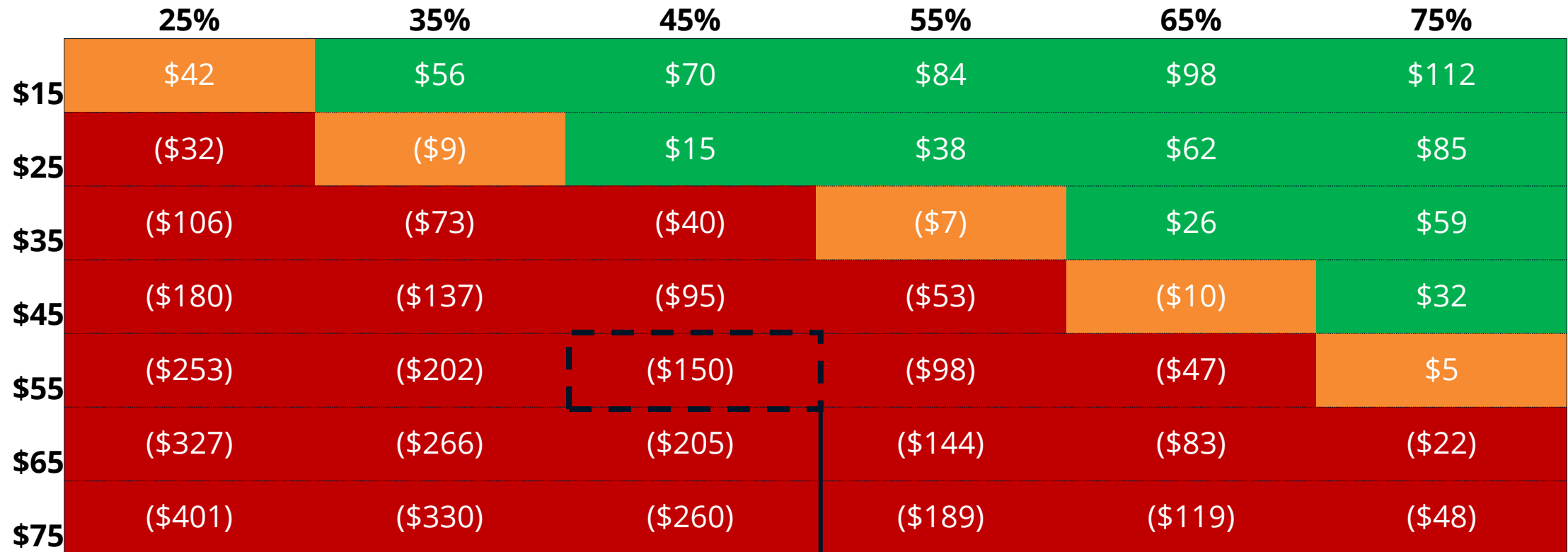
Baseline Scenario 1 Conditions Modeled for Typology 2: \$61/SF Rent

Scenario 1 Sensitivity Analysis: Type 4

Similarly, Type 4 buildings would need a significant decrease in rents or significant increase in vacancy to be financially feasible to convert given current conditions.

Typology	GSF	Scenarios
Type 4	100,000	Low-Mid Rise 6-20K

Difference in RLV/SF by Office Rent and Vacancy



Baseline Scenario 1 Conditions Modeled for Typology 4: \$56/SF Rent

Baseline Feasibility: Scenario 2

If the office market responds to current vacancy with further reduced rents, property owners may still be better positioned to maintain office use through repositioning even if the residential market improves.

Summary of Scenarios for Typologies

Assumptions		Typology	GSF	Scenarios	Maintain RLV/GSF	Convert RLV/GSF	Difference in RLV/GSF	Gap for Building	Gap per Unit
Office Vacancy	20%	Type 1	140,000	High Rise Up To 12K	\$22	(\$50)	(\$72)	(\$10,100,000)	(\$59,000)
Office Rent	10% drop from 2022 rents	Type 2	290,000	High Rise 12-20K	\$66	(\$76)	(\$142)	(\$41,100,000)	(\$115,000)
		Type 3	750,000	High Rise Over 20K	(\$26)	(\$91)	(\$65)	(\$48,700,000)	(\$53,000)
Capital Investment	\$100/SF	Type 4	100,000	Low-Mid Rise 6-20K	\$54	(\$86)	(\$140)	(\$14,000,000)	(\$121,000)
Residential Rents	\$7.25/SF	Type 5	170,000	Low-Mid Rise Over 20K	\$41	(\$81)	(\$122)	(\$20,800,000)	(\$106,000)
		Type 6	20,000	Low-Mid Rise Under 6K	(\$148)	(\$178)	(\$30)	(\$600,000)	(\$26,000)

* The upcoming sensitivity analyses focused on Typologies 1, 2 and 4 as they are the most prevalent typologies in the CBD and as these typologies provides the mix of building types that the Client has requested HR&A focus on.

Baseline Feasibility: Scenario 3

If the office market declines significantly, residential uses would be more financially viable for many building owners, although asset values would likely decline significantly.

Summary of Scenarios for Typologies

Assumptions		Typology	GSF	Scenarios	Maintain RLV/GSF	Convert RLV/GSF	Difference in RLV/GSF	Gain for Building	Gain per Unit
Office Vacancy	75%	Type 1	140,000	High Rise Up To 12K	(\$222)	(\$50)	\$173	\$24,200,000	\$140,000
Office Rent	40% decline from 2022 rents	Type 2	290,000	High Rise 12-20K	(\$212)	(\$76)	\$136	\$39,600,000	\$111,000
		Type 3	750,000	High Rise Over 20K	(\$230)	(\$91)	\$139	\$104,500,000	\$113,000
Capital Investment	\$25/SF	Type 4	100,000	Low-Mid Rise 6-20K	(\$195)	(\$86)	\$109	\$10,900,000	\$94,000
Residential Rents	\$7.25/SF	Type 5	170,000	Low-Mid Rise Over 20K	(\$196)	(\$81)	\$115	\$19,500,000	\$99,000
		Type 6	20,000	Low-Mid Rise Under 6K	(\$234)	(\$178)	\$57	\$1,130,000	\$49,000

* The upcoming sensitivity analyses focused on Typologies 1, 2 and 4 as they are the most prevalent typologies in the CBD and as these typologies provides the mix of building types that the Client has requested HR&A focus on.

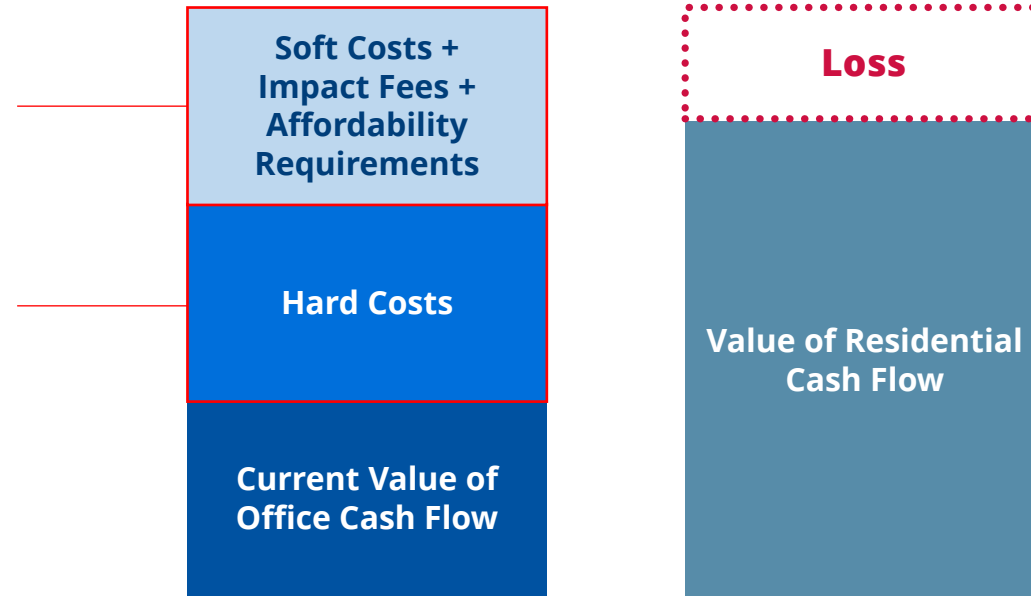
Sensitivities

Our modeling approach considers the impacts of adjusting costs and affordability requirements.

Remain as Office if...

The City of San Francisco has a limited set of levers it can pull to help reduce costs – through impact fees, the affordability requirement, and some additional soft costs – and increase feasibility of conversion.

Hard costs fluctuate over time and therefore substantially impact feasibility conversion.



**Individual owner decision making will be driven by this and countless other building specific factors, including existing debt and overall portfolio considerations.*

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Assumptions – Scenario 1

Typology	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Rent/SF - Residential	\$6.50	\$6.50	\$6.50	\$6.50	\$6.50	\$6.50	CoStar (2022)
SF/Unit	650	650	650	650	650	650	Gensler
Vacancy - Residential	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	CoStar (2022)
Vacancy - Affordable Residential	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	Developer Conversations
Concessions (as % of Revenue)	0.40%	0.40%	0.40%	0.40%	0.40%	0.40%	CoStar
OpEx/SF - Residential	\$14.00	\$14.00	\$14.00	\$14.00	\$14.00	\$14.00	Owner Conversations
Cap Rate - Residential	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	CBRE
Rent Growth - Residential	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	HR&A Assumption
Expense Growth - Residential	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	HR&A Assumption
Conversion Assumptions	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Hard Costs/GSF - Conversion	\$580.00	\$630.00	\$670.00	\$590.00	\$550.00	\$730.00	Developer Conversations
Time to Vacate Office - Conversion	3 Years	3 Years	3 Years	3 Years	3 Years	3 Years	Owner Conversations
Construction Time - Conversion	2 Years	2 Years	2 Years	2 Years	2 Years	2 Years	Developer Conversations
LTC - Conversion	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	HR&A Assumption
Interest Rate - Conversion	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	HR&A Assumption/Owner Conversations
Lease-up Period - Conversion	1 Years	1 Years	1 Years	1 Years	1 Years	1 Years	HR&A Assumption
Lease-up Vacancy - Conversion	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	HR&A Assumption
Class B/C Office Assumptions	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Rent/SF - High - Office B/C	\$69.88	\$84.70	\$85.00	\$68.00	\$79.00	\$63.18	Costar 2019 Rent
Rent/SF - Low - Office B/C	\$55.23	\$61.44	\$47.68	\$56.11	\$56.11	\$27.08	Costar 2022 Rent
Vacancy - High - Office B/C	54.13%	55.70%	45.50%	53.80%	81.2%	51.1%	CoStar (2022)
Vacancy - Low - Office B/C	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	CoStar (2019)
Concessions - High - Office B/C	13.33%	13.33%	13.33%	13.33%	13.33%	13.33%	CBRE Concessions Data (2019)
Concessions - Low - Office B/C	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	CBRE Concessions Data (2012)
OpEx/SF - Office B/C	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	Owner Conversations
Cap Rate - Office B/C	7.00%	7.00%	7.00%	7.00%	8.00%	8.00%	CBRE Cap Rate Survey (2022)
Rent Growth - Office B/C	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	HR&A Assumption
Expense Growth - Office	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	HR&A Assumption
Building Characteristics	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Gross SF	140,000	290,000	750,000	100,000	170,000	20,000	CBRE
Gross to Rentable SF Conversion	90%	90%	90%	90%	90%	90%	CBRE
Existing FAR	14.0	15.0	14.0	12.0	6.0	6.0	CBRE
Residential FAR	15.0	15.0	14.0	12.0	6.0	6.0	SF Planning
Max Supportable FAR	15.0	15.0	14.0	12.0	6.0	6.0	SF Planning
Efficiency Factor	80%	80%	80%	75%	75%	75%	Gensler
Capital Costs	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Tenant Improvements (per Office and Retail SF)	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	Owner Conversations & CBRE data
Leasing Commissions (% of Office/Retail Rent)	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	HR&A Assumption
Lease Term	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	Owner Conversations
CapEx Reserve (% of Total Rent)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	HR&A Assumption
Tax and Valuation Assumptions	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Transfer Tax	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	See SF Tax Calculation Tab
Taxes (as % of Effective Income)	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	Owner Conversations
Taxes during Conversion	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	Owner Conversations
Exit Year	Year 20	Year 20	Year 20	Year 20	Year 20	Year 20	User Input
Sale Costs	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	HR&A Assumption
Soft Costs	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
A&E, Design Cost Assumptions/SF	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	Developer Conversations
Insurance Cost/SF	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	Developer Conversations
General & Admin/SF	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	Developer Conversations
Contingency/SF	\$41.00	\$41.00	\$41.00	\$41.00	\$41.00	\$41.00	Developer Conversations
Fees	\$15.58	\$16.41	\$16.41	\$16.41	\$16.41	\$14.97	SF Planning
City Fee - Inclusionary/SF	\$69.00	\$69.00	\$69.00	\$69.00	\$69.00	\$69.00	Developer Conversations

Each of the three scenarios depend on the 4 assumptions that are highlighted, which include: residential rent/sf, office rent/sf – low, office vacancy – low, and tenant improvements.

Assumptions – Scenario 2

Typology	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Rent/SF - Residential	\$7.25	\$7.25	\$7.25	\$7.25	\$7.25	\$7.25	Developer Conversations
SF/Unit	650	650	650	650	650	650	Gensler
Vacancy - Residential	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	CoStar (2022)
Vacancy - Affordable Residential	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	Developer Conversations
Concessions (as % of Revenue)	0.40%	0.40%	0.40%	0.40%	0.40%	0.40%	CoStar
OpEx/SF - Residential	\$14.00	\$14.00	\$14.00	\$14.00	\$14.00	\$14.00	Owner Conversations
Cap Rate - Residential	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	CBRE
Rent Growth - Residential	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	HR&A Assumption
Expense Growth - Residential	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	HR&A Assumption
Conversion Assumptions	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Hard Costs/GSF - Conversion	\$580.00	\$630.00	\$670.00	\$590.00	\$550.00	\$730.00	Developer Conversations
Time to Vacate Office - Conversion	3 Years	3 Years	3 Years	3 Years	3 Years	3 Years	Owner Conversations
Construction Time - Conversion	2 Years	2 Years	2 Years	2 Years	2 Years	2 Years	Developer Conversations
LTC - Conversion	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	HR&A Assumption
Interest Rate - Conversion	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	HR&A Assumption/Owner Conversations
Lease-up Period - Conversion	1 Years	1 Years	1 Years	1 Years	1 Years	1 Years	HR&A Assumption
Lease-up Vacancy - Conversion	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	HR&A Assumption
Class B/C Office Assumptions	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Rent/SF - High - Office B/C	\$69.88	\$84.70	\$85.00	\$68.00	\$79.00	\$63.18	Costar 2019 Rent
Rent/SF - Low - Office B/C	\$49.71	\$55.30	\$42.91	\$50.50	\$45.45	\$24.37	Costar 2022 Rent
Vacancy - High - Office B/C	54.13%	55.70%	45.50%	53.80%	81.2%	51.1%	CoStar (2022)
Vacancy - Low - Office B/C	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	CoStar (2019)
Concessions - High - Office B/C	13.33%	13.33%	13.33%	13.33%	13.33%	13.33%	CBRE Concessions Data (2019)
Concessions - Low - Office B/C	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	CBRE Concessions Data (2012)
OpEx/SF - Office B/C	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	Owner Conversations
Cap Rate - Office B/C	7.00%	7.00%	7.00%	7.00%	8.00%	8.00%	CBRE Cap Rate Survey (2022)
Rent Growth - Office B/C	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	HR&A Assumption
Expense Growth - Office	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	HR&A Assumption
Building Characteristics	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Gross SF	140,000	290,000	750,000	100,000	170,000	20,000	CBRE
Gross to Rentable SF Conversion	90%	90%	90%	90%	90%	90%	CBRE
Existing FAR	1.40	1.50	1.40	1.20	6.0	6.0	CBRE
Residential FAR	1.50	1.50	1.40	1.20	6.0	6.0	SF Planning
Max Supportable FAR	1.50	1.50	1.40	1.20	6.0	6.0	SF Planning
Efficiency Factor	80%	80%	80%	75%	75%	75%	Gensler
Capital Costs	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Tenant Improvements (per Office and Retail SF)	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	Owner Conversations & CBRE data
Leasing Commissions (% of Office/Retail Rent)	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	HR&A Assumption
Lease Term	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	Owner Conversations
CapEx Reserve (% of Total Rent)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	HR&A Assumption
Tax and Valuation Assumptions	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Transfer Tax	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	See SF Tax Calculation Tab
Taxes (as % of Effective Income)	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	Owner Conversations
Taxes during Conversion	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	Owner Conversations
Exit Year	Year 20	Year 20	Year 20	Year 20	Year 20	Year 20	User Input
Sale Costs	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	HR&A Assumption
Soft Costs	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
A&E, Design Cost Assumptions/SF	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	Developer Conversations
Insurance Cost/SF	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	Developer Conversations
General & Admin/SF	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	Developer Conversations
Contingency/SF	\$41.00	\$41.00	\$41.00	\$41.00	\$41.00	\$41.00	Developer Conversations
Fees	\$15.58	\$16.41	\$16.41	\$16.41	\$16.41	\$14.97	SF Planning
City Fee - Inclusionary/SF	\$69.00	\$69.00	\$69.00	\$69.00	\$69.00	\$69.00	Developer Conversations

Each of the three scenarios depend on the 4 assumptions that are highlighted, which include: residential rent/sf, office rent/sf – low, office vacancy – low, and tenant improvements.

Assumptions – Scenario 3

Typology	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Rent/SF - Residential	\$7.25	\$7.25	\$7.25	\$7.25	\$7.25	\$7.25	Developer Conversations
SF/Unit	650	650	650	650	650	650	Gensler
Vacancy - Residential	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	CoStar (2022)
Vacancy - Affordable Residential	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	Developer Conversations
Concessions (as % of Revenue)	0.40%	0.40%	0.40%	0.40%	0.40%	0.40%	CoStar
OpEx/SF - Residential	\$14.00	\$14.00	\$14.00	\$14.00	\$14.00	\$14.00	Owner Conversations
Cap Rate - Residential	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	CBRE
Rent Growth - Residential	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	HR&A Assumption
Expense Growth - Residential	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	HR&A Assumption
Conversion Assumptions	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Hard Costs/GSF - Conversion	\$580.00	\$630.00	\$670.00	\$590.00	\$550.00	\$730.00	Developer Conversations
Time to Vacate Office - Conversion	3 Years	3 Years	3 Years	3 Years	3 Years	3 Years	Owner Conversations
Construction Time - Conversion	2 Years	2 Years	2 Years	2 Years	2 Years	2 Years	Developer Conversations
LTC - Conversion	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	HR&A Assumption
Interest Rate - Conversion	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	HR&A Assumption/Owner Conversations
Lease-up Period - Conversion	1 Years	1 Years	1 Years	1 Years	1 Years	1 Years	HR&A Assumption
Lease-up Vacancy - Conversion	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	HR&A Assumption
Class B/C Office Assumptions	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Rent/SF - High - Office B/C	\$69.88	\$84.70	\$85.00	\$68.00	\$79.00	\$63.18	Costar 2019 Rent
Rent/SF - Low - Office B/C	\$33.14	\$36.86	\$28.61	\$33.67	\$20.20	\$16.25	NYU Stern
Vacancy - High - Office B/C	54.13%	55.70%	45.50%	53.80%	81.2%	51.1%	CoStar (2022)
Vacancy - Low - Office B/C	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	HR&A Assumption
Concessions - High - Office B/C	13.33%	13.33%	13.33%	13.33%	13.33%	13.33%	CBRE Concessions Data (2019)
Concessions - Low - Office B/C	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	CBRE Concessions Data (2012)
OpEx/SF - Office B/C	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	Owner Conversations
Cap Rate - Office B/C	7.00%	7.00%	7.00%	7.00%	8.00%	8.00%	CBRE Cap Rate Survey (2022)
Rent Growth - Office B/C	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	HR&A Assumption
Expense Growth - Office	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	HR&A Assumption
Building Characteristics	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Gross SF	140,000	290,000	750,000	100,000	170,000	20,000	CBRE
Gross to Rentable SF Conversion	90%	90%	90%	90%	90%	90%	CBRE
Existing FAR	1.40	1.50	1.40	1.20	6.0	6.0	CBRE
Residential FAR	1.50	1.50	1.40	1.20	6.0	6.0	SF Planning
Max Supportable FAR	1.50	1.50	1.40	1.20	6.0	6.0	SF Planning
Efficiency Factor	80%	80%	80%	75%	75%	75%	Gensler
Capital Costs	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Tenant Improvements (per Office and Retail SF)	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	Owner Conversations & CBRE data
Leasing Commissions (% of Office/Retail Rent)	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	HR&A Assumption
Lease Term	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	Owner Conversations
CapEx Reserve (% of Total Rent)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	HR&A Assumption
Tax and Valuation Assumptions	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
Transfer Tax	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	See SF Tax Calculation Tab
Taxes (as % of Effective Income)	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	Owner Conversations
Taxes during Conversion	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	Owner Conversations
Exit Year	Year 20	Year 20	Year 20	Year 20	Year 20	Year 20	User Input
Sale Costs	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	HR&A Assumption
Soft Costs	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Sources
A&E, Design Cost Assumptions/SF	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	Developer Conversations
Insurance Cost/SF	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	Developer Conversations
General & Admin/SF	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	Developer Conversations
Contingency/SF	\$41.00	\$41.00	\$41.00	\$41.00	\$41.00	\$41.00	Developer Conversations
Fees	\$15.58	\$16.41	\$16.41	\$16.41	\$16.41	\$14.97	SF Planning
City Fee - Inclusionary/SF	\$69.00	\$69.00	\$69.00	\$69.00	\$69.00	\$69.00	Developer Conversations

Each of the three scenarios depend on the 4 assumptions that are highlighted, which include: residential rent/sf, office rent/sf – low, office vacancy – low, and tenant improvements.

Sensitivity Tables – Scenario 1

Difference in NPV of Office and Residential Given Varying Office Rents and Vacancy

Type 1		25%	35%	45%	55%	65%	75%
(\$92)	\$15	\$101	\$115	\$129	\$143	\$157	\$171
	\$25	\$27	\$51	\$74	\$98	\$121	\$145
	\$35	(\$47)	(\$14)	\$19	\$52	\$85	\$118
	\$45	(\$120)	(\$78)	(\$36)	\$7	\$49	\$91
	\$55	(\$194)	(\$142)	(\$91)	(\$39)	\$13	\$64
	\$65	(\$268)	(\$207)	(\$146)	(\$85)	(\$23)	\$38
	\$75	(\$342)	(\$271)	(\$201)	(\$130)	(\$60)	\$11

Type 2		25%	35%	45%	55%	65%	75%
(\$152)	\$15	\$74	\$88	\$103	\$117	\$131	\$145
	\$25	\$1	\$24	\$48	\$71	\$95	\$118
	\$35	(\$73)	(\$40)	(\$7)	\$26	\$59	\$92
	\$45	(\$147)	(\$104)	(\$62)	(\$20)	\$23	\$65
	\$55	(\$220)	(\$168)	(\$117)	(\$65)	(\$13)	\$38
	\$65	(\$294)	(\$233)	(\$172)	(\$110)	(\$49)	\$12
	\$75	(\$367)	(\$297)	(\$226)	(\$156)	(\$85)	(\$15)

Type 3		25%	35%	45%	55%	65%	75%
(\$97)	\$15	\$56	\$70	\$84	\$99	\$113	\$127
	\$25	(\$18)	\$5	\$29	\$52	\$76	\$99
	\$35	(\$92)	(\$60)	(\$27)	\$6	\$39	\$72
	\$45	(\$167)	(\$124)	(\$82)	(\$40)	\$2	\$45
	\$55	(\$241)	(\$189)	(\$138)	(\$86)	(\$34)	\$17
	\$65	(\$315)	(\$254)	(\$193)	(\$132)	(\$71)	(\$10)
	\$75	(\$390)	(\$319)	(\$249)	(\$178)	(\$108)	(\$37)

Type 4		25%	35%	45%	55%	65%	75%
(\$156)	\$15	\$42	\$56	\$70	\$84	\$98	\$112
	\$25	(\$32)	(\$9)	\$15	\$38	\$62	\$85
	\$35	(\$106)	(\$73)	(\$40)	(\$7)	\$26	\$59
	\$45	(\$180)	(\$137)	(\$95)	(\$53)	(\$10)	\$32
	\$55	(\$253)	(\$202)	(\$150)	(\$98)	(\$47)	\$5
	\$65	(\$327)	(\$266)	(\$205)	(\$144)	(\$83)	(\$22)
	\$75	(\$401)	(\$330)	(\$260)	(\$189)	(\$119)	(\$48)

Type 5		25%	35%	45%	55%	65%	75%
(\$139)	\$15	\$45	\$58	\$72	\$86	\$99	\$113
	\$25	(\$25)	(\$2)	\$21	\$43	\$66	\$89
	\$35	(\$95)	(\$63)	(\$31)	\$1	\$33	\$65
	\$45	(\$164)	(\$123)	(\$82)	(\$41)	(\$0)	\$41
	\$55	(\$234)	(\$184)	(\$134)	(\$84)	(\$34)	\$17
	\$65	(\$304)	(\$244)	(\$185)	(\$126)	(\$67)	(\$8)
	\$75	(\$373)	(\$305)	(\$237)	(\$168)	(\$100)	(\$32)

Type 6		25%	35%	45%	55%	65%	75%
(\$92)	\$15	(\$55)	(\$41)	(\$28)	(\$14)	(\$0)	\$13
	\$25	(\$127)	(\$104)	(\$81)	(\$59)	(\$36)	(\$13)
	\$35	(\$199)	(\$167)	(\$135)	(\$103)	(\$71)	(\$39)
	\$45	(\$270)	(\$229)	(\$188)	(\$147)	(\$106)	(\$65)
	\$55	(\$342)	(\$292)	(\$242)	(\$192)	(\$142)	(\$92)
	\$65	(\$414)	(\$355)	(\$295)	(\$236)	(\$177)	(\$118)
	\$75	(\$486)	(\$417)	(\$349)	(\$281)	(\$212)	(\$144)

Difference in NPV of Office and Residential Given Varying Affordability Levels

Type 1		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$92)	(\$29)	(\$61)	(\$92)	(\$123)	(\$154)	(\$184)	(\$217)	(\$248)	(\$279)	(\$309)	(\$340)	

Type 2		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$152)	(\$89)	(\$121)	(\$152)	(\$183)	(\$214)	(\$244)	(\$277)	(\$308)	(\$339)	(\$369)	(\$400)	

Type 3		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$82)	(\$34)	(\$66)	(\$97)	(\$128)	(\$159)	(\$189)	(\$222)	(\$253)	(\$284)	(\$314)	(\$345)	

Type 4		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$156)	(\$97)	(\$127)	(\$156)	(\$185)	(\$214)	(\$243)	(\$273)	(\$302)	(\$331)	(\$360)	(\$389)	

Type 5		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$139)	(\$80)	(\$111)	(\$139)	(\$168)	(\$197)	(\$226)	(\$257)	(\$285)	(\$314)	(\$343)	(\$372)	

Type 6		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$92)	(\$33)	(\$64)	(\$92)	(\$121)	(\$150)	(\$179)	(\$210)	(\$238)	(\$267)	(\$296)	(\$325)	

Difference in NPV of Office and Residential Given Varying Soft Costs

Type 1		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$92)	(\$10)	(\$23)	(\$37)	(\$50)	(\$63)	(\$76)	(\$89)	(\$102)	(\$115)	(\$128)	(\$141)	

Type 2		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$152)	(\$70)	(\$83)	(\$96)	(\$109)	(\$122)	(\$135)	(\$149)	(\$162)	(\$175)	(\$188)	(\$201)	

Type 3		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$97)	(\$15)	(\$28)	(\$41)	(\$54)	(\$67)	(\$80)	(\$94)	(\$107)	(\$120)	(\$133)	(\$146)	

Type 4		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$156)	(\$74)	(\$87)	(\$100)	(\$113)	(\$126)	(\$139)	(\$153)	(\$166)	(\$179)	(\$192)	(\$205)	

Type 5		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$139)	(\$57)	(\$70)	(\$83)	(\$97)	(\$110)	(\$123)	(\$136)	(\$149)	(\$162)	(\$175)	(\$188)	

Type 6		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$92)	(\$11)	(\$24)	(\$37)	(\$51)	(\$64)	(\$77)	(\$90)	(\$103)	(\$116)	(\$129)	(\$142)	

Difference in NPV of Office and Residential Given Varying Soft Costs (Excludes Affordability Requirement)

Type 1		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$29)	\$53	\$40	\$27	\$14	\$1	(\$12)	(\$26)	(\$39)	(\$52)	(\$65)	(\$78)	

Type 2		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$89)	(\$6)	(\$20)	(\$33)	(\$46)	(\$59)	(\$72)	(\$85)	(\$98)	(\$111)	(\$124)	(\$138)	

Type 3		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$34)	\$49	\$35	\$22	\$9	(\$4)	(\$17)	(\$30)	(\$43)	(\$56)	(\$69)	(\$83)	

Type 4		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$97)	(\$14)	(\$28)	(\$41)	(\$54)	(\$67)	(\$80)	(\$93)	(\$106)	(\$119)	(\$132)	(\$146)	

Type 5		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$80)	\$2	(\$11)	(\$24)	(\$37)	(\$50)	(\$63)	(\$76)	(\$90)	(\$103)	(\$116)	(\$129)	

Type 6		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$33)	\$48	\$35	\$22	\$9	(\$4)	(\$17)	(\$30)	(\$44)	(\$57)	(\$70)	(\$83)	

Difference in NPV of Office and Residential Given Varying Affordability Levels (Excludes Impact Fees)

Type 1		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$82)	(\$18)	(\$51)	(\$82)	(\$113)	(\$143)	(\$174)	(\$207)	(\$238)	(\$268)	(\$299)	(\$330)	

Type 2		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$141)	(\$78)	(\$111)	(\$141)	(\$172)	(\$203)	(\$234)	(\$266)	(\$297)	(\$328)	(\$359)	(\$389)	

Type 3		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$86)	(\$23)	(\$56)	(\$86)	(\$117)	(\$148)	(\$179)	(\$211)	(\$242)	(\$273)	(\$304)	(\$334)	

Type 4		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$145)	(\$86)	(\$116)	(\$145)	(\$174)	(\$203)	(\$232)	(\$262)	(\$291)	(\$320)	(\$349)	(\$378)	

Type 5		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$129)	(\$69)	(\$100)	(\$129)	(\$158)	(\$186)	(\$215)	(\$246)	(\$275)	(\$304)	(\$332)	(\$361)	

Type 6		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$83)	(\$23)	(\$54)	(\$83)	(\$111)	(\$140)	(\$169)	(\$200)	(\$229)	(\$258)	(\$286)	(\$315)	

Sensitivity Tables – Scenario 2

Difference in NPV of Office and Residential Given Varying Office Rents and Vacancy

Type 1		25%	35%	45%	55%	65%	75%
(\$172)	\$15	\$207	\$221	\$236	\$250	\$264	\$278
	\$25	\$134	\$157	\$181	\$204	\$228	\$251
	\$35	\$60	\$93	\$126	\$159	\$192	\$224
	\$45	(\$14)	\$28	\$71	\$113	\$155	\$198
	\$55	(\$88)	(\$36)	\$16	\$68	\$119	\$171
	\$65	(\$161)	(\$100)	(\$39)	\$22	\$83	\$144
	\$75	(\$235)	(\$165)	(\$94)	(\$24)	\$47	\$118

Type 2		25%	35%	45%	55%	65%	75%
(\$142)	\$15	\$181	\$195	\$209	\$223	\$237	\$251
	\$25	\$107	\$131	\$154	\$178	\$201	\$225
	\$35	\$34	\$67	\$99	\$132	\$165	\$198
	\$45	(\$40)	\$2	\$45	\$87	\$129	\$172
	\$55	(\$114)	(\$62)	(\$10)	\$42	\$93	\$145
	\$65	(\$187)	(\$126)	(\$65)	(\$4)	\$57	\$118
	\$75	(\$261)	(\$190)	(\$120)	(\$49)	\$21	\$92

Type 3		25%	35%	45%	55%	65%	75%
(\$65)	\$15	\$163	\$177	\$191	\$205	\$219	\$233
	\$25	\$88	\$112	\$135	\$159	\$182	\$206
	\$35	\$14	\$47	\$80	\$113	\$146	\$179
	\$45	(\$60)	(\$18)	\$24	\$67	\$109	\$151
	\$55	(\$135)	(\$83)	(\$31)	\$21	\$72	\$124
	\$65	(\$209)	(\$148)	(\$87)	(\$26)	\$36	\$97
	\$75	(\$283)	(\$213)	(\$142)	(\$72)	(\$1)	\$69

Type 4		25%	35%	45%	55%	65%	75%
(\$140)	\$15	\$145	\$159	\$173	\$187	\$202	\$216
	\$25	\$71	\$95	\$118	\$142	\$165	\$189
	\$35	(\$2)	\$30	\$63	\$96	\$129	\$162
	\$45	(\$76)	(\$34)	\$8	\$51	\$93	\$135
	\$55	(\$150)	(\$98)	(\$47)	\$5	\$57	\$109
	\$65	(\$224)	(\$163)	(\$101)	(\$40)	\$21	\$82
	\$75	(\$297)	(\$227)	(\$156)	(\$86)	(\$15)	\$55

Type 5		25%	35%	45%	55%	65%	75%
(\$30)	\$15	\$48	\$62	\$76	\$89	\$103	\$117
	\$25	(\$23)	(\$1)	\$22	\$45	\$68	\$90
	\$35	(\$95)	(\$63)	(\$31)	\$1	\$32	\$64
	\$45	(\$167)	(\$126)	(\$85)	(\$44)	(\$3)	\$38
	\$55	(\$239)	(\$188)	(\$138)	(\$88)	(\$38)	\$12
	\$65	(\$310)	(\$251)	(\$192)	(\$133)	(\$74)	(\$14)
	\$75	(\$382)	(\$314)	(\$245)	(\$177)	(\$109)	(\$41)

Type 6		25%	35%	45%	55%	65%	75%
(\$30)	\$15	\$48	\$62	\$76	\$89	\$103	\$117
	\$25	(\$23)	(\$1)	\$22	\$45	\$68	\$90
	\$35	(\$95)	(\$63)	(\$31)	\$1	\$32	\$64
	\$45	(\$167)	(\$126)	(\$85)	(\$44)	(\$3)	\$38
	\$55	(\$239)	(\$188)	(\$138)	(\$88)	(\$38)	\$12
	\$65	(\$310)	(\$251)	(\$192)	(\$133)	(\$74)	(\$14)
	\$75	(\$382)	(\$314)	(\$245)	(\$177)	(\$109)	(\$41)

Difference in NPV of Office and Residential Given Varying Affordability Levels

Type 1		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$249	\$4	(\$35)	(\$72)	(\$109)	(\$146)	(\$183)	(\$222)	(\$259)	(\$296)	(\$333)	(\$370)	

Type 2		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$213	(\$66)	(\$105)	(\$142)	(\$179)	(\$216)	(\$253)	(\$292)	(\$329)	(\$366)	(\$403)	(\$440)	

Type 3		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$65)	\$11	(\$28)	(\$65)	(\$102)	(\$139)	(\$176)	(\$215)	(\$252)	(\$289)	(\$326)	(\$363)	

Type 4		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$140)	(\$69)	(\$106)	(\$140)	(\$175)	(\$210)	(\$244)	(\$281)	(\$316)	(\$350)	(\$385)	(\$420)	

Type 5		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$122)	(\$51)	(\$87)	(\$122)	(\$157)	(\$191)	(\$226)	(\$263)	(\$297)	(\$332)	(\$367)	(\$401)	

Type 6		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$30)	\$41	\$5	(\$30)	(\$65)	(\$99)	(\$134)	(\$171)	(\$205)	(\$240)	(\$275)	(\$309)	

Difference in NPV of Office and Residential Given Varying Soft Costs

Type 1		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$72)	\$10	(\$3)	(\$17)	(\$30)	(\$43)	(\$56)	(\$69)	(\$82)	(\$95)	(\$108)	(\$121)	

Type 2		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$142)	(\$60)	(\$73)	(\$86)	(\$99)	(\$112)	(\$125)	(\$138)	(\$151)	(\$165)	(\$178)	(\$191)	

Type 3		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$65)	\$17	\$4	(\$9)	(\$22)	(\$35)	(\$48)	(\$61)	(\$74)	(\$88)	(\$101)	(\$114)	

Type 4		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$140)	(\$58)	(\$71)	(\$85)	(\$98)	(\$111)	(\$124)	(\$137)	(\$150)	(\$163)	(\$176)	(\$189)	

Type 5		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$122)	(\$40)	(\$53)	(\$66)	(\$79)	(\$92)	(\$105)	(\$119)	(\$132)	(\$145)	(\$158)	(\$171)	

Type 6		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$30)	\$51	\$38	\$25	\$12	(\$1)	(\$14)	(\$27)	(\$40)	(\$54)	(\$67)	(\$80)	

Difference in NPV of Office and Residential Given Varying Soft Costs (Excludes Affordability Requirement)

Type 1		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$4	\$86	\$73	\$60	\$46	\$33	\$20	\$7	(\$6)	(\$19)	(\$32)	(\$45)	

Type 2		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$66)	\$16	\$3	(\$10)	(\$23)	(\$36)	(\$49)	(\$62)	(\$75)	(\$88)	(\$102)	(\$115)	

Type 3		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$11	\$93	\$80	\$67	\$54	\$41	\$28	\$15	\$2	(\$11)	(\$25)	(\$38)	

Type 4		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$69)	\$13	(\$0)	(\$13)	(\$26)	(\$39)	(\$52)	(\$66)	(\$79)	(\$92)	(\$105)	(\$118)	

Type 5		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
(\$51)	\$31	\$18	\$5	(\$8)	(\$21)	(\$34)	(\$47)	(\$60)	(\$73)	(\$87)	(\$100)	

Type 6		\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$41	\$123	\$110	\$96	\$83	\$70	\$57	\$44	\$31	\$18	\$5	(\$8)	

Difference in NPV of Office and Residential Given Varying Affordability Levels (Excludes Impact Fees)

Type 1		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$62)	\$14	(\$25)	(\$62)	(\$99)	(\$136)	(\$173)	(\$212)	(\$249)	(\$286)	(\$323)	(\$360)	

Type 2		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$131)	(\$55)	(\$94)	(\$131)	(\$168)	(\$205)	(\$242)	(\$281)	(\$318)	(\$355)	(\$392)	(\$429)	

Type 3		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$54)	\$22	(\$17)	(\$54)	(\$91)	(\$128)	(\$165)	(\$204)	(\$241)	(\$278)	(\$315)	(\$352)	

Type 4		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$130)	(\$58)	(\$95)	(\$130)	(\$164)	(\$199)	(\$234)	(\$270)	(\$305)	(\$340)	(\$374)	(\$409)	

Type 5		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$111)	(\$40)	(\$77)	(\$111)	(\$146)	(\$181)	(\$215)	(\$252)	(\$287)	(\$321)	(\$356)	(\$391)	

Type 6		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(\$20)	\$51	\$14	(\$20)	(\$55)	(\$89)	(\$124)	(\$161)	(\$195)	(\$230)	(\$265)	(\$299)	

Difference in NPV of Office and Residential Given Varying Hard Costs (Excludes Affordability Requirement)

Type 1		\$400	\$450	\$500	\$550	\$600	\$650	\$700	\$750	\$800
\$4	\$122	\$89	\$57	\$24	(\$9)	(\$42)	(\$74)	(\$107)	(\$140)	

Type 2		\$400	\$450	\$500	\$550	\$600	\$650	\$700	\$750	\$800
(\$66)	\$85	\$52	\$19	(\$13)	(\$46)	(\$79)	(\$112)	(\$144)	(\$177)	

Type 3		\$400	\$450	\$500	\$550	\$600	\$650	\$700	\$750	\$800
\$11	\$126	\$93	\$60	\$27	(\$5)	(\$38)	(\$71)	(\$104)	(\$136)	

Type 4		\$400	\$450	\$500	\$550	\$600	\$650	\$700	\$750	\$800
(\$69)	\$55	\$23	(\$10)	(\$43)	(\$76)	(\$108)	(\$141)	(\$174)	(\$207)	

Type 5		\$400	\$450	\$500	\$550	\$600	\$650	\$700	\$750	\$800
(\$51)	\$48	\$15	(\$18)	(\$51)	(\$84)	(\$116)	(\$149)			

Sensitivity Tables – Scenario 3

Difference in NPV of Office and Residential Given Varying Office Rents and Vacancy

Type 1	25%	35%	45%	55%	65%	75%
\$173	\$15	\$165	\$179	\$193	\$207	\$221
\$25	\$77	\$100	\$124	\$147	\$171	\$194
\$35	\$3	\$36	\$69	\$102	\$135	\$168
\$45	(\$71)	(\$28)	\$14	\$56	\$99	\$141
\$55	(\$144)	(\$93)	(\$41)	\$11	\$62	\$114
\$65	(\$218)	(\$157)	(\$96)	(\$35)	\$26	\$87
\$75	(\$292)	(\$221)	(\$151)	(\$80)	(\$10)	\$61

Type 2	25%	35%	45%	55%	65%	75%
\$136	\$15	\$138	\$152	\$166	\$180	\$195
\$25	\$50	\$74	\$97	\$121	\$144	\$168
\$35	(\$23)	\$10	\$43	\$76	\$108	\$141
\$45	(\$97)	(\$55)	(\$12)	\$30	\$72	\$115
\$55	(\$170)	(\$119)	(\$67)	(\$15)	\$36	\$88
\$65	(\$244)	(\$183)	(\$122)	(\$61)	\$0	\$62
\$75	(\$318)	(\$247)	(\$177)	(\$106)	(\$36)	\$35

Type 3	25%	35%	45%	55%	65%	75%
\$139	\$15	\$120	\$134	\$148	\$162	\$177
\$25	\$32	\$55	\$79	\$102	\$126	\$149
\$35	(\$43)	(\$10)	\$23	\$56	\$89	\$122
\$45	(\$117)	(\$75)	(\$32)	\$10	\$52	\$95
\$55	(\$191)	(\$140)	(\$88)	(\$36)	\$15	\$67
\$65	(\$266)	(\$205)	(\$143)	(\$82)	(\$21)	\$40
\$75	(\$340)	(\$270)	(\$199)	(\$129)	(\$58)	\$13

Type 4	25%	35%	45%	55%	65%	75%
\$109	\$15	\$88	\$102	\$117	\$131	\$145
\$25	\$15	\$38	\$62	\$85	\$109	\$132
\$35	(\$59)	(\$26)	\$7	\$40	\$72	\$105
\$45	(\$133)	(\$91)	(\$48)	(\$6)	\$36	\$79
\$55	(\$207)	(\$155)	(\$103)	(\$52)	\$0	\$52
\$65	(\$281)	(\$219)	(\$158)	(\$97)	(\$36)	\$25
\$75	(\$354)	(\$284)	(\$213)	(\$143)	(\$72)	(\$2)

Type 5	25%	35%	45%	55%	65%	75%
\$115	\$15	\$91	\$105	\$119	\$132	\$146
\$25	\$22	\$44	\$67	\$90	\$113	\$135
\$35	(\$48)	(\$16)	\$16	\$48	\$79	\$111
\$45	(\$118)	(\$77)	(\$36)	\$5	\$46	\$87
\$55	(\$187)	(\$137)	(\$87)	(\$37)	\$13	\$63
\$65	(\$257)	(\$198)	(\$138)	(\$79)	(\$20)	\$39
\$75	(\$327)	(\$258)	(\$190)	(\$122)	(\$53)	\$15

Type 6	25%	35%	45%	55%	65%	75%
\$57	(\$8)	\$5	\$19	\$33	\$46	\$60
\$25	(\$80)	(\$57)	(\$35)	(\$12)	\$11	\$34
\$35	(\$152)	(\$120)	(\$88)	(\$56)	(\$24)	\$7
\$45	(\$224)	(\$183)	(\$142)	(\$101)	(\$60)	(\$19)
\$55	(\$295)	(\$245)	(\$195)	(\$145)	(\$95)	(\$45)
\$65	(\$367)	(\$308)	(\$249)	(\$190)	(\$130)	(\$71)
\$75	(\$439)	(\$371)	(\$302)	(\$234)	(\$166)	(\$97)

Difference in NPV of Office and Residential Given Varying Affordability Levels

Type 1	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$173	\$249	\$210	\$173	\$136	\$99	\$62	\$23	(\$14)	(\$51)	(\$88)	(\$125)

Type 2	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$213	\$213	\$173	\$136	\$99	\$62	\$26	(\$14)	(\$51)	(\$88)	(\$125)	(\$161)

Type 3	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$139	\$215	\$176	\$139	\$102	\$65	\$28	(\$11)	(\$48)	(\$85)	(\$122)	(\$159)

Type 4	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$109	\$180	\$144	\$109	\$74	\$40	\$5	(\$32)	(\$66)	(\$101)	(\$136)	(\$170)

Type 5	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$115	\$186	\$149	\$115	\$80	\$45	\$11	(\$26)	(\$61)	(\$95)	(\$130)	(\$165)

Type 6	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$57	\$128	\$91	\$57	\$22	(\$13)	(\$47)	(\$84)	(\$119)	(\$153)	(\$188)	(\$223)

Difference in NPV of Office and Residential Given Varying Soft Costs

Type 1	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$173	\$254	\$241	\$228	\$215	\$202	\$189	\$176	\$162	\$149	\$136	\$123

Type 2	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$136	\$219	\$205	\$192	\$179	\$166	\$153	\$140	\$127	\$114	\$101	\$88

Type 3	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$139	\$222	\$208	\$195	\$182	\$169	\$156	\$143	\$130	\$117	\$104	\$90

Type 4	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$109	\$191	\$178	\$165	\$152	\$139	\$126	\$112	\$99	\$86	\$73	\$60

Type 5	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$115	\$197	\$184	\$171	\$157	\$144	\$131	\$118	\$105	\$92	\$79	\$66

Type 6	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$57	\$138	\$125	\$112	\$99	\$85	\$72	\$59	\$46	\$33	\$20	\$7

Difference in NPV of Office and Residential Given Varying Soft Costs (Excludes Affordability Requirement)

Type 1	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$249	\$254	\$241	\$228	\$215	\$202	\$189	\$176	\$162	\$149	\$136	\$123

Type 2	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$213	\$219	\$205	\$192	\$179	\$166	\$153	\$140	\$127	\$114	\$101	\$88

Type 3	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$215	\$298	\$285	\$271	\$258	\$245	\$232	\$219	\$206	\$193	\$180	\$167

Type 4	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$180	\$262	\$249	\$236	\$223	\$210	\$197	\$184	\$171	\$158	\$144	\$131

Type 5	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$186	\$268	\$255	\$242	\$229	\$216	\$203	\$189	\$176	\$163	\$150	\$137

Type 6	\$0	\$20	\$40	\$60	\$80	\$100	\$120	\$140	\$160	\$180	\$200
\$128	\$209	\$196	\$183	\$170	\$157	\$144	\$131	\$117	\$104	\$91	\$78

Difference in NPV of Office and Residential Given Varying Affordability Levels (Excludes Impact Fees)

Type 1	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$183	\$259	\$220	\$183	\$146	\$109	\$72	\$33	(\$4)	(\$41)	(\$78)	(\$115)

Type 2	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$147	\$223	\$184	\$147	\$110	\$73	\$36	(\$3)	(\$40)	(\$77)	(\$114)	(\$151)

Type 3	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$150	\$226	\$187	\$150	\$113	\$76	\$39	\$0	(\$37)	(\$74)	(\$111)	(\$148)

Type 4	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$120	\$191	\$154	\$120	\$85	\$50	\$16	(\$21)	(\$56)	(\$90)	(\$125)	(\$160)

Type 5	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$125	\$197	\$160	\$125	\$91	\$56	\$21	(\$15)	(\$50)	(\$85)	(\$119)	(\$154)

Type 6	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
\$66	\$138	\$101	\$66	\$32	(\$3)	(\$38)	(\$74)	(\$109)	(\$144)	(\$178)	(\$213)

Difference in NPV of Office and Residential Given Varying Hard Costs (Excludes Affordability Requirement)

Type 1	\$400	\$450	\$500	\$550	\$600	\$650	\$700	\$750	\$800
\$249	\$367	\$334	\$301	\$268	\$236	\$203	\$170	\$137	\$105

Type 2	\$400	\$450	\$500	\$550	\$600	\$650	\$700	\$750	\$800
\$213	\$363	\$330	\$298	\$265	\$232	\$199	\$167	\$134	\$101

Type 3	\$400	\$450	\$500	\$550	\$600	\$650	\$700	\$750	\$800
\$215	\$392	\$360	\$327	\$294	\$261	\$229	\$196	\$163	\$130

Type 4	\$400	\$450	\$500	\$550	\$600	\$650	\$700	\$750	\$800
\$180	\$305	\$272	\$239	\$206	\$174	\$141	\$108	\$75	\$43

Type 5	\$400	\$450	\$500	\$550	\$600	\$650	\$700	\$750	\$800
\$186	\$284	\$251	\$219	\$186	\$153	\$120	\$88	\$55	\$22

Type 6	\$400	\$450	\$500	\$550	\$600	\$650	\$700	\$750	\$800
\$128	\$344	\$311	\$279	\$246	\$213	\$180	\$148	\$115	\$82