

**Date:** January 5, 2023  
**To:** Lisa Abuaf and Sarah Harpole, Prosper Portland  
**From:** Mike Wilkerson, Michelle Anderson, and Brittany Bagent, ECONorthwest  
**Subject:** Office to Residential Conversion Study – Feasibility Results Memo

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## Purpose and Background

ECONorthwest was engaged to conduct a development feasibility analysis to better understand the financial feasibility of office to residential conversion in the Portland Central City. The goal of this work was to select representative example building prototypes from which results could then be generalized to understand the feasibility of office to residential conversion across the Central City. The nature of office to residential conversion is that unique building characteristics have a large influence on suitability and ultimately financial feasibility. Although there are likely multiple “unicorn” properties, this report is not attempting to represent the feasibility of the few potential unicorns, but rather to take a broader view of feasibility using commonly found building prototypes located in the Central City.

ECONorthwest conducted market research to determine expected market rents for a converted office, then tested the financial feasibility using a pro forma analysis. In addition to baseline market feasibility, we tested a range of potential policy interventions to measure their impact on project feasibility. In order to provide accurate assumptions in the financial analysis, a team of technical experts were engaged as sub-contractors. Gensler produced test fits for each of the buildings, KPFF and Glumac evaluated the MEP and seismic costs, and Turner Construction produced cost estimates.

## Why office to residential conversions?

When evaluating public policy options as an incentive to make housing more financially feasible, typically the main benefit is the housing itself, and any additional below market rents that are achieved as part of the incentive, for example inclusionary housing. Office to residential conversion offers the same benefits as other housing, but also has several other public benefits that should be considered as part of a broader benefit-cost analysis. The environmental benefits of adaptive reuse compared to demolition, or the carbon footprint of new construction are significant, and adaptively reusing buildings could mean the preservation of some historic buildings as well. There is also the time savings related to permitting and infrastructure as compared to new construction. And finally, introducing a mix of uses into predominantly office-centric neighborhoods offer broad benefits and will aid in the continuing pandemic recovery.

None of the identified benefits were directly quantified in this memo but should be considered as part of a broader public policy analysis.

# Analysis Approach

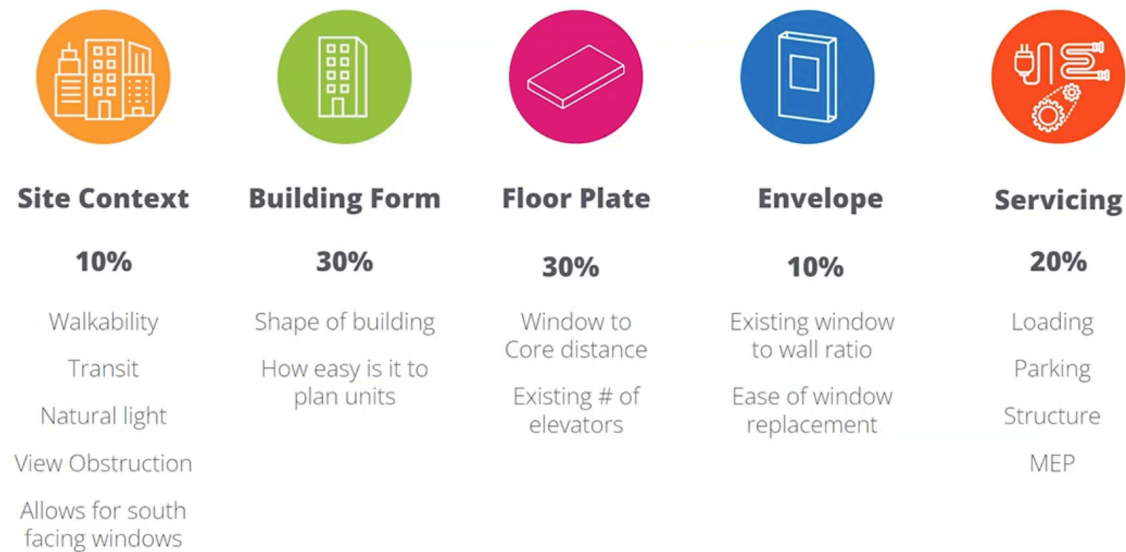
## Conversion Schemes

Gensler created an algorithm to analyze the physical conversion attributes of more than 400 office to residential conversion candidate buildings. The algorithm considers the site context, building form, floor plate, envelope, and servicing, assigning weights to each component to arrive at a compatibility score (see Exhibit 1). Based on buildings evaluated using the algorithm, Gensler determined that a score of 80 on compatibility index is the threshold for which buildings are suitable candidates and additional financial analysis is warranted.

Rather than conduct a wide screen of multiple buildings that would be costly and time consuming, a process was used to narrow down a list of buildings for evaluation that are representative of the common block configurations in the Central City. Development sites representing a full block, a half-block, and quarter-block were selected. In addition to parcel size, buildings were pre-screened based architectural conditions that were more efficient as identified in the Gensler algorithm in order to increase the financial performance. The final building selection criteria was to evaluate a representative range of seismic conditions, such as unreinforced masonry as well as a range of seismic retrofits conditions in towers. Based on these selection criteria, a quarter-block unreinforced masonry building (URM), a half-block tower with a vertical step back and zero lot line on one side, and a full-block tower were selected.

### Exhibit 1. Factors Included in Compatibility Score Algorithm

Source: Gensler Architects






Turner Construction then produced construction cost estimates for the three building prototypes. These construction cost estimates detailed all needed conversion costs, including additional seismic costs required by the City of Portland. The three conversion schemes evaluated are summarized in



Exhibit 2. See the attachment for more details.

**Exhibit 2. Summary of Conversion Schemes**

Source: ECONorthwest, Gensler architects, Turner Construction

	Prototype	Building Name	Gensler Compatibility Score	Number of Units	Average Hard Cost per sf
	¼ block URM	Fleischner-Mayer	75%	47	\$350
	½ block tower	Commonwealth	78% (73% lower floors to 87% on upper floors)	182	\$445
	Full-block tower	200 Market	79%	340	\$308

**Financial Feasibility Methods**

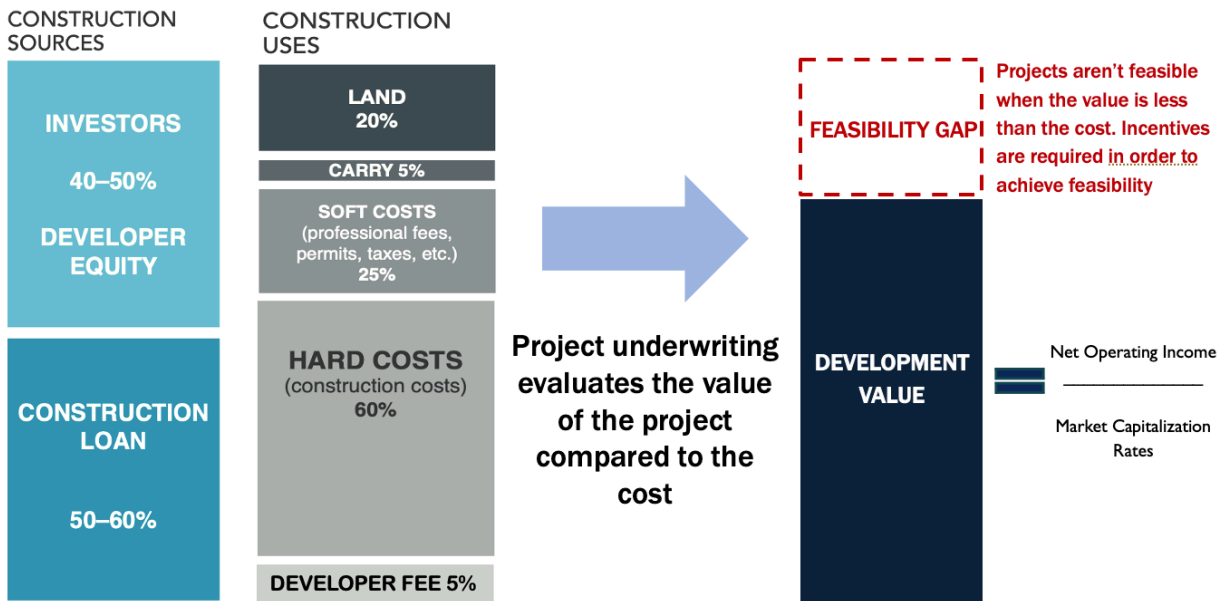
Using the compatibility assessment produced by Gensler architects, and the cost assessment produced by Turner Construction, ECONorthwest conducted a financial feasibility analysis using a pro forma that mimics the underwriting process of debt and equity investors in new construction.

The pro forma methodology considers the building program of each conversion scheme, operations (rent and operating costs), development hard costs (labor and materials), and other development costs (soft costs, contingency, developer fee, inclusionary housing, construction excise tax, etc.). We modeled a range of property acquisition costs as part of a sensitivity analysis, as well as a range of rents per square foot. We constructed a matrix to calculate the going in yield on cost (return on cost), for each of the permutations, as the primary metric to evaluate financial feasibility.



### Exhibit 3. Method for Determining Financial Feasibility

Source: ECONorthwest



This approach to feasibility modeling is best suited for developers acquiring existing office buildings with the intent of converting the building to residential. We also conducted an alternative analysis that was better suited to evaluate how an owner of an existing asset (office building) would determine feasibility (a levered cash on cash return). This approach did not substantially change the results and implications, and therefore is not discussed in detail in the remainder of this memo.

### Potential Policy Interventions

ECONorthwest conducted a comprehensive review of all current City of Portland policies, from which the following were identified as having the largest impact on the feasibility of converting an office building to residential. For each prototype and the associated conversion scheme, we evaluated the impact of a 10-year tax abatement, a full system development charge (SDC) waiver, a construction excise tax (CET) waiver, a waiver from complying with the City of Portland seismic retrofit requirements, and a waiver from complying with the City of Portland Inclusionary Housing (IH) requirements.



## Incorporating the City of Portland Inclusionary Housing Program Requirements

The City of Portland’s Inclusionary Housing (IH) policy requires that residential buildings proposing 20 or more new units comply with the policy. Developers must choose one of the following options to meet IH requirements:

- Set aside 20% of the total units at rents affordable to households earning 80% of median family income (MFI).
- Set aside 10% of units for households earning 60% of MFI.
- Build units off-site in a separate new development.
- Designate units off-site in an existing building.
- Pay a fee in lieu of providing affordable units (\$27 per gross square foot of the residential and residential-related portions of the building within the Central City Plan District.)

For this analysis, we assumed that developers would opt to pay the fee in lieu of providing affordable units. While it possible that, in some instances, this option could have the least impact on financial returns, we did not conduct a comprehensive analysis of all options. This choice was made because it enables the separation of incentives currently included in the IH policy, such as property tax abatements and SDC waivers.

Exhibit 4 offers an overview of how we modeled the potential incentives. Several other policies, which we did not assess, also impact the financial feasibility of office to residential conversions. Examples of these policies include minimum parking requirements, bike parking requirements, ground floor active uses, and bird glass requirements, which all may generate additional impacts.

### Exhibit 4. Overview of the Analysis of Potential Policy Incentives

Source: ECOnorthwest

Incentive	Description
Tax abatement	Reduction in costs based on the net present value of a 10-year property tax abatement on the hard costs
SDC waiver	Removal of the full SDC costs*
CET waiver	Removal of 1% tax on hard costs
Seismic retrofit waiver	Removal of the seismic retrofit hard cost estimated by Turner Construction
IH waiver	Removal of the IH fee of \$27 per gross square foot of residential use

\*We calculated an approximate SDC cost, based on the 2023 fees on the City of Portland website, for each scheme. The assumed SDCs ranged from approximately \$16,000 per unit to \$19,000 per unit.



# Summary of Findings

## Subsidies or policy interventions are needed for financial feasibility.

Assuming an acquisition cost of \$0 and rent at \$3.00 per leasable square foot, the yield falls below the expected market return requirements of over 6%, highlighting the necessity of policy intervention in order to achieve financial feasibility. Testing the assumption of a \$0 acquisition cost per square foot aims to illustrate the maximum potential return. However, increasing the acquisition price further diminishes the financial feasibility of an acquisition-based conversion strategy.

The most recent acquisition price for an existing office building was \$75 per square foot of building, which is lower than any observed transactions in recent years.<sup>1</sup> This underscores the challenges in achieving financial feasibility without additional policy measures or subsidies.

### Exhibit 5. Results of Analysis assuming rent at \$3 per sf (without incentives)

Source: EConorthwest

Prototype	Building Name in Study	Yield (based on acquisition costs at \$0 psf)	Yield (based on acquisition costs at \$50 psf)
¼ block URM	Fleischner-Mayer	3.2%	2.91%
½ block tower	Commonwealth	1.4%	1.26%
Full-block tower	200 Market	4.8%	4.32%

Feasibility challenges stem from multiple factors: elevated interest rates, limited capital sources, and a perceived stigma specific to Portland, especially in Downtown and other neighborhoods in the Central City. Additionally, a significant obstacle is the cost estimate from Turner Construction, which includes seismic retrofit requirements at or exceeding the cost of ground-up new construction. In summary, the combination of high conversion costs, regulatory requirements, and comparable rents that are below new purpose-built apartments in the Central City, do not produce a financial return that is likely to attract capital to the project.

## Some conversion schemes are more financially feasible than others.

This analysis focused on representative buildings and seismic conditions, emphasizing factors influencing cost and feasibility, particularly seismic conditions and architectural efficiency for vertical mixed-use conversion.

The study revealed seismic retrofit costs ranging from approximately 13% to 28% of hard costs, translating to a range of \$4 million to \$26 million for the scenarios examined (see Exhibit 6). The current

<sup>1</sup>[https://product.costar.com/home/news/shared/572145046?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=personalized&utm\\_content=p4&t=eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJjb250YWN0SWQiOiI2MjkyNjc4IiwiaWF0Ij06IjY3VsdHVyZUNvZGUiOiJlbiIVUyIsImhhdCI6MTY5NTA1MjAzNX0.ESQFbg8VzyMBxBbrl4qKthJ9Eb\\_7UC4vauwJBvIhn9w](https://product.costar.com/home/news/shared/572145046?utm_source=newsletter&utm_medium=email&utm_campaign=personalized&utm_content=p4&t=eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJjb250YWN0SWQiOiI2MjkyNjc4IiwiaWF0Ij06IjY3VsdHVyZUNvZGUiOiJlbiIVUyIsImhhdCI6MTY5NTA1MjAzNX0.ESQFbg8VzyMBxBbrl4qKthJ9Eb_7UC4vauwJBvIhn9w)



SDC waiver of \$3 million falls short of offsetting the seismic retrofit costs for any of the prototypes tested. Exhibit 5 identifies the 200 Market building as the most feasible scenario, with one contributing factor being that the seismic retrofit costs are at the low end of the range of the building prototypes that we analyzed.

We did not test a scenario with a vertical mix of uses. The Commonwealth building, representative of many Portland buildings, presents architectural features suitable for a mix of uses, particularly with zero lot lines on at least one side. Buildings with zero lot lines, that abut another building, make those areas that are next to another building not well suited as a residential building (no light to those potential units unlike a shared office). The Commonwealth building’s lower floors, currently suitable as office space, could be preserved, while conversion efforts could focus on upper floors better suited for residential use. A vertical mix of uses has also been observed more frequently in new construction in Portland as the mix of uses help reduce the risk by diversifying the absorption of different products. However, not every potential office conversion will be suitable to a vertical mix of uses given the complications associated with separate building access.

**Exhibit 6. Construction Cost Summary**

Source: ECOnorthwest

Prototype	Building Name in Study	Total Hard Costs	Seismic Costs	Seismic costs as a share of total costs
¼ block URM	Fleischner-Mayer	\$14.89 M	\$4 M*	27%
½ block tower	Commonwealth	\$93.52 M	\$26 M	28%
Full-block tower	200 Market	\$109.62 M	\$14 M	13%

\*Unreinforced masonry (URM) buildings would not be subject to any seismic waiver, and therefore the costs would be incurred for any potential conversion

**Incentives increase financial feasibility, but only with low acquisition costs and multiple incentives.**

We conducted tests on each potential incentive individually and explored two scenarios combining almost all incentives to gauge their impact on feasibility. Among these incentives, the most feasible on an individual basis was the removal of the seismic retrofit requirement. Eliminating the seismic requirement for 200 Market, which is the most financially feasible scheme, increased the yield by over 80 basis points. However, this still falls short of reaching the minimum yield assumed necessary in the current market. Applying all incentives with the exception of a seismic retrofit waiver would still not yield expected market return requirements of over 6%.

Applying all incentives listed in Exhibit 4 to each scheme leads to increased feasibility, potential creating an incentive for conversion to residential use, particularly when acquisition costs are low.



**Exhibit 7. Results of Analysis (with all hypothetical incentives) assuming rent at \$3 per sf for 200 Market**

Source: ECOnorthwest

Incentive	Description of Scheme	ROC Result*
Baseline	No incentives, paying IH fee at \$27 per gross square foot	4.89%
Tax abatement	10-year property tax abatement	+0.18%
SDC waiver	Removal of the full SDC costs	+0.20%
CET waiver	Removal of 1% tax on hard costs	+0.04%
Seismic retrofit waiver	Removal of the seismic retrofit hard cost	+0.83%
IH waiver	Removal of the IH fee of \$27 per gross square foot	+0.27%
All incentives (except seismic)	Tax abatement, SDC waiver, CET waiver, IH waiver	5.67% (+0.78%)
All incentives applied	Tax abatement, SDC waiver, CET waiver, seismic retrofit waiver IH waiver	6.50% (+1.61%)

\*Assuming acquisition cost of \$0 per sf

If acquisition costs are higher, our analysis indicates that for every \$10 per square foot of acquisition costs there is an approximate ten basis point increase in return on cost (for the 200 Market building conversion scheme at \$3 per square foot rent). This means that a 6.5% yield would be closer to a 6% yield if acquisition costs were \$50 per square foot.

## Policy Implications

Given this information we see two potential options for how the City of Portland can support office to residential conversions.

### Option A: City to offer some combination of the incentives/policies explored.

The City could offer some or all of the incentives tested as part of this analysis. Therefore, any costs associated with this option would be fully borne by the City of Portland. Some of these incentives are effectively no-cost incentives (i.e., there is not a direct cost to the City), for instance the seismic or IH waiver. However, the remaining incentives have an associated dollar impact to the City in terms of reduced fees or taxes. This option would be an incentive program which limits the City’s ability to have direct involvement in the outcome.

### Option B: provide a nominal subsidy (\$ per square foot) to incentivize conversions.

The City could reserve general fund dollars, assign other dedicated revenue sources (for example PCEF), or work with the State of Oregon to identify revenue sources, that would help fund the office to residential conversions including the cost of acquisitions. This is an approach that has been used in several other markets around the U.S. These revenue sources could cover development costs associated with conversions that might otherwise be offset by local incentives so that the City does not directly impact revenue streams or other policy goals. This option reduces or potentially eliminates the need for





other local incentives. While this option could be the most direct and straightforward to implement, it is challenged due to the need to appropriate a large amount of funds for an unknown amount of demand. This type of incentive would be equally attractive to existing owners and developers seeking to acquire existing buildings for the purpose of conversion.

We conducted an additional analysis to test the amount of direct subsidy needed given an assumed acquisition cost of \$50 per square foot and 6% return on cost hurdle. These are both aggressive assumptions in order to demonstrate the minimum amount of subsidy needed, given the identified construction cost for a representative property like the 200 Market building.

**Exhibit 8. Results of gap funding analysis, assuming rent at \$3 per square foot, an acquisition cost of \$50 per square foot, and a 6% return on cost hurdle rate for the 200 Market building**

Source: EConorthwest

	Total direct subsidy	Direct subsidy per square foot	Subsidy per unit
Baseline (no other incentives)	\$48.0 million	\$135	\$141,000
Seismic Waiver	\$31.7 million	\$90	\$93,000
All Incentives	\$8.9 million	\$25	\$26,000

## Generalizing results to the broader market

While the three buildings selected for this study were intended to typify a wider range of building across the City, individual building characteristics can have a meaningful impact of feasibility. For example, a building that fits the narrow window of the existing seismic exemption enacted by the City would be closer to achieving feasibility at current market prices if it could achieve a 10-15% reduction in the quoted construction costs, without any additional subsidy. While this is not likely to be a generalizable result, there could be a unicorn property that could proceed without subsidy.

If the goal is to incentivize a meaningful number of conversion opportunities, the results of this study suggest requiring at minimum a seismic waiver, some amount of direct subsidy, or many of the incentives explored in this study. The acquisition cost remains the most unknown factor given the current uncertain market conditions. As more transactions (distressed or market) emerge, policy incentives can be better calibrated to construction costs, which are more stable and have not decreased in the current market.

## Areas for Future Study

Much of the new construction development in Downtown Portland have been towers with a vertical mix of uses, such as Park Avenue West, Block 260, and Broadway and Clay. This indicates general market interest in more vertical mixed-use projects. Although we did not directly evaluate the financial feasibility of these types of projects, a vertical mix of uses is likely to increase the viability of office to residential conversion projects.

