Regional Wetlands Mitigation Impact Analysis

Prepared for

Cascades West Council of Governments

by

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Final Report

April 2007

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Date submitted April 2007

ECO Project Number 7066

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Introduction

Industrial land in the mid-Willamette Valley is becoming scarcer as the region's urban growth boundaries become developed. Evidence suggests that many of the existing vacant industrial sites are impacted by wetlands. Any development will be required to mitigate for unavoidable wetland fills.

The Cascades West Council of Governments (CWCOG) hired ECONorthwest (ECO) to identify the financial impact of wetland mitigation on industrial development in Linn and Benton Counties. ECO's task was to examine if the market will support development of the sites after the costs of wetland mitigation are factored in. The analysis was designed to lead to an understanding of how the costs of wetlands mitigation affect industrial development, and to identify other development impacts related to wetlands mitigation from the developer's perspective.

CWCOG and participating cities identified industrial properties that are good candidates for development. This report describes ECO's analysis examining the effects of wetlands mitigation on prototype industrial development on 11 selected sites. ECO conducted an analysis of residual land value to determine the effect of wetlands mitigation on developer's decisions to locate on these sites.

The remainder of this report contains three chapters and two appendices:

- **Chapter 2, Framework for the analysis** provides an overview of firm-location theory and explains the mechanics and purpose of a residual land value analysis.
- **Chapter 3, Analysis** describes the scenarios that ECO incorporated into the analysis, the key assumptions in the analysis and summarizes the results of the analysis for the 11 sites.
- **Chapter 4, Implications and policy recommendations** describes how CWCOG can use ECO's analysis to answer some of their questions, and the implications of ECO's findings.
- **Appendix A, Summary of industrial development sites included in study** provides details about the location and size of the 11 sites.
- **Appendix B, Site-by-site analysis** documents the details of the analysis for the 11 sites.
- **Appendix C, Interviews** lists the individuals ECO interviewed for this analysis.

Chapter 2 Framework for the Analysis

This chapter explains the theory that supports ECO's analysis. It has two parts:

- **Firm-location theory** provides a brief overview of the economic theory that explains why firms choose particular locations.
- **Residual land value analysis** explains how the calculations in the analysis are made, and how to interpret the results.

FIRM-LOCATION THEORY

Economic theory says that firms locate where they can minimize costs. Firms locate in regions where they have access to inputs that meet their quality standards, at a relatively low cost.

Firms making location decisions consider locations on two different levels: they will generally first select a state or metro area, making an *inter-regional* choice, before selecting a city or site, making an *intra-regional* choice. This means that a firm deciding to locate in the mid-Willamette Valley will generally not be choosing between sites in Lebanon, Oregon, and Denver, Colorado, but rather will be looking at different sites within a specific region (which could be the Willamette Valley or the Northwest).

Why do firms locate where they do? There is no single answer—different firms choose their locations for different reasons. Key determinates of a location decision are a firm's *factors of production*. For example, a firm that spends a large portion of total costs on unskilled labor will be drawn to locations where labor is relatively inexpensive. A firm with large energy demands will give more weight to locations where energy is relatively inexpensive. In general, firms choose locations they believe will allow them to maximize net revenues: if demand for goods and services is held roughly constant, then revenues are maximized by minimizing costs. Because firms are different, the relative importance of different factors of production varies both across industry and, even more importantly, across type of firm.

The typical categories that economists use to describe the different factors of production are the following.

- **Labor force.** Labor is often and increasingly the most important factor of production. Other things equal, firms want productivity, in other words, labor output per dollar. Productivity can decrease if certain types of labor are in short supply, which increases the costs by requiring either more pay to acquire the labor that is available, the recruiting of labor from other areas, or the use of the less productive labor that is available locally. This is often the most important factor for a firm making a location decision, both in terms of the cost of the labor force and its quality.

- **Land.** Demand for land depends on the type of firm. Manufacturing firms need more space and tend to prefer suburban locations where land is relatively less expensive and less difficult to develop. Warehousing and distribution firms need to locate close to interstate highways. A firm may need a location that is urban, suburban, or rural.
- **Local infrastructure.** Infrastructure and facilities such as roads, bridges, water and sewer systems, airport and cargo facilities, energy systems, and telecommunications are the basic services government provides to businesses. Firms require infrastructure that has the capacity to support their operation, and is both modern and efficient.
- **Access to markets.** Firms need to move their product, either goods or services, to the market, and they rely on access to different modes of transportation to do this. Depending on the type of firm, access to various modes of transportation—rail, barge, air, pipelines, or roads—is key. For example, access to the interstate highway system is a primary driver of site location for a distribution center.
- **Raw materials.** Firms producing goods, and even firms producing services, need various materials to develop products that they can sell. Some firms need natural resources: a manufacturing sector like lumber needs trees. Or, farther down the production line, firms may need intermediate materials: for example, dimensioned lumber. Generally less crucial than in the past, for some industries the availability and shipping costs of raw materials still helps to determine their location.
- **Regulations.** Regulations protect the health and safety of a community, and help maintain the quality of life. However, simplified bureaucracies and straightforward regulations can help firms react quickly in a competitive marketplace. Local jurisdictions and states will ideally have regulations that are clear and simple to follow with the business's responsibilities clearly defined and all required application procedures and time frames clearly identified. The more certainty a company has regarding the time and cost of compliance, the less costly and more attractive the location becomes.
- **Tax rates.** Firms tend to seek locations where they can optimize their after-tax profits. But tax rates are not a primary location factor, they matter only after corporations have made decisions on labor, transportation, raw materials, and capital costs. Firms generally consider tax rates well below other factors, such as labor, transportation, and capital costs. Tax rates generally become important at the margin, where they can help distinguish fairly similar sites from one another. Within a region, production factors are likely to be similar, so differences in tax levels across communities are more important in the location decision than are differences in tax levels between regions.
- **Financial incentives.** Generally, financial incentives tend to work in ways similar to tax rates. Governments offer firms incentives to encourage growth. Economic research has shown that most types of incentives have had little significant effect on firm location between regions. However, for

manufacturing industries with significant equipment costs, property or investment tax credit or abatement incentives can play a significant role in location decisions. Incentives are more effective at redirecting growth within a region than they are at providing a competitive advantage between regions.

- **Industry clusters.** Firms tend to locate in areas where there is already a concentration of firms like their own. The theory works in practice because firms realize operational savings and have access to a large pool of skilled labor when they congregate in a single location. Clusters of similar industries may also facilitate the flow of information.
- **Quality of life.** A region that features many quality amenities, such as good weather, recreational opportunities, culture, low crime, good schools, and a clean environment attracts people simply because it is a nice place to be. A region's quality of life attracts skilled workers, and if the amenities lure enough potential workers to the region, the excess labor supply pushes their wages down so that firms can find skilled labor for a relatively low cost.

Consideration of all of the factors involved in making location decisions shows that firms that would locate in Linn or Benton Counties would be a very small subset of all the firms making location decisions in Oregon, or in the United States. Firms looking for an urban environment, a very large labor pool, easy access to barge shipping, or firms requiring access to raw materials unavailable in the mid-Willamette Valley will not consider locating at one of the 11 sites in this analysis. Firms that need access to Interstate 5, relatively cheap land, and larger sites, however, could take these mid-Willamette Valley sites into consideration.

Selection of a facility is also involved in the process of intra-regional location decisions. Firms must decide whether to build new, purchase an existing facility, or lease a new or existing facility.

RESIDUAL LAND VALUE ANALYSIS

ECO's original task was to perform a residual land value analysis of three reasonably expected development scenarios on 11 sites which were identified by CWCOG. The purpose of the residual land value analysis is to provide an understanding of the possible and likely costs and revenues associated with developing the 11 industrial sites. The focus of the analysis is on the cost of mitigating wetlands on industrial sites.

The main benefit of the analysis is that it makes explicit the factors and assumptions that will affect the financial performance of a hypothetical development. The assumptions would certainly change if an actual development goes forward. But by providing rough estimates of the profitability (or loss) of the development, the analysis gives some insight into what property owners and developers might be willing to build, and how the cost of mitigating wetlands affects their decisions.

A residual land value analysis is a simple model that solves for *land value*. The model's inputs are assumptions about all non-land costs, all revenues, and a

market rate of return. The model's output is how much money would a developer be willing (able) to pay for the land. If the land value exceeds what the property is likely to be offered for, then the project "pencils out."

The model requires two types of inputs: costs and revenues. The costs include all the development costs for a particular project. The analyst must identify the type and size of building, construction costs on a square foot basis, parking requirements, soft costs (e.g., engineering and planning fees), and other details. For this analysis, the costs include mitigating wetlands.

The revenue side of the model estimates the amount of leasable space, the rent per square foot, vacancy rate, and operating expenses. Based on the net operating income and a capitalization rate, the model estimates the value of the development. The cost of the development is subtracted from the value of the development to determine the net value of the property. Developers require a particular rate of return (their profit) and the model applies the rate of return to the net value of the property to estimate the price a developer would be willing to pay for the land.

This type of analysis only functions correctly if most of the variables in the model are reasonably accurate assumptions. For this analysis, ECO derived the input assumptions from a variety of local sources. ECO interviewed local commercial developers and realtors to identify reasonable development costs and rental data.

Analysis

This chapter describes ECO's analysis. It has three parts:

- **Scenarios** describes the different scenarios that ECO was asked to model.
- **Definitions and assumptions** provides detailed descriptions of the variables used in the model and their sources.
- **Results** explains the land values calculated by the model.

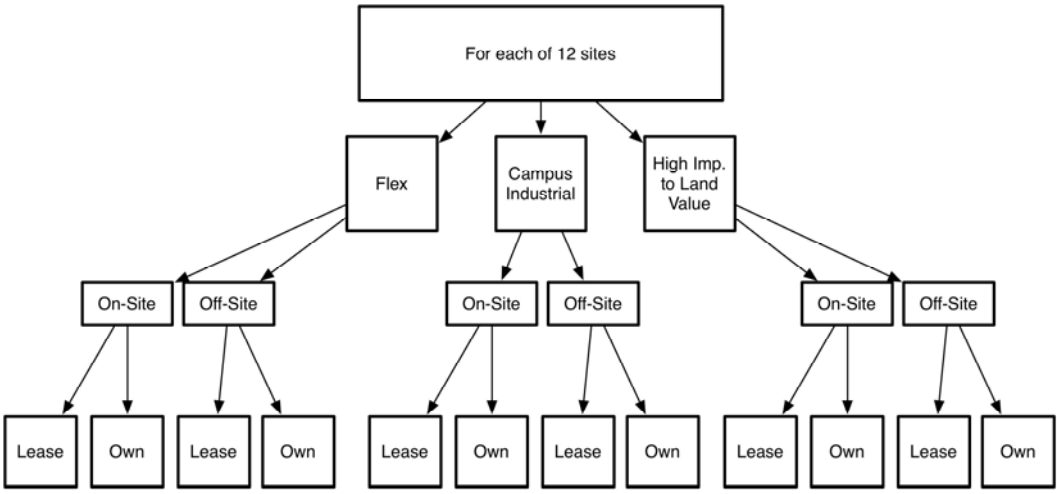
SCENARIOS

ECO's original task was to perform a residual land value analysis of three reasonably expected development scenarios on 11 sites (see Appendix A for a summary of the sites). The analysis would provide an estimate of how much a private developer would be willing to pay for land given assumptions about building type, development costs (including wetland mitigation), rents (lease and sale scenarios), and the developer's desired return on investment. The analysis could be summarized into the following scenarios:

- Three types of structures:
    1. **Flex Space.** This scenario is for a typical steel frame flex space building developed at an average FAR and lot coverage. We use comparable structures built in Lebanon and other jurisdictions for specifications and average cost figures.
    2. **Campus Industrial.** This scenario is for campus industrial uses that could include a mix of manufacturing and office uses. We use comparable developments to develop FAR and lot coverages as well as cost figures.
    3. **High Improvement-to-Land Value Uses.** This scenario is for higher end structures that may have specialized structural needs and house operations with significant equipment. ECO refers to this type of development as "high tech" because often high technology firms are those that develop high improvement to land value projects.
- Development with off-site or on-site wetlands mitigation
- Development built to lease or development built to own (built-to-suit)

Figure 1 shows the combination of scenarios that ECO used to develop the analysis.

Figure 1. Scenario development for residual land value analysis



Source: ECONorthwest.

DEFINITIONS AND ASSUMPTIONS

A residual land value analysis requires a number of assumptions: land costs, construction costs, entitlement (permitting) costs, impact fees, financing, etc. This section defines the variables and explains ECO's source for the assumption used in the model. These assumptions were used in ECO's preliminary analysis as well as the final cost analysis described later in this report.

- **Site area.** Total acres of the individual development sites. Provided to ECO by the CWCOG.
- **Wetlands impact area.** Total acres of wetlands. Provided to ECO by the CWCOG. The Department of State Lands (DSL) provided "total wetland area" information using existing wetland delineation information, or, where not available for a given site, soil survey data to estimate wetland area. "Likely impact area" was preliminarily estimated by DSL considering the position of wetlands on the site and then confirmed by each participating city. ECO assumed the area in need of mitigation is any part of the "likely impact area" filled by development.
- **Floor-to-area ratio (FAR).** This is a ratio of built square footage to total site acreage. Developers and brokers told ECO that industrial flex use buildings generally occupy about 30%-40% of the site, whereas campus industrial development occupies about 25%. ECO assumed that the FAR for flex space is 0.40, campus industrial is 0.25, and high tech is 0.33. Campus industrial developments generally have greater parking needs and more landscaping requirements. All types of industrial developments use a larger percentage of the site than office or commercial space because of truck and turn requirements. To address site variability, we assumed full site build out at applicable FARs.

- **Portion for sale or lease (Gross Leaseable Area).** Because ECO is assuming that the buildings on these sites will be built-to-suit then sold to the occupants, the portion for sale or lease is 100%.
- **Parking spaces per 1,000 square feet.** Based on comparable property data, parking requirements are 3 parking spaces per 1,000 square feet of flex property, 4 parking spaces per 1,000 square feet of campus industrial property, and 4 parking spaces per 1,000 square feet of high improvement to land value property.
- **Parking spaces.** This uses the number of square feet of building space and the number of parking spaces required per 1,000 square feet to calculate the total number of parking spaces.
- **Parking area.** This assumes 3 parking spaces require 1,000 square feet of parking area.
- **Total impervious surface.** This adds together the amount of building square footage and the square feet paved for parking lots.
- **Cost of land per acre.** ECO used the cost of land per acre to determine the portion of all development costs in the built-to-suit scenario attributable to wetlands mitigation. In order to estimate costs of development, ECO needed to determine the "average" cost of land over the 11 sites. The figure allowed ECO to determine the portion of costs attributable to land. Because very few of the sites have been certified through the Oregon Economic and Community Development Department (OECDD) as being "shovel ready" (and therefore have a price already determined for them), we had to develop a hypothetical price for all of the land in our analysis. We estimated this hypothetical price by examining all certified sites with prices in the mid-Willamette Valley, and developing an average of the prices. We excluded land for sale in Eugene, Salem, and McMinnville from the average because land value in those areas tended to be much higher. However, the range of land prices that we did look at varied from $38,000 per acre to $220,000 per acre. We assumed a land price of $65,000 per acre for the analysis.[1] ECO used this assumption in the cost analysis performed after ECO evaluated the preliminary conclusions from the residual land analysis.
- **Mitigation costs per acre.** Mitigation occurs in two different ways in Oregon. Developers may mitigate on-site, which means that they have to restore, create and or enhance a certain number of acres of wetlands on the site for every acre they fill during construction. DSL requires that on-site mitigation opportunities be considered first. If on site mitigation is impracticable, developers may mitigate off-site, which means that they have to either restore, create or enhance wetlands at another location or purchase an equivalent number of credits from a wetlands mitigation bank (if available).

[1] Bev Thacker, Oregon Economic and Community Development Department, personal communication, February 26, 2007.

The number of acres that need to be mitigated depend on the type of mitigation. For every 1 acre of wetlands impacted during construction, a developer must: (1) restore at least 1 acre of previously existing but no longer functioning wetlands; (2) create at least 1.5 acres of new wetlands; (3) enhance at least 2 (if cropped) or 3 (if not cropped) acres of existing wetlands. Because many undeveloped sites in the mid-Willamette Valley are currently in a cropped wetland condition, it was assumed that enhancing wetlands at a 2:1 ratio would be the most likely form of wetlands mitigation for the 11 sites in this analysis.[2] ECO assumes that wetlands mitigation would occur at the 2:1 enhancement ratio.

Credits from the mitigation land bank system vary depending on the supply and demand of those credits in the open marketplace. We used estimates from DSL, who cited the January 2007 statewide average cost of one mitigation credit as $60,000, to estimate the cost of this form of off-site mitigation in our analysis. On-site costs are also from the Department of State Lands, who estimated that on-site mitigation, including grading, site preparation, and five years of mandated monitoring, would cost about $28,000 per acre of wetlands impacted during construction (as well as two acres of land on-site) for the mid-Willamette Valley sites in this report.[3]

- **Infrastructure.** For these estimates, the cost of infrastructure to the site is assumed to be covered by the local jurisdiction and is calculated at $0 for the analysis.
- **Parking costs.** The average cost of a surface space varies, depending primarily on the amount of amenity (landscaping, lighting, stall and aisle width) that gets specified. At the low end, without land, hard cost is in the range of $3.50 to $5.00 per square foot, and the average stall price is in the range of $1,500.
- **Percent office space.** Most flex buildings are designed to have manufacturing or warehousing space in the majority of the structure, and to also have in addition some space for offices. Developers estimated that a typical flex building would have between 5% and 50% office space; because office space is more expensive to finish than warehouse or manufacturing space, this percentage is flexible depending on the needs of the tenant.
- **Hard costs.** These are the purchase price of actual assets. For this study, hard costs include all costs associated with building a structure, but do not include land costs or soft costs. The soft costs are additional fees for items like engineering and architectural services. In ECO's interviews with developers, the cost of draining and grading wetlands as opposed to

[2] Kirk Jarvie, Oregon Department of State Lands, March 16, 2007.

[3] Interview with Kirk Jarvie, Oregon Department of State Lands, February 21, 2007. Jarvie reported that mitigation costs include the costs of purchasing the land, construction costs, and 5 years of monitoring the site. He estimated that this would cost between $20,000 and $30,000 per acre, and corroborated this estimate with notes from a recent City of Corvallis mitigation estimate of $25,000 to $28,000 per acre. These estimates are specifically for a large-scale mitigation site where significant economies of scale may be generated and assumes only relatively minor mitigation site grading requirements.

typical draining and grading for other sites was negligible (when compared with total development cost); wetlands were not perceived to require additional site preparation costs. Hard costs are expressed in two ways for flex space calculations, with the latter applying to campus industrial and high tech calculations as well.

- **Cost of flex space per square foot.** Based on developer interviews, this cost is about $74 per square foot. This includes a single story building with concrete tilt-up walls, 20-foot clear height, no ceilings or floor coverings, but with power, water, and bathrooms. This would be the minimum cost for the shell space.
- **Cost of office space per square foot.** This cost includes the cost of building the shell and then adds to it the cost of improving the shell into office space. This price ranges from $90 to $150 per square foot depending on the quality of the improvements. ECO uses an average of $122 per square foot for flex space office space. Office space costs for campus industrial buildings are used to calculate the entire building's construction costs. These were estimated to be $163 per square foot. High improvement to land value uses were nearly impossible for developers to estimate as the costs can vary so widely depending on the use of the building and the needs of the occupants; these buildings are nearly always custom-built for a particular tenant. Developers estimated prices at anywhere between 20% and 500% of the cost of a flex space building; ECO assumed $378 per square foot construction costs for this type of building.

- **Soft costs as a percent of hard costs.** Soft costs are those costs that are not directly associated with purchase of land or construction of a building: impact and other development fees, architectural and engineering services, site preparation, etc. This figure varies a great deal depending on what is included as a "soft cost." ECO assumes that soft costs include architectural fees, platting or replatting, soils engineering, topographical or boundary surveys, structural and civil engineering, site plan review, design, financing (including attorney's fees, escrow, and title insurance), as well as project management, inspection, and appraisal costs. For this analysis, ECO assumes that soft costs—excluding SDCs and permitting costs—will account for about 27% of soft costs.[4]

- **Systems development charges (SDCs) and permitting fees.** These costs vary by jurisdiction, size of property, distance from infrastructure, infrastructure needs, type of occupant, and many other factors. Developers did not attempt to estimate systems development charges or permitting fees. Because these costs are so variable, they are almost impossible to estimate. ECO used $150,000 for the analysis but the model is constructed so that this number can vary if jurisdictions have more accurate information.

[4] Interview with Clayton Walker, C.W. Walker & Associates, March 6, 2007.

- **Rent of flex space per square foot per month.** This estimate was used to determine the net operating income for the building in ECO's preliminary analysis, when we were determining the revenue for the project. ECO used a survey of 35 Willamette Valley industrial buildings and office parks to determine the average market rent for flex and office space,[5] then checked our results with local brokers. ECO assumed $0.38 per square foot per month rent for flex space, $0.73 per square foot per month for flex/ interior office space, $0.90 per square foot per month for campus industrial space, and $3.00 per square foot for high tech space.

  Would variations in rents mean that speculative development could be feasible? If rents were to be raised high enough, and a tenant was willing to pay those rents, any type of development on these 11 sites would be feasible. Varying the rents within the range of averages (for the flex site, adjusting rents to $0.41—flex—and $0.90—interior office space—the high end of the average variation) changed the net operating income, but an increase from $1.6 million per year to $1.8 million per year did not affect the overall feasibility of the project. Using the *highest* rents in the Willamette Valley survey ($0.57 for flex and $1.35 for interior office space) finally made the project feasible. However, higher rents usually mean that the building is of higher quality, and ECO's construction cost estimates would have to be raised in addition to the rent. The likelihood of developing a very expensive speculative project in the mid-Willamette Valley and finding a tenant willing to pay rents higher than are typically charged in the Portland metro area for flex space is low.

- **Contingency factors.** In a net lease, or triple-net lease, there are a few costs—such as management fees and reserve funds for future structural repairs—not covered by the tenant. These, together with vacancy rates (generally not applicable in our analysis, because we assume that the building would be occupied by the firm for which the project was built-to-suit), are accounted for by this contingency factor. ECO assumes a 9% contingency factor for this analysis.

- **Desired capitalization rate.** Local capitalization rates ("cap rates") for industrial development range from 7% to 8%. This analysis assumes a 7.5% capitalization rate.

  The capitalization rate is a rough calculation derived from the ratio of the first year net operating income to the asking price. It is designed to measure whether the price of the property is competitive with other similar properties—in this analysis we use a capitalization rate equivalent to that of other similar properties and the net operating income to estimate the approximate asking price for the property.[6] Capitalization rates are not equivalent to the return on investment for the property because they do not

[5] National Association of Industrial and Office Properties, "2005 Guide to Industrial and Business Parks, Oregon and Southwest Washington," Supplement to Oregon Business Magazine, 2005. (This was the last of these supplements published for Oregon.)

[6] Interview with Sue Pritchard, March 6, 2007 and Brueggeman, William B. and Jeffrey D. Fisher, *Real Estate Finance and Investments.* New York: McGraw-Hill, 2001.

consider future income from operations and resale of the property at the end of the holding period.

If developing a particular site were perceived as being riskier for the investor, the capitalization rate would increase, and could be as high as 11%. Brokers interviewed by ECO stated that each additional risk factor in the transaction could raise the capitalization rate 1%—if a developer purchased a building outright without leasing or constructing it the rate would be 7%, and they would add 1% for the lease-up risk (vs. selling the building), 1% for the risks associated with construction (vs. buying an existing building), 1% for speculative construction (vs. building-to-suit), etc.[7]

- **Required rate of return**. This measures the rate of return on investment, expressed as a compound rate of interest, over the entire investment period. In ECO's preliminary analysis, the rate of return was used to determine the costs of development of the property and to show how high costs made the speculative projects unfeasible. ECO assumed a 13% rate of return, consistent with what developers cited.
- **Net Operating Income (NOI).** This is income after deducting for operating expenses but before deducting for income taxes and interest. In ECO's preliminary analysis, the NOI was used to determine the value of the property and to show how low rents and therefore, revenues, made the speculative projects unfeasible.

RESULTS

ECO's task was to develop a residual land value analysis for 11 sites in the mid-Willamette Valley. The analysis would determine if the market would support the development of the sites after the costs of wetland mitigation were factored in. ECO modeled three scenarios for each site: flex space, campus industrial, and high improvement to land value. For each scenario, ECO examined how development would be affected by mitigating for wetlands on-site and off-site, as well as how revenues would change based on whether the project was built for lease or built-to-suit (for sale).

After building a model to conduct our analysis, and interviewing local commercial and industrial developers, realtors, and brokers,[8] ECO concluded that presenting the analysis in terms of costs of development and revenue earned from development was not the best way of approaching the issues involved. When considering development of sites like the 11 in this analysis, it is helpful to describe how developers think about projects. The main components of cost are: (1) land; (2) soft costs (including planning and entitlements, design, public fees or exactions, financing); and (3) building (defined as hard costs).

[7] Interview with Monte Hayes, GVA Kidder Mathews, February 22, 2007.

Based on ECO's preliminary analysis, given the land, soft, and hard costs associated with this type of development and the current market rents that developers receive in this part of the state, the break-even costs of land acquisition is negative. This means that a developer would *need to be paid* to construct a speculative (built-to-lease) development. Construction costs for new buildings have increased dramatically over the past few years, and rents have not kept pace with the rise in construction costs. The way that developers achieve their desired rate of return on projects in this part of the Willamette Valley is to develop sites for tenants who are prepared to purchase the building after construction, regardless of the cost. The only type of speculative development that ECO's research indicated would be feasible is small, e.g. a structure of no more than 15,000 square feet. Given the large size of the 11 sites, potential developers are more likely to wait until they can partner with firms that need larger spaces than develop the sites with many small buildings.

Because speculative development proved to be an unfeasible option for sites in the mid-Willamette Valley, ECO decided that a more effective analysis would show wetlands mitigation's relationship to project costs, assuming that most development would be built-to-suit and sold directly to the occupant of the structure. This type of development occurs when a developer partners with a specific firm that plans to occupy the building after it is constructed. The developer will finish the building to the specifications of the individual occupant. Then, the tenant will purchase the building from the developer. This analysis shows development costs and explains the relationship between the costs of wetlands mitigation and the willingness of a developer to develop industrial sites in the mid-Willamette Valley.

Table 1 shows the summarized results of ECO's analysis. Because ECO assumes that on-site mitigation would require 2 enhanced acres of wetlands for every acre filled during construction, on several of the 11 study sites on-site mitigation would not be feasible. The site simply does not have enough acres to mitigate for the wetlands being filled. In Table 1, "n/a" signifies an unfeasible mitigation scenario. If a developer were to develop on these sites where on-site mitigation is unfeasible, the developer would probably use a combination of on- and off-site mitigation to account for the wetlands being filled on that site.

Table 1 shows the site acreage and total wetlands acreage, as well as the cost of on-site and off-site mitigation. It shows the costs of constructing each of the three types of structures on the site, and then calculates the costs of mitigation as a percent of construction costs.

The analysis presented here shows that mitigation costs—both on-site and off-site—represent a very small percentage of total construction costs. On-site mitigation costs range from less than 1% to about 5%, aside from the Corvallis Industrial Lands 65% scenario. On-site mitigation represents a high percentage of costs in this scenario because on-site mitigation requires so much acreage that it subtracts nearly all potential buildable land from development. The *actual* costs of on-site mitigation as a percentage of total construction costs are negligible. The *opportunity* costs, e.g. the loss of potential buildable land, in some cases are very high. Off-site mitigation costs as a percent of total development costs range from less than 1% to about 5%. The difference in *costs* of on-site and off-site

mitigation is small, but the loss of buildable land to on-site mitigation requirements can greatly impact the amount of development possible on many of these sites.

The results show that as the type of building becomes more expensive, wetlands become a smaller portion of overall costs. This analysis was limited to three building types. Any use of industrial land that requires a lower-cost facility than modeled here will show a higher portion of costs attributable to wetlands. An industrial user looking for a very low-cost facility, for example, a small building surrounded by open storage, will see the wetlands mitigation costs being a larger portion than for the development types modeled here.

Table 1. Costs of wetlands mitigation relative to costs of construction, 2007

Site	Site area (acres)	Wetlands impact area (acres)	Mitigation costs ($millions)	Cost of construction ($millions)			Mitigation % of construction costs	Mitigation & land % of construction costs
				Flex space	Campus industrial	High tech		
Albany Industrial North (Albany)	102	70						
on-site			n/a	n/a	n/a	n/a	n/a - n/a	n/a - n/a
off-site			4.20	164	178	549	0.8% - 2.6%	2.0% - 6.6%
Airport (Corvallis)	224	54.13						
on-site			1.52	192	210	623	0.2% - 0.8%	2.6% - 8.4%
off-site			3.25	375	420	1,245	0.3% - 0.9%	1.4% - 4.8%
South Corvallis 50% (Corvallis)	930	355						
on-site			9.94	365	404	1,209	0.8% - 2.7%	5.8% - 19.3%
off-site			21.30	1,571	1,744	5,201	0.4% - 1.4%	1.6% - 5.2%
South Corvallis 65% (Corvallis)	930	462						
on-site			12.94	18	16	37	35.3% - 70.8%	200.4% - 401.6%
off-site			27.72	1,571	1,744	5,201	0.5% - 1.8%	1.7% - 5.6%
South Corvallis 75% (Corvallis)	930	533						
on-site			n/a	n/a	n/a	n/a	n/a - n/a	n/a - n/a
off-site			31.98	1,571	1,744	5,201	0.6% - 2.0%	1.8% - 5.9%
Morse Bros (Harrisburg)	27	7						
on-site			0.20	18	16	37	0.5% - 1.1%	5.3% - 10.7%
off-site			0.42	46	48	146	0.3% - 0.9%	1.5% - 4.8%
Peoria Road (Harrisburg)	37	13						
on-site			0.36	18	16	37	1.0% - 2.0%	7.6% - 15.2%
off-site			0.78	55	65	183	0.4% - 1.4%	1.7% - 5.8%
Airport (Lebanon)	78	56.74						
on-site			n/a	n/a	n/a	n/a	n/a - n/a	n/a - n/a
off-site			3.40	128	145	403	0.8% - 2.7%	2.1% - 6.6%
Burkhart (Lebanon)	47	24.1						
on-site			n/a	n/a	n/a	n/a	n/a - n/a	n/a - n/a
off-site			1.45	73	81	256	0.8% - 2.0%	1.8% - 6.2%
Rodeo (Lebanon)	124	78.1						
on-site			n/a	n/a	n/a	n/a	n/a - n/a	n/a - n/a
off-site			4.69	210	226	696	0.7% - 2.2%	1.8% - 6.1%
Reeves (Lebanon)	47	7.52						
on-site			0.21	46	48	146	0.1% - 0.5%	2.2% - 7.1%
off-site			0.45	73	81	256	0.2% - 0.6%	1.4% - 4.8%
Millersburg/ Wah Chang (Millersburg)	223	10						
on-site			0.28	338	371	1,135	0.0% - 0.1%	1.3% - 4.4%
off-site			0.60	375	404	1,245	0.0% - 0.2%	1.2% - 4.0%
Tangent (Tangent)	98	39						
on-site			1.09	27	32	110	1.0% - 4.0%	6.8% - 27.2%
off-site			2.34	164	178	549	0.4% - 1.4%	1.6% - 5.3%

Source: ECONorthwest.

Chapter 4 Implications and Policy Recommendations

ECO concludes that because of the rapid increase of development and construction costs, wetlands mitigation—both on-site and off-site—does not account for a large percentage of development costs. Given their small percentage of overall project costs, why do wetlands remain a problem for developers and firms?

Wetlands present a problem to developers not so much because of the cost of mitigation, but the uncertainty behind the mitigation requirements and process. Developers worry that federal regulations could change, and anecdotal evidence citing cases where property owners had to retroactively mitigate their properties only reinforces the risk that developers see in a property with substantial wetlands. Wetlands are viewed, as one developer said, "no different than a contaminated site."[9] Risk is not easy to quantify, but it plays a large role in the location decisions that firms undertake.

What can jurisdictions do to make the development of sites such as these 11 in the mid-Willamette Valley more feasible? ECO's first recommendation is to take steps to reduce uncertainty in the entitlement process. There are various ways to make the development of sites with substantial portions of wetlands more feasible, including:

- Ensuring that the property has clearly delineated wetlands that has been approved by DSL and such approval is current, so that a developer knows the exact size and quality of the wetlands
- Streamlining and simplifying its permitting process, to minimize the time the developer must spend to get the necessary permits. Smaller, local developers are often comparatively more burdened by the extensive permitting process that wetlands require than are larger, national firms. Streamlining the permitting process reduces the confusion for *all* developers. The OECDD Site Certification program is already moving toward this goal.
- Purchasing wetlands mitigation credits directly from the mitigation bank, to guarantee that wetlands mitigation credits are available as soon as the developer needs them.

Reducing risk is the important part of the strategy. ECO recommends that jurisdictions focus more on risk reduction than price subsidies; as analysis of the 11 sites shows, wetlands mitigation is generally no more formidable of a cost than any other type of necessary infrastructure improvement. Wetlands mitigation only becomes highly burdensome if a developer or property owner intends to build an extremely low-value structure on the property. Because construction costs and

[9] Interview with John Brown, Evans, Elder and Brown, March 6, 2007.

revenues would be much lower, and the costs of wetlands mitigation would remain roughly the same, mitigating the wetlands would require a larger percent of the overall project budget. A developer or property owner wanting to build a low-value structure on the property will be priced out of the market.

While this project was completed for the Cascades West Council of Governments, the findings have implications for municipalities and state agencies. The key conclusions (that mitigation is a small factor in overall project costs) and that uncertainty is a bigger locational factor lead to our recommendations above about reducing uncertainty in the development process. More specific steps could include:

- Conduct and approve delineations on sites as early as possible in the project design phase. Currently, DSL will only guarantee timely (i.e., up to 120 days) review of a wetland delineation report when the report accompanies a Removal-Fill Permit application (or application will be submitted within 90 days of delineation report submittal), or if the site is enrolled in the OECDD site certification program. Pending legislation (HB 2106) would provide DSL sufficient staffing to review all submitted wetland delineations (including those conducted well in advance of the application phase) within 120 days so that wetland avoidance and minimization strategies may be considered early in an owner's/developer's project design phase. This allows for the development of a more robust wetland fill alternatives analysis, which is a key, and common stumbling block, of the wetland permitting process.

- Match the supply of mitigation credits with demand. Current state policy requires cities to conduct an "Economic Opportunities Analysis" to identify the types of industries likely to locate in the city, the types of sites needed, and demand for those sites (OAR 660-009). It requires the land inventory to identify constraints such as wetlands, but does not require cities to discuss mitigation measures. It also does not require cities to identify the supply of credits. Moreover, demand for sites—and credits—is regional. Demand for credits can be for all types of land uses. Thus, it is difficult to determine how many credits might be needed over a given period without an estimate of regional demand.

- Create a state-funded mitigation credit bank. Such a bank would ensure that credits are available for priority economic development projects and could mitigate the price volatility of credits. OECDD would be a logical agency to administer such a bank.

Anecdotal evidence also suggests that for certain types of development, on-site mitigation can increase the value of a site. The costs of campus industrial development are greater than the costs of flex development in part because campus industrial occupants prefer to have increased amounts of landscaping, and improved building facades. An attractively mitigated wetland on-site can provide recreational opportunities for employees in the form of trails, or can become an attractive part of the view and increase the visual appeal of a campus setting.

If jurisdictions choose to try to subsidize the price of wetlands mitigation, ECO recommends that they treat wetlands mitigation like any other subsidy available to local government. Consider it just one of many options available in a jurisdiction's toolbox, and consider offering wetlands mitigation subsidies as one of several choices for a developer to select from. As with other types of financial incentives and tax rate adjustments, this type of subsidy will have only marginal effects on the location decisions of industrial developers.

Appendix A Summary of Industrial Development Sites Included in Study

Table A-1 provides details on the sites evaluated as part of this study.

Table A-1. Sites included in study

Site Name	Nearest City, County	HUC 5 Location	Legal Description	DSL #	Total Site Size (in ac.)	Total Wetland Area by Cowardin & HGM (in ac.)		Likely Impact Area (in ac.)
Albany Industrial North	Albany, Linn	1709000304	T11S0330: TL 200	WD05-0407	52	PEM/S-F	40	40
	Albany, Linn	1709000304	T11S03W19: TL 304	Albany LWI	50	PEM/S-F	30	30
Corvallis Airport	Corvallis, Benton	1709000305	T12SR5W22: TL 300, 500, 501 T12SR5W22D: 301, 401 T12SR5W27: TL 101 T12SR5W22: TL 300/A03	WD04-0216 & WD06-0312	224	PEM/Flats	71.64	53.73
						PSS/RF	0.4	0.4
						PSS/D	1.06	0
South Corvallis Industrial Lands	Corvallis, Benton	170900305		Corvallis LWI	approx. 930	PEM/Flats	710	50% Scenario = 355 65% Scenario = 462 75% Scenario = 533
Morse Bros/6th St	Harrisburg, Linn	1709000302	T15SR4W16D: TL 200 (portion)	WD03-0405 (determination)	27	PEM/D	7	7
Peoria Rd Site	Harrisburg, Linn	1709000302	T15SR4W09 TL 600 (portion)	WD03-0404 (determination)	37	PEM/S-F	13	13
Lebanon Airport	Lebanon, Linn	1709000304	12S2W16: TL 300, 303 2900, 3100	WD06-0177	19	PEM/Flats	10.29	10.29
			TL 2801, 2802, 2804	WD06-0234	59	PEM/Flats	46.45	46.45
Burkhart	Lebanon, Linn	1709000304	T12SR2W10BB TL 100	WD04-0333	47	PEM/S-F	24.1	24.1
						PFO/RI	3.2	0
Rodeo	Lebanon, Linn	1709000304	T12SR2W09: TL 400, 500, 800, 900 903	WD04-0360	119	PEM/S-F	72.6	72.6
						PFO/S-F	0.5	0.5
			TL 902	WD06-0323	5	PEM/S-F	5	5
Reeves	Lebanon, Linn	1709000304	T12SR2W3C: TL 1900, 2000	WD03-0456	47	PEM/S-F	7.52	7.52
						PFO/S-F	2.51	0
Millersburg/ Wah Chang site	Millersburg, Linn	1709000304	T10SR3W28: TL 104 105 700 800 T10SR3W29: TL 204	WD04-0549	223	PEM/Flats	55.5	7.5
						PEM/RF	14.8	2
						PSS/RF	3.7	0.5
Tangent Industrial Park	Tangent, Linn	1709000304	T12SR3W06: multiple tax lots	WD05-0056 (determination)	98	PEM/S-F	39	39

Source: Cascades West Council of Governments.
Note: The acres of wetlands were estimated by DSL based on hydric soil mapping for the South Corvallis Industrial Lands site, the Morse Brothers site in Harrisburg, the Peoria Road site in Harrisburg, and the Tangent site. The remainder were delineated.

ECO analyzed three different wetlands scenarios for the South Corvallis Industrial Lands site. In the 50% Wetlands Scenario, the model assumed that 50% of total wetland area was the likely impact area. In the 65% Wetlands Scenario, the model assumed that 65% of total wetland area was the likely impact area. In the 75% Wetlands Scenario, the model assumed that 75% of total wetland area was the likely impact area.

Site-by-Site Analysis

Site name: Albany Industrial North
Nearest city, county: Albany, Linn County
Legal description: T11S0330: TL 200; 11S03W19: TL 304
DSL number: WD05-0407 and Albany LWI

Table B-1. Albany Industrial North site analysis, showing three scenarios, 2007.

	Flex Space		Campus Industrial		High Tech	
Albany Industrial North (Albany)	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**
Site area	102	102	102	102	102	102
Wetlands Impact Area	70	70	70	70	70	70
Developable Area	-38	102	-38	102	-38	102
Net Developable Acres	10	81.6	10	81.6	10	81.6
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	174,240	1,421,798	108,900	888,624	143,748	1,172,984
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	n/a	4,050	n/a	3,300	n/a	4,500
Parking area	n/a	1,350,000	n/a	1,100,000	n/a	1,500,000
Total impervious surface	n/a	2,771,798	n/a	1,988,624	n/a	2,672,984
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$6,630,000	$6,630,000	$6,630,000	$6,630,000	$6,630,000	$6,630,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	n/a	$4,200,000	n/a	$4,200,000	n/a	$4,200,000
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	n/a	$6,075,000	n/a	$4,950,000	n/a	$6,750,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	n/a	18	n/a	11	n/a	15
Total cost for buildings	n/a	$164,451,600	n/a	$177,592,800	n/a	$549,353,250
Mitigation % of development costs	n/a	2.6%	n/a	2.4%	n/a	0.8%
Mitigation and land % of development costs	n/a	6.6%	n/a	6.1%	n/a	2.0%

Source: ECONorthwest.

Site name: Corvallis Airport
Nearest city, county: Corvallis, Benton County
Legal description: T12SR5W22: TL 300, 500, 501; T12SR5W22D: 301, 401' T12SR5W27: TL 101; T12SR5W22: TL 300 /A03
DSL number: WD04-0216 and WD06-0312

Table B-2. Corvallis airport site analysis, showing three scenarios, 2007.

	Flex Space		Campus Industrial		High Tech	
Covallis Airport (Corvallis)	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**
Site area	224	224	224	224	224	224
Wetlands Impact Area	54.13	54.13	54.13	54.13	54.13	54.13
Developable Area	115.74	224	115.74	224	115.74	224
Net Developable Acres	92.592	179.2	92.592	179.2	92.592	179.2
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	1,613,323	3,122,381	1,008,327	1,951,488	1,330,991	2,575,964
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	4,725	9,225	3,900	7,800	5,100	10,200
Parking area	1,575,000	3,075,000	1,300,000	2,600,000	1,700,000	3,400,000
Total impervious surface	3,188,323	6,197,381	2,308,327	4,551,488	3,030,991	5,975,964
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$14,560,000	$14,560,000	$14,560,000	$14,560,000	$14,560,000	$14,560,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	$1,515,640	$3,247,800	$1,515,640	$3,247,800	$1,515,640	$3,247,800
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	$7,087,500	$13,837,500	$5,850,000	$11,700,000	$7,650,000	$15,300,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	21	41	13	26	17	34
Total cost for buildings	$191,860,200	$374,584,200	$209,882,400	$419,764,800	$622,600,350	$1,245,200,700
Mitigation % of development costs	0.8%	0.9%	0.7%	0.8%	0.2%	0.3%
Mitigation and land % of development costs	8.4%	4.8%	7.7%	4.2%	2.6%	1.4%

Source: ECONorthwest.

Site name: South Corvallis Industrial Lands Scenario 1 (50%)
Nearest city, county: Corvallis, Benton County
Legal description: n/a
DSL number: Corvallis LWI

Table B-3. South Corvallis Industrial (50%) site analysis, showing three scenarios, 2007.

South Corvallis Industrial Lands (Corvallis) 50% scenario	Flex Space		Campus Industrial		High Tech	
	On-Site Mitigation	Off-Site Mitigation	On-Site Mitigation	Off-Site Mitigation	On-Site Mitigation	Off-Site Mitigation
Site area	930	930	930	930	930	930
Wetlands Impact Area	355	355	355	355	355	355
Developable Area	220	930	220	930	220	930
Net Developable Acres	176	744	176	744	176	744
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	3,066,624	12,963,456	1,916,640	8,102,160	2,529,965	10,694,851
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	9,000	38,700	7,500	32,400	9,900	42,600
Parking area	3,000,000	12,900,000	2,500,000	10,800,000	3,300,000	14,200,000
Total impervious surface	6,066,624	25,863,456	4,416,640	18,902,160	5,829,965	24,894,851
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$60,450,000	$60,450,000	$60,450,000	$60,450,000	$60,450,000	$60,450,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	$9,940,000	$21,300,000	$9,940,000	$21,300,000	$9,940,000	$21,300,000
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	$13,500,000	$58,050,000	$11,250,000	$48,600,000	$14,850,000	$63,900,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	40	172	25	108	33	142
Total cost for buildings	$365,448,000	$1,571,426,400	$403,620,000	$1,743,638,400	$1,208,577,150	$5,200,544,100
Mitigation % of development costs	2.7%	1.4%	2.5%	1.2%	0.8%	0.4%
Mitigation and land % of development costs	19.3%	5.2%	17.4%	4.7%	5.8%	1.6%

Source: ECONorthwest.

Site name: South Corvallis Industrial Lands Scenario 2 (65%)
Nearest city, county: Corvallis, Benton County
Legal description: n/a
DSL number: Corvallis LWI

Table B-4. South Corvallis Industrial (65%) site analysis, showing three scenarios, 2007.

South Corvallis Industrial Lands (Corvallis) 65% scenario	Flex Space		Campus Industrial		High Tech	
	On-Site Mitigation	Off-Site Mitigation	On-Site Mitigation	Off-Site Mitigation	On-Site Mitigation	Off-Site Mitigation
Site area	930	930	930	930	930	930
Wetlands Impact Area	462	462	462	462	462	462
Developable Area	6	930	6	930	6	930
Net Developable Acres	10	744	10	744	10	744
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	174,240	12,963,456	108,900	8,102,160	143,748	10,694,851
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	450	38,700	300	32,400	300	42,600
Parking area	150,000	12,900,000	100,000	10,800,000	100,000	14,200,000
Total impervious surface	324,240	25,863,456	208,900	18,902,160	243,748	24,894,851
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$60,450,000	$60,450,000	$60,450,000	$60,450,000	$60,450,000	$60,450,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	$12,936,000	$27,720,000	$12,936,000	$27,720,000	$12,936,000	$27,720,000
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	$675,000	$58,050,000	$450,000	$48,600,000	$450,000	$63,900,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	2	172	1	108	1	142
Total cost for buildings	$18,272,400	$1,571,426,400	$16,144,800	$1,743,638,400	$36,623,550	$5,200,544,100
Mitigation % of development costs	70.8%	1.8%	80.1%	1.6%	35.3%	0.5%
Mitigation and land % of development costs	401.6%	5.6%	454.5%	5.1%	200.4%	1.7%

Source: ECONorthwest.

Site name: South Corvallis Industrial Lands Scenario 3 (75%)
Nearest city, county: Corvallis, Benton County
Legal description: n/a
DSL number: Corvallis LWI

Table B-5. South Corvallis Industrial (75%) site analysis, showing three scenarios, 2007.

South Corvallis Industrial Lands (Corvallis) 75% scenario	Flex Space		Campus Industrial		High Tech	
	On-Site Mitigation	Off-Site Mitigation	On-Site Mitigation	Off-Site Mitigation	On-Site Mitigation	Off-Site Mitigation
Site area	930	930	930	930	930	930
Wetlands Impact Area	533	533	533	533	533	533
Developable Area	-136	930	-136	930	-136	930
Net Developable Acres	10	744	10	744	10	744
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	174,240	12,963,456	108,900	8,102,160	143,748	10,694,851
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	n/a	38,700	n/a	32,400	n/a	42,600
Parking area	n/a	12,900,000	n/a	10,800,000	n/a	14,200,000
Total impervious surface	n/a	25,863,456	n/a	18,902,160	n/a	24,894,851
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$60,450,000	$60,450,000	$60,450,000	$60,450,000	$60,450,000	$60,450,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	n/a	$31,980,000	n/a	$31,980,000	n/a	$31,980,000
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	n/a	$58,050,000	n/a	$48,600,000	n/a	$63,900,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	n/a	172	n/a	108	n/a	142
Total cost for buildings	n/a	$1,571,426,400	n/a	$1,743,638,400	n/a	$5,200,544,100
Mitigation % of development costs	n/a	2.0%	n/a	1.8%	n/a	0.6%
Mitigation and land % of development costs	n/a	5.9%	n/a	5.3%	n/a	1.8%

Source: ECONorthwest.

Site name: Morse Bros/ 6th Street
Nearest city, county: Harrisburg, Linn County
Legal description: T15SR4W16D: TL 200 (portion)
DSL number: WD03-0405 (determination)

Table B-6. Morse Bros site analysis, showing three scenarios, 2007.

	Flex Space		Campus Industrial		High Tech	
Morse Bros Site (Harrisburg)	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**
Site area	27	27	27	27	27	27
Wetlands Impact Area	7	7	7	7	7	7
Developable Area	13	27	13	27	13	27
Net Developable Acres	10.4	21.6	10.4	21.6	10.4	21.6
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	181,210	376,358	113,256	235,224	149,498	310,496
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1,000 SF of Bldg Space	3	3	4	4	4	4
Parking spaces	450	1,125	300	900	300	1,200
Parking area	150,000	375,000	100,000	300,000	100,000	400,000
Total impervious surface	331,210	751,358	213,256	535,224	249,498	710,496
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$1,755,000	$1,755,000	$1,755,000	$1,755,000	$1,755,000	$1,755,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	$196,000	$420,000	$196,000	$420,000	$196,000	$420,000
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	$675,000	$1,687,500	$450,000	$1,350,000	$450,000	$1,800,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	2	5	1	3	1	4
Total cost for buildings	$18,272,400	$45,681,000	$16,144,800	$48,434,400	$36,623,550	$146,494,200
Mitigation % of development costs	1.1%	0.9%	1.2%	0.9%	0.5%	0.3%
Mitigation and land % of development costs	10.7%	4.8%	12.1%	4.5%	5.3%	1.5%

Source: ECONorthwest.

Site name: Peoria Road
Nearest city, county: Harrisburg, Linn County
Legal description: T15SR4W09 TL 600 (portion)
DSL number: WD03-0404 (determination)

Table B-7. Peoria Road site analysis, showing three scenarios, 2007.

	Flex Space		Campus Industrial		High Tech	
Peoria Road Site (Harrisburg)	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**
Site area	37	37	37	37	37	37
Wetlands Impact Area	13	13	13	13	13	13
Developable Area	11	37	11	37	11	37
Net Developable Acres	8.8	29.6	8.8	29.6	8.8	29.6
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	153,331	515,750	95,832	322,344	126,498	425,494
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	450	1,350	300	1,200	300	1,500
Parking area	150,000	450,000	100,000	400,000	100,000	500,000
Total impervious surface	303,331	965,750	195,832	722,344	226,498	925,494
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$2,405,000	$2,405,000	$2,405,000	$2,405,000	$2,405,000	$2,405,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	$364,000	$780,000	$364,000	$780,000	$364,000	$780,000
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	$675,000	$2,025,000	$450,000	$1,800,000	$450,000	$2,250,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	2	6	1	4	1	5
Total cost for buildings	$18,272,400	$54,817,200	$16,144,800	$64,579,200	$36,623,550	$183,117,750
Mitigation % of development costs	2.0%	1.4%	2.3%	1.2%	1.0%	0.4%
Mitigation and land % of development costs	15.2%	5.8%	17.2%	4.9%	7.6%	1.7%

Source: ECONorthwest.

Site name: Airport
Nearest city, county: Lebanon, Linn County
Legal description: 12S2W16: TL 300, 303, 2900, 3100, TL 2801, 2802, 2804
DSL number: WD06-0177, WD06-0234

Table B-8. Lebanon Airport site analysis, showing three scenarios, 2007.

	Flex Space		Campus Industrial		High Tech	
Lebanon Airport Site (Lebanon)	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**
Site area	78	78	78	78	78	78
Wetlands Impact Area	56.74	56.74	56.74	56.74	56.74	56.74
Developable Area	-35.48	78	-35.48	78	-35.48	78
Net Developable Acres	10	62.4	10	62.4	10	62.4
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	174,240	1,087,258	108,900	679,536	143,748	896,988
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	n/a	3,150	n/a	2,700	n/a	3,300
Parking area	n/a	1,050,000	n/a	900,000	n/a	1,100,000
Total impervious surface	n/a	2,137,258	n/a	1,579,536	n/a	1,996,988
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$5,070,000	$5,070,000	$5,070,000	$5,070,000	$5,070,000	$5,070,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	n/a	$3,404,400	n/a	$3,404,400	n/a	$3,404,400
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	n/a	$4,725,000	n/a	$4,050,000	n/a	$4,950,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	n/a	14	n/a	9	n/a	11
Total cost for buildings	n/a	$127,906,800	n/a	$145,303,200	n/a	$402,859,050
Mitigation % of development costs	n/a	2.7%	n/a	2.3%	n/a	0.8%
Mitigation and land % of development costs	n/a	6.6%	n/a	5.8%	n/a	2.1%

Source: ECONorthwest.

Site name: Burkhart
Nearest city, county: Lebanon, Linn County
Legal description: T12SR2W10BB TL 100
DSL number: WD04-0333

Table B-9. Burkhart site analysis, showing three scenarios, 2007.

	Flex Space		Campus Industrial		High Tech	
Burkhart Site (Lebanon)	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**
Site area	47	47	47	47	47	47
Wetlands Impact Area	24.1	24.1	24.1	24.1	24.1	24.1
Developable Area	-1.2	47	-1.2	47	-1.2	47
Net Developable Acres	10	37.6	10	37.6	10	37.6
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	174,240	655,142	108,900	409,464	143,748	540,492
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	n/a	1,800	n/a	1,500	n/a	2,100
Parking area	n/a	600,000	n/a	500,000	n/a	700,000
Total impervious surface	n/a	1,255,142	n/a	909,464	n/a	1,240,492
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$3,055,000	$3,055,000	$3,055,000	$3,055,000	$3,055,000	$3,055,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	n/a	$1,446,000	n/a	$1,446,000	n/a	$1,446,000
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	n/a	$2,700,000	n/a	$2,250,000	n/a	$3,150,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	n/a	8	n/a	5	n/a	7
Total cost for buildings	n/a	$73,089,600	n/a	$80,724,000	n/a	$256,364,850
Mitigation % of development costs	n/a	2.0%	n/a	1.8%	n/a	0.6%
Mitigation and land % of development costs	n/a	6.2%	n/a	5.6%	n/a	1.8%

Source: ECONorthwest.

Site name: Rodeo
Nearest city, county: Lebanon, Linn County
Legal description: T12SR2W09, TL 400, 500, 800, 900, 903, TL 902
DSL number: WD04-0360, WD06-0323

Table B-10. Rodeo site analysis, showing three scenarios, 2007.

	Flex Space		Campus Industrial		High Tech	
Rodeo Site (Lebanon)	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**
Site area	124	124	124	124	124	124
Wetlands Impact Area	78.1	78.1	78.1	78.1	78.1	78.1
Developable Area	-32.2	124	-32.2	124	-32.2	124
Net Developable Acres	10	99.2	10	99.2	10	99.2
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	174,240	1,728,461	108,900	1,080,288	143,748	1,425,980
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	n/a	5,175	n/a	4,200	n/a	5,700
Parking area	n/a	1,725,000	n/a	1,400,000	n/a	1,900,000
Total impervious surface	n/a	3,453,461	n/a	2,480,288	n/a	3,325,980
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$8,060,000	$8,060,000	$8,060,000	$8,060,000	$8,060,000	$8,060,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	n/a	$4,686,000	n/a	$4,686,000	n/a	$4,686,000
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	n/a	$7,762,500	n/a	$6,300,000	n/a	$8,550,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	n/a	23	n/a	14	n/a	19
Total cost for buildings	n/a	$210,132,600	n/a	$226,027,200	n/a	$695,847,450
Mitigation % of development costs	n/a	2.2%	n/a	2.1%	n/a	0.7%
Mitigation and land % of development costs	n/a	6.1%	n/a	5.6%	n/a	1.8%

Source: ECONorthwest.

Site name: Reeves
Nearest city, county: Lebanon, Linn County
Legal description: T12SR2W3C: TL 1900, 2000
DSL number: WD03-0456

Table B-11. Reeves site analysis, showing three scenarios, 2007.

	Flex Space		Campus Industrial		High Tech	
Reeves Site (Lebanon)	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**
Site area	47	47	47	47	47	47
Wetlands Impact Area	7.52	7.52	7.52	7.52	7.52	7.52
Developable Area	31.96	47	31.96	47	31.96	47
Net Developable Acres	25.568	37.6	25.568	37.6	25.568	37.6
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	445,497	655,142	278,436	409,464	367,535	540,492
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	1,125	1,800	900	1,500	1,200	2,100
Parking area	375,000	600,000	300,000	500,000	400,000	700,000
Total impervious surface	820,497	1,255,142	578,436	909,464	767,535	1,240,492
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$3,055,000	$3,055,000	$3,055,000	$3,055,000	$3,055,000	$3,055,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	$210,560	$451,200	$210,560	$451,200	$210,560	$451,200
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	$1,687,500	$2,700,000	$1,350,000	$2,250,000	$1,800,000	$3,150,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	5	8	3	5	4	7
Total cost for buildings	$45,681,000	$73,089,600	$48,434,400	$80,724,000	$146,494,200	$256,364,850
Mitigation % of development costs	0.5%	0.6%	0.4%	0.6%	0.1%	0.2%
Mitigation and land % of development costs	7.1%	4.8%	6.7%	4.3%	2.2%	1.4%

Source: ECONorthwest.

Site name: Millersburg/ Wah Chang
Nearest city, county: Millersburg, Linn County
Legal description: T10SR3W28: TL 104, 105, 700, 800, T10SR3W29: TL 204
DSL number: WD04-0549

Table B-12. Millersburg/ Wah Chang site analysis, showing three scenarios, 2007.

	Flex Space		Campus Industrial		High Tech	
Wah Chang Site (Millersburg)	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**	**On-Site Mitigation**	**Off-Site Mitigation**
Site area	223	223	223	223	223	223
Wetlands Impact Area	10	10	10	10	10	10
Developable Area	203	223	203	223	203	223
Net Developable Acres	162.4	178.4	162.4	178.4	162.4	178.4
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	2,829,658	3,108,442	1,768,536	1,942,776	2,334,468	2,564,464
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	8,325	9,225	6,900	7,500	9,300	10,200
Parking area	2,775,000	3,075,000	2,300,000	2,500,000	3,100,000	3,400,000
Total impervious surface	5,604,658	6,183,442	4,068,536	4,442,776	5,434,468	5,964,464
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$14,495,000	$14,495,000	$14,495,000	$14,495,000	$14,495,000	$14,495,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	$280,000	$600,000	$280,000	$600,000	$280,000	$600,000
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	$12,487,500	$13,837,500	$10,350,000	$11,250,000	$13,950,000	$15,300,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	37	41	23	25	31	34
Total cost for buildings	$338,039,400	$374,584,200	$371,330,400	$403,620,000	$1,135,330,050	$1,245,200,700
Mitigation % of development costs	0.1%	0.2%	0.1%	0.1%	0.0%	0.0%
Mitigation and land % of development costs	4.4%	4.0%	4.0%	3.7%	1.3%	1.2%

Source: ECONorthwest.

Site name: Tangent Industrial Park
Nearest city, county: Tangent, Linn County
Legal description: T12SR3W06: multiple tax lots
DSL number: WD05-0056 (determination)

Table B-13. Tangent Industrial Park site analysis, showing three scenarios, 2007.

Tangent Industrial Park (Tangent)	Flex Space		Campus Industrial		High Tech	
	On-Site Mitigation	Off-Site Mitigation	On-Site Mitigation	Off-Site Mitigation	On-Site Mitigation	Off-Site Mitigation
Site area	98	98	98	98	98	98
Wetlands Impact Area	39	39	39	39	39	39
Developable Area	20	98	20	98	20	98
Net Developable Acres	16	78.4	16	78.4	16	78.4
Floor-to-area ratio	0.40	0.40	0.25	0.25	0.33	0.33
Total Built Square Feet	278,784	1,366,042	174,240	853,776	229,997	1,126,984
Portion for sale or lease (GLA)	100%	100%	100%	100%	100%	100%
Parking Space/1000 SF	3	3	4	4	4	4
Parking spaces	675	4,050	600	3,300	900	4,500
Parking area	225,000	1,350,000	200,000	1,100,000	300,000	1,500,000
Total impervious surface	503,784	2,716,042	374,240	1,953,776	529,997	2,626,984
Cost of Land per Acre	$65,000	$65,000	$65,000	$65,000	$65,000	$65,000
Total Land Cost	$6,370,000	$6,370,000	$6,370,000	$6,370,000	$6,370,000	$6,370,000
Mitigation Costs per acre	$28,000	$60,000	$28,000	$60,000	$28,000	$60,000
Total Mitigation Costs	$1,092,000	$2,340,000	$1,092,000	$2,340,000	$1,092,000	$2,340,000
75,000 square foot building						
Infrastructure	$0	$0	$0	$0	$0	$0
Parking Costs	$1,012,500	$6,075,000	$900,000	$4,950,000	$1,350,000	$6,750,000
Percent office space	35%	35%	100%	100%	100%	100%
Cost of flex space/ SF	$74	$74	n/a	n/a	n/a	n/a
Cost of office space/ SF	$122	$122	$163	$163	$378	$378
Total Hard Costs	$6,810,000	$6,810,000	$12,240,000	$12,240,000	$28,365,000	$28,365,000
Soft Cost (% of hard costs)	27%	27%	27%	27%	27%	27%
SDC & Permitting Fees	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Total Soft Costs	$1,988,700	$1,988,700	$3,454,800	$3,454,800	$7,808,550	$7,808,550
Total small building cost	$8,798,700	$8,798,700	$15,694,800	$15,694,800	$36,173,550	$36,173,550
Number of small buildings on site	3	18	2	11	3	15
Total cost for buildings	$27,408,600	$164,451,600	$32,289,600	$177,592,800	$109,870,650	$549,353,250
Mitigation % of development costs	4.0%	1.4%	3.4%	1.3%	1.0%	0.4%
Mitigation and land % of development costs	27.2%	5.3%	23.1%	4.9%	6.8%	1.6%

Source: ECONorthwest.

Appendix C

Interviews

ECO interviewed the following development and real estate professionals:

- Mike Wells, Wells Development
- Brad Fletcher, Grubb and Ellis
- Paul Breuer, Colliers
- Monte Hayes, GVA Kidder Mathews
- Walter Daffe, Chambers Construction
- Greg Vik, Vik Construction
- Tony Reser, GVA Kidder Mathews
- Gene Johnson, Linn County Appraiser's Office
- John Bartell, Opus Development
- John Brown, Evans, Elder and Brown
- Sue Prichard
- Clayton Walker, CW Walker