B. PHASE 2 CONCLUSIONS

The goal of the Phase 2 analysis was to investigate in more detail the development constraints confronting the Tier 2 and Tier 3 sites in the region. The findings in the preceding section provide specific details on a site by site basis of the costs and benefits of the assumed site concept plans. This approach was taken with the intent of being able to showcase the different barriers to development across all Tier 2 and Tier 3 sites, not simply to focus on the 12 sites. The approach was taken to 1) provide State and regional policymakers with case studies of the development costs and benefits of bringing industrial sites in the region to market readiness, and 2) develop a methodology for analysis that can be replicated with other sites in (and not currently in) the region's industrial sites inventory.

Table 21 below presents the information, not from a site specific perspective, but from the perspective of the specific constraints to development.

Table 21: Constraint Cost and Remediation Timeline Comparison

	TIME (MONTHS)			TOTAL COST			COST (PER DEVELOPABLE SF)		
Off-Site Infrastructure	**Min**	**Median[44]**	**Max**	**Min**	**Median**	**Max**	**Min**	**Median**	**Max**
Water	3	10.5	30	$14,000	$270,000	$4M	$0.005	$0.16	$0.68
Sanitary Sewer	3	15	30	$18,000	$662,500	$4.9M	$0.009	$0.27	$2.90
Storm	6	15	30	$18,000	$593,250	$8.6M	$0.009	$0.21	$1.98
Transportation	3	12	24	$250,000	$1,480,000	$12.3M	$0.17	$0.85	$2.47
On-Site Natural Resource	**Min**	**Median[45]**	**Max**	**Min**	**Median**	**Max**	**Min**	**Median**	**Max**
Wetlands	3	4.5	18	$12,000	$206,500	$6.4M	$0.009	$0.12	$2.73
Floodplain	9	9	9	$1.74M	$1.74M	$1.74M	$1.02	$1.02	$1.02
Slope Mitigation	9	9	33	$130,000	$236,000	$3.68M	$0.03	$0.13	$4.27
Site Surcharge	21	31.5	39	$563,000	$1.31M	$1.68M	$0.28	$0.55	$0.72
On-Site Environmental	**Min**	**Median[46]**	**Max**	**Min**	**Median**	**Max**	**Min**	**Median**	**Max**
Brownfields	3	6	6	$15,000	$53,750	$3M	$0.005	$0.01	$1.28

Source: Group Mackenzie

Cost per square foot is the preferred way to examine constraint costs. Using this number normalizes the costs across the sites and it also allows for adding costs to a base purchase or value of the site to reflect bringing it to market. The median cost for off-site infrastructure ranges between $0.16/SF and $0.85/SF. Transportation is the highest $0.85/SF. The median time to move these sites to market is from 10 to 15 months.

On-site natural resource mitigation ranges from $0.12/SF and $1.02/SF for floodplain. However, only one site, Time Oil, requires floodplain mitigation. As a result, 11 of the 12 sites have relatively low on-site mitigation costs. The median time to move these sites to market is from 4.5 to 9 months. The exception to this is site surcharge, which is expensive and requires significant time of 31.5 months. The need to surcharge is very site specific (only

[44] Median time and cost numbers were utilized in this analysis.

[45] Median time and cost numbers were utilized in this analysis.

[46] Median time and cost numbers were utilized in this analysis.

applicable to four sites) and the time to surcharge is directly impacted by the cost, meaning that surcharging more rapidly can be achieved by bring in more material, which increases the cost.

Brownfield remediation is the lowest median cost across all constraints. Brownfield remediation is directly related to a site's previous use. Eight of the 12 sites in this study are greenfields that have had no previous industrial use as they are agricultural. Costs and time for these sites is minimal (the median time to move these sites to market is six months). Brownfield remediation for previously used industrial sites can, on the other hand, be significant. The TRIP site has a total of $3 million in cleanup costs or $1.28/square foot. This is in addition to the cost already incurred by the previous owner, Alcoa Aluminum, on this Superfund site. Looking at the number of times a constraint is a major issue and impacts the cost of development is key. Development constraints are defined as having a significant issue or impact in terms of total costs and/or percent of costs. The comparative impact of mitigation costs of each constraint was examined to determine which constraints were the most significant contribution to the overall costs for each site.

Based on the results displayed in Table 22, it is clear that there are a variety of issues facing the development of each of the Phase 2 sites. However, a few issues have comparatively greater significance Nine out of the 12 Phase 2 sites require significant transportation improvements to make the site development ready. Sanitary sewer and stormwater, wetland fill, and site aggregation and annexation are all of significance. The other constraints or issues have less of an influence on development readiness.

The findings of the analysis above supports conclusions about the nature of development constraints among Phase 2 sites. Most sites have at least one major constraint, which is significant enough to preclude market activity. Off-site constraints, such as sewer and transportation, are both the most common and in many cases, most severe. Taken together, off-site costs comprise approximately 44% of all development costs across all sites. Severe on-site constraints, such as slope mitigation and wetlands, are not broadly common, but are costly both in terms of time and dollars. Generally, constraints that have low costs but long time lags are candidates for moving Tier 2 sites closer to Tier 1 status. Tier 3 sites more commonly have such severe constraints that they will require alternative strategies to bring them to the market. Financial variables, such as time, cost, and risk, are directly correlated with development schedules and dollar costs. Activities that reduce those inputs will implicitly reduce time and risk costs.

Table 22: Phase 2 Total Constraints Table

Environmental and Natural Resource Issues	Infrastructure Issues	Land Use Issues
Environmental Clean Up **2 sites**	Water **4 sites**	Aggregation **6 sites**
Wetland Fill **7 sites**	Sewer **7 sites**	Annexation **6 sites**
Floodplain Fill **1 Sites**	Storm **6 sites**	Outside UGB **1 site**
Slope Mitigation **4 sites**	Transportation **9 sites**	Marine Dock **1 site**

Source: Group Mackenzie

From the Phase 2 findings, several tools have the potential to reduce the costs of site development and encourage the interest of private investment. For sites that are close to viable, tools that reduce market time and risk are likely to be most efficient. For example, implementing an aggregation assistance organization or streamlining one or more of the development permit processes.

For the next level sites with measurable but not extreme gaps, several other impactful tools could include negotiation for lower acquisition price with land owners in light of identified constraints, or public assistance for critical infrastructure. For example, transportation infrastructure alone for East Evergreen, Coffee Creek, and Orr Family A would move all three sites to a near viable state. Another approach would be economic development efforts that recruit users or developers willing to take on additional risk or pay a premium for a particular site do to its unique location or attributes.

For sites with extreme and highly costly constraints, it is likely that some form of public involvement or direct assistance will be necessary to overcome development challenges. This could come in the form of direct infrastructure assistance or an entity acting as a patient developer with lower sensitivities to time and risk, or a

combination of both. In any case, when site development costs approach two or three times market value, development constraints are far too great for the private market to tolerate.

For the region to be competitive for new investment by traded sector firms it requires an inventory of Tier 1 sites to meet the specific locational requirements of the target firms. A large, single owner warehouse and distribution firm has different locational requirements (access to freeway and Port facilities) than a high or clean tech company (adjacency to suppliers and workforce) and different economic and fiscal impacts. It is important to understand the variables that go into the decision making by different industry groups and to have a variety of sites in the inventory that meet those requirements.

Table 23 shows the average economic impacts for each Phase 2 traded sector industry profile. The Portland metropolitan area's economic development strategy is focused on these industry clusters that support traded sector job creation and an export-oriented economy. The table shows that a single firm in each of these target industries that locates on a market ready site has substantial long term economic benefits, in terms of jobs, payroll and tax benefit to the state and local governments.

Table 23: Average Direct Economic Impacts

	WAREHOUSE AND DISTRIBUTION	GENERAL MANUFACTURING	HIGH TECH	CLEAN TECH	BUSINESS PARK
Average Site Size[47]	50	49	34	163	49
Average Jobs	458	723	500	2,323	720
Average Payroll*	$20.55	$32.7	$67.7	$314.5	$32.6
Average Cumulative 20 Year Payroll Tax Revenue*	$20	$17.7	$50.1	$129.3	$26.1
Average Cumulative 20 Year Property Tax Revenue*	$9.25	$9.36	$11.8	$36.3	$12.6

**Costs are displayed in millions of dollars*

Source: Group Mackenzie

When sites are developed they are marketable to users. This study finds that when users build facilities on these sites, there are significant economic and fiscal impacts. Based on the conceptual uses placed on the Phase 2 sites, the fiscal impacts to State and local jurisdictions are quite large. These impacts, if realized, in most cases exceed what it would cost an entity to finance infrastructure improvements necessary to move sites to a development ready status. To sum up, from the perspective of the public, infrastructure investment can have a significant positive return.

There is public interest in ensuring industrial land within the UGB is available for industrial development. As shown by the Phase 1 inventory and 12 Phase 2 site assessments, the current inventory of industrial sites is substantially constrained and requires actions and investments to solidify land use decisions to preserve the region's compact urban form. This analysis has served to create a framework for identifying constraints, understanding their magnitude, and quantifying the potential economic and fiscal impact of private investment in market ready sites. The intent is that this information will provide a basis for further discussion and recommendations by state and regional policy makers.

[47] Average site size was calculated per the net developable acreage of the Phase 2 sites that were identified for the specific industry cluster.