Parcelization Evaluation

Prepared for Metro

By ECONorthwest

with Fregonese Associates

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Preface

Parcelization (fragmented ownerships of small parcels) is sometimes mentioned as a barrier to the development of downtowns, main streets, and employment areas as envisioned in local and regional plans. This report addresses the following questions:

- How significant is parcelization in decisions by real estate professionals about the type, intensity, and timing of development in centers and corridors in the Metro region?
- What might be done to address parcelization as a potential barrier to development?

ECONorthwest (ECO, prime consultant) and Fregonese Associates (FA, subcontractor) completed the research summarized in this report for Metro. Terry Moore was project director. Robert J Wyman was project manager, conducted most of the case-study research and analysis, and did some of the GIS data analysis. Glen Bolen and Max Bolen did the GIS analysis that defined case-study areas.

ECONorthwest acknowledges assistance provided by staff at Metro, staff in local governments in the case-study areas (see Appendix B for a full list of contributors), and by several experts on development in the Portland area: Damin Tarlow (Gerding Edlen); Steve Wells (Trammell Crow); Todd Sheaffer (Specht Properties).

Despite all the assistance, ECONorthwest alone is responsible for the report's contents. The contents of this document do not necessarily reflect views or policies of Metro or any public entity or person associated with the project.[1]

[1] This report identifies sources of information and assumptions used in the analysis. Within the limitations imposed by uncertainty and the project budget, every effort was made to check the reasonableness of the data and assumptions. But any forecast of the future is uncertain. Evaluating those assumptions as reasonable does not guarantee they will prevail. ECONorthwest prepared this report based on its general knowledge of economic impact analysis, and information derived from government agencies, private statistical services, the reports of others, interviews of individuals, or other sources believed to be reliable. ECONorthwest cannot verify the accuracy of all data sources used in this report and makes no representation regarding their accuracy or completeness. Any statements nonfactual in nature constitute the authors' current opinions, which may change as more information becomes available.

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Executive Summary

BACKGROUND

This study investigates the extent to which a high degree of "parcelization" (a relatively large number of legal land parcels and owners in a given area) is inhibiting the kinds of development that are desired and planned for by communities in the Portland region. It identifies the reasons one would expect parcelization to have an effect on the timing and type of development, and puts this into context relative to other factors that one would expect to affect the timing and type of development.

Parcelization can be defined as a process or a result. For the purposes of this study, the ***process of parcelization*** **is the subdivision or partitioning of a larger parcel into smaller parcels**. But the concern motivating this study is that the existence of many smaller parcels (the results of parcelization) can make certain types of development more difficult. Thus, for the purposes of this study, ***the concern about parcelization*** **is that some types of desired development may be inhibited because many small parcels make the amount of land held under a single ownership too small for effective development of certain types of real estate products**.[2]

The research reported in this document is exploratory. A hypothesis has been stated by Metro: parcelization is inhibiting some types of development in some types of areas (2040 design types) in some parts of the region. This study comments on the extent to which theory and data (quantitative and qualitative) support that hypothesis. It discusses (but does not recommend) policies that might reduce any problems the research finds. Thus, the research approach focuses on (1) identifying some areas that regional and local plans want to see develop but that are not developing (i.e., where 2040 design types are not being achieved fast enough or at all), and (2) evaluating the reasons, including parcelization, for their slow development.

If parcelization is a problem, it will be most clearly manifest in urbanized areas looking to "infill" or "redevelop" as the way of changing land uses. Thus, this study does not examine fringe, suburban, or greenfield

[2] Not all parcelization is bad. Local governments have policies expressly designed to facilitate parcelization on the assumption that it facilitates more, different, and potentially better development. In fact, the kind of development and density that plans envision would not be possible without parcelization. In that context, parcelization can be a measure of success: it is correlated with denser, mixed-use, walkable communities.

development, but rather illustrates potential problems in higher-density urban centers, corridors, and employment areas.

METHODS AND ASSUMPTIONS

This study frames the analysis as follows:

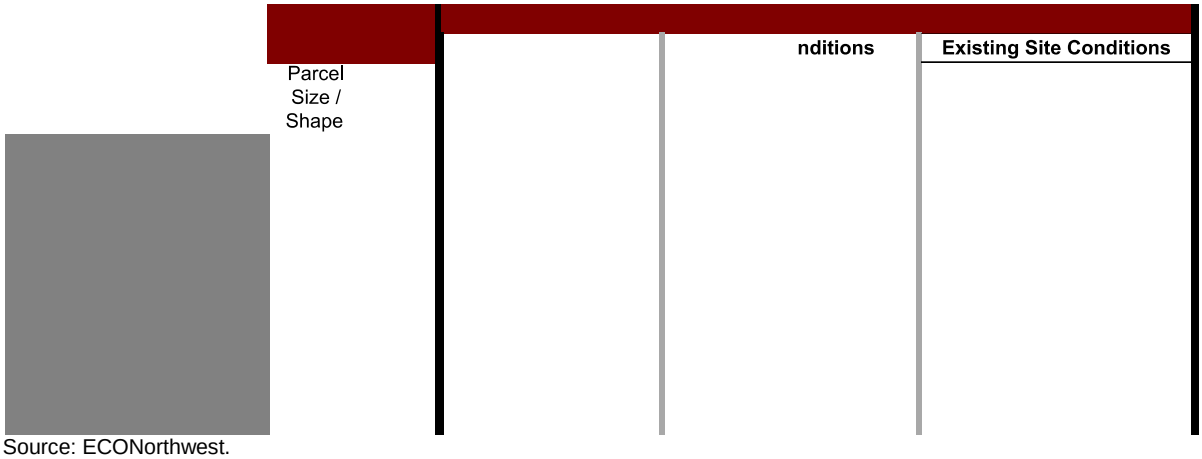
- **Case-study approach**. Metro and the consultant agreed that case-studies would provide: (1) an understandable discussion of how big a problem parcelization is for development in centers, corridors, and employment areas and (2) a more understandable analysis, and would be more useful to the local governments that have the responsibility for the planning, permitting, and infrastructure that the development requires.
- **Developer perspective**. It is necessary to understand development decisions from the perspective of the people that are making those decisions: developers.
- **Parcelization in the context of other obstacles to development**. Parcelization is one of many costs of development. The answer to the question "How big an obstacle is parcelization for development in centers, corridors, and employment areas?" requires placing in the context of other obstacles and looking at its relative magnitude.

FINDINGS

CASE-STUDY AREAS AND SITES

Exhibit S-1 lists the case-study areas and rates them for development obstacles mentioned in interviews with developers and surveys with local stakeholders.

Exhibit S-1. Case-study area development obstacles mentioned in interviews and surveys



Source: ECONorthwest.
Note: The dark red X is negative and indicates that the obstacle was mentioned as a challenge for development in interview and / or survey responses.

- **Almost all the case-study areas have higher degrees of parcelization than the average for the entire region.** This result is expected: the case-study areas were chosen, in part, for that reason.
- **Land availability is a potential development obstacle in all case-study areas.** Nine of the areas have less vacant land per acre than the regional average. A lack of vacant land and the presence of brownfields were the most cited causes of development challenges. Parcel shape as well as size can be an obstacle.
- **Beyond parcelization, market, policy, and site conditions create obstacles to development.** The burst of the housing bubble in 2008 and the accompanying *slow economy* create development challenges for each of the case-study areas—ones that local governments have no control over. For five of the case-study areas, interviewees noted that *entrenched uses* are making redevelopment more difficult. Owners that have fully capitalized their property and are achieving stable rents will be much more reluctant to incur risk and redevelop, regardless of whether the use is compatible with local (or regional) planning goals. *Minimum parking ratios and zoning codes* that specify maximum height requirements prove critical for development feasibility, and developers pointed out that in some cases the allowed intensity was too low for development to work. Another obstacle: *lack of sense of place or clear identity* that signals to local stakeholders and potential investors what the area should become and how it should look. Six of the case-study areas showed a *lack of infrastructure* necessary to develop building products desired by local and regional plans. Roughly half of case-study areas face development constraints related to *brownfields and floodplains.*

- **Results for sites are varied.** No site was rated as having higher development challenges on all variables; every site had lower development challenges on some variables; many sites were roughly split on positive and negative; and there is no consistent pattern across sites.

THE IMPACTS OF PARCELIZATION ON DEVELOPMENT IN CENTERS

Our conclusions:[3]

- **Of the many obstacles to development, parcelization is probably not the most important in most cases**. Many of the other obstacles may prove "fatal" to development feasibility prior to and independent of parcelization. Many of the critical **demand-side variables** (e.g., the national economy, interest rates) cannot be changed by local land-use policy. Local policies aimed at stimulating economic development may have some success and thus some effect on the demand for built space in centers, but the marginal effect is small. Similarly, local programs that put more income into the hands of purchasers or renters of built space have a very small impact on overall market demand. In contrast, effects on **supply-side variables** (costs) can be large if one considers the costs of land and infrastructure. But that supports the point: issues related to zoning and entitlements, and to the quality and cost of infrastructure, will in many cases be much more important than parcelization.
- **Parcelization is not necessarily fatal to the kind of development the region hopes to achieve in centers**. Several areas in the region have developed recently as centers despite high degrees of prior parcelization. This fact is not surprising: all regions have centers and subcenters (pockets of density that are highly parcelized but that work). But it does illustrate that parcelization and center-like development are not incompatible.[4]
- **The problems of parcelization increase as parcels get smaller or more oddly shaped** (e.g., narrow and deep, wide and shallow).

[3] Subject to the typical limitations: data require interpretation; interpretations may differ, in part because of differences in definitions and assumptions; case studies are illustrative and not necessarily representative of all sites.

[4] The report acknowledges that the causal link between successful, dense centers and parcelization is not definitive. One can see a high correlation between successful centers and parcelization, but what came first? It is possible that successful centers were developed on bigger lots that were available and then got parcelized as part of the development process. That situation may be different from the one today: trying to create or recreate a center in an area that is already highly parcelized.

Making them work requires land assembly. If they are very small and have multiple owners, land assembly will be harder.

- **Parcelization can be a critical problem in some instances.** Many things can affect a developer's return on investment. In most cases, developers deal with all or most of them simultaneously. It is more likely that the demand side will be an early concern: if the market demand is too thin to generate a rate of return under even optimistic preliminary assumptions about costs (land, permitting, infrastructure, design and construction), then there is little need to worry about parcelization and land assembly. If the focus is, however, on a specific site (as it has been in this report), then parcelization is among the top considerations on the cost side.

PUBLIC ACTIONS THAT ADDRESS PARCELIZATION AND THE DEVELOPMENT CHALLENGES IT MAY CREATE

Our summary conclusions regarding parcelization and public policy are that **parcelization, to the extent it is a development problem, is not one best addressed primarily at the regional level; it is better addressed by local governments and development authorities**. The advice for local governments is to understand that parcelization can be a problem, evaluate the extent of the problem on sites that the local government wants to see develop soon and in a specific way, and decide what level of public effort to put into either reducing parcelization or offsetting the costs it creates. For most local governments, parcelization is not an urgent problem that needs immediate action. For a few areas and sites, however, it may be. Given our summary conclusions, this section discusses public actions that local governments and development authorities can use to address parcelization.

The fundamental problem of parcelization is not the size of the parcels per se. It is that small parcels suggest more owners per acre, and multiple ownerships are likely to be an obstacle to development. The presence of many owners may be a problem now, or it may become one in the future if parcelization continues. Thus, this report groups all public policies that might ameliorate the problems of parcelization into one of three categories:

1. Reduce the ability for even more parcelization to occur in areas where regional and local plans want larger-scale development.
2. Reduce the parcelization that has already occurred by assembling land (reconsolidating small parcels and multiple ownerships into fewer ownerships).[5]

[5] The analysis draws on work ECONorthwest managed in 2011 for Oklahoma City and published in 2012 as Appendix E of the City's Employment and Industrial Land Analysis. Larry Pederson of

3. Reduce the problems that parcelization creates for development.

Policies to reduce *new* parcelization

Trying to assemble land later after it has been parcelized may be harder than reducing additional parcelization now. In concept, the public policies to do that are in the local comprehensive plan and implementing zoning. If a jurisdiction wants less parcelization, it increases the minimum allowable parcel size.

The dilemma for this category of policies is that the direction of Metro and local government policy for 20 years has been to encourage density, which usually (but not always) is achieved or at least accompanied by the creation of more and smaller parcels. General and broadly applied policies to reduce future parcelization may have the countervailing and undesired effect of making densification that is desired more difficult.

The recommendation here is that local governments deal with the issue at the neighborhood / sub-area level when they develop specific-area plans. In other words, even before going to the effort of assembling land, a jurisdiction can address the question of whether it wants to reduce the rate at which it is being parcelized, or the increase the ultimate minimum lot size.

Policies to reduce existing parcelization (land assembly)

There are several ways that land can be assembled under a single ownership:

- Outright purchase by public sector.
- Donation or grant to public sector.
- Outright purchase by a foundation.
- Purchase options.
- Acquisition of surplus state or county land.

There are several ways that the public sector can assist in assembling land where benefits and risk associated with the final assembled site are shared among multiple owners, usually a mix of public and private entities:

- Cooperative land bank.
- Public/private partnership.
- Limited Liability Corporation (LLC) formed with public and private sector property owners as pro-rata share holders.

IronWolf did the initial draft of that analysis and was lead author. ECONorthwest grateful acknowledges that work.

- Horizontal development entity where individual property owners who control contiguous parcels convert their land interest to shares in a legal entity to better capture new, larger-scale development than they otherwise would be able to do if they acted only on their individual land holdings.

Reports on land assembly reviewed as part of this research suggest that "best practices "include:

- Narrow, well-defined goals.
- Citywide coordination and cooperation between internal and external partners.
- Legal structures that provide some measure of independence from local government.
- A robust parcel management information system.
- Integration of land assembly and banking with a long-term strategic visioning.
- Limited or streamlined processes for eminent domain and judicial foreclosure.
- Flexible, diverse funding sources for any entity created for managing and redeveloping assembled parcels.

Most of those recommendations are general and common sense. To go deeper, ECONorthwest interviewed developers with experience with land assembly about both issues and best-practices for resolving them, from the private sector perspective:

- **Streamline the process.** The longer it takes it assemble a site, the riskier the deal becomes: one or more owners are more likely to hold onto full interest in their property, developer staff costs accumulate, and lenders lose patience. A solution for developers, of course, is to have the public sector do some, most, or all of the work. For example, urban renewal districts often assemble land and then offer sites for development.
- **Align terms when closing multiple parcels for assembly.** All parcels should be closed as close together as possible; any parcel left open for negotiation is a liability.
- **Keep the deal simple.** Simplicity means assembling as few parcels as possible, and dealing with as few owners as possible.
- **Take full control of parcels for assembly.** It is probably easier and less risky in most cases to gain full control of parcels from the outset and not form partnership arrangements. Institutional lenders are

more willing to lend to a developer who can show the ability to gain full control of all final assembled parcels.

- **Be careful about entering into master planning arrangements.** Master planning can, for instance, obligate a developer to start a new project every other year. This can be risky if the market for new residential or mixed-use development softens.
- **Expect landowners to negotiate a price well above the appraised amount.** Since 2008, property values have diminished but asking prices may have remained static. In partnership arrangements, this means that land contributions from existing owners are worth less, and more equity is required to secure lending.
- **Consider other ways to assemble land besides initial outright purchase.** Full parcel acquisition can be too expensive a proposition for both private and public entities in their effort to assemble viable developable sites. A less expensive alternative involves optioning land (e.g., to buy the property at some later date at some agreed upon price) or land swapping.

Policies to reduce problems caused by parcelization

If local jurisdictions do not take steps to reduce the *amount* of parcelization by any of the methods described above, can they do anything to reduce the obstacle that parcelization poses for the kind of development desired in urban centers?

Broadly, of course, cities have dozens of policies that they can bring into play to encourage certain types of development by reducing the costs of that development. Ultimately, the developer perspective must get to a bottom line about return on investment. Anything that a local government can do to increase the amount or reduce the uncertainty of revenue (e.g., helping secure federal assistance for low-income renters of buyers of housing products; pre-leasing space for government operations) or reduce the amount or risk to costs (e.g., expedited permitting, including public involvement; reduced development requirements or fees; provision or cost sharing of need infrastructure and amenity; tax exemptions) will make development more attractive. Some examples:

- **Reduce parking requirements.** Surface parking takes up valuable land area and below-grade structured parking may add 10 percent to development costs. On small parcels and for certain types of development, it may be impossible to provide the on-site parking required by codes without building structured parking. Reducing the number of parking spaces required per residential unit or per commercial square foot basis reduces the cost of development. This

policy may be controversial where neighbors believe residents will compete for limited parking spaces on streets.

- **Relax building restrictions.** Building height restrictions reduce the amount of usable building square footage a developer can build, and the square footage lost probably costs less on average than the square footage allowed. By relaxing building height restrictions in the zoning code (and / or FAR standards), local governments may allow developers to improve their return on investment without changing the size of their parcel or building footprint. Relaxing landscape requirements and building setbacks also allows developers to more efficiently use small parcels. This policy may be controversial where existing residents worry block viewed, reduced sunlight, parking, congestion, "incompatible" neighbors, and more.
- **Provide off-site amenities that small parcels cannot provide on-site.** As private space gets compressed on smaller parcels (smaller units, smaller yards) these parcels can hold or increase their value if the are surrounded by substitutes (e.g., restaurants, gyms, parks, transit).

These solutions reduce the problems caused by parcelization by making it less costly for developers to use small parcels, or by increasing the returns they can get on a given investment because of increasing value of surrounding amenity. Doing so may also make it more worthwhile for a developer to undertake the additional risk and effort of assembling multiple properties.

Chapter 1 Introduction

Chapter Summary. This study investigates the extent to which "parcelization" is inhibiting the kinds of development that are desired by communities around the region. This chapter provides background about the purposes of the study, and describes how this report is organized.

1.1 BACKGROUND

Since adoption of the 2040 Growth Concept and subsequent Urban Growth Management Functional Plan,[6] the Metro region has seen significant changes in development practices. Development in centers and main streets has increased both absolutely and as a share of total development; the average size of residential lots has decreased.

But what is true on average is not true in all instances: many shopping and business areas designated for development have seen little growth, and what has occurred has often not been of the type or density envisioned by local and regional plans.

In short, some areas (by location and by planned type of development) have grown more or less according to plan, but others have not. The hypothesis of this research project is that "parcelization" is discouraging desired development in some areas. The hypothesized causality is:

- Small parcels mean more parcels in a given area
- More parcels mean more owners
- More owners means that larger developments are only possible if parcels are aggregated, making them more complicated, more expensive, and potentially impossible (if a single owner does not want to sell).

A correlated effect of parcelization is likely to be higher land prices per square foot: more parcels typically are correlated with more density, more urban amenities, and high land values.

[6] The 2040 Growth Concept is the Portland region's long-range plan for growth. Those growth "concepts" get more specific and are implemented by the Urban Growth Management Functional Plan. The Growth Concept identifies a hierarchy of centers and places, and states broadly the kind and intensity of activity they should contain. The Functional Plan gets to the details of things like minimum residential density, affordable housing, parking requirements, employment areas, and natural areas, and requires cities and counties to have local plans that are consistent with the Growth Concept.

Hence, the fundamental questions for this research are:

- To what extent is parcelization an obstacle to the kind of development local and regional plans envision?
- How big are the impacts of parcelization relative to those of other factors that might be contributing to slower or undesired development?
- Whatever the magnitude of the restricting effects of parcelization on desired development, what can be done to reduce those effects?

1.2 ORGANIZATION OF THE REPORT

Including this Introduction, this report has four sections:

- **Chapter 2, Framework and Methods** presents the foundation and theories for thinking about the project hypothesis. For this research, that means defining parcelization, and identifying the reasons one would expect it to (1) have an effect on the timing and type of development, and (2) have an effect that is significant relative to other factors that one would expect to affect the timing and type of development.
- **Chapter 3, Analysis and Findings** summarizes the findings of the Appendix B Case Study Analysis. It also discusses key variables that determine whether a development is feasible, and how overall feasibility can be impacted by parcelization.
- **Chapter 4, Potential Policy Responses** summarizes best practices and other relevant literature for potentially overcoming negative impacts caused by parcelization.

Supporting the analysis and conclusions in this report are three technical appendices:

- **Appendix A, Methods** contains a detailed technical description of the methods used to select case study areas, catalytic sites within these areas, and to evaluate the extent parcelization poses challenges to development.
- **Appendix B, Case Study Analysis** describes the results of the methods described in Appendix A. For each study area, we present a description of the physical characteristics, a developer assessment, and market analysis.
- **Appendix C, Policies for Land Assembly** discusses actions local governments can take to reduce parcelization by assembling land. Its findings are summarized in Chapter 4.

Chapter 2 Framework and Methods

Chapter Summary. A *parcel* is the smallest packet of land that can legally be transferred from one owner to another. *Parcelization* is the subdivision or partitioning of a larger parcel into smaller parcels. *The concern about parcelization* is that some types of desired development may be inhibited because many small parcels make the amount of land held under a single ownership too small for effective development of certain types of real estate products. Whether parcelization is a problem depends on the context of the desired urban form. Consequently, there is an inherent subjectivity to describing parcelization.

Evaluating parcelization as an obstacle to development requires evaluating it as a cost in the context of all other development costs. For development to occur, a developer must (1) acquire land, (2) get necessary permits and financing, (3) prepare the site, (4) build or pay for infrastructure, and (5) construct the buildings. Parcelization influences the cost of development primarily as an additional cost (time and money) of the first step, land acquisition.

2.1 FRAMEWORK

Good research builds from a solid foundation of clear definitions and reasonable theories of causality. For this research, that means defining parcelization, and identifying the reasons one would expect it to (1) have an effect on the timing and type of development, and (2) have an effect that is significant relative to other factors that one would expect to affect the timing and type of development.

We refer to these ideas collectively as a *framework* for the research. A framework is different from, more general than, and prior to a *methodology*. Methods describe specific data sources and analytical techniques that will be used to address the research questions, *consistent with a hypothesized framework.*

2.1.1 DEFINITIONS

What is parcelization? Its definition starts with a definition of a parcel. For the purposes of this study, **a *parcel* is the smallest packet of land that can legally be transferred from one owner to another**. Parcels are legally recorded; owners have deeds to a parcel. Some related ideas:

- From the ground, one often cannot see parcels, though their boundaries can often be inferred by fences, tree lines, roads, and surrounding buildings. The definitive way to see parcels is with a tax-assessor's map.

- There is a difference between *tax lots* (boundaries defined by taxing districts for the purposes of levying taxes), *parcels* (the smallest unit of land that can be sold and developed without further legal division; a parcel may consist of multiple tax lots), and *sites* (areas ready to development, which may include multiple parcels). Tax lots may be parcels, but they may not be. A large parcel (one that has yet to be subdivided or partitioned[7] into smaller legal packets for sale and, typically, construction) will be in many taxing jurisdictions, and the boundaries of some of them may cover only part of the parcel. Thus, it is possible for a parcel to be composed of more than one—sometimes many—tax lots.
- Occasionally two or more parcels get consolidated into one. A house built across the line of two small parcels may not have gone through a lot-line adjustment and may get tax bills for each parcel separately, though the parcels are no longer separable for purposes of sale.
- Condominiums and planned-unit developments create some variations in the idea of parcel. Both effectively allow multiple ownership of a single parcel.

Parcelization can be defined as a process or a result. For the purposes of this study, the process of ***parcelization*** **is the subdivision or partitioning of a larger parcel into smaller parcels**.

But this study is concerned not about the process of parcelization, but its results. The concern is that parcelization can result in smaller parcels than those a developer may want for a particular development project.

Not that all parcelization is bad. Local governments have policies expressly designed to facilitate parcelization on the assumption that it facilitates more, different, and potentially better development. In fact, the kind of development and density that the regional plans envision would not be possible without parcelization. Parcelization allows very big land holdings (tens or hundreds of acres) to be partitioned or subdivided so that smaller pieces can be transferred to more owners and developers. Parcelization is a necessary and advantageous concomitant of urbanization and densification. In zones that are planned as single-family dwellings, for example, parcelization is necessary to get smaller single-family lots, a result consistent with local and regional objectives.

[7] Local governments typically distinguish between *partitions* (dividing a parcel into 2 – 4 parcels) and *subdivisions* (dividing a parcel into 5 or more parcels), and typically have different processes and requirements for each. For the purposes of this research, both processes contribute to "parcelization" and are not treated any differently.

Rather, the concern about parcelization is that in some cases the existence of many smaller parcels can make certain types of development more difficult. In particular for this study, the concern is that when larger parcels get divided, sold to different owners, and developed, then (1) the ability to do larger-scale, integrated urban development becomes more difficult, and (2) that may mean suboptimal[8] development in some parts of the region. Thus, for the purposes of this study, ***the concern about parcelization*** **is that some types of desired development may be inhibited because many small parcels make the amount of land held under a single ownership too small for effective development of certain types of real estate products**.

The concern is more specific yet. It is not about all land in the Metro region. As noted above, parcelization is allowed and encouraged at the urban fringe. For example, in areas that have recently been brought into the regional urban growth boundary (e.g., Damascus, North Bethany), evidence of parcelization could be good news: it would mean that formerly rural areas were planned, serviced and beginning to urbanize, which is the intent. Thus, this evaluation is not about "greenfield" development.

If parcelization is a problem, it will be most clearly manifest in urbanized areas looking to "infill" or "redevelopment" as the way of changing land uses.[9] Thus, this study does not examine fringe, suburban, or greenfield development. Its case studies are chosen to illustrate potential problems in higher-density urban centers, corridors, station communities, and industrial and employment areas.

2.1.2 CAUSAL MODEL

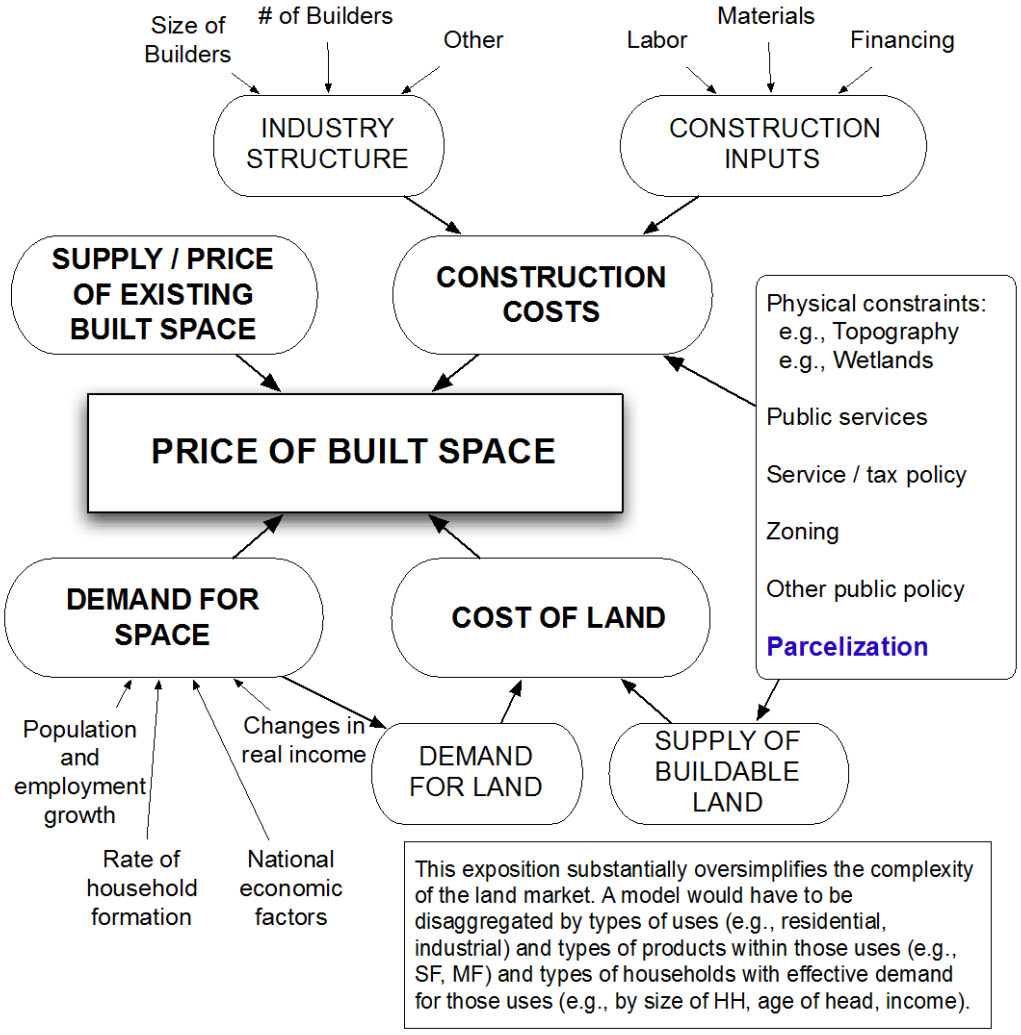
Exhibit 1 is a model of the factors that affect the price of built space. Some of the key points in Exhibit 1 relevant to this research:

[8] By suboptimal we mean some combination of the wrong density or slow rate of growth. The issue for this study is not that the wrong type of land use is getting developed: presumably the Regional Framework Plan and the local plans and zoning that implement it prevent that from happening. It is that the desired type of land use may not be happening quickly or densely enough in some places. In some cases, it may mean that development is completely stalled.

[9] Definitions vary slightly. Infill and redevelopment can be defined as mutually exclusive. Both occur in areas that are largely urbanized. Infill is development that happens on vacant land; redevelopment is development that happens on developed land. But one could also distinguish between location of development (greenfield / suburban vs. infill / urban) and then whether the parcels being development are vacant or developed. In that hierarchy, redevelopment is mainly a subset of infill. For the purposes of this study the precise definitions are not critical: the study looks exclusively at sites that are in urban areas that are mainly developed: at infill / redevelopment sites.

- Parcelization (highlighted near the bottom right) is one factor of many.
- As complicated as the diagram may seem, the text box at the bottom makes the point that a more realistic model would have to be more complicated yet.
- The diagram does not give any information about the relative contribution of the factors to the price of built space. Some are more influential than others.

Exhibit 1: Model of the factors contributing to the price of built space



Source: ECONorthwest, 2012

Exhibit 1 does not show the much greater number of interconnections among the factors that affect the price of land and amount of construction. Markets are dynamic; factors interact in reinforcing and negating ways; the factors do not operate sequentially, but simultaneously.

For example, suppose a developer finds an area she believes is "undervalued" given the potential new uses that she sees as possible; buys property in one use; builds a higher-value use; and gets much higher rents / prices than surrounding properties. Other developers will notice, as will other property owners. Land prices will rise to reflect the value of the increasing rents / prices. If expectations of developers rise unrealistically, they may pay more for land than the market for built space will pay in compensating rent. If expectations of property owners rise unrealistically, developers will not buy the property. In both cases, development may slow down or stop; there are examples of both situations in the Portland region.

2.1.3 MATCHING THE RESEARCH TO POLICY NEEDS

The research reported in this document is exploratory. A hypothesis has been stated by Metro: parcelization is inhibiting some types of development in some types of areas (2040 design types) in some parts of the region. This study comments on the extent to which theory and data (quantitative and qualitative) support that hypothesis. It discusses (but does not recommend) policies that might reduce any problems the research finds. The study is aimed at defining a potential development problem and getting a sense of its relative importance, not at having the Metro Council adopt new policy.

The reduction of parcelization is not the fundamental policy objective of Metro or local governments—developing good centers, corridors, neighborhoods, and employment centers is. Thus, the research approach focuses on (1) identifying some areas that regional and local plans want to see develop but that are not developing (i.e., where 2040 design types are not being achieved fast enough or at all), and (2) evaluating the reasons, including parcelization, for their slow development.

Exhibit 1 suggests the research decision to try to **understand development decisions from the perspective of the people that are making those decisions: developers**. Some concerns from that perspective:

- At some level, all of the factors in Exhibit 1 are of concern to a developer because they all potentially influence cost and price. Together, those factors form the market for their finished product.
- In concept, the many factors that affect revenues (from the sale, lease, or rental of built space) and costs eventually get rolled up into an assessment of **return on investment**: what are the expected revenues and costs (and the variance around the expected values because of uncertainty and risk)?

- Parcelization in the context of the kind of development envisioned in 2040 centers usually affects development on the cost side.[10] Those costs can be direct and calculable (e.g., permit fees, construction cost) or they can be less direct and uncertain (e.g., the time it takes to get a local planning commission or city council to approve a relatively complicated public-private partnership, the extent and cost of environmental remediation when redeveloping an industrial site).
- Developers care about being able to acquire land at a reasonable price in a reasonable amount of time. Parcelization may suggest the potential for acquisition problems, but it may not stop a developer from testing the ability to make the acquisitions. A developer will identify strategic areas based on a general assessment of the potential upside. If intuition or a back-of-the-envelope calculation suggests the *potential* for a good return on investment, then more detailed analysis of potential revenues and costs would follow, including an evaluation of the potential problems of and ways to deal with parcelization. In some cases, a developer need not buy out the owner—other strategies are available (e.g., land lease, ownership stake, partnership). In short, what makes the price "reasonable" for any given parcel is its relationship to the revenues that could be produced by development on it. Developers will be willing to overcome challenges (even those challenges that increase costs) if expected revenues remain sufficient to achieve financial feasibility.
- Even without parcelization, ownership can be a problem. An owner of a single large parcel may be convinced it is worth more than any developer believes will allow a reasonable return.
- Developers are not always or even typically attracted to vacant parcels first. They are looking for places that they believe market forces and their concept of development can make more valuable.

2.1.4 FRAMEWORK FOR THINKING ABOUT OBSTACLES TO DEVELOPMENT

By showing how many factors can affect housing price (and, thus, production), Exhibit 1 implies that changes in any of these factors can affect the production of real estate products—can make development more or less likely. In the context of this study, the question is: which of these factors can potentially be (1) significant *obstacles* to development, and (2) influenced by public policy.

[10] In greenfield and suburban development, the ability to parcelize can have a big impact on revenues. A ten-acre parcel will sell for less as a single parcel than as 40 lots.

ECONorthwest developed the following list of obstacles based on its experience, a review of the professional literature, and consultation with developers. In preparing this list, we asked this question about each potential obstacle: Is it an obstacle that affects development in the Portland regional market broadly and in general, or is it an obstacle that *differs by location* within the Portland market? Examples of the former: the prime interest rate, a burst of a housing bubble, decline in US manufacturing employment relative to service employment. Examples of the latter: zoning and fees, permitting processes, neighborhood opinions about growth and involvement in decisions about development, parcelization. In general, we do not consider in our analysis the first group of obstacles because they (roughly) affect all areas of the Portland region equally and would not explain why one particular area is not growing while others are.

Our next cut at organizing the obstacles is to note that some are more likely to affect revenues, and others are more likely to affect costs. Both are essential to any consideration of rate of return, even a qualitative one.

The **revenue side** is primarily market driven. A developer looks for places and products that will bring rents or prices that are high relative to expected costs. There is not much the public sector usually does to affect the revenue side, but there are some things. For example, the public sector may be the use of demand-side housing incentives designed to make housing more affordable for eligible households (e.g., rental subsidies such as Section 8 housing vouchers, and tax abatements for homeowners that reduce monthly mortgage payments). In that example, the public sector has made the rate of return for certain housing products higher by increase the ability of consumers to pay for those products (i.e., the policy has affected the demand / revenue side of a developer's calculation of rate of return).

A related factor is the composition of market-demand and potential users / tenants. Different users in the same general category (e.g., retail) will have different site requirements (e.g., IKEA vs. Target vs. Walgreens). The public sector can affect demand by restricting it via zoning, and similarly might be able to increase it by relaxing that zoning. But it is not really increasing consumer demand; rather, it is restricting or not restricting the uses that the market proposes to build to accommodate that demand.

The **cost side** has several categories of obstacles, and many (but not all) can vary by location *within* the Portland region. The list that follows is in roughly chronological order: a developer (1) acquires land, (2) gets necessary permits and financing, (3) prepares the site, (4) builds or pays for infrastructure, (5) constructs the buildings, and (6) sells or rents the buildings.

- **Land**. Land prices clearly differ by location. Moreover, land prices may incorporate (capitalize) many of the other costs that follow (e.g., zoning, achievable rents, proximity to amenity and jobs, public perception of the surrounding community).

  Public policy rarely aims directly at changing land prices, but it can affect those prices indirectly via policies related to planning, zoning, infrastructure, and fees. Public policy cannot have much effect on the per-square-foot cost of construction (labor and materials) except to the degree that it requires certain standards for building (building codes) and infrastructure and environmental standards. Public policy can affect the cost of land via restrictions on land supply (e.g., urban growth boundaries), but in the context of this research those effects are probably positive: the reduction in growth of land supply at the fringe should make infill and redevelopment in centers more feasible as land prices rise.

  Site assembly is a subset of land cost and especially important in this study because it is a potential additional development cost that results from **parcelization**. The need for site assembly creates direct cost (the need to acquire additional properties), time delays (time to complete acquisition deals, to permit parcel assembly), and increased uncertainty (regarding whether property owners will sell, and when).

- **Zoning and Permitting**. Not every use is an option at every site. It is usually the case that public policy limits the development options. Local *zoning* policies dictate the type and intensity of use, and can create obstacles for developers if a market-supported development type is not allowed by zoning code.

  While procedures exist for amending zoning code or getting exceptions to code for specific developments, in practice the procedures are time consuming and expensive, and have uncertain outcomes. If a developer has a site that does not already allow, by right, the use he believes offers the best return on investment, the cost of getting approval to build for that use (the "entitlement" process) can be expensive. Not only can it take many months or a few years (with a cost of time and delay), but it can ultimately be unsuccessful.

- **Financing.** Even if financing was not needed to acquire the land, it will almost certainly be required to build the project. In general, the market for financing development is at least a regional one: lending terms for a particular type of product are influenced by national and regional markets. Some financing aspects are site specific, however,

and reflect the relative risk of the type of development proposed for a particular site.

- **Site preparation**. Building on slopes or in flood plains is typically more expensive than building on flat land. For this evaluation we screened parcels for site preparation and existing conditions using a GIS database for buildability.

  Site remediation is a subset of site preparation. Some infill and redevelopment sites will have had historical uses that have resulted in contamination that must be mitigated through the development process. The presence of contaminants on a site almost always creates additional costs associated with clean up, uncertainty, and liability.

- **Infrastructure**. For a given amount of development (people served, square footage), the cost of transmission facilities (water, sewer, electric, and transportation) is generally greater with greater distance from central locations and facilities. The unit cost of central facilities may differ also because of differences in economies of scale or service standards. More important for development is that these costs differences get reflected in charges and fees that differ by location. In the Portland metropolitan area, developers cover some or all of the incremental impact to the infrastructure system through systems development charges, which affect the total cost of development. In some cases they may have to provide off-site infrastructure improvements.

  Certain basic infrastructure, and the cost of providing it, is unavoidable: for example, water, sewerage, and roads. But some is more discretionary: for example, local jurisdictions have requirements for landscaping, setbacks, parking, and so on that may add to amenity and safety, but do so at a cost.

- **Construction**. We do not consider building costs in this study because we assume that on buildable sites in the Portland region a new structure of a given type and size will cost about the same no matter where it is located. In other words, once one controls for building type and size (as one must for this type of evaluation) and site characteristics that influence site preparation (see above), the differences in the costs of labor or material across the Portland region is relatively small and would not explain why some area of region has not developed while another area has. There are, of course, big variations in construction cost for different types and sizes of use, and local policies (e.g., zoning) may make it difficult for developers to build the type of structures with the best return (which

could reduce development). But those variables affect the type of development that gets constructed (multi-family vs. single-family, for example) rather than the cost of construction of that type of unit.

The bulk of the costs above are direct costs that cannot be avoided and are mainly independent of public policy: land, capital, materials, labor, and entrepreneurial skill are all necessary to create a marketable development, and they all have a cost. But it addition, public policy can increase some of these costs directly (e.g., through standards or fees for infrastructure, building construction, landscaping, and off-site improvements) or indirectly (e.g., through an entitlement and permitting process that is uncertain and time consuming). The point here is not that such standards and processes are unnecessary or always inefficient, but that they do add to the cost of development.

2.2 METHODS

Appendix A provides details about the approach and assumptions.

A first task of the research was to (1) refine the definition of the problem, and (2) evaluate the data and methods available and appropriate for addressing questions about the problem. That task led to several decisions that framed the rest of the analysis:

- **Case-study approach**. Metro has an extensive database of land characteristics. The study team considered using those data to create a Metro-wide database on parcelization. One could use GIS techniques, for example, to create some type of parcelization index for all the centers in the regional plan. The decision by Metro staff and the consultant, however, was that (1) the main objective was not a database but rather an understandable discussion of how big a problem parcelization is for development in centers and corridors, and (2) case studies would provide a more understandable analysis, and would be more useful to the local governments that have the responsibility for the planning, permitting, and infrastructure that the development requires.
- **Developer perspective**. As noted above, it is necessary to understand development decisions from the perspective of the people that are making those decisions: developers.
- **Parcelization in the context of other obstacles to development**. As noted above, parcelization is one of many costs of development. The answer to the question "How big an obstacle is parcelization for

development in centers and corridors?" requires placing in the context of other obstacles and looking at its relative magnitude.

The research followed the organization of this report:

- **Definitions and causality**. (Chapter 2 and Appendix A). What is parcelization, and how can it be measured using standard data sources? What is the hypothesis about how and where it is creating development problems in various parts of the Portland region?
- **List and assessment of potential obstacles to development.** (Chapters 2 and 3). What are all the potential obstacles? Which ones are likely to be affected in a significant way by public policy? What is the expected relative importance of those obstacles?
- **Case-study areas and sites**. (Chapter 3 and Appendix B). Develop criteria for and select case study areas and sites. Use Metro GIS data to screen parcels within case study areas to identify sites. Check site selection with local jurisdictions. To what extent do the identified sites have the problems for development identified in Section 2.1.4? How important is parcelization relative to other obstacles to development?
- **Ways to reduce any problems created by parcelization**. (Chapter 4 and Appendix C). The opposite of parcelization is land consolidation. There are various techniques that can be used to facilitate land assembly, and there are circumstances that would make land assembly efforts more likely to be successful. It is also possible, however, that the purposes of the 2040 Concept Plan can be achieved by other policies that acknowledge the constraints of parcelization and provide other incentives for development. What tools are currently being used? What are best practices? What makes the most sense in subareas of the Metro region? What are the private-sector or property-owner roles, and what might motivate action? What is Metro's role? What are the roles of other public agencies and local jurisdictions?

Chapter 3 Analysis and Findings

Chapter Summary. Section 3.1 lists the many obstacles for development and redevelopment of urban areas, only one of which is parcelization. Section 3.2 evaluates specific sites. The evaluation of parcelization started with the selection of 10 case-study areas. Within those areas, one or two "catalytic sites" were chosen (a total of 15) based on preliminary data analysis and interviews with local developers and planners. For each catalytic site, further GIS analysis was done to create measurements of site characteristics, degree of parcelization, and potential development problems. That analysis informed work sessions and interviews with developers to get their views about the problems of parcelization in general, and about obstacles to development at the 15 sites in particular. Section 3.2.2 discusses obstacles to development at the case-study sites. Section 3.3 provides conclusions regarding the impacts of parcelization on development in urban areas. A key finding is that for most local governments, parcelization is not an urgent problem that needs immediate action. For a few areas and sites, however, it may be. For local governments, the best advice may be to understand that parcelization can be a problem, evaluate the extent of the problem on sites that the local government wants to see develop soon and in a specific way, and decide what level of public effort to put into either reducing parcelization or offsetting the costs it creates.

3.1 OBSTACLES FOR DEVELOPMENT

ECONorthwest tested the points made in Chapters 2.1.3 and 2.1.4 with a group of developers that advised on this project. *The developers generally supported the conclusions about how developers think about projects, and about obstacles to development.* They built on those points to make several others related to obstacles to development:

- **Return on investment is affected by multiple factors on both the revenue and cost side of the equation.** Some factors are mainly market driven; others can be influenced by public policy.
- **Every development is different**. Rules of thumb might be helpful in general, but in any given situation, the relative importance of factors as obstacles to development can change. Every deal and every site can have a unique mixture of site attributes, market conditions, and policy considerations.
- **Market factors can be more important to the success of development than local policy factors.** The burst of housing bubble in 2008 was caused by macroeconomic and national policy forces that local governments had no control over.
- **Policy should focus on obstacles that the public sector can do something about**. In general, local policy cannot have a significant effect on broader market conditions like the strength of the national

economic, demographic shifts, and interest rates. Local policy can, however, affect many aspects of the cost of development, and some of the attributes it requires that add to that cost may also add to value.

- **The most critical public-sector role in development: zoning and infrastructure.** All the obstacles listed in Section 2.1.4 are theoretically relevant and occasionally critical. But zoning and infrastructure are almost always critical.

  Zoning enables or limits the kind of development that public policy would like to see and that the market can profitably provide. Though policy generally allows mixed use and higher density in centers and corridors, developers pointed out that in some cases that allowed intensity was too low for development to work.

  An additional complication on the cost / risk side of the equation is getting the new development approved. Even if the zoning allows the proposed development, the neighborhood may oppose it strongly, or want many amendments to make it acceptable.

  Some infrastructure is essential to development (water, sewerage, roads) and potentially very expensive. Other infrastructure may or may not be critical to development, but if it is required it probably has a cost to developers and may in some cases flip an expected return on investment from positive to negative (e.g., structured parking, off-site public amenities).

  In general, however, infrastructure has a value and a cost. The tricky questions are whether the value (what consumers are willing to pay) is enough (1) to cover the full costs of the infrastructure / amenity, and if not, (2) to cover whatever costs are left after the public sector contributes to the costs.

- **Site preparation and existing conditions affect the supply of land available for development.** Brownfields and floodplains increase site preparation and remediation costs and may constrain the amount of developable land.

- **Since return on investment can be improved by either increasing revenues or decreasing costs, anything the public sector can do in either area helps development.** Revenues and costs are not always separate. For example, if the public sector builds a parking garage or street-car line with existing funds instead of new fees on development, it both reduces the cost of development (or, at least, does not increase it) and increases the value of (and return on) the development. If the public sector can contribute to amenity and

placemaking, it can help create the "wow factor" that will increase demand and price for the real estate products.

- **Redevelopment is not easy.** Developers noted many difficulties, but especially the one of convincing a property owner to take on the risk of development. Many buildings that might look ripe for redevelopment because of their age and functional obsolescence may be fully paid off and generating a stable and positive cash flow. A stable return of as low as 5% in today's market may look good. Why go through all the costs of redevelopment for a chance at a higher rate of return and the risk of not achieving it? Other complications that have costs: neighborhood opposition and incompatible surrounding uses.
- **To get redevelopment started, a catalytic development is usually critical.** The catalytic project is the one with the greatest market risk, and the likely and typical place for the public sector to provide assistance to get development moving in the desired direction.
- **Public-sector promotion of redevelopment can have mixed effects.** Developers noted that in some cases the public sector's interest in promoting a public improvement is supported by studies of likely increases in property values, which then may lead to property-owner expectations that increase land cost and decrease expected return on investment. It does not make sense to take the risk unless there is "a huge difference in value" between existing and potential future uses.

3.2 ASSESSMENT OF CASE-STUDY SITES

3.2.1 DEFINITIONS, SELECTION, AND EVALUATION METHODS

A case study approach was used to illustrate how parcelization may be an obstacle to development in a variety of locations in the region. The case studies are intended to lead to more general conclusions about parcelization and do not necessarily depict areas where there is public sector intent to assemble land.

Appendix A, Sections A.1 through A.3 describe how the case-studies and catalytic sites were selected in consultation with developers and local jurisdiction staff. The **definition of boundaries** is as follows:

- The regional plan for Portland metropolitan region (Metro's 2040 Growth Concept) identifies various types of areas in the region. Of interest in this study are those design types called *centers* (several

different types) and *corridors, station communities, and industrial and employment areas.*

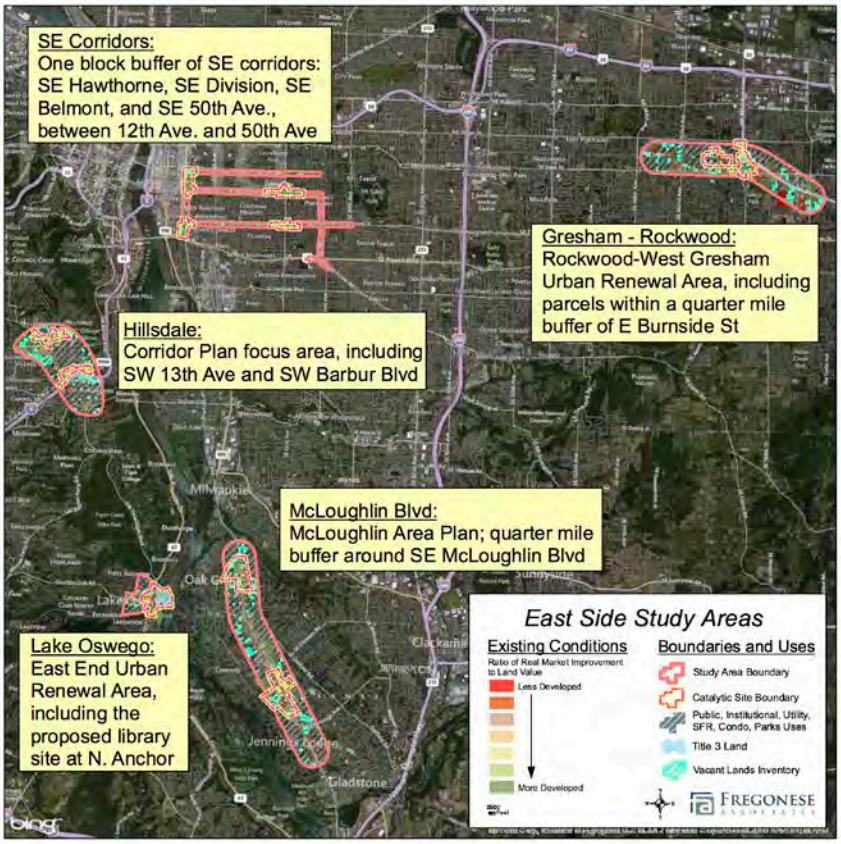
- This study uses 2040 design types to help define *case-study areas.*

Within case-study areas this research defined *catalytic sites* as a combination of contiguous tax lots (parcels) that made sense to consider as a potential area for the kind of development that regional and local plans would like to see occur in centers and corridors. In summary, the **process for selecting catalytic sites** was to:

- Use GIS analysis and a region-wide parcel dataset to filter study-area parcels to get a potentially redevelopable subset to analyze for (1) catalytic potential, and (2) failure to develop as policy desires. Such parcels were identified using filters for existing conditions, physical geography, zoning, and urban amenities.
- Identify one or two catalytic sites (consolidations of potentially redevelopable parcels from the previous step) in each study area that a reasonable developer might attempt to develop. These sites were tested and confirmed through interviews with local developers and representatives of jurisdictions within each of the case study areas.

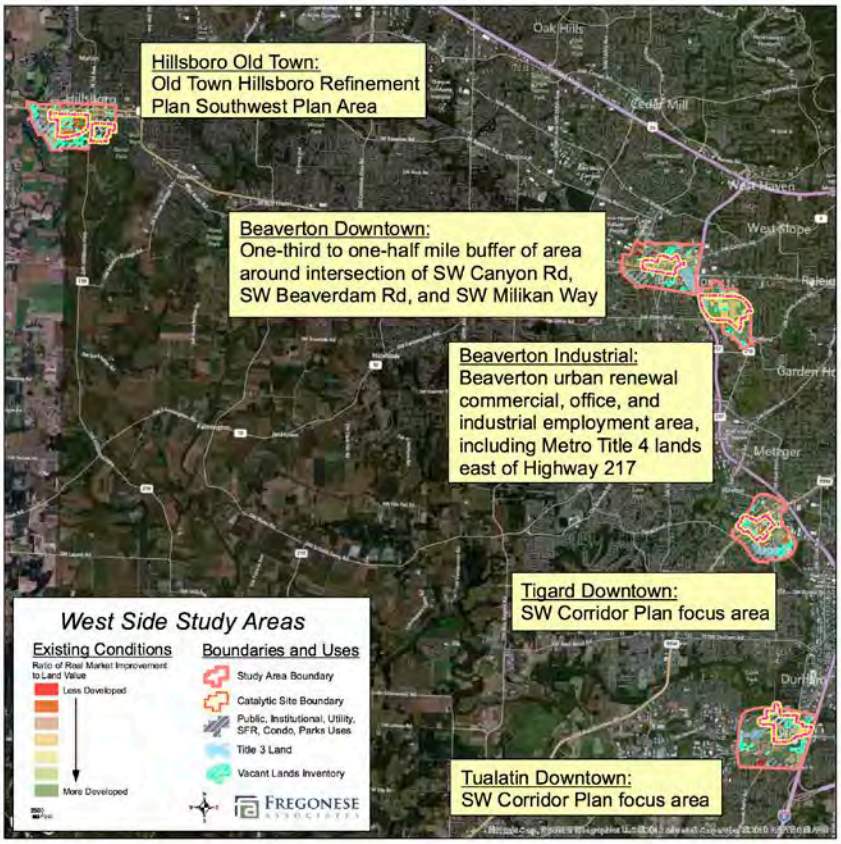
Exhibits 2 and 3 below display maps of the selected case-study areas and catalytic sites, categorized by their location relative to each other: east side and west side.

Exhibit 2: East-side case study areas with catalytic sites



Source: Fregonese and Associates/ECONorthwest.

Exhibit 3: West-side case study areas with catalytic sites



Source: Fregonese and Associates/ECONorthwest.

Three **evaluation methods** were used for each case-study area and catalytic site, and are described in the next three subsections.[11]

3.2.1.1 GIS evaluation of site characteristics

For each of the catalytic sites, we quantitatively assessed development challenges using a set of evaluation metrics. The evaluation metrics were calculated using GIS analysis techniques and address factors that affect land availability (e.g., land vacancy, brownfields, floodplains), and factors that affect parcelization (e.g., number of parcels and owners). To make the metrics comparable across case-study areas, we "normalized" them to a per-acre basis.

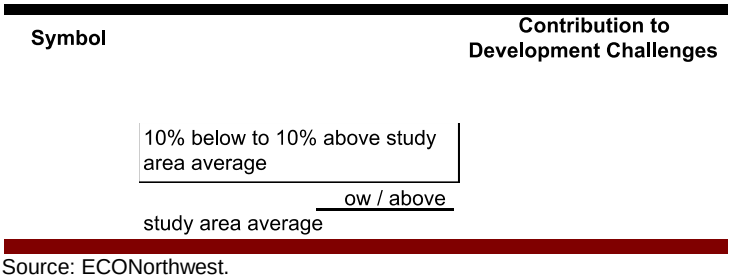
Some of the factors we measure are positive for development (more is better); others are negative (more is worse). We evaluated metrics relative to the case-study area averages: a value 10% above or below the case-study area average moves the contribution to development challenges from

[11] For more detail, see Section A.4 of Appendix A

"Low" to "Neutral" or "High" depending on the specific metric measurement. For example, if Catalytic Site X has a metric value greater than 10% above the per acre average for the case-study area it belongs to, and more of this characteristic makes development easier or more likely (other things being equal), then this characteristic is designated as posing a "Low" challenge to development for that catalytic site *relative* average conditions in its study area.[12] Where noted, we also use the same methods to evaluate development challenges for the case-study areas relative to the entire Portland-Metropolitan area urban growth boundary.

Exhibit 4 shows the evaluation thresholds we used to estimate each metric's contribution to development challenges. It assigns a symbol to each threshold. The symbols are consistent across all study areas: the light green circle is positive and indicates "Lower Challenges;" the dark red X is negative and indicates "Higher Challenges;" the blue square falls in-between and indicates "Average Challenges."

Exhibit 4. Evaluation threshold description for determining quantitative metric contribution to development challenges.



Source: ECONorthwest.

Exhibit 5 below contains—for each metric—a description, its units of measurement, and data source.[13] For every metric, except for Vacancy, we define a greater metric measurement value as indication of a higher contribution to development challenges.

The metrics are divided into two categories: (1) land availability; and (2) parcelization:

- The **metrics of land availability** signal whether development is inhibited because of a lack of buildable land that results from lack of vacancy or underutilization, presence of known brownfields that

[12] The study area averages for each of the characteristics excludes single family residential, condominium, public, institutional, and utility land uses.

[13] For a full description of each evaluation metric and a rationale for inclusion in this report, see Section A.4 of Appendix A.

require costly cleanup and remediation of contamination, presence of high-value structures (relative to land value), or presence of a threat from natural hazards.

- The **metrics of parcelization** are small average parcel sizes, many unique owners per acre, and higher density (measured as lot coverage). Any of these characteristics is presumed to be correlated, at least moderately, with things like higher land prices, less physical space to meet parking and zoning standards, and greater need to assemble parcels for development, all of which make development more difficult (other things being equal).

Exhibit 5. Description of metrics

Metric	Units	Description / Source
of Land Availability		
Vacancy	SqFt/Acre	Metro vacant lands inventory, excludes parks and open space; RLIS April 2012.
Brownfields	SqFt/Acre	Vacant, underused, potentially contaminated sites; Oregon DEQ 2012.
IMP/LV Ratio	SqFt/Acre Over .75	Real market improvement value divided by land value; RLIS April 2012.
Metro Title 3 Land	SqFt/Acre	Areas within Metro's Stream and Floodplain Protection Plan; RLIS April 2012.
of Parcelization		
Parcel Size	Parcels/Acre	Size of individual taxlots based on assessor records; RLIS April 2012.
Ownership	Owners/Acre	Unique property owners based on assessor records; RLIS April 2012.
Lot Coverage	SqFt Covered / Acre	Metro's building footprint database and assessor records; RLIS April 2012.

Source: ECONorthwest.

We were careful not to assess the prevalence of parcelization with too low a threshold. If parcelization is more or less ubiquitous for some jurisdictions or design types, and if some design types in some jurisdictions are performing well, then parcelization, by itself, is not a sufficient condition to prohibit development. We found that some areas in the region score "High" for development challenges under the parcelization metrics, yet are generally considered places of successful development (NW 23rd Ave, and the Pearl District are two examples).

Given that finding, our challenge was to use the case-study analyses in Appendix B describe other conditions contribute to under-performance, how parcelization interacts with those conditions, and what combinations of conditions are likely to make parcelization more or less important.

Section A.2 of Appendix A explains that our analysis is focused on parcels that are currently—or that could become—mixed-use, multi-family, commercial, or industrial development. Single-family residential parcels were largely excluded from the analysis, except in some cases where their zoning designation allows for higher-density redevelopment. We also

excluded public, institutional, and utility uses from the final analysis. Our analysis of the evaluation metrics does not consider these excluded parcels; for the remaining parcels, the metric measurements are comparable across study areas and are normalized by acre.

3.2.1.2 Selection of building types

Metro's *Climate Smart Communities* study defines 16 development typologies and 30 building product types as regionally viable, meaning they are consistent with local and regional goals for density and character. The study team identified 11 building types appropriate for the types of areas this study is investigating. These building types were then the target of the study: is parcelization inhibiting that kind of development (i.e., Are parcel sizes are too small to allow these types of development without land assembly)?

3.2.1.3 Investigation of other obstacles for development

Local developers and representatives of public sector jurisdictions within each of the case study areas were consulted to determine other obstacles to development feasibility within the catalytic sites: general market trends, accessibility (transportation and transit), parking, development fees, and allowed zoning, etc. We considered most line items typically found in a development pro forma that affect overall financial feasibility, especially those items that could vary by location within the region. These obstacles are discussed in Section 3.1 of the report, and are discussed on a case-by-case basis in Appendix B.

3.2.2 SUMMARY OF CASE-STUDY RESULTS

Appendix B provides a full analysis of the ten case-study areas.

For each study area and for one or two catalytic sites within each study area, we assessed several factors contributing to development challenges. For the catalytic sites within study areas, we estimated the extent of parcelization and other development challenges, and made a qualitative assessment of the relative importance of parcelization based on professional judgment, interviews with developers, and feedback from representatives of cities or counties within each of the study areas.

Exhibit 6 summarizes key characteristics for each of the 10 case-studies and 15 catalytic sites. See Appendix B for full summary characteristics.

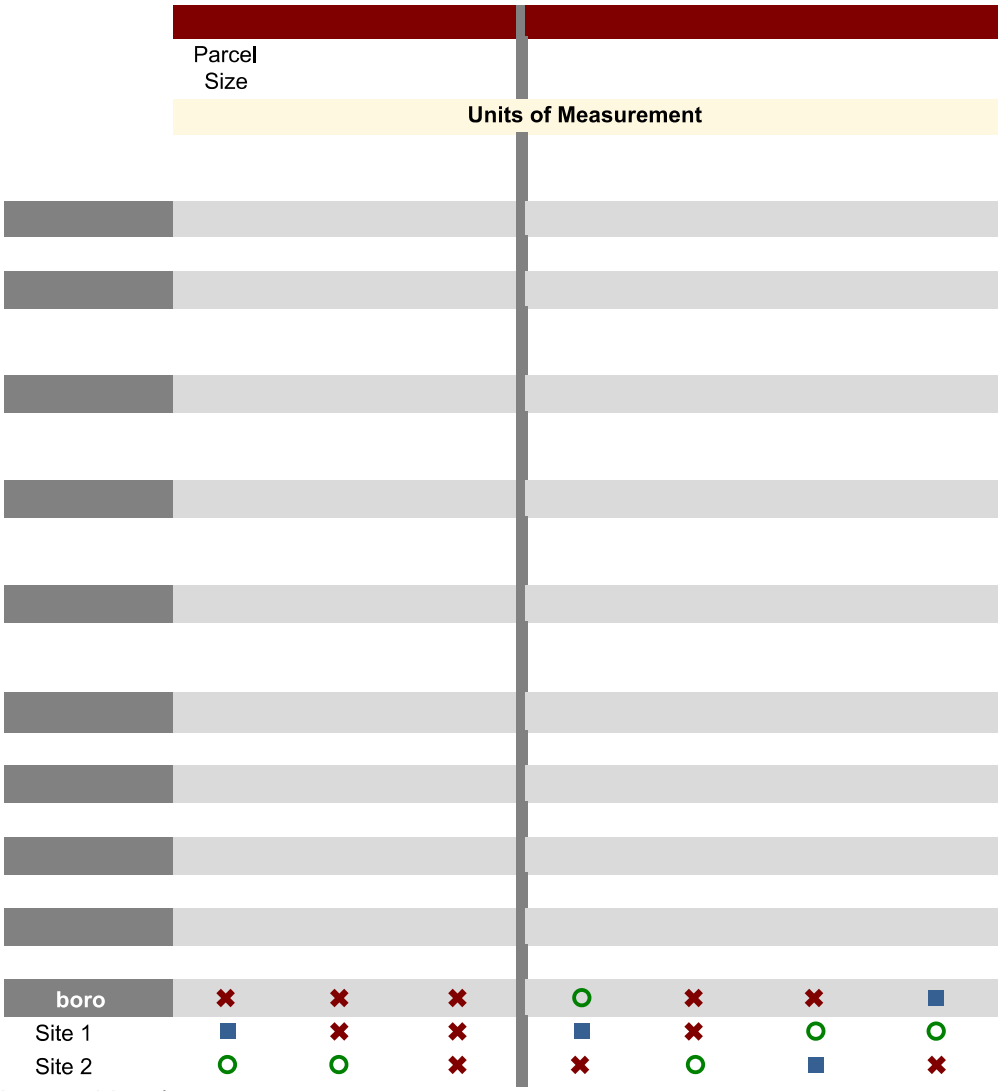
Exhibit 6: Case-study areas: summary characteristics

Study Area / Catalytic Site	Area (acres)	Parcels (/ acre)	Land Use: Highest % of total acres	Land Use: 2nd Highest % of total acres
Lake Oswego	194.8	2.0	SFR	Commercial
Site 1	94.1	1.5	Industrial	Commercial
Mcloughlin	1,171.5	1.1	SFR	Commercial
Site 1	98.6	1.3	Commercial	SFR
Site 2	134.9	0.7	Commercial	Industrial
Hillsdale	695.9	1.2	SFR	Commercial
Site 1	48.3	2.1	Commercial	MFR
Site 2	38.5	1.6	Commercial	Condo
Gresham	934.9	1.1	SFR	Commercial
Site 1	58.7	1.6	SFR	MFR
Site 2	71.5	2.0	Commercial	SFR
SE Corridors	490.1	4.7	SFR	Commercial
Site 1	73.2	4.2	Commercial	Industrial
Site 2	73.3	4.9	Commercial	SFR
Beaverton DT	513.4	1.4	Commercial	Institutional / Public
Site 1	73.3	2.7	Commercial	Unused / Unoccupied
Beaverton IND	313.6	0.3	Industrial	Unused / Unoccupied
Site 1	172.0	0.2	Industrial	Unused / Unoccupied
Tigard	427.0	1.1	Institutional / Public	Commercial
Site 1	84.5	1.9	Commercial	Institutional / Public
Tualatin	634.1	0.4	Commercial	Institutional / Public
Site 1	143.1	1.1	Institutional / Public	Commercial
Hillsboro	513.4	1.5	Institutional / Public	Commercial
Site 1	105.7	1.5	Industrial	Commercial
Site 2	53.9	1.0	SFR	Industrial

Source: ECONorthwest.
Note: Land use designations are based on generalized use codes from the Metro RLIS dataset. Parcels per acre figures exclude single family residential, public, institutional, and utility uses.

Exhibit 7 summarizes the metric measurements (Exhibit 4) for each of the case-study areas and catalytic sites.

Exhibit 7. Quantitative case-study metric measurements of factors that may contribute to development challenges in the case-study areas and catalytic sites



Source: ECONorthwest.
Note: The light green circle is positive and indicates "Low development challenges;" the dark red X is negative and indicates "High development challenges;" the blue square falls in-between and indicates "Neutral development challenges."

In Exhibit 7, the case-study metric measurements (highlighted in grey) are measured relative to the entire Portland-Metropolitan area urban growth boundary (UGB), minus exclusions for single -family residential, and public, institutional, or utility uses. The catalytic site metric measurements are measured relative to their respective case-study areas.

Regarding the case-study areas, we find the metrics in Exhibit 7 to be more useful for generating discussion about why they take on the values indicated in Exhibit 7, rather than as an indicator of their ease of development relative to the region. For catalytic sites, however, the metrics

are easier to interpret. For example, for the first case-study area, on parcelization metrics Lake Oswego is more parcelized than the region *on average* (because, the Lake Oswego case-study area includes the downtown with small scale commercial/retail uses). But Site 1 in Lake Oswego is less parcelized relative to the Lake Oswego case-study area average because it includes larger industrial and multi-family residential parcels: more intense uses on larger parcels, resulting in fewer owners per acre. Site 1 is more difficult on every land availability metric (except for IMP / LV Ratio), however, than the average parcel in Lake Oswego. Site 1 is less difficult on every parcelization metric.

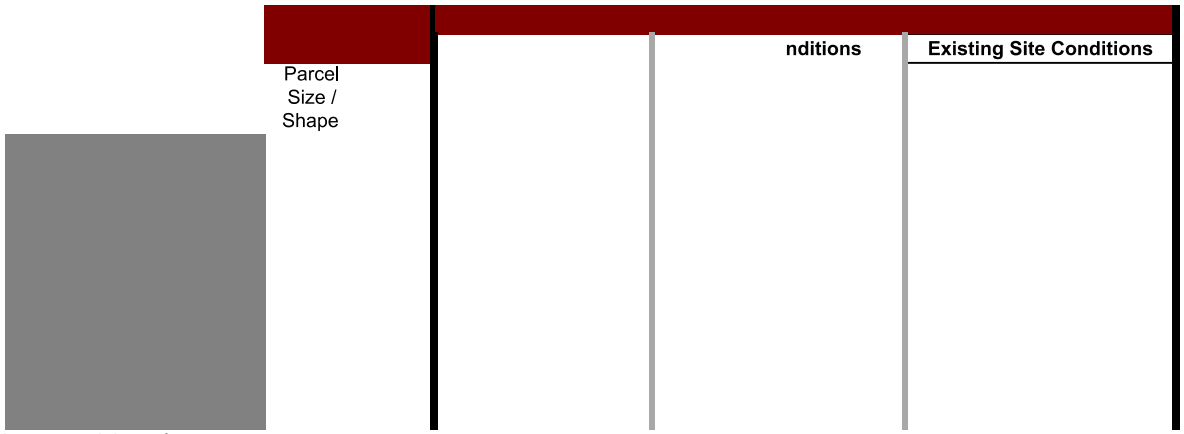
Our conclusions about the information in Exhibit 7:

- **All of the case-study areas except Beaverton Industrial exhibit characteristics of parcelization relative to the UGB average.** This result is expected: the case-study areas were chosen, in part, because of documented development challenges, clear local and regional goals for development / redevelopment, and an informal determination that parcelization may be a challenge in each case-study area. In the case of the Beaverton Industrial areas, it is not surprising that the average parcel size is larger than the UGB average since industrial areas are often characterized by larger parcels. Those larger parcels reflect the needs of industrial users, which typically require one-storey buildings and larger areas for parking and maneuvering trucks.
- **Land availability is a potential development obstacle in each case-study area.** Relative to the UGB, all of the case-study areas are more developed: there is less vacant land, per acre, in nine of the areas. Existing structures are more valuable, suggesting greater development intensity in each of the areas. These findings suggest that less land is available, per acre, for development and redevelopment in each case-study area relative to the UGB. Half of the areas have greater than 10% more land that is (at worst) undevelopable or (at best) requires brownfield and floodplain mitigation and remediation relative to the UGB. A lack of vacant land and the presence of brownfields are the most cited causes of high development challenges related to land availability within the catalytic sites, relative to the case-study areas.
- **Characteristics of parcelization are present in nine of ten case-study areas.** The case study areas have greater than 10% more parcels and owners per acre relative to the UGB, except for Beaverton Industrial and Tualatin. Except for SE Corridors and Lake Oswego, the catalytic sites face more parcelization challenges relative to the case-study areas they fall within.

- **Results for sites are varied.** No site was rated as having higher development challenges on all variables; every site had lower development challenges on some variables; many sites were roughly split on positive and negative; and there is no consistent pattern across sites.

Exhibit 8 shows case-study area development obstacles mentioned in interviews with developers and surveys with local stakeholders (denoted by the dark red "X").

Exhibit 8. Case-study area development obstacles mentioned in interviews and surveys



Source: ECONorthwest.
Note: The dark red X is negative and indicates that the obstacle was mentioned as a challenge for development in interview and / or survey responses.

Our analysis of Exhibit 8 is categorized by obstacle type: (1) parcelization obstacles; and (2) all other obstacles, described in the next two sub-sections.

Parcelization obstacles

At least one symptom of parcelization was mentioned for every case-study area. Parcels that are narrow and deep, or are wide and shallow, are challenging to develop.[14] These types of parcels impose accessibility issues because parking is difficult—or impossible—to create on the sides or back of the property. For developers, narrow lots make it difficult to achieve adequate returns on investment if zoning codes impose strict height limitations on structures and push floor-area-ratios (and maximum rents) below the development break-even point. Odd parcel shapes, such as

[14] This finding is not surprising, but we did not get to it until after we had done the quantitative analysis with GIS data. In theory, it could have been. One could measure the perimeter of each tax lot and divide that by the tax lot's area to get a measure of "lineal foot square foot of area." The bigger and more square shaped (thus more compact as opposed to elongated), the bigger the measure.

triangles, make it difficult to develop many traditional building product types (e.g., rectangular buildings with a parking lot either in front, along the side, or in back).

Parcel sizes were reported as too small, on average, in all case-study areas except for Beaverton Industrial—in fact, parcels are probably too big and too institutional in this area if the goal is to move away from heavy industrial and encourage less intense industrial and commercial uses. Where parcels were reported as being too small, we find that it would be difficult to develop any building products without land assembly, except for low–to--medium density attached and multi-family residential housing, and small-scale commercial uses. The development-inhibiting effects of small parcel size can be reduced, however, if parcels are under a single ownership.

Property owners respond to unique sets of incentives and may compete against each other. Concentration of individual owners over a small area increase the need for cooperation and agreement, and increases the costs of land assembly: that challenge was reported in seven of the case-study areas. Owners cannot be forced to sell their properties to a developer if they do not wish to accept an offer or a partnership opportunity; they may have no incentive to sell or redevelop. Parcelization increases the possibility that one (or more) holdouts will decline to sell or relinquish some control of their property, eliminating the possibility of land assembly.

Using the *Climate Smart Communities* building types, we further examined the extent parcelization poses an obstacle to development by testing whether average parcel sizes in the case-study areas are too small to allow these types of development without land assembly. We found that case-study area parcels had an average size of between 10,000 and 30,000 square feet, and after setbacks, were too small—absent land assembly—for any of the regionally viable building types except for low – to – medium density attached and mixed-use multi-family housing, and small scale commercial. These building types have a density of roughly 40 dwelling units per acre (for residential uses) and 10 to 24 jobs per acre (for mixed-uses). To the extent that local plans hope to achieve higher densities, either (1) land assembly, and / or (2) relaxed building height and FAR restrictions would be required in each of the case-study areas to achieve more than 50 dwelling units per acre. The only exception was the Beaverton Industrial and Employment study-area, with an average parcel size large enough to fit any of the building types (222,000 square feet). These parcels may face the opposite problem of parcelization: While any of the regionally viable building types could conceivably fit on parcels of this size, a developer interested in a 40,000 square foot redevelopment project, for instance, may

not wish to purchase a site this large – especially if existing conditions may drive up the cost of the project (e.g., as a result of brownfield remediation or demolition).

All other obstacles

Nine other obstacles impacting development in the case-study areas were reported by the developers and local stakeholders. We grouped these obstacles into three categories: market conditions, policy conditions, and existing site conditions.

Market obstacles

The Metro region and the country are facing adverse general market conditions caused by the burst of the housing bubble in 2008. That fact creates development challenges for each of the case-study areas—ones that local governments have no control over. For many of the areas, poor market conditions mean that anticipated investment returns are too low and represent too great a risk for many developers.

For five of the case-study areas, interviewees noted that established uses are making redevelopment more difficult. Owners that have fully capitalized their property and are achieving stable rents will be much more reluctant to incur risk and redevelop, regardless of whether the use is compatible with local (or regional) planning goals. Parcelization exacerbates this issue: the greater the number of properties and owners that must cooperate for land assembly to work, the greater the chance an owner of an established use that is a going concern will hold out and decline to sell.

Policy obstacles

We noted in Chapter 3.1 that local policy can affect many aspects of the cost of development. Zoning, for instance, enables or limits that kind of development that public policy would like to see and that the market can profitably provide. Developers noted that existing policy is imposing constraints on development within a few of the case-study areas. Minimum parking ratios and zoning codes that specify maximum height requirements prove critical for development feasibility, and developers pointed out that in some cases the allowed intensity was too low for development to work.

In areas where density has already been achieved, such as the SE Corridors and Lake Oswego downtown, minimum parking ratios—which specify a minimum number parking stalls per unit—make high-intensity residential or mixed-use projects more difficult or unfeasible because of the high construction costs of structured parking. Parking standards have been

reduced for some projects within the SE Corridors area recently, and developers have responded positively, but neighborhood opposition has complicated the approval process. Loosening standards may not produce the same results elsewhere: while residents of the inner SE Portland area have shown a willingness (and even desire) to live without a parking stall, this demand is unproven in other parts of the Portland area.

Limits to allowable building heights were also suggested as critical impediments to development in three of the case-study areas. Height limitations reduce the maximum rent that can be charged to tenants, and in some areas achievable rents are not high enough to offset the costs of a two- or three-story structure, but would be enough if the building were five stories. Policy can reduce this impediment, but may be limited by neighborhood opposition, or historical standards that specify comparable characteristics within corridors or neighborhoods.

A lack of a sense of place or clear identity, and in some cases a lack of vision, was also cited as a development constraint in a handful of the areas. A vision, such as stated planning or development goals, signals to local stakeholders and potential investors what the area should become and how it should look. A cohesive vision can present policy changes that eliminate development challenges (e.g., to zoning codes, mentioned above). An identity is less tangible, but it may include a sense of "place" that drives demand in an area—for restaurants, nightlife, housing, etc. Place can be cultivated through streetscape improvements, transportation infrastructure enhancements, or area beautification. Sometimes identity may be simply cultivated by a single successful restaurant, which catalyzes demand for other uses. If an area can show it can generate auto and pedestrian traffic, development will follow.

Site obstacles

Site preparation and existing conditions affect the supply of land physically available or financially feasible for development.

Section 3.1 noted that some infrastructure is essential to development (water, sewerage, roads) and potentially very expensive, while other infrastructure is less essential but may still influence overall development feasibility (e.g., structured parking, off-site public amenities). Six of the case-study areas were described as lacking infrastructure necessary to develop building products desired by local and regional plans. In Hillsdale, for instance, developers noted that sewer pipe diameters are too small to support buildings greater than three stories: the cost and time it would take to remedy this obstacle with appropriate infrastructure improvements may prove too high for many developers. Optimally, zoning codes and existing

infrastructure cooperate so that parcels can be developed to their highest and best use, given existing demand.

Targeted infrastructure investments, such as roundabouts, may also be used to improve traffic flow and enhance walkability; they may not be critical for development, but they may enhance a sense of place and drive demand for future development. The interviews suggested that a lack of this type of investment in many areas is constraining development. In Gresham-Rockwood, for instance, relatively wide streets with infrequent crossing opportunities provide few opportunities for dense pedestrian-friendly development.

Brownfields and floodplains increase site preparation and remediation costs and may constrain the amount of developable land. Roughly half of case-study areas face development constraints related to brownfields and floodplains. The costs associated with mitigating these constraints can be unpredictable, but are often critical to overall development feasibility.

3.3 CONCLUSIONS REGARDING THE IMPACTS OF PARCELIZATION ON DEVELOPMENT IN CENTERS

Our first set of conclusions is about the limitations of drawing conclusions:

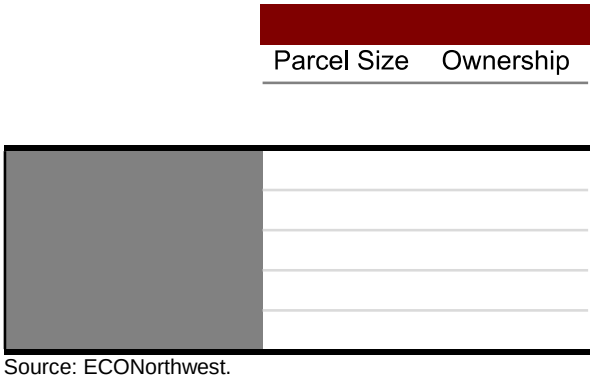
- **The data are require interpretation, and interpretations will differ.** People with different experiences and interests will view the problems differently. If one is looking to prove parcelization is a problem, this report provides evidence to support that conclusion. If one wants to argue that parcelization is a small part of the overall problem of getting high-quality infill and redevelopment in the right spots around the Portland region, this report provides evidence to support that conclusion.
- **To explain, much less justify, any interpretation requires clarity about definitions and assumptions.** This report devotes considerable space to both definitions and assumptions because they are critical to any productive discussion about the results of this report and the implications for policy related to parcelization. There are many ways one could try to measure on both parcelization and its impacts on development. This report chooses a few and explains the reasons for and limitations of those choices. Exhibit 7, for example, would be easy to misinterpret if one did not read the accompanying text that explains the measurements it summarizes.

- **There is substantial variability across sites, which means generalizations are more likely to be inaccurate in specific cases.**

Those limitations notwithstanding, the data have no practical application without interpretation and generalization, and it is common and reasonable for those who have assembled and evaluated the data to make a first attempt at that interpretation. That is what we do here, noting that these are the conclusions of ECONorthwest and that the data may support other conclusions—complementary or even competing ones—as well:

- **Parcelization is just one of many obstacles for development for sites in the case-study areas**. All the evidence (Exhibits 1, 7, and 8; the developer interviews) supports this conclusion.
- **Parcelization is probably not the most important obstacle in most cases**. Many of the other obstacles may prove "fatal" to development feasibility prior to and independent of parcelization. Many of the critical **demand-side variables** (e.g., the national economy, interest rates) cannot be changed by local land-use policy. Local policies aimed at stimulating economic development may have some success and thus some effect on the demand for built space in centers, but the marginal effect is small. Similarly, local programs that put more income into the hands of purchasers or renters of built space have a very small impact on overall market demand. In contrast, effects on **supply-side variables** (costs) can be large if one considers the costs of land and infrastructure. But that supports the point: issues related to zoning and entitlements, and to the quality and cost of infrastructure, will in many cases be much more important than parcelization.
- **Parcelization is not necessarily fatal to the kind of development the region hopes to achieve in centers**. Exhibit 9 shows parcelization measurements for five areas in the Portland region that are generally considered examples of successful "center-oriented" development. The measurements indicate that relative to all land in the UGB, these areas have high parcelization: high concentrations of parcels and owners per acre.

Exhibit 9. Parcelization measurements for areas of with successful development



Source: ECONorthwest.

The Mississippi area between N Freemont Street and N Prescott Street, and SE Division between SE 20th Avenue and SE 50th Avenue both have roughly 10 times more parcels per acre than the UGB on average, and 15 times more owners per acre.[15] The 21st / 23rd Avenue commercial district has over six times more parcels and nine times more owners per acre relative to the UGB average. Only the Orenco Station development near Hillsboro has parcel and owner density consistent to the UGB. Regardless of these densities (and perhaps even because of them), these areas have continued to perform well during the economic downturn beginning in 2008.

The fact that we can show areas with high levels of parcelization that are also successful is not surprising: all regions have centers and subcenters (pockets of density that are highly parcelized but that work). But it does, nonetheless, illustrate that parcelization and center-like development are not incompatible.

We acknowledge that the causal link between successful, dense centers and parcelization is not definitive. One can see a high correlation between successful centers and parcelization, but what came first? It is possible that successful centers were developed on bigger lots that were available and then got parcelized as part of the development process. That situation may be different from the one today: trying to create or recreate a center in an area that is already highly parcelized.

- **The problems of parcelization increase as parcels get smaller or more oddly shaped** (e.g., narrow and deep, wide and shallow). These types of parcels have issues of accessibility because parking is

[15] This analysis excludes single family residences and condominiums, and public, utility, and institutional uses.

difficult to create on the sides or back of the property. Making them work requires land assembly. If they are very small and have multiple owners, land assembly will be harder.

- **Parcelization can be a critical problem in some instances.** This report has shown the many things that can affect a developer's return on investment. In most cases, developers deal with all or most of them simultaneously. It is more likely that the demand side will be an early concern: if the market demand is too thin to generate a rate of return under even optimistic preliminary assumptions about costs (land, permitting, infrastructure, design and construction), then there is little need to worry about parcelization and land assembly. If the focus is, however, on a specific site (as it has been in this report), then parcelization is among the top considerations on the cost side: is the parcel and ownership pattern such that assembling the land is like to take too long and cost too much to make the project feasible? A few of the case-study sites appear to approach those conditions.

Our summary conclusions regarding parcelization and public policy are that:

- **Parcelization, to the extent it is a development problem, is not one best addressed primarily at the regional level.** The extent to which parcelization is a problem, and the best way to deal with that problem, depends on the specific site, or at least on the neighborhood. That makes it an issue, if it is to be addressed at all, for local governments. There is no need for regional enabling legislation. One might make the case for regional funding to meet regional goals, but most of the development benefits are more local in nature, and are spread around local jurisdictions. Metro's regional contribution to solving any problems of parcelization may be largely completed by producing this report so that all local governments have better information about whether they should and will take actions with respect to parcelization, and what those actions will be.
- **For local governments, the best advice may be to understand that parcelization can be a problem, evaluate the extent of the problem on sites that the local government wants to see develop soon and in a specific way, and decide what level of public effort to put into either reducing parcelization or offsetting the costs it creates.** For most local governments, parcelization is not an urgent problem that needs immediate action. For a few areas and sites, however, it may be.

Chapter 4 Potential Policy Responses

Chapter Summary. To the extent to which parcelization is a problem for the kind of development regional and local plans hope to see in urban areas, how might public policy reduce the problem? At a minimum public policy could reduce the ability for even *more* parcelization to occur in those areas. Public policy could also try to reverse parcelization that has already occurred: it could "assemble land." This chapter discusses several techniques for land assembly in two categories: those that ultimately result in a site with parcels under a single ownership, and those that result in multiple ownerships but with owners working toward common development goals.

A problem for economic development relates to land for larger-scale development: large projects need more land. If larger sites are not available because of parcelization, they have to be assembled from smaller parcels.

Chapter 2 and 3 of this report discussed a range of obstacles to development of larger projects, one of which was parcelization. This chapter looks just at the potential problem of parcelization and looks at policies the public sector (primarily local governments with land-use authority: cities and counties) might take to reduce that problem. In particular, it focuses on *land assembly*, which is a rewind of the parcelization process: if parcels are now so small and so many that they are obstacles to desired types of development, then the parcels need to be consolidated (assembled) into a larger parcel.

The fundamental issue is not the size of the parcels per se. It is that small parcels suggest more owners per acre, and multiple ownership is an obstacle to development. The problem of too many owners may be a problem now, or it may become one in the future if parcelization continues. Thus, we group all public policies that might ameliorate the problems of parcelization into one of three categories:

4. Reduce the ability for even more parcelization to occur in areas where regional and local plans want larger-scale development.
5. Reduce the parcelization that has already occurred by assembling land (reconsolidating small parcels and multiple ownerships into fewer ownerships) .[16]
6. Reduce the problems that parcelization creates for development.

[16] The analysis draws on work ECONorthwest managed in 2011 for Oklahoma City and published in 2012 as Appendix E of the City's Employment and Industrial Land Analysis. Larry Pederson of IronWolf did the initial draft of that analysis and was lead author. ECONorthwest grateful acknowledges that work.

Appendix C discusses all three categories, but focuses on the second.

4.1 POLICIES TO REDUCE *NEW* PARCELIZATION

Trying to assemble land later after it has been parcelized may be harder than reducing additional parcelization now. In concept, the public policies to do that are in the local comprehensive plan and implementing zoning. If a jurisdiction wants less parcelization, it increases the minimum allowable parcel size.

The dilemma for this category of policies is that the direction of Metro and local government policy for 20 years has been to encourage density, which usually (but not always) is achieved or at least accompanied by the creation of more and smaller parcels. On the one hand, it supports greater density, which probably increases (though not always) smaller parcels (parcelization). On the other hand, it wants redevelopment and integrated mixed-use development that creates functional and walkable commercial districts in designated centers, which is hindered if parcels are small and many. General and broadly applied policies to reduce future parcelization may have the countervailing and undesired effect of making densification that is desired more difficult. A city may want a zone to work one way in general and in most parts of the city, but it may want to adjust the allowances and requirements in one or two specific subareas.

The recommendation here is that local governments deal with the issue at the neighborhood / sub-area level when they develop specific-area plans. In locations where significant or different development or redevelopment is desired, local governments should review their plan and zone designations to make a judgment about whether they are getting parcelization they want, or parcelization they do not want. In other words, even before going to the effort of assembling land, a jurisdiction can address the question of whether it wants to reduce the rate at which it is being parcelized, or the increase the ultimate minimum lot size.

4.2 POLICIES TO REDUCE *EXISTING* PARCELIZATION (LAND ASSEMBLY)

Our analysis of land assembly policies divides them into two broad categories: those that assemble land under (1) a **single ownership** (which ultimately requires purchasing the land from prior owners and eliminating them from the subsequent development process, or (2) **multiple ownerships**, which may or may not include purchase but may also include

legal arrangements that allow a developer to make decisions efficiently even though there is multiple ownership (corporations are a good example: multiple owners [shareholders] but clear executive authority to make operational decisions).

4.2.1 BARRIERS TO LAND ASSEMBLY

Assembling multiple parcels into a site suitable for development can be a difficult task. Among the difficulties:

- Property owners may be unwilling to sell (for many reasons: price, tax impact, replacement costs, viable alternative locations)
- Land is expensive, and owners may have an inflated expectation about its value
- Just *one owner* in a larger site assembly has the power to stop a deal that all others support
- After assembly the properties may be too small, fragmented, or oddly shaped to adequately site desire development
- Local politics and neighborhood might make a certain development type unfeasible, regardless of property conditions
- In the case of outright purchase by a county, a city, or another public entity the carrying cost of major land holdings for future development could be significant
- Ownership interests are fractured (often true in family inheritance situations); this issue often is combined with absentee ownership, so that owners don't really have a "stake" in the transaction and its potential development/economic impact on the community
- The regulatory environment (zoning, environmental overlays, mandated parcel size) adds to costs, and all the benefits of the regulations may not accrue to property owners and developers
- Infrastructure demands caused by land assembly, and the commensurate ability to finance necessary improvements, often create barriers
- Legal issues, including clear title, easements, and encumbrances, are obstacles
- Existing development or structures on site or on neighboring parcels is especially a problem when a property owner has a fully capitalized stake in his or her property and is realizing a perpetual positive cash flow from tenants – in this case there is little incentive

to risk this cash flow for perhaps a slightly higher return from redeveloping.

Given the difficulties these problems may present in assembling a larger development site from smaller parcels, one can see why fragmented ownership may be a "deal-killer" for developers who do not have the time, patience, or expertise to wade through a possible quagmire of issues.

4.2.2 LAND ASSEMBLY UNDER A SINGLE OWNERSHIP

There are several ways that the public sector can assist assemble land under a single ownership:

- **Outright purchase by public sector**. The strongest control of property is outright ownership. If a public entity acquires that ownership, it has the ability to set requirements on how it will develop. The purchase can occur between the public agency (e.g., a city, county, or urban renewal district) and a willing private seller. In rare cases related to an overriding public good (unlikely to be applicable to the situations addressed in this report), public agencies have used the power of eminent domain to force the sale of a property to the agencies.
- **Donation or grant to public sector**. Property owners may be motivated to donate land for tax reasons, designation for specific use or purpose (perhaps strictly for the public good, or perhaps to enhance the value of adjacent land not donated), or a family or personal memorial. The small initial cost can sometimes be offset by significant ongoing costs for maintenance and upkeep on donated properties. Observing the wishes of the grantor can narrow the range of alternative uses.
- **Outright purchase by a foundation**. Foundations can acquire and hold land as a part of their investment portfolios. The land in question would need either (1) to serve a mission of the foundation (e.g., conservation, public housing); or (2) to be a productive asset expected to provide a financial return that could be used to fund the foundation's programs. A foundation created specifically for economic development purposes would have more latitude for the types and timing of property development.
- **Purchase options.** Short of buying the land, a public agency or foundation can purchase the "option" to buy the property at some later date at some agreed upon price. Option agreements are commonly used by conservation land trusts. An option price is small relative to the total value of the land. It "ties up" the land for some

fixed period. Options for a shorter term (0-3 months, depending on the strength of the market and regional conditions) frequently are done with little or no "hard money" (i.e., the prospective buyer does not pay anything for the short term). The prospective buyer can then activate an extension beyond that short term in return for a specified payment to the seller. Agreements between public and private entities, however, usually require options for a period of 12-18 months or longer (with extension allowances) for one to two percent of the agreed upon land price, particularly for larger sites. The buyer typically uses this time to conduct due diligence on environmental and development issues that they then can compare with alternative locations.

In the context of land assembly, the public sector could use the option process to assemble parcels from multiple ownerships to support the requirements of a particular future type and size of development. The options keep property off the market as infrastructure is provided to prevent possible development of competing (and inconsistent) uses. The public sector could consider using a third party in the optioning process, since frequent public sector interest in properties can drive prices upward in excess of true market values. It is not unusual for property options to be negotiated confidentially with the identity of the prospective purchaser not disclosed.

- **Acquisition of surplus state or county land**. This option is obviously not available in all situations—it applies only in special cases. It can occur when surplus land is created through infrastructure improvements, such as airport or road projects that create remnants that are not used for the actual project. Less frequently, land or buildings that become surplus can be granted or sold to the local jurisdiction by other entities (e.g., school districts, state agencies, public utilities) when they no longer serve their intended purpose.

4.2.3 LAND ASSEMBLY AMONG MULTIPLE OWNERS

There are several ways that the public sector can assist in assembling land where benefits and risk associated with the final assembled site are shared among multiple owners, usually a mix of public and private entities:

- **Cooperative land bank**. In cities and counties where abandoned or deserted properties are a problem, governments take such properties

over and place them in a land bank.[17] In most cases the public sector (or its agent, like an urban renewal agency) gains control over a parcel or parcels and then joins with for-profit or non-profit organizations who control additional parcels to reach a critical mass for development or redevelopment. This form of property control may require public entities to purchase parcels outright; in the case of abandoned properties the jurisdictions with taxing power could take them over in lieu of unpaid taxes.

- **Public/private partnership**. Broadly, public-private partnership (PPP) refers to any development project in which both sectors have a significant stake and role in the development. Every development project, of course, has some public sector participation (typically in planning, permitting, inspection, and provision of infrastructure)—that standard level of involvement is not considered a PPP. Typically, a PPP means that there are specific financial, operational, and managerial obligations and authorities specified in a binding agreement among (perhaps multiple) private and public sector entities. Metro's 2010 Community Investment Strategy repeatedly emphasizes the need for innovative and effective public-private partnerships. The Community Investment Initiative, and much of the work on brownfields in the region by Metro and others, are public-private partnerships.
- **Limited Liability Corporation (LLC) formed with public and private sector property owners as pro-rata share holders**. Public agencies could join with private landowners to form an LLC for a parcel or collection of parcels to make them development-ready. The public sector's contribution could be investment in infrastructure, with the private owners contributing their land. Ownership of the LLC would then be on a pro-rata basis in proportion to the value of the contribution. The public entities can be specific about the type(s) of enterprises and industries targeted for that area consistent with investment and employment goals. The creation of an LLC would be a more formalized form of public-private partnership through the formation of a legal entity.
- **Horizontal development entity**. Most land assembly is achieved when one party purchases the holdings of others to create a larger land parcel for development. An alternative that enables multiple

[17] Examples include the Cuyahoga Land Bank in Cleveland, OH (http://www.cuyahogalandbank.org/assembly.php), the Genesee County Land Bank (Flint, MI; http://www.thelandbank.org/default.asp); and the Fulton County Land Bank in Atlanta, GA (http://www.fccalandbank.org/index.htm).

property owners to benefit from larger scale redevelopment is a horizontal development entity (e.g., LLC for development). Individual property owners who control contiguous parcels may conclude they have more to gain by voluntarily assigning their land interest to a legal entity to better capture new, larger-scale development than they otherwise would be able to do if they acted only on their individual land holdings. Property owners can assemble larger parcels by agreeing to convert the value of their individual holdings into shares of a larger property holding entity. In this way each owner benefits from development over time regardless of where on the newly created assembled site the development occurs. A recent example is the central district of South Waterfront where a public university and private property owner formed a collective entity to prepare about 33 acres for more intensive mixed use development.

4.2.4 BEST PRACTICES IN LAND ASSEMBLY MANAGEMENT

Appendix C gives more details about the sources reviewed to create this summary of best practices. These reports, combined with the experience of ECONorthwest, suggests that "best practices" would use:

- **Narrow, well-defined goals.** These goals will clarify the function and responsibility of public entities and departments for land assembly, the role the private sector will play, and how risk will be shared across all cooperating parties.
- **Citywide coordination and cooperation between internal and external partners.** That means coordination across departments, jurisdictions, and agencies (public-public), and with the private sector (public-private).
- **Legal structures that provide some measure of independence from local government.** Independent legal entities (e.g., and economic development authority or urban renewal district) will have more control and flexibility to pursue more narrow land assembly objectives.
- **A robust parcel management information system.** A database such as Metro's RLIS parcel taxlot file can help to quickly identify parcel characteristics and boundaries.
- **Integration of land assembly and banking with a long-term strategic visioning.**
- **Limited or streamlined processes for eminent domain and judicial foreclosure.** Because these tools are unpopular with both citizens

and elected officials, best practice is probably to not use these tools unless there is a very strong public purpose.

- **Flexible, diverse funding sources for any entity created for managing and redeveloping assembled parcels.**

Most of those recommendations are noted in the literature and are general and common sense. To go deeper, we interviewed developers with experience with land assembly about both issues and best-practices for resolving them (from a private sector developer perspective):

- **Streamline the process.** Institutional lenders can lose patience while waiting for developers to negotiate purchase agreements with property owners. The longer it takes it assemble a site, the riskier the deal becomes: one or more owners are more likely to hold onto full interest in their property, and developer staff costs accumulate. A solution for developers, of course, is to have the public sector do some, most, or all of the work. For example, urban renewal districts often assemble land and then offer sites for development.
- **Align terms when closing multiple parcels for assembly.** All parcels should be closed as close together as possible. Developers should not and probably will not spend time and money on design and due diligence unless they are sure all targeted parcels will close. Any parcel left open for continued negotiation is a liability.
- **Keep it simpler.** Simplicity means assembling as few parcels as possible, and dealing with as few owners as possible. Partnership arrangements, such as horizontal development entities, can become complex as multiple owners have different interests, incentives, and visions for the development.
- **Take full control of parcels for assembly.** Before the real estate market recession began in 2008, equity requirements for borrowers were roughly 10% to 15% of the total development cost. A developer could form a partnership with a landowner who would put the value of his land into the deal for a stake in the final development outcome. The developer would not have to raise much more money to reach the 10% to 15% equity requirement. Today, lenders require roughly 30% to 35% equity, and the land value is a smaller percentage of the requirement. It is probably easier and less risky in most cases to gain full control of parcels from the outset and not form partnership arrangements. Institutional lenders are more willing to lend to a developer who can show the ability to gain full control of all final assembled parcels.

- **Be careful about entering into master planning arrangements.** Master planning can, for instance, obligate a developer to start a new project every other year. This can be risky if the market for new residential or mixed-use development softens. Portland's South Waterfront, which is subject to a master plan, has seen some luxury condominium towers turn into apartments after the real estate market recession began in 2008.
- **Expect landowners to negotiate a price well above the appraised amount.** Since 2008, property values have diminished and appraisers (with directives from lenders) have been conservative in their valuations. There is now a large gap between what properties are appraised for and the property owner's asking price. In partnership arrangements, this means that land contributions from existing owners are worth less, and more equity is required to secure lending.
- **Consider other ways to assemble land besides initial outright purchase.** Full parcel acquisition can be an expensive proposition for both private and public entities in their effort to assemble viable developable sites. A less expensive alternative involves optioning land (described above in section 4.2.2): *purchasing an option* to buy the property at some later date at some agreed upon price. Options can provide a development entity site control for a long enough period to develop a concept for a site and enhance its chances to succeed while reducing financial exposure at the front end. The Portland Development Commission employed an options approach when assembling land for the Burnside Bridgehead project. Another alternative is a *land swap* for another parcel, usually one already owned by the public or private entity wanting to make the acquisition. Land swaps involve securing agreement between the swapping parties on many aspects particularly the value of the parcels involved

4.3 POLICIES TO REDUCE PROBLEMS *CAUSED* BY PARCELIZATION

If local jurisdictions do not take steps to reduce the *amount* of parcelization by any of the methods described in Sections 4.1 and 4.2 above, can they do anything to reduce the obstacle that parcelization poses for the kind of development desired in urban centers?

Broadly, of course, cities have dozens of policies that they can bring into play to encourage certain types of development by reducing the costs of

that development. Ultimately, the developer perspective must get to a bottom line about return on investment. Anything that a local government can do to increase the amount or reduce the uncertainty of revenue (e.g., helping secure federal assistance for low-income renters of buyers of housing products; pre-leasing space for government operations) or reduce the amount or risk to costs (e.g., expedited permitting, including public involvement; reduced development requirements or fees; provision or cost sharing of need infrastructure and amenity; tax exemptions) will make development more attractive.[18] The better the financial pro-forma looks, the more room a developer has to incur the costs of negotiating with multiple owners to find an arrangement that allows a site of multiple parcels to get clear for development.

This appendix does not address everything on the long list of things a local government can do to increase demand or reduce costs for developers. Rather, it focuses on a few policies related directly to costs that parcelization creates. Such policies are hard to separate from policies aimed at land assembly (Section 4.2).

Land assembly can be costly—in terms of time and dollars—and may prove too costly for some development proposals. For example, to assemble the public storage parcel that would become Elizabeth Caruthers Park in Portland's South Waterfront developers negotiated a purchase agreement over a period of almost two years at a cost above the appraised amount. If a developer concludes that parcelized ownership makes the cost of creating a developable site to high relative to anticipated return on investment, and if local governments do not take actions to substantially reduce those specific costs, **what public policies can help make small parcels work for development in the absence of land assembly?**

- **Reduce parking requirements.** Surface parking takes up valuable land area on small parcels. On small parcels and for certain types of development, it may be impossible to provide the on-site parking required by codes without building structured parking. A parking space in a parking structure costs, on average, five to ten times more than a surface space. The difference can easily add 10 percent or more to the full cost of a residential, retail, or office development project, which is enough to eliminate a developer's typical fee.

  Reducing the number of parking spaces required per residential unit or per commercial square foot basis reduces the cost of development.

[18] Section 2.1.4 discusses all the factors that can affect a developer's revenues, costs, and return on investment.

Such reductions are especially helpful if they eliminate the need for structured parking.

Such reductions are also consistent with regional and many local plans that want to emphasize mixed-use and walkable development, and the ability to reduce trips by automobile (and, thus, reduce congestion and air emissions).

But those benefits are not without costs. The loosening of parking standards may be a point of indifference to one- and two-person households that are mainly renters, may have one car or none, and looking for affordable rents in close-in neighborhoods that allow transportation by non-auto modes of travel. But homeowners in those same neighborhoods may oppose the reduced parking based on the belief that some of the occupants will still have cars and will now be competing for already limited parking spaces on streets. A proposed four-story apartment building at SE Division and SE 37th Ave is being opposed by local residents for this reason.

- **Relax building restrictions.** Developers can only exact rent from usable building square footage. There are many fixed costs to development that may not increase at all or at the same rate as the size of the development (for example, permitting, design, on- and off-site requirements for infrastructure and amenity). That means that the price per unit or square foot can decrease with scale. That can be true for the construction costs as well. Once a developer is into a multi-story building, he may want to go to the maximum density possible before new levels of costs are incurred (e.g., structural issues that require a shift from wood to steel).

  Building height restrictions reduce the amount of usable building square footage a developer can build, and the square footage lost probably costs less on average than the square footage allowed. By relaxing building height restrictions in the zoning code, local governments may allow developers to improve their return on investment without changing the size of their parcel or building footprint.

  As with parking, taller buildings may be controversial in some neighborhoods. Historically an underlying (if unstated) function of zoning has been to protect single-family neighborhoods. Existing residents may worry about block viewed, reduced sunlight, parking, congestion, "incompatible" neighbors, and more.

  Similarly, reduced setbacks and landscaping requirements can increase slightly the amount of leasable space on a given parcel, and

reduce some cost, but with the potential effect of being less acceptable to surrounding residents and businesses.

- **Provide off-site the amenities that small parcels cannot provide on-site.** People are buying or renting a building because it delivers a bundle of services: shelter, of course, but also access to good and many employment opportunities, parks, schools, restaurants, and more. As private space gets compressed on smaller parcels (smaller units, smaller yards) they can hold or increase their value if the are surrounded by substitutes (e.g., restaurants, gyms, parks, transit).

These solutions reduce the problems caused by parcelization by making it less costly for developers to use small parcels, or by increasing the returns they can get on a given investment because of increasing value of surrounding amenity.

Appendices

Supporting this report are the following appendices, available from Metro :

Appendix A: Methods

This appendix describes the methods used to select case study areas, catalytic sites within these areas, and how the extent parcelization poses challenges to development was assessed.

Appendix B: Case study analysis

For each study area, we present a description of physical characteristics and an assessment of factors contributing to development challenges. For the catalytic sites within study areas, we estimate: (1) the extent of parcelization, (2) the extent of development challenges, (3) the extent to which we can attribute the development challenges to parcelization (relative to other causes).

Appendix C: Policy options for addressing parcelization

This appendix focuses on land assembly as the main policy option for addressing *existing* parcelization. It discusses barriers and opportunities for land assembly, including potential policy responses and best practices public sector entities can and have used to limit the development challenges related to parcelization. This appendix also briefly discusses other policies to avoid *new* parcelization and to reduce problems *caused* by parcelization.

Appendix A Methods

This appendix describes the methods used to select case-study areas and catalytic sites within those areas, and to evaluate the extent to which parcelization poses challenges to development.

The reduction of parcelization is not the fundamental policy objective—developing good centers, corridors, neighborhoods, and employment centers is. Thus, the approach that follows focuses on identifying places that are not developing (i.e., where 2040 design types are not being achieved fast enough or at all), and then looking at the degree to which parcelization contributes to that lack of development.

The methods center on case studies, not on the creation of a comprehensive parcel file or broad assessment of the regional magnitude of the problem. The sites selected for evaluation in the case studies were not selected primarily because they had small parcels that might be causing problems, but because they were in locations that presented the best opportunities for the kind of develop that might transform neighborhoods in the directions encouraged by regional policy. Those methods focus the research on the question "Why are sites that on a cursory inspection appear to be in a good area for development not developing?"

This appendix describes the methods in four sections:

- **A.1, Selection of case-study areas**. How the project team selected which regionally significant *case-study areas* to examine.
- **A.2, Selection of potentially redevelopable parcels.** How the project team filtered *parcels* in case-study areas to obtain a subset that are potentially developable.
- **A.3, Selection of catalytic sites.** How the project team identified potentially *catalytic sites*—made up of one or more parcels each—within each study area.
- **A.4, Assessment of the contribution of parcelization to development problems.** How the project team used the case studies and catalytic sites to examine the question: Given a site suitable for development, if it has not already developed with a mix of development desired by regional and local plans and generally viable in the region, what are the likely causes and how big a cause is parcelization?.

A.1 SELECTION OF CASE-STUDY AREAS

Metro policy is clear: it would like to see development in the Portland region that is consistent with the 2040 Concept Plan and Design Types. Metro observes that in many subareas of the region, in Design Type categories that support higher density and mixed use, development of desired types is not occurring.

Metro staff reviewed these subareas to create a list of 10 case-study evaluation; it considered:

- Initial, informal determination that parcelization may be a challenge in the area.
- Local jurisdiction interest in being included in study (suggestions were solicited at the Metro Technical Advisory Committee, the Metro Policy Advisory Committee and in conversations with local jurisdiction staff).
- The existence of clear local and regional goals for development or redevelopment.
- Existence of other efforts, plans, or public investments that support development (e.g., area is inside or includes an urban renewal or other focus area).
- 2040 design type (to get a mix of different types for the case studies).
- Geographic and jurisdictional distribution (to get a mix for the case studies).
- Market conditions (to get a mix for the case studies).

Based on a preliminary selection of case-study areas, the project team confirmed that they were likely to contain sites suitable for the evaluation. The team did a preliminary investigation of parcels. It excluded parcels not targeted for redevelopment. It then looked at the following factors:

- Ripeness: Is there independent interest in the development of some area? Is a developer trying to do something? Are public investment decisions pending (e.g., Portland / Milwaukie LRT)? Is a local government or Metro doing a planning study in some area? (We are interested in regionally significant areas).
- Geographic dispersion about the region (we did not want all 10 case studies in just two or three cities).
- Land use (there are different types of land uses in any design type: we want a mix).

- Degree of economic activity and development. Is the area thriving or lagging? Is there are lot of development or a little? Is there are lot of vacant and redevelopable land, or a little? (We want a mix of study areas, possibly focusing on the areas that need the most help or have the most opportunity).
- Urban renewal districts (some in, some out for variety in area-wide financing mechanisms).

Figure A1 below summarizes the 10 case-study areas by location, design type, other identifying characteristics, and (if applicable) inclusion in local and regional plans.

Figure A1: Case-study areas

Label	Study Area	City	County	2040 Design Types	Boundary
1	Lake Oswego Downtown	Lake Oswego	Clackamas	Town Center	East End Urban Renewal Area, including the proposed library site at N. Anchor
2	McLoughlin Blvd	Milwaukie	Clackamas	Station Community, Industrial / Employment Area, Corridor	McLoughlin Area Plan; quarter mile buffer around SE McLoughlin Blvd
3	Hillsdale	Portland	Multnomah	Town Center, potential future Station Community	SW Corridor Plan focus area, including SW 13th Ave and SW Barbur Blvd
4	West Gresham / Rockwood	Gresham	Multnomah	Town Center, Station Community	Rockwood-West Gresham Urban Renewal Area, including parcels within a quarter mile buffer of E Burnside St
5	Close-in SE PDX corridors	Portland	Multnomah	Corridor	One block buffer of SE corridors: SE Hawthorne, SE Division, SE Belmont, and SE 50th Ave., between 12th Ave. and 50th Ave
6	Beaverton Downtown	Beaverton	Washington	Town Center, Station Community, Main Streets	One-third to one-half mile buffer of area around intersection of SW Canyon Rd, SW Beaverdam Rd, and SW Milikan Way
7	Beaverton Industrial / Employment Area	Beaverton	Washington	Industrial / Employment Area	Beaverton urban renewal commercial, office, and industrial employment area, including Metro Title 4 lands east of Highway 217
8	Tigard Downtown	Tigard	Washington	Town Center, Station Community	SW Corridor Plan focus area
9	Tualatin Downtown	Tualatin	Washington	Town Center, potential future Station Community	SW Corridor Plan focus area
10	Hillsboro Old Town	Hillsboro	Washington	Industrial / Employment Area	Old Town Hillsboro Refinement Plan Southwest Plan Area

Source: ECONorthwest.

The preliminary boundaries of the case-study areas were modified to reach the final study area boundaries based on further input from Metro and local jurisdictions. The modifications allowed the project team to identify and include locally significant locations and areas with high

redevelopment potential (e.g., urban renewal areas), and exclude areas with low significance and low potential for redevelopment. The case-study area boundaries were further modified as follows:[1]

1 Lake Oswego Downtown (Lake Oswego):

- Include East End Urban Renewal Area, including the proposed library site.
- Include the neighborhood and businesses surrounding the proposed library site.
- Exclude single-family residential areas north of B Ave. and west of 4th St.

3 Hillsdale (Portland):

- Include parcels within the Hillsdale Metro SW Corridor Plan focus area.
- Exclude the single-family residential neighborhood located south of Interstate-5.
- Extend the boundary south to SW 30th Ave. along SW Capitol Highway.

4 West Gresham / Rockwood (Gresham):

- Include parcels within a quarter mile buffer of E Burnside St. between two light rail stops (E Burnside St. and 197th Ave. in the east, and E Burnside St. and 148th Ave. to the west).
- Include parcels within the Rockwood-West Gresham Urban Renewal Area.

5 Close-in SE corridor areas (Portland):

- Exclude parcels west of SE 12th Ave., so that the final study area boundary includes parcels that are a homogenous mix of residential and commercial uses.
- Include parcels along SE Division St. up to 60th Ave.
- Include the SE Foster and SE Powell intersection.

7 Beaverton Industrial / Employment Area (Beaverton):

- Include Beaverton Urban Renewal Area, based on a request from the City.

[1] Note that the absence of a study area from this list indicates that the broad study area and final study area boundary designations are the same.

- Include Metro Title 4 Industrial and Employment designated land located just east of Highway 217

8 Tigard Downtown (Tigard):

- Include parcels within the Downtown Tigard Metro SW Corridor Plan focus area.
- Include parcels around Main St., an area the City feels has issues of parcelization and has requested be examined.

9 Tualatin Downtown (Tualatin):

- Include parcels within the Downtown Tualatin Metro SW Corridor Plan focus area.
- Exclude parcels located east of Interstate-5.

The project team agreed that the research would be stronger if it did not pre-judge parcelization to be the cause of the problem (i.e., a failure to achieve regional and community goals for development) and then select for study as "problem areas" those areas that analysis shows are highly parcelized. For this reason the project team used previously established planning boundaries or focus areas. These boundaries (1) were not created with the intent to bound highly parcelized areas and (2) they indicate areas that local jurisdictions feel are significant due to underdevelopment, underutilization, the presence of incompatible uses, etc.

The question that created this study was whether parcelization (the division of land into smaller and smaller parcels, usually associated with an increasing number of different owners per acre) contributes, perhaps significantly, to the failure of the market to provide development of the type and in the places that Metro policies desire. Reduced parcelization, to the extent it is a policy objective, is an intermediate one: the ultimate objective is quality development of certain types, in certain locations, in some reasonable time frame. Thus, we assessed our final study areas (i.e., the problem areas) based their failure to meet those objectives, not on their degree of parcelization. Degree of parcelization was a component of our final study area selection criteria, but it was not the major driver of our selection process.

A.2 SELECTION OF POTENTIALLY REDEVELOPABLE PARCELS

Using GIS analysis techniques, we filtered study area parcels to obtain a potentially redevelopable subset to evaluate for: (1) catalytic potential, and

(2) failure to develop as policy desires. The process of using filters to identify potentially redevelopable parcels a typical task effort in Oregon land-use planning: create a list of sites based on a mix of beneficial characteristics such as location, zoning and ownership status, and other positive market signals. These are sites local *planners* feel are able to fill a local need (e.g., medium- or high-density housing, mixed-use redevelopment, etc.) because of their size, location, and level of development or use. It is then up to *developers*—list in hand—to determine which sites, if any, have the correct combination of acquisition price, location, competitive advantage, and physical and legal characteristics to justify investment.

The Metro RLIS GIS-based parcel dataset, plus a database of additional parcel characteristics drawn from county assessor databases, allowed the project team to find sites where conditions suggest good development potential using a set of criteria important to a developer, such as access to transportation and utility infrastructure, proximity to schools, slope steepness, and location inside a floodplain zone. We calculated a ratio of improvement to land value using real market values reported by county assessors to derive a general understanding of existing conditions: is each site fully developed or underutilized?[2]

This process mimics the one typical local efforts to identify buildable and redevelopable land. First, look for underdeveloped parcels with the correct combination of physical and legal characteristics, and within an area serviced by public infrastructure. Then, once candidate sites are selected, asks private-sector real-estate professionals to evaluate market factors in these areas (e.g., price, risk, and return on investment). Within GIS, we dissolved parcels (actually, tax lots) that met our criteria into contiguous pieces of land (which we called "sites") to begin to understand how adjacent parcels may be assembled through this process.

We used the following filters to hone our selection of potentially redevelopable sites (a site is two or more tax lots) within each study area: (the city planner role). The filters were applied in order:

- **Existing conditions.** The land within the study areas is predominately developed. Accordingly, new development in many of the case-study areas will result primarily from infill or redevelopment. We assessed existing conditions (e.g., development status) to determine whether parcels have the potential to attract developer investment. Parcels that are not realizing their highest and

[2] See Section A.5 for a more detailed description of this analysis.

best use are more likely to attract investment relative to fully developed parcels. We derived a general understanding of existing conditions as follows:

  - Using the RLIS dataset, which includes county assessor data for all tax lots in the Metro region, we divided estimated real market improvement value by real market land value. The lower that value, the less of an obstacle existing development is to new development (other things being equal). Though the scale is continuous (the values will be in range of 0 to 100), our analysis used a value of 0.75 as a threshold.
  - We also consulted a vacant land inventory and building footprint database—both part of RLIS—and a brownfields database from the Oregon Department of Environmental Quality to further understand existing development status.

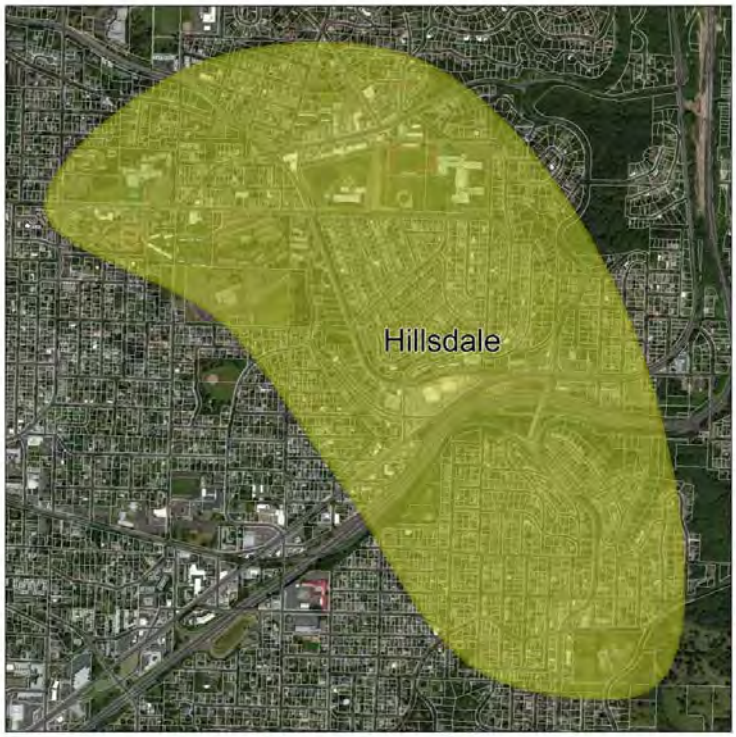
- **Physical geography**. Environmental constraints were identified and removed from the study area if any of the following environmental conditions were present. These constraints are known as Title 3: Metro's designation for land within its Stream and Floodplain Protection Plan. Title 3 parcels were considered constrained to development for physical or economic reasons:
  - Steep Slopes (equal to or greater than 25%)
  - Presence of National Wetlands Inventory designation or otherwise identified Wetlands
  - Stream buffer incursion (as per Metro Functional Plan Title 3)
  - Floodplains (based on FEMA 100-year designations)
  - Riparian designated areas

- **Zoning.** Based on the knowledge of local plans and desired development products, we focused our analysis on parcels that are currently—or could become—mixed-use, multi-family, commercial, or industrial. Single family residential parcels were largely excluded from the analysis, except in some cases where their zoning designation allows for higher density redevelopment. We also excluded public, institutional, and utility uses from the final analysis. We excluded these parcels because they are entrenched and unlikely to change through redevelopment in the near future, or especially in the case of single family residential parcels, are characterized by small lots and may bias our analysis of those property types we are concerned with: mixed-use, multi-family, commercial, or industrial.

- **Urban amenities.** Proximity to various urban amenities is one factor that increases the likelihood of parcel development: developers generally pay lower development fees, and residents and customers value accessibility. The following amenities were identified for each study area:
  - Access to the regional transit system
  - Walk/Bike access, measured using the transportation network, including sidewalks, paths and bikeways.
  - Distance to retail and service locations that may support new and existing residents.

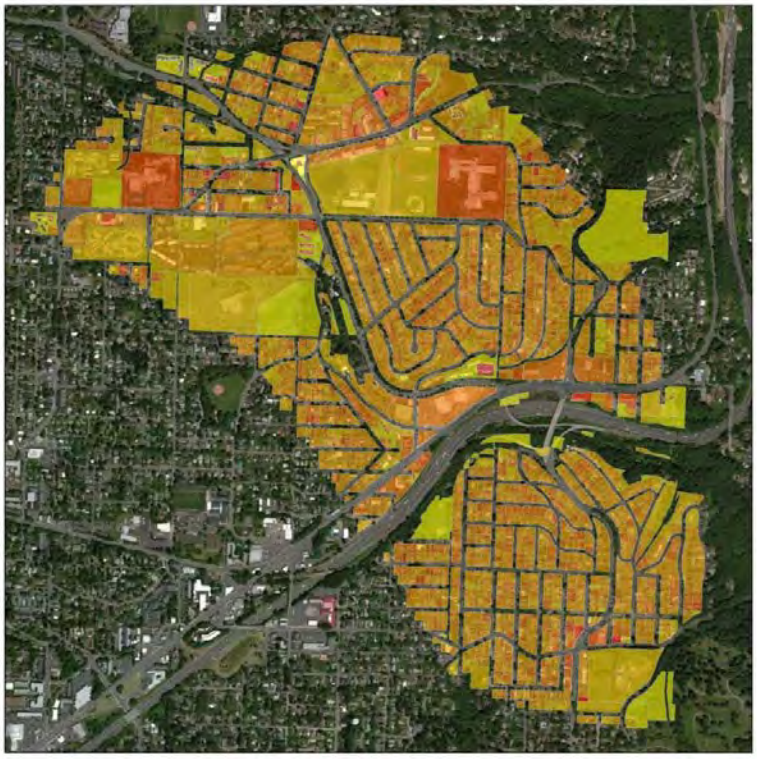
The following is an example of the process applied to one of the study areas, from final boundary area (Figure A2) to a map of potentially redevelopable sites and urban amenities (Figure A6).

Figure A2. Study area boundary



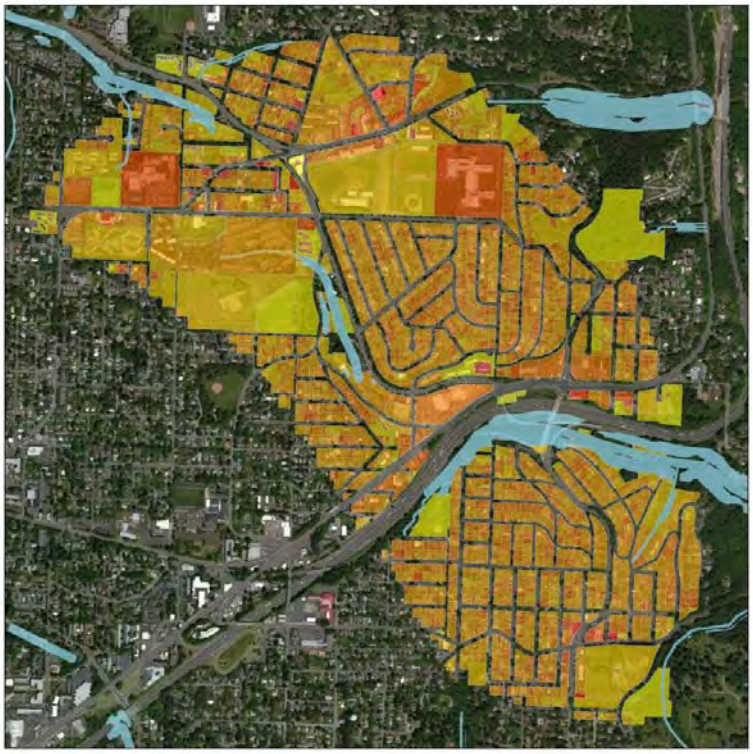
Source: Fregonese and Associates/ECONorthwest

Figure A3. Determine assessor real market value (land plus improvements) to estimate existing conditions



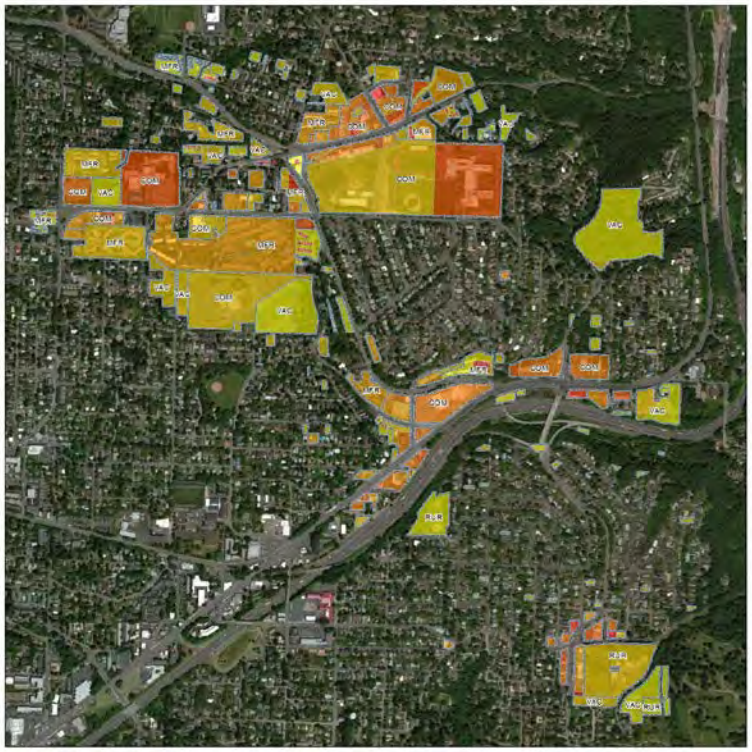
Source: Fregonese and Associates/ECONorthwest

Figure A4. Physical geography filter



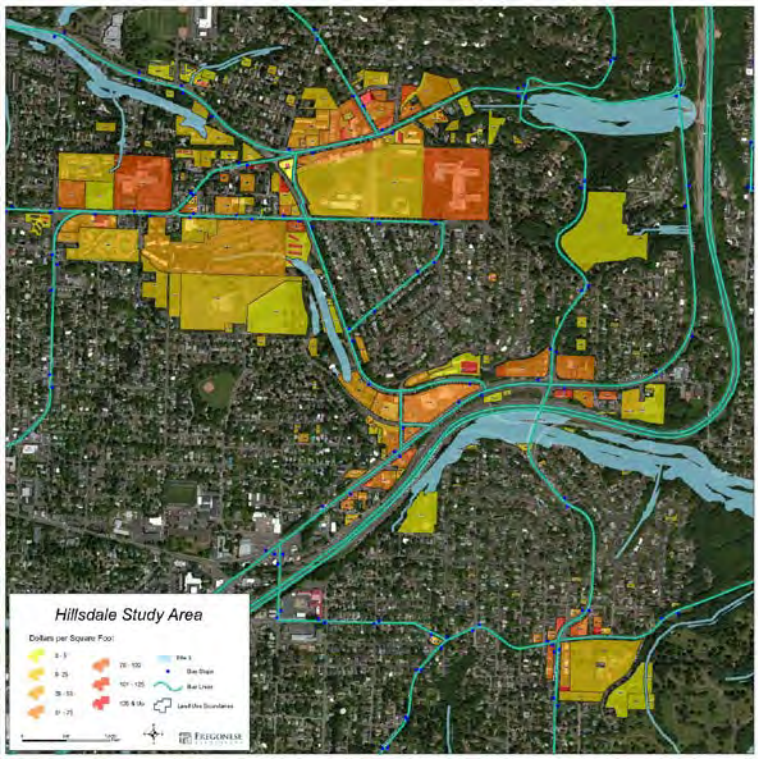
Source: Fregonese and Associates/ECONorthwest

Figure A5. Zoning filter



Source: Fregonese and Associates/ECONorthwest

Figure A6. Final study area and potentially redevelopable parcels, with urban amenities



Source: Fregonese and Associates/ECONorthwest

A.3 SELECTION OF CATALYTIC SITES

The GIS filters described in Section A.2 allowed us to produce maps of the parcels (tax lots) most ripe for development, given the standard and supportable assumption that vacant parcels would be easier to develop than developed parcels. Our focus was vacant parcels, with larger ones being preferable (fewer land assembly problems) to smaller ones. We used these parcels as guides for identifying one to two *catalytic sites* in each study area made up of one or more parcels that a reasonable developer might attempt to develop.

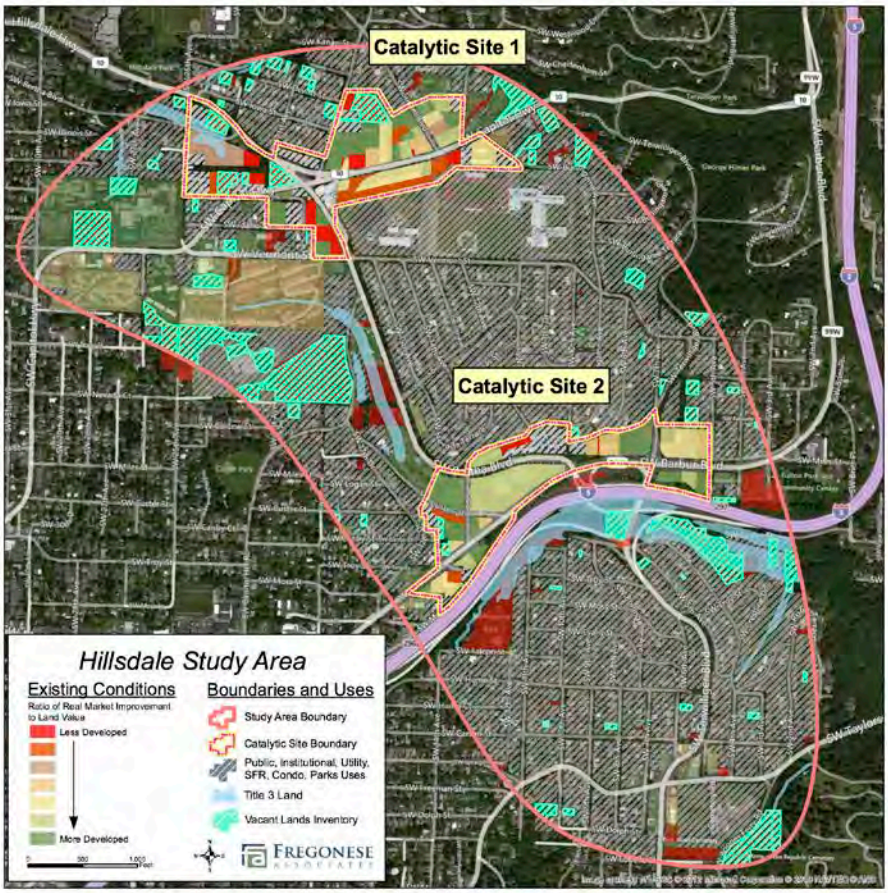
The process we used to identify catalytic sites was to one that a private-sector developer would take (in contrast to the supply-side process more typical for local-government planning). Once potentially redevelopable candidate sites are identified by city planners, developers examine the feasibility of different development types and compatibility to weigh price, risk, and return on investment. Sometimes vacant parcels are the most attractive for development; other times previously developed parcels present the greatest upside. From a developer's perspective, the most attractive parcels are in places that market forces and the developer's concept of development can make more valuable.

Catalytic sites are not the easiest sites to develop, but they are not necessarily the hardest. They do, theoretically, provide the best opportunities for getting the kind of development that the 2040 Growth Concept, Design Types, and Framework Plan are trying to achieve. The selection of these catalytic sites allowed us to address parcelization in the broader context of desired development. Specifically, the sites selected for evaluation in the case studies were not selected because they had small parcels that might be causing problems, but because they were in locations that presented the best opportunities for the kind of development that might transform neighborhoods in the directions encouraged by regional policy.

We confirmed that the chosen sites are "potentially catalytic" with representatives of public entities that have jurisdiction in each of the ten study areas. Given extensive knowledge of their jurisdictions, we asked these representatives if the sites we selected provide good opportunities for (1) the kind of development that local and regional plans are trying to achieve, and (2) "catalyzing" similar or related development in the study area. We gave our respondents the opportunity to suggest alternative catalytic sites if they did not agree with our initial assessment.

Figure A7 below presents a map of two catalytic sites—denoted by the red-beige boundaries—selected for one of the study areas (Hillsdale). These sites contain many of the same potentially redevelopable parcels identified in Figure A6. Parcels may have been added, however, to catalytic site boundaries not because they are vacant or underutilized but because they are located in an area that presents opportunities for development, yet has failed to provide development of the type that Metro policies desire. Our goal is to determine to what extent, if any, parcelization has inhibited development at these catalytic sites.

Figure A7. Catalytic sites with land use and real market value.



Source: Fregonese and Associates/ECONorthwest

A.4 ASSESSMENT OF THE CONTRIBUTION OF PARCELIZATION TO DEVELOPMENT PROBLEMS

The analysis described in Sections A.2 and A.3 of this appendix helped determine the supply of sites suitable for regionally viable development within the study areas. The analysis described in this section examined the demand (e.g., given a site suitable for development, why isn't it already

developed with a regionally viable building product mix?). The answer may be parcelization, but it may be other factors. This exercise (1) evaluated the overall feasibility of assembling the parcels for development, and (2) examined to what extent parcelization has hindered or helped development at each site from a market demand perspective, and to what extent it may be tied to other causes:

- Parcelization: is the site too small, fragmented, or oddly shaped?
- Expectation of owners: do individual property owners overvalue their property above what the market says it is worth?
- Neighborhood opposition: local politics might make a certain development type unfeasible, regardless of property conditions.
- Personal motives: individual property owners might not have an incentive to sell or develop (e.g., being close to retirement, realizing a perpetual positive cash flow).

For each catalytic site, we addressed (1) the extent of parcelization, (2) the extent of development challenges, (3) the extent to which we can attribute the development challenges to parcelization (relative to other causes), and (4) potential ways to reduce the challenges of parcelization.[3] Our assessment of the contribution of parcelization to development challenges at each catalytic site is based on the project's overarching question (How big an obstacle is parcelization to the development of desired building types in certain 2040 Design Types, relative to other obstacles?), and not on individual parcels. We did not, for instance, examine individual parcels within the catalytic sites for issues that inhibit development (e.g., lack of driveway entitlements, etc.) but determined, on average, why parcels in each study area have not developed as desired by the 2040 Growth Concept. Our focus was on the obstacles preventing development in the catalytic sites, and on the relative importance of parcelization as an obstacle.

We used three methods for evaluating the contribution of parcelization to development problems at each of the study areas and catalytic sites:

- **A.4.1 Evaluation of quantitative metrics** describes how we selected and measured factors that help us to evaluate development challenges for each case study. For each metric we estimated its overall contribution to case study development challenges.

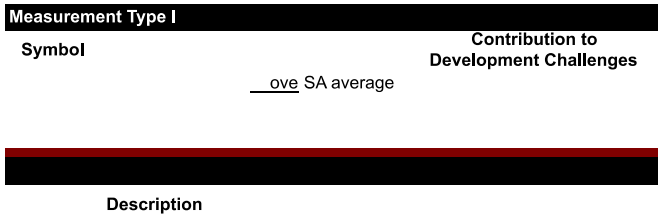
[3] The results of our study area and catalytic site analysis are presented in Appendix B of this report.

- **A.4.2 Selection of building types** explains how we identified example building product types to test whether characteristics of parcelization are inhibiting development. If certain building types cannot be built on existing developable parcels without assembly (e.g., the parcels are too small or fragmented), then parcelization may be an issue preventing desired development.
- **A.4.3 Investigation of other obstacles for development** explains that we considered the effects other difficult-to-measure factors impose on development feasibility. We considered anything normally listed in a development pro forma that affects overall financial feasibility.

A.4.1 GIS EVALUATION OF SITE CHARACTERISTICS

For each catalytic site we used GIS analysis techniques to assess development challenges for a set of quantitative metrics. We measured these metrics in one of two ways: Measurement Type I and Type II, which indicate whether a higher or lower metric value suggests a greater or lessor contribution to development challenges (Figure A8).

Figure A8. Measurement type description for determining quantitative metric contribution to development challenges



Source: ECONorthwest.

The concept is simple. The greater presence of some measurable attributes makes development easier, so development is less of a challenge (Type I); the greater presence of other measurable attributes makes development harder so development is less of a challenge (Type I); *Measurement Type I* is used when a greater metric value indicates a lower contribution to development challenges. Metrics are evaluated relative to the study area average: a value 10% above or below the study area average moves the contribution to development challenges from "neutral" to "low" or "high" depending on the measurement type. For example, if Catalytic Site X has a value on some desirable (Type I) metric that is 10% greater per acre than the study area it belongs to, this metric is designated as posing a

"Low" challenge to development at that catalytic site, *relative* to the study area.[4]

The symbols are consistent across the measurement types with respect to "level of challenge": the green circle indicates the challenge is relatively "Low," the blue square indicates that the challenge is about verger ("Neutral)" for the study area, and the red X indicates "High" challenges to development relative to the study-area average.

Figure A9 below contains (for each metric) a description, its units of measurement, data source, and measurement type:

Figure A9. Description of quantitative metric

Metric	Units	Description / Source	Measurement Type
of Land Availability			
Vacancy	SqFt/Acre	Metro vacant lands inventory, excludes parks and open space; RLIS April 2012.	Type I
Brownfields	SqFt/Acre	Vacant, underused, potentially contaminated sites; Oregon DEQ 2012.	Type II
IMP/LV Ratio	SqFt/Acre Over .75	Real market improvement value divided by land value; RLIS April 2012.	Type II
Metro Title 3 Land	SqFt/Acre	Areas within Metro's Stream and Floodplain Protection Plan; RLIS April 2012.	Type II
of Parcelization			
Parcel Size	Parcels/Acre	Size of individual taxlots based on assessor records; RLIS April 2012.	Type II
Ownership	Owners/Acre	Unique property owners based on assessor records; RLIS April 2012.	Type II
Lot Coverage	Sqft Covered / Acre	Metro's building footprint database and assessor records; RLIS April 2012.	Type II

Source: ECONorthwest.

The metrics are divided into two categories of: (1) land availability; and (2) parcelization:

Metrics of land availability:

- **Vacancy.** This metric measures vacant land (e.g., without buildings, improvements, or identifiable land use) as determined by Metro. Parks and open spaces are not included in this metric. Higher average vacant square footage per acre indicates a greater supply of land available for development.
- **Brownfields.** Vacant, underused, and potentially contaminated sites are included in this metric. Unlike the Vacancy metric, Brownfields

[4] The study area averages for each of the characteristics excludes single family residential, condominium, public, institutional, and utility land uses.

indicates sites that may otherwise appear ripe for development, but will likely add a (potentially fatal) cost to development: for cleanup and remediation of contamination. The presence of brownfields indicate greater contribution to development challenges.

- **IMP/LV Ratio.** Assessor-estimated real market value is one measure of a property's value.[5] Total real market is made up of two estimated market values: land and improvements. Calculating the ratio of land to improvement value is a method for estimating existing development conditions on a property. An improvement to land value ratio of below 1 indicates that the land is valued at more than the land and perhaps it is not being used for its highest and best use (i.e., it is being underutilized).The rents one would generate in perpetuity with a $50,000 building, for instance, would not justify an investment of $1 million for the land underneath. A surface parking lot in a high demand area (e.g., the downtown core) may be an exception to this observation. We use the threshold of .75 for our evaluation metric; the more square feet per acre above this threshold, the less area is available for redevelopment.
- **Title 3 land.** Title 3 is Metro's designation for land within its Stream and Floodplain Protection Plan. We use this metric as a proxy for land that is vulnerable to natural hazards such as flooding and soil erosion. Development of these lands comes with the added cost associated with mitigation and remediation of these hazards. The presence of Title 3 land indicates greater contribution to development challenges.

Metrics of parcelization:

- **Parcel size.** This metric measures the number of parcels per acre: more parcels per acre indicates a smaller average parcel size, a greater need to assemble parcels for development, and therefore a greater contribution to development challenges.
- **Ownership.** The effects of small parcel size can be reduced if the parcels are under a single ownership. This metric accounts for where parcels owned by identical owners reduces the challenges posed by land assembly. A higher concentration of unique owners per acre indicates greater contribution to development challenges.

[5] Other methods, such as professional appraisal or a pro forma analysis of the ratio of annual net operating income to capitalization rate requires careful examination on a property-by-property basis. It would not be practical to use these methods across ten study areas and thousands of individual properties to estimate value.

- **Lot coverage.** Lot coverage is a measure of parcel density. Lot coverage, and similarly floor-area ratios (FARs), is highest in dense areas where land values are greatest. A higher lot coverage indicates greater contribution to development challenges stemming from higher land prices, less physical space to meet parking and zoning standards, and greater need to assemble parcels for development.

Section A.2 of this appendix explains that our analysis is focused on parcels that are currently—or could become—mixed-use, multi-family, or commercial. Single-family residential parcels were largely excluded from the analysis, except in some cases where their zoning designation allows for higher-density redevelopment. We also excluded public, institutional, and utility uses from the final analysis. Our analysis of the evaluation metrics does not consider these excluded parcels; for the remaining parcels, the metrics are comparable across study areas, and are normalized by acre.

Figure A10 displays a sample study area evaluation using the metrics described in Figures A8 and A9.

Figure A10. Sample study area evaluation for Hillsdale

Metric				Average Values for:	
of Land Availability					
Vacancy	SqFt/Acre				
Brownfields	SqFt/Acre				
IMP/LV Ratio	SqFt/Acre Over .75				
Metro Title 3 Land	SqFt/Acre			.3	5,167.5
of Parcelization					
Parcel Size	Parcels/Acre	✖	✖	1.2	0.6
Ownership	Owners/Acre	✖	✖	1.4	0.3
Lot Coverage	SqFt/Acre	✖	✖	6,631.2	5,212.4

Source: ECONorthwest.
Note: Real market value figures exclude public, institutional, and residential uses.

Figure A10 indicates, for instance, that vacancy in Catalytic Site 1 is greater than 10% above the study area average, per acre. It is the opposite for Catalytic Site 2. Yet, vacancy within the UGB is almost three times as high, per acre, relative to the Hillsdale study area. Figure A10 also indicates both catalytic sites show characteristics of parcelization: more parcels and owners per acre relative to the study area and UGB.

We were careful not to assess the prevalence of parcelization with too low a threshold. It is very likely that some areas with low amounts of recent development will also be areas with few large parcels. That seems inevitable, for example, in most Portland neighborhoods: they are almost all without large parcels, and some of them are growing at slower rates than

others. These areas may exhibit characteristics that indicate parcelization (e.g., small parcel sizes, many unique owners), but have in fact developed consistent with goals found in the 2040 Growth Concept. The more difficult research question is sorting out the degree to which the parcelization is contributing to the problem in those areas that are not realizing development consistent with regional goals.

If parcelization is more or less ubiquitous for some jurisdictions or design types, and if some design types in some jurisdictions are performing well, then parcelization, by itself, is not a sufficient condition for identifying under-performing development. In fact we determined that some areas in the region score "High" for development challenges under the parcelization metrics, yet are generally considered places of successful development (NW 23rd Avenue and the Pearl District are two examples).

Given that finding, our challenge was to use the case study analyses in Appendix B to try to describe what other conditions contribute to under performance, how parcelization interacts with those conditions, and what combinations of conditions are likely to make parcelization more or less important.

A.4.2 EVALUATION OF BUILDING TYPES

Metro's *Climate Smart Communities* study has defined 16 development typologies and 30 building product types as regionally viable, meaning they are consistent with regional goals for density and character. We used the building types to test whether characteristics of parcelization (small parcels, many owners) are inhibiting development. We began by identifying relevant development typologies—at least a block in size but no more than several blocks—for our study areas and then boiled down to a set of compatible building types using existing *Climate Smart* guidelines that define an appropriate building type mix for each development typology. Development typologies are at least a block in size, and are made up of a mix of building types and land uses. To select building types, we (1) identified development typologies within each study area and then (2) selected a subset of building types that would be potentially viable, eliminating product types that would be incompatible in every study area due to a use, lot size, density, or market mismatch (e.g., a mixed-use high rise tower, heavy industrial factory or warehouse, large format retailer, etc.).

Identification of development typologies within study areas

The *Climate Smart Communities* work has identified 16 "development typologies" that are "classification of places, defined in terms of their character, role, and function." Development typologies resemble Metro

2040 design types—both definitions identify regionally preferred styles of development—except that the former are defined quantitatively: by dwelling units and jobs per acre, and mix of uses. Metro 2040 design types are defined by policy. Within each development typology, usually applied on a block by block basis, there exist a combination of building types that achieve these quantitative targets. Each study area is made up of a handful of typologies, and within each typology, a mix of building types are used to "create or enhance a place."[6]

Figure A11 below displays the development typologies consistent with the 10 study areas, based on housing and employment density, and land use mix. We find that 11 of the 16 typologies are consistent with existing and preferred development in our study areas. The building types that fall outside these bounds were eliminated from our analysis.

Figure A11. Study area target development typologies, with net densities and land use mix.

	Development Typology	Dwelling Units/Acre	Jobs/ Acre	Land Use Mix SFR	MFR	COM	IND
1	Urban Residential	200	31	0%	88%	12%	0%
2	Commercial Node	N/A	40	0%	0%	100%	0%
3	Neighborhood Node	N/A	30	0%	0%	100%	0%
4	Historic Downtown	24	72	0%	39%	61%	0%
5	Urban Transit Corridor	47	74	0%	52%	48%	0%
6	Regional Corridor	43	42	0%	61%	39%	0%
7	Main Street	69	52	0%	65%	35%	0%
8	Urban Neighborhood	20	7	39%	46%	15%	0%
9	Transitional Neighborhood	13	3	59%	33%	8%	0%
10	Suburban Neighborhood	8	N/A	88%	12%	0%	0%
11	Light Industrial / Campus District	N/A	14	0%	0%	0%	100%

Source: *Climate Smart Communities*.

Identification of building types compatible with study areas

The project team identified applicable building types by first eliminating those types that do not belong in the final study areas based on development typologies found in Figure A11. The following is a list of *Climate Smart Communities* building types that were eliminated from consideration for all study areas based on the development typology densities shown in Figure A11. A short description of each excluded building type, with average size and density, and a reason for exclusion follows:

[6] Source of quotations: *Climate Smart Communities* Development Typologies Descriptions, September 2011.

Residential and Mixed-Use:

- **A1 SFR Large Lot (3,000 sqft/unit; 6 units/acre).** The density, measured in dwelling units per acre, is much lower than the targeted development typologies residential densities.
- **A2 SFR Houses – Suburban Medium Lot (2,500 sqft/unit; 7 units/acre).** The residential density is similar to that of the Suburban Neighborhood typology, but is much lower than any of the other typologies.
- **A3 SFR Houses – Urban Medium Lot (2,250 sqft/unit; 10 units/acre).** Although this building type represents a higher residential density, it is not a type we wish to test for development because of small lot size.
- **B SFR Narrow Lot Houses (1,750 sqft/unit; 17 units/acre).** Although this building type represents a high residential density, it is not a type we wish to test for development because of small lot size.
- **G SRO Housing (300 sqft/unit; 202 units/acre; 42 employees/acre).** While this building type is at the high end for our target development typologies residential density, it would be out of character with our study areas.
- **K High Rise Tower (1,200 sqft/unit; 268 units/acre; 17 employees/acre).** This building type is too dense for the target development typologies residential density, and would be out of character with our study areas.
- **N Mixed-Use High Rise Point Tower (800 sqft/unit; 394 units/acre; 17 employees/acre).** This building type is too dense for the target development typologies residential density, and would be out of character with our study areas.

Commercial:

- **L2 High Rise Office (40,000 sqft lot; 892 employees/acre).** This building type is too dense for the target development typologies employment density, and would be out of character with our study areas.
- **L3 Low Density Commercial (20,000 sqft lot; 19 employees/acre).** Although the employment density is consistent with the target development typologies, this is not a building type we wish to test because it is low density and is not the preferred development type found in many local redevelopment plans.
- **L6 Large Format Retail (100,000 sqft lot; 12 employees/acre).** Although this building type represents an employment density

consistent to the target development typologies, it is not a type we wish to test for development because of large lot size.

Industrial:

- **M2 Heavy Industrial (250,000 sqft lot; 6 employees/acre).** The employment density is too low, the lot size is too large, and this building type would be out of character with our study areas.

After eliminating incompatible building types, we examined each study area as a reasonable developer might and asked: Given we are interested in Area X, where would we develop and what would it look like? Are available sites suitable for the type of product we want to build? The answers to these questions were based on (1) a quantitative assessment of average building type development costs, lot sizes, uses, and densities; and (2) a professional assessment of the feasibility of the building types at each of the catalytic sites.

From the remaining subset of suitable building types, we selected those types that align to each study area's goals. Additionally, we compared average development type sizes, densities, and market rents against the catalytic sites identified in each study area (Section A.3 of this appendix) and asked: can the viable building types fit on parcels within the selected sites? Do the types conform to the local aesthetic? Are market rents aligned to area demographics and competitive with nearby properties? Our goal was to test several building types in each study area to help understand why a certain product types work in Area X but has failed in Area Y.

Figure A12 shows the project team's quantitative assessment of building types. It contains a description of each of the retained building types. It ws the basis for eliminating incompatible or unfeasible building types (e.g., a building that requires an average lot size of 20,000 square feet cannot be built in areas where lots are less than 10,000 square feet). This process allowed us to focus on building types appropriate for every study area.[7]

[7] Note that the selected sites and building types are intended to be illustrative. There is no assertion on behalf of the project team—or Metro—that these individual sites should be or will be developed as illustrated. The intent is to use these sites to draw general conclusions about the extent of parcelization in each study area.

Figure A12. Retained building type matrix.

Code	Description	Dwelling Units/Acre	Jobs/ Acre	Lot Size (sqft)	Height (stories)	FAR	Est. Land Value (/sqft)	Development Typologies
C	Attached Houses, Medium Density	29	N/A	10,000	3	1.13	$8	4, 8, 9, 10
D	Attached Houses, High Density	37	N/A	10,000	3	1.02	$9	4, 5, 6, 8
E	Plexes	35	N/A	5,000	2	0.80	$10	4, 5, 6, 8
E1	MFR Moderate Density	49	N/A	20,000	3	1.06	$10	5, 6
E2	MFR Medium Density	70	N/A	43,560	4	1.32	$10	5, 6, 7
E3	MFR High Density, Small Units	313	N/A	15,000	6	4.67	$10	1, 5
E4	MFR High Density, Large Units	154	N/A	15,000	6	3.93	$10	1, 5
F	Corridor Apartments	64	N/A	20,000	4	1.34	$10	5, 6, 7
H	Neighborhood Mixed-Use	89	24	10,000	4	4.00	$12	5, 6, 7
H1	Suburban MUR, Low Density	32	9	10,000	3	1.08	$8	4, 5, 6, 7, 8
H2	Suburban MUR, Medium Density	88	40	39,200	4	3.40	$10	5, 6, 7
H3	Suburban MUR, High Density	106	46	43,560	5	4.25	$10	5, 6, 7
I	Mid-Rise Mixed-Use, Small Units	166	21	40,000	6	3.52	$10	1, 5, 6, 7
I1	Mod-Rise Mixed-Use, Small Units	399	109	40,000	12	8.51	$10	1, 5
J	Mid-Rise Mixed-Use, Large Units	112	15	40,000	6	4.29	$10	1, 5, 6, 7
L1	Low Rise Office	N/A	96	40,000	5	0.83	$20	2, 3, 4, 5, 7
L4	Main Street Commercial	N/A	124	5,000	2	1.90	$20	2, 3, 4, 5, 7
L7	Business Park / Campus Industrial	N/A	11	150,000	1	0.32	$5	11
M1	Light Industrial	N/A	14	100,000	1	0.33	$7	11

Source: *Climate Smart Communities*.
Note: Development typologies number corresponds to Figure A11.

The project team confirmed the viability of the building product types by asking jurisdiction representatives the following:

- The sites fall into two general categories: (1) residential, commercial, mixed-use; and (2) industrial. Based on the building type codes listed in Figure A12, we believe codes suitable for Category 1 are C, D, E, E1, E2, E3, E4, F, H, H1, H2, H3, I, I1, J, L1, L4, and for Category 2 are L1, L7, M1. Which building types would you select for the case study sites we have chosen in your jurisdiction (i.e., which building types represent the development you want to see in your community)?
- Are the building densities and character acceptable to you? If not, what alternative building types not shown in Figure A12 would you recommend, and why?

We used the building types to test whether characteristics of parcelization (small parcels, many owners) are inhibiting development. If a preferred building type requires a lot size of 5,000 square feet, for instance, and no contiguous group of vacant or underutilized parcels of this size exist within a catalytic site, then we may infer that parcelization may be rendering such a hypothetical development infeasible. We may determine that regardless of market rents, regionally preferred building types are being inhibited by the fact that many small parcels are making land holdings under a single ownership too small for effective development.

A.4.3 INVESTIGATION OF OTHER OBSTACLES TO DEVELOPMENT

We considered the effects other difficult-to-measure factors have on development feasibility; for example, general market trends, accessibility (transportation and transit), parking, development fees, and zoning codes. We considered anything normally listed in a development pro forma that affects overall financial feasibility. Exhibit 1 in the main report displays a model of all these factors that contribute to the price of built space. By showing how many factors can affect housing price (and, thus, production), Exhibit 1 implies that changes in any of these factors can affect the production of real estate products—can make development more or less likely. In the context of this study, the question is: which of these factors can potentially be (1) significant *obstacles* to development, and (2) influenced by public policy.

Local developers and representatives of public sector jurisdictions within each of the case-study areas were consulted to determine the magnitude each of these factors plays as an obstacle for development feasibility relative to the obstacle of parcelization. We also investigated these obstacles based on our experience in real estate economics, and a review of the professional literature. The factors are discussed in detail in Chapter 3 of the main report and are analyzed on a case study basis in Appendix B.

The results of this exercise allow us to explain what factors are working for and against development—within each case-study area—and to what degree parcelization fits in the discussion.[8] We then generalized from the case studies to make an estimate of the magnitude of problems parcelization poses regionally (see Chapter 3 of the report).

[8] Note that we did not investigate every obstacle to development; instead, we investigated factors that influence development and estimated where parcelization falls in scale of severity.

Appendix B Case Study Analysis

ECONorthwest applied the methods described in Appendix A to get the results summarized in this appendix. For each study area, this appendix presents a description of physical characteristics and an assessment of factors contributing to development challenges. For the catalytic sites within study areas, we estimate: (1) the extent of parcelization, (2) the extent of development challenges, (3) the extent to which we can attribute the development challenges to parcelization (relative to other causes). The analysis provided in this appendix relies on professional judgment, interviews with developers, and feedback from representatives of cities or counties within each of the study areas.

We used three methods for evaluating the contribution of parcelization to development problems at each of the study areas and catalytic sites, described briefly here and in detail in Section A.4 of Appendix A:

- **GIS evaluation of site characteristics.** For each characteristic, we estimated its overall contribution to case-study development challenges.
- **Evaluation of building types.** We used example building product types to test whether characteristics of parcelization (small parcels, many owners) are inhibiting development.
- **Investigation of other obstacles to development.** We considered anything normally listed in a development pro forma that affects overall financial feasibility.

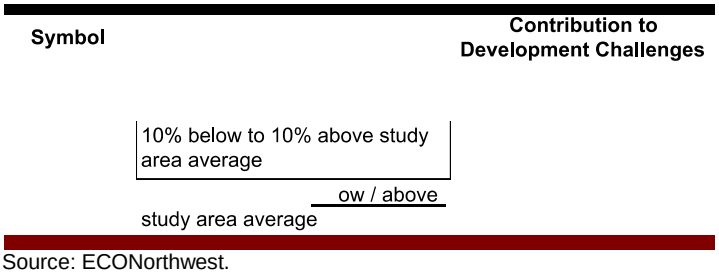
Following a summary of our methods, case studies are discussed as follows:

- **B.1: Lake Oswego Downtown**
- **B.2: McLoughlin Blvd**
- **B.3: Hillsdale**
- **B.4: West Gresham / Rockwood**
- **B.5: Close-in SE Corridors**
- **B.6: Beaverton Downtown**
- **B.7: Beaverton Industrial / Employment Area**
- **B.8: Tigard Downtown**
- **B.9: Tualatin Downtown**
- **B.10: Hillsboro Old Town**

GIS EVALUATION OF SITE CHARACTERISTICS

For each of the catalytic sites, we quantitatively assessed development challenges using a set of evaluation metrics. In some cases, we recognize that a greater metric value indicates a lower contribution to development challenges; in other cases, a greater metric value indicates a higher contribution to development challenges, and vice versa. Figure B1 explains the evaluation threshold we used to determine each metric's contribution to development challenges. It also assigns a symbol to each threshold; these symbols are consistent across all case study analyses in this appendix.

Figure B1. Evaluation threshold description for determining quantitative metric contribution to development challenges



Source: ECONorthwest.

Figure B1 indicates that the metrics are evaluated relative to the study area average: a value 10% above or below the study area average moves the contribution to development challenges from "Low" to "Neutral" or "High" depending on the specific metric (e.g., if Catalytic Site X has a metric value greater than 10% above the per acre average for the study area it belongs to, and a higher prevalence of this metric is desirable to developers, this characteristic is designated as posing a "Low" challenge to development for that catalytic site *relative* to its study area).[1] The symbols are consistent across all study areas: the circle indicates "Low," the square "Neutral," and the X "High" challenges to development.

Figure B2 below contains—for each quantitative metric—a description, its units of measurement, data source, and measurement type (for a full description of each evaluation metric and a rationale for inclusion in this report, see Section A.4 of Appendix A). For every metric, except for Vacancy, we define a greater metric value as indication of a higher contribution to development challenges.

[11] The study area averages for each of the characteristics excludes single family residential, condominium, public, institutional, and utility land uses.

The metrics are divided into two categories: (1) land availability; and (2) parcelization:

- The **metrics of land availability** signal whether development is inhibited due to a lack of buildable land for reasons of: lack of vacancy or underutilization; presence of known brownfields that require costly cleanup and remediation of contamination; presence of high-value structures (relative to land value); and in an area impacted by potential flood and landslide hazards.[2]
- The **metrics of parcelization** indicate the presence of parcelization: (1) small average parcel sizes and many unique owners per acre, and (2) presence of density through lot coverage, indicating greater contribution to development challenges through higher land prices, more parking constraints, and greater need to assemble parcels for development.

Figure B2. Description of metrics

Metric	Units	Description / Source
of Land Availability		
Vacancy	SqFt/Acre	Metro vacant lands inventory, excludes parks and open space; RLIS April 2012.
Brownfields	SqFt/Acre	Vacant, underused, potentially contaminated sites; Oregon DEQ 2012.
IMP/LV Ratio	SqFt/Acre Over .75	Real market improvement value divided by land value; RLIS April 2012.
Metro Title 3 Land	SqFt/Acre	Areas within Metro's Stream and Floodplain Protection Plan; RLIS April 2012.
of Parcelization		
Parcel Size	Parcels/Acre	Size of individual taxlots based on assessor records; RLIS April 2012.
Ownership	Owners/Acre	Unique property owners based on assessor records; RLIS April 2012.
Lot Coverage	SqFt Covered / Acre	Metro's building footprint database and assessor records; RLIS April 2012.

Source: ECONorthwest.

We were careful not to assess the prevalence of parcelization with too low a threshold. If parcelization is more or less ubiquitous for some jurisdictions or design types, and if some design types in some jurisdictions are performing well, then parcelization, by itself, is not a sufficient condition for identifying under-performing development. In fact we determined that some areas in the region score "High" for development challenges under the parcelization metrics, yet are generally considered places of successful development (NW 23rd Ave, and the Pearl District are two examples).

Given that finding, our challenge was to use the case study analyses in Appendix B to try to describe what other conditions contribute to under

[2] The area impacted by flood and landslide hazards is designated as Title 3 Land by Metro. Title 3 Land is protected by Metro's Stream and Floodplain Protection Plan, which aims to identify areas at risk for flood and landslide hazards.

performance, how parcelization interacts with those conditions, and what combinations of conditions are likely to make parcelization more or less important.

SELECTION OF BUILDING TYPES

Metro's *Climate Smart Communities* study has defined 16 development typologies and 30 building product types as regionally viable, meaning they are consistent with regional goals for density and character. We selected 19 building types that were consistent with the development typologies identified in the study areas, and used them to test whether characteristics of parcelization are inhibiting their development (i.e., if parcel sizes are too small to accept these types of development without land assembly).

Figure B3 below is a matrix the project team used to conduct the quantitative assessment of building types. It contains a description of each of the 19 retained building types. The case study analyses found in this appendix refer to building types by the letter found in the "Code" column shown in Figure B3. This matrix allowed us to quickly eliminate incompatible or unfeasible building types (e.g., a building that requires an average lot size of 20,000 square feet cannot be built in areas where lots are less than 10,000 square feet). This process, described fully in Section A.4 of Appendix A, allowed us to focus on building types appropriate for every study area.[3]

Figure B3. Retained building type matrix.

Code	Description	Dwelling Units/Acre	Jobs/ Acre	Lot Size (sqft)	Height (stories)	FAR
C	Attached Houses, Medium Density	29	N/A	10,000	3	1.13
D	Attached Houses, High Density	37	N/A	10,000	3	1.02
E	Plexes	35	N/A	5,000	2	0.80
E1	MFR Moderate Density	49	N/A	20,000	3	1.06
E2	MFR Medium Density	70	N/A	43,560	4	1.32
E3	MFR High Density, Small Units	313	N/A	15,000	6	4.67
E4	MFR High Density, Large Units	154	N/A	15,000	6	3.93
F	Corridor Apartments	64	N/A	20,000	4	1.34
H	Neighborhood Mixed-Use	89	24	10,000	4	4.00
H1	Suburban MUR, Low Density	32	9	10,000	3	1.08
H2	Suburban MUR, Medium Density	88	40	39,200	4	3.40
H3	Suburban MUR, High Density	106	46	43,560	5	4.25
I	Mid-Rise Mixed-Use, Small Units	166	21	40,000	6	3.52
I1	Mod-Rise Mixed-Use, Small Units	399	109	40,000	12	8.51
J	Mid-Rise Mixed-Use, Large Units	112	15	40,000	6	4.29
L1	Low Rise Office	N/A	96	40,000	5	0.83
L4	Main Street Commercial	N/A	124	5,000	2	1.90
L7	Business Park / Campus Industrial	N/A	11	150,000	1	0.32
M1	Light Industrial	N/A	14	100,000	1	0.33

Source: Metro *Climate Smart Communities*.

[3] Note that the selected sites and building types are intended to be illustrative. There is no assertion on behalf of the project team—or Metro—that these individual sites should be or will be developed as illustrated. The intent is to use these sites to draw general conclusions about the extent of parcelization in each study area.

INVESTIGATION OF OTHER OBSTACLES TO DEVELOPMENT

We considered the effects other difficult-to-measure factors impose on development feasibility including general market trends, accessibility (transportation and transit), parking, development fees, zoning codes, etc. We considered anything normally listed in a development pro forma that affects overall financial feasibility. Exhibit 1 in the main report displays a model of all these factors that contribute to the price of built space. Chapter 3 of the main report describes which of these factors can potentially be (1) significant *obstacles* to development, and (2) influenced by public policy.

Local developers and representatives of cities or counties within each of the case study areas were consulted to determine the magnitude each of these factors plays as an obstacle for development feasibility relative to the obstacle of parcelization (see below). We also investigated these obstacles based on our experience in real estate economics, and a review of the professional literature.

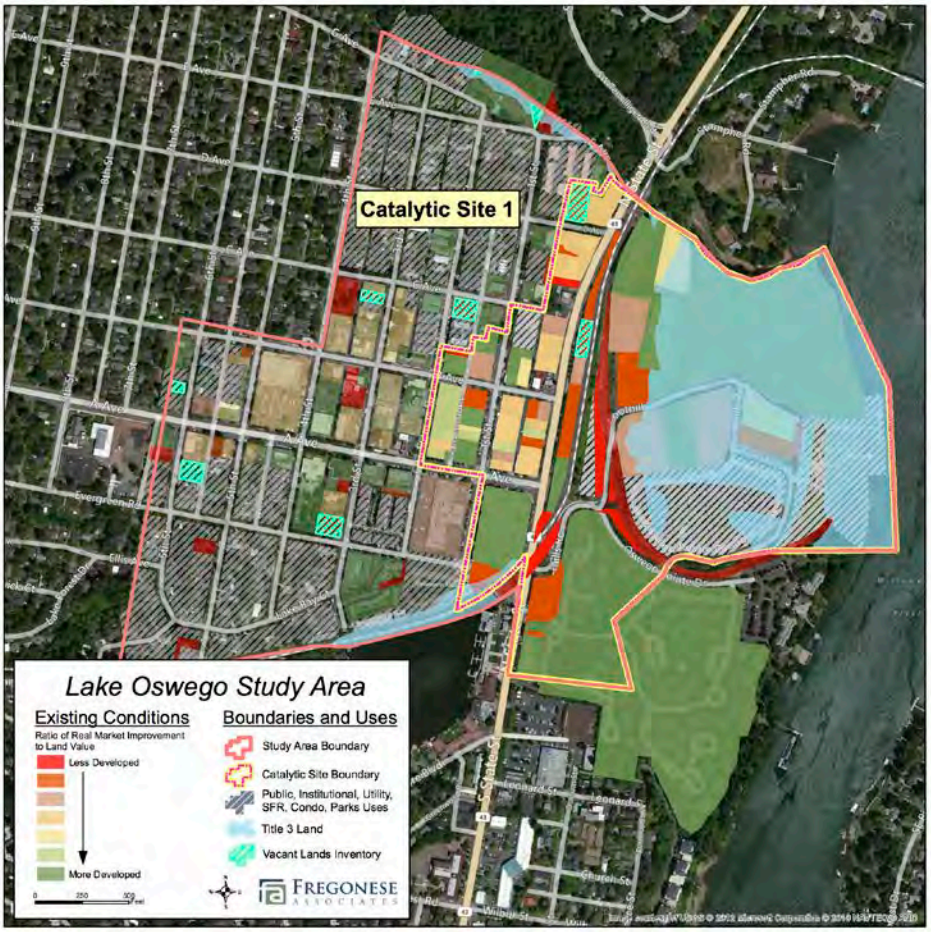
We gratefully acknowledge the assistance of city and county staff who helped us to better understand the effects of parcelization within their jurisdictions: Jane Blackstone, Denny Egner, Sidaro Sin (Lake Oswego); Catherine Comer, Dan Chandler (McLoughlin – Clackamas County); Jay Sugnet (Hillsdale – Portland); Stacy Humphrey (Gresham); Matt Wickstrom (SE Corridors – Portland); Tyler Ryerson, Don Mazziotti (Beaverton Downtown and Industrial / Employment Area); Judith Gray, Sean Farrelly (Tigard); Ben Bryant, Will Harper (Tualatin); Alwin Turiel (Hillsboro).

We also acknowledge assistance provided by several experts on development in the Portland area: Damin Tarlow (Gerding Edlen); Steve Wells (Trammell Crow); Todd Sheaffer (Specht Properties).[4]

[4] Despite all the assistance, ECONorthwest alone is responsible for the report's contents. The contents of this document do not necessarily reflect views or policies of Metro or any public entity or person associated with the project. See full disclaimer at the front of this report for more information.

B.1 LAKE OSWEGO

Figure B.1.1 Lake Oswego study area.



Data sources: Metro RLIS, April 2012; Bing aerial basemap 2012.

Study area summary

The Lake Oswego study area includes the East End Urban Renewal Area, the Foothills Area, and the eastern portion of downtown. N State St bisects the study area north-south, with 4th St and 6th St making up the western boundary. Catalytic Site 1 contains the Foothills area, plus a portion of east downtown as far west as 2nd St.

Figure B.1.2 below displays summary statistics for the study area and the catalytic site. According to this figure, single family residential is the highest proportion of land uses within the study area, followed by commercial and industrial. Catalytic Site 1 is a mix of industrial (the sewer treatment facility in the Foothills area), commercial, SFR and condominium. Site 1 has one half parcel fewer per acre on average relative to the study area. Assessor-estimated market values for improvements are consistent across the study area and Site 1; land value is higher, however, within the study area as a whole.

Development assessment

Figure B.1.3 below presents a quantitative assessment of development challenges facing the catalytic site, in addition to measures of parcelization. According to the metrics, Catalytic Site 1 faces many challenges with regards to physical site characteristics: relative to the study area (excluding single family and public uses), there exists less land vacancy, more brownfields, and more floodplain area on a square foot basis compared to the study

Figure B.1.2. Lake Oswego study area summary statistics.

Statistic	Units	Catalytic Site 1	Study Area Lake Oswego
Area/Density			
Area	Acres	94.1	194.8
Parcels (excl. res, public)	Total/Acre	1.5	2.0
Land Use			
Commercial	Pct of Total	25.3%	24.9%
Industrial	Pct of Total	46.2%	20.9%
Single Family Residential	Pct of Total	10.6%	33.4%
Condominium	Pct of Total	12.7%	8.9%
Multi-Family Residential	Pct of Total	1.1%	7.8%
Public/Institutional/Utility	Pct of Total	2.1%	1.1%
Unused / Unoccupied	Pct of Total	2.1%	3.0%
Other	Pct of Total	0.0%	0.0%
Real Market Value			
Land Value	$/SqFt	$ 13.89	$ 17.75
Improvement Value	$/SqFt	$ 34.02	$ 34.01
Total	$/SqFt	$ 47.90	$ 51.76

Source: ECONorthwest.
Note: Real market value figures exclude public, institutional, and residential uses.

area. This area has, however, been targeted for redevelopment due to a need for increased housing supply and a riverfront presence near downtown Lake Oswego. The Foothills District Framework Plan describes how the City and developers will mitigate floodplain and brownfields issues: certainly, this is a case where, despite these obstacles relative to the rest of the city, redevelopment planning efforts are being made.

The parcelization metrics in Figure B.1.3 indicate Site 1 is less parcelized than the study area as a whole. For this site, the number of parcels and owners are less than 10% fewer per acre relative to the study area. The Foothills District Framework Plan identifies, however, high density mixed-use and residential development that do require land assembly – regardless of larger parcel size.

Figure B.1.3. Lake Oswego development assessment metrics.

Metric	Units	Catalytic Site Relative to Study Area	Average Values for: Study Area	Region
		1	Lake Oswego	UGB
of Land Availability				
Vacancy	SqFt/Acre	✖	436.2	7,309.9
Brownfields	SqFt/Acre	✖	3,808.7	1,917.7
IMP/LV Ratio	SqFt/Acre Over .75	■	24,541.0	15,122.9
Metro Title 3 Land	SqFt/Acre	✖	9,254.5	5,167.5
of Parcelization				
Parcel Size	Parcels/Acre	○	2.0	0.6
Ownership	Owners/Acre	○	2.3	0.3
Lot Coverage	SqFt/Acre	■	8,488.8	5,212.4

Source: ECONorthwest
Note: Real market value figures exclude public, institutional, and residential uses.

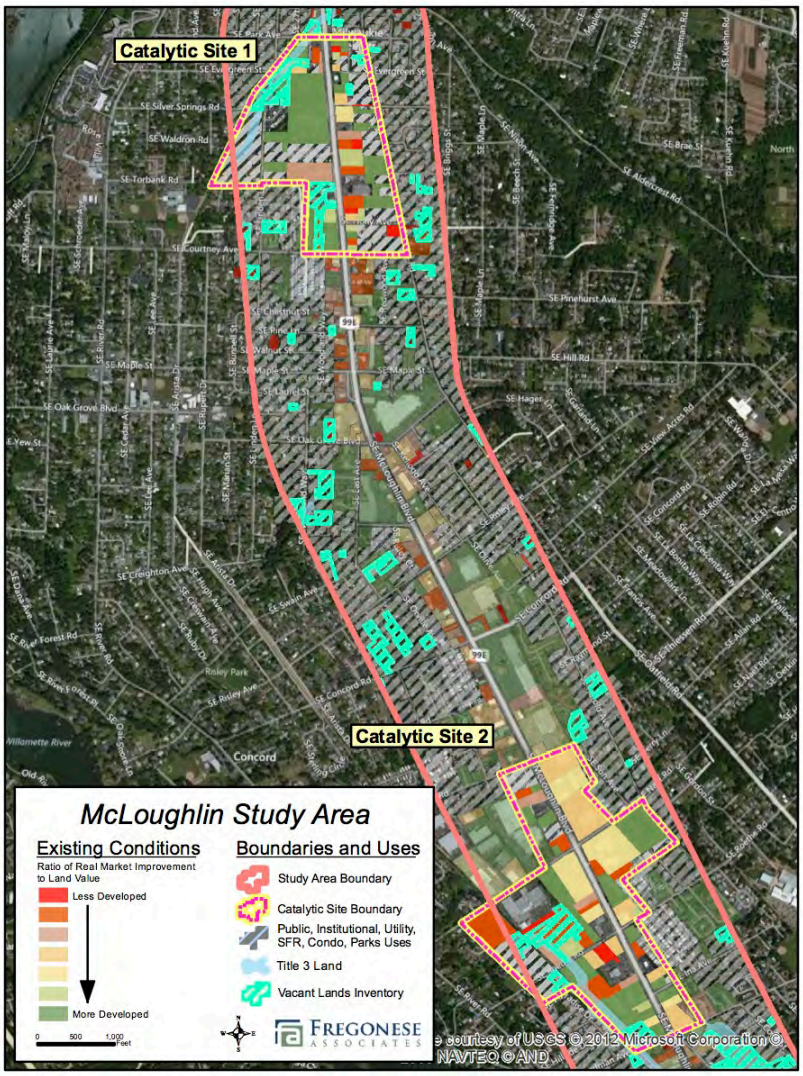
According to City staff, and indicated in Figure B.1.3, there exist large parcels under multiple ownership within the Foothills Area. The Plan, however, appears to overcome the ownership issue and parcelization is not an issue preventing redevelopment from occurring. General market conditions have inhibited development, and on the policy side parking minimums have posed a potential obstacle to redevelopment for the Foothills as well as the downtown area. The City has done a parking study for the downtown area and is currently looking at adopting code amendments (reducing minimums, etc.) to address this issue.

On the west side of N State St within Catalytic Site 1 and the Lake Oswego East End Design District, the City has created a mixed-use redevelopment concept for building types of 3 to 4 stories and 30 to 60 dwelling units per acre (comparable building types: C, D, E, E1, and H1). Parcels in this area average about 29,000 square feet (roughly 1.5 parcels per acre), which is large enough for each of these building types. This average, however, is driven by large parcels within the Foothills area; parcels along N State St only average 10,000 square feet, necessitating land assembly for all building types except for E and potentially C or D (attached housing). The City's redevelopment agency, however, is in the process of assembling the parcels and the major development obstacle for development feasibility will hinge on the market response to this opportunity. Other portions of Catalytic Site 1, such as the southern portion just west of N State St, is under one ownership and redevelopment opportunities are not limited due to parcelization per se, but rather how the owner chooses to use their property (parcelization, a symptom of which is more owners per acre, exacerbates this issue).

From a developer's perspective, the Foothills area proves to be a good development opportunity with the largest obstacles being mitigation costs associated with brownfields and floodplains lands. Another impediment for development is the need to get people safely across N State St (Hwy 43). The Foothills Area absolutely needs connectivity between the Area and the downtown through targeted infrastructure investment. The Foothills District Framework Plan addresses each of these obstacles. Additionally, parking requirements and height limitations along the west side of Hwy 43 have made some development types unfeasible because of the high cost of below grade parking structures.

B.2 MCLOUGHLIN

Figure B.2.1. McLoughlin study area.



Data sources: Metro RLIS, April 2012; Bing aerial basemap 2012.

Study area summary

The McLoughlin study area includes area inside the McLoughlin Area Plan and within a quarter mile of SE McLoughlin Blvd between roughly SE Lark St to the north and SE Glen Echo Ave to the south. Catalytic Site 1 is located in the northern portion of the study area and falls between SE Park Ave and SE Courtney Ave. Catalytic Site 2 is located in the southern portion of the study area and falls between SE Vineyard Rd and SE Boardman Ave.

Figure B.2.2 below displays summary statistics for the study area and the two catalytic sites. According to this figure, a majority of the study area is single family residential, with commercial uses making up nearly one-quarter of the land area. Catalytic Site 1 largely made up of commercial uses, with single family residential representing almost four-tenths the land area. Catalytic Site 2 is also predominately commercial, but has roughly three-tenths of the land area used for industrial purposes; only one-tenth of the area is represented by single family residential uses. Site 2 has fewer parcels per acre (larger in size, on average) relative to the study area. Site 1 has smaller parcels, on average, than both the study area and Site 2. Assessor-estimated market values for land and improvements indicate parcels within the two catalytic sites are consistently valued relative to the study area. Improvement values are lowest in Site 2 where parcels are the largest.

Figure B.2.2. McLoughlin study area summary statistics.

		Catalytic Site		Study Area
Statistic	Units	1	2	McLoughlin
Area/Density				
Area	Acres	98.6	134.9	1,171.5
Parcels (excl. res, public)	Total/Acre	1.3	0.7	1.1
Land Use				
Commercial	Pct of Total	45.7%	47.8%	23.4%
Industrial	Pct of Total	0.0%	27.8%	5.4%
Single Family Residential	Pct of Total	37.5%	11.2%	55.1%
Condominium	Pct of Total	0.7%	0.0%	0.7%
Multi-Family Residential	Pct of Total	10.7%	5.2%	9.7%
Public/Institutional/Utility	Pct of Total	1.3%	1.0%	0.8%
Unused / Unoccupied	Pct of Total	3.9%	2.8%	3.9%
Other	Pct of Total	0.0%	4.2%	1.0%
Real Market Value				
Land Value	$/SqFt	$ 6.84	$ 6.86	$ 6.94
Improvement Value	$/SqFt	$ 10.43	$ 8.16	$ 11.91
Total	$/SqFt	$ 17.27	$ 15.02	$ 18.84

Source: ECONorthwest.
Note: Real market value figures exclude public, institutional, and residential uses.

Development assessment

Figure B.2.3 below presents a quantitative assessment of development challenges facing the two catalytic sites, in addition to measures

of parcelization. According to the metrics, Catalytic Site 1 and 2 are facing challenges with regards to physical site characteristics: both sites have more brownfield- and floodplain-designated land per acre relative to the study area. These characteristics reduce the overall availability of developable land and cause increased development costs due to site cleanup and natural hazards mitigation within the two sites. Both areas also have greater than 10% more vacant land than the study area, although the vacancy rate is much lower, per acre, than the UGB average. Based on assessor market values, Site 1 is roughly as developed and Site 2 is less developed as a function of an estimated improvement to land value ratio (IMP/LV) relative to the study area.

Figure B.2.3. McLoughlin development assessment metrics.

Metric	Units	Catalytic Site Relative to Study Area		Average Values for:	
				Study Area	Region
		1	2	McLoughlin	UGB
of Land Availability					
Vacancy	SqFt/Acre	○	○	1,781.0	7,309.9
Brownfields	SqFt/Acre	✖	✖	1,594.0	1,917.7
IMP/LV Ratio	SqFt/Acre Over .75	■	○	27,136.0	15,122.9
Metro Title 3 Land	SqFt/Acre	✖	✖	1,200.3	5,167.5
of Parcelization					
Parcel Size	Parcels/Acre	✖	○	1.1	0.6
Ownership	Owners/Acre	✖	■	1.3	0.3
Lot Coverage	SqFt/Acre	○	■	7,185.4	5,212.4

Source: ECONorthwest
Note: Real market value figures exclude public, institutional, and residential uses.

The parcelization metrics in Figure B.2.3 indicate that Site 1 exhibits characteristics of parcelization: compared to the study area, Site 1 has greater than 10% more parcels and owners per acre. The study area has three times the parcels per acre found in the UGB. The lot coverage is less than 10% the study area, suggesting small parcels with wide setbacks and more parking relative to the study area. Site 2 does not appear any more parcelized than the study area, and has parcels that are greater than 10% larger per acre.

According to Clackamas County staff, the Clackamas County Economic Development Commission studied the McLoughlin Corridor in 2011 and identified the following as reasons this area has not realized desired type of development: *The area is lacking a "quality" and / or an identity. There is a lack of business clusters. Lack of streetscapes and public investment in beautification of area. Lack of transportation linkages: this area has been referred to as an "island" that is not easily accessible...there is a lack of a cohesive vision by leaders, the business community, and property owners.*

County staff have also recognized constraints relating to aging buildings that make redevelopment and adaptive reuse difficult. Transportation constraints are also a concern among potential tenants and developers: although actual driving time may indicate otherwise, there is a perception that both of the identified sites do not have access to major highways for both customer and product delivery needs.

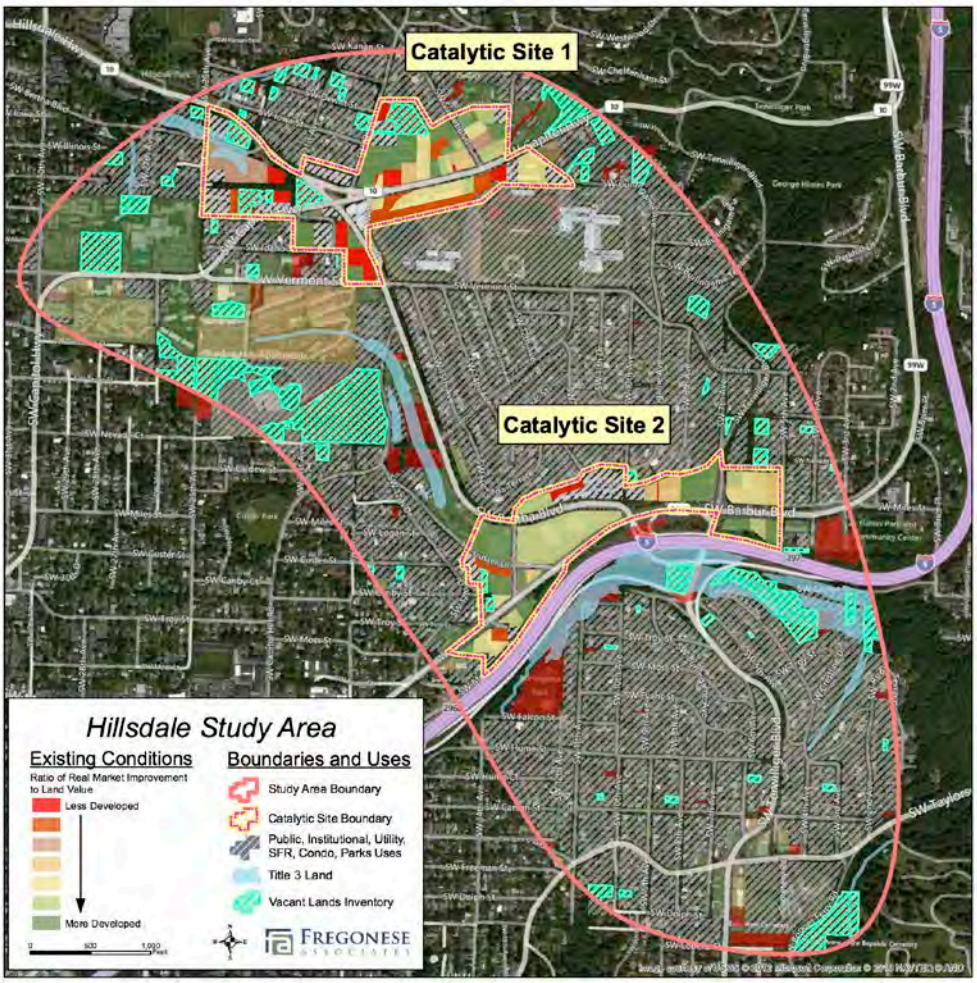
From the developer's perspective, the area is lacking in identity: nothing is happening in the area, and *that* is the problem. Further, there is too much inherent value in the existing buildings to completely tear down and redevelop. Many developers and businesses look to purchase existing buildings, and add value by changing use or introducing efficiencies. This area, however, may currently be at its highest and best use, with little added-value opportunity. Its current use is likely to be its highest use until something major changes (MAX is one possibility). Unfortunately, these existing uses do not align with local or regional planning goals.

The County does indicate that parcelization has been an issue: for significant growth or redevelopment of these areas, their experience has indicated that a single redevelopment site would is necessary as a catalyst for other development. With many property owners of private and public interests, however, it has been difficult to manage a unified vision. The average lot size in the catalytic sites range from 33,500 to 66,200 square feet, large enough for all but the most intense building types. Narrow, deep lots make traditional development difficult, however, even for large parcels because of

difficulty automobile accessibility. Preferred development types, such as campus professional, are large format, require ease of accessibility and would necessitate land assembly in the area.

B.3 HILLSDALE

Figure B.3.1 Hillsdale study area.



Data sources: Metro RLIS, April 2012; Bing aerial basemap 2012.

Study area summary

The Hillsdale study area includes the Metro SW Corridor Plan Hillsdale / Burlingame focus area. Major east-west oriented roads and highways intersecting the study area are SW Capitol Hwy, SW Barbur Blvd, Interstate 5, and SW Taylors Ferry Rd. Catalytic Site 1 contains the intersection of SW Capitol Hwy and SW Beaverton Hillsdale Hwy, and stretches east and north along these two arterials. Catalytic Site 2 falls north of Interstate 5 along SW Barbur Blvd between roughly SW 5th and SW 19th Ave.

Figure B.3.2 displays summary statistics for the study area and the two catalytic sites. According to this figure, a majority of the study area is single family residential (54.9%). Catalytic Site 1 is a mix of commercial and multi-family residential, and Catalytic Site 2 is predominately commercial. Site 1 has almost twice as many parcels per acre compared to the study area and has smaller parcels, on average, relative to Site 2. Assessor-estimated market values for land and improvements are significantly higher per square foot within the two catalytic sites, owing to a higher percentage of commercial uses and proximity to transportation infrastructure.

Figure B.3.2. Hillsdale study area summary statistics.

		Catalytic Site		Study Area
Statistic	**Units**	**1**	**2**	**Hillsdale**
Area/Density				
Area	Acres	48.3	38.5	695.9
Parcels (excl. res, public)	Total/Acre	2.1	1.6	1.2
Land Use				
Commercial	Pct of Total	32.6%	75.7%	21.2%
Industrial	Pct of Total	0.0%	0.0%	0.0%
Single Family Residential	Pct of Total	16.4%	2.1%	54.9%
Condominium	Pct of Total	4.5%	12.4%	1.7%
Multi-Family Residential	Pct of Total	30.2%	6.8%	10.0%
Public/Institutional/Utility	Pct of Total	0.0%	0.0%	0.0%
Unused / Unoccupied	Pct of Total	16.2%	3.0%	9.4%
Other	Pct of Total	0.0%	0.0%	2.8%
Real Market Value				
Land Value	$/SqFt	$ 22.65	$ 28.74	$ 11.33
Improvement Value	$/SqFt	$ 20.15	$ 31.39	$ 20.56
Total	$/SqFt	$ 42.81	$ 60.13	$ 31.88

Source: ECONorthwest.
Note: Real market value figures exclude public, institutional, and residential uses.

Development assessment

Figure B.3.3 below presents a quantitative assessment of development challenges facing the two catalytic sites, in addition to measures of parcelization. According to the metrics, Catalytic Site 1 is not facing many challenges with regards to physical site characteristics: relative to the study area (excluding single family and public uses), there exists more vacancy and less land within floodplain and erosion zones (Title 3 land). Based on assessor market values, it is also less developed as a function of estimate land to improvement values (IMP/LV ratio). Catalytic Site 2 has more obstacles for development relative to the study area: less land vacancy per acre, a higher average of brownfield designated sites per acre, and the assessor data indicate there is little area that is underdeveloped.

Figure B.3.3 Hillsdale development assessment metrics.

Metric	Units	Catalytic Site Relative to Study Area		Average Values for:	
				Study Area	Region
		1	2	Hillsdale	UGB
of Land Availability					
Vacancy	SqFt/Acre	O	✖	2,490.9	7,309.9
Brownfields	SqFt/Acre	✖	✖	738.5	1,917.7
IMP/LV Ratio	SqFt/Acre Over .75	O	✖	25,859.8	15,122.9
Metro Title 3 Land	SqFt/Acre	O	O	1,889.3	5,167.5
of Parcelization					
Parcel Size	Parcels/Acre	✖	✖	1.2	0.6
Ownership	Owners/Acre	✖	✖	1.4	0.3
Lot Coverage	SqFt/Acre	✖	✖	6,631.2	5,212.4

Source: ECONorthwest.
Note: Real market value figures exclude public, institutional, and residential uses.

The parcelization metrics in Figure B.3.3 indicate the catalytic sites are parcelized relative to the study area: for each site, the number of parcels and owners are higher per acre relative to the study area, suggesting additional obstacles for land assembly within these areas. Lot coverage is greater within the catalytic sites, indicating denser development and less surface parking on average for each parcel.

Opportunities for development are greatest in Catalytic Site 1 along both sides of SW Capitol Hwy where existing building heights do not yet align with building codes and zoning. The obstacles for maximizing allowable building heights include community opposition, a lack of appropriate infrastructure (e.g., large enough sewer pipes), and parking ratios that are too high. From a developer's perspective, areas where zoning codes and existing infrastructure cooperate make land assembly possible. For infill areas such as Hillsdale, however, amending the zoning code for tall buildings is not a prerequisite to catalyze the neighborhood: a developer doesn't need to find resident density because it is already there. But creating the demand for a place is tricky: not every intersection can be an epicenter that attracts people from across the region.

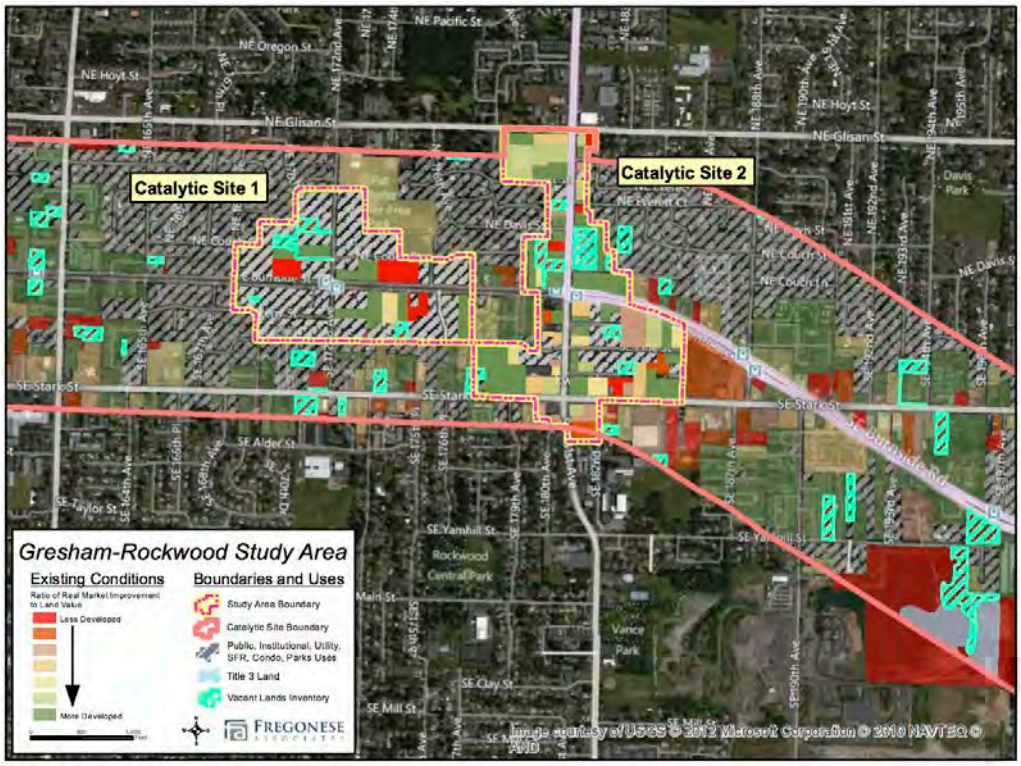
The catalytic sites also lack an identity. Much of the existing development fills a niche for local residents, but does not serve a wider area. There are a lot of entrenched uses, such as banks, that serve a purpose but these uses do not make the area a "destination." One method a developer may use to overcome this obstacle is targeted infrastructure investment: roundabouts to slow traffic down through the area, or new pedestrian thoroughfares.

From the developer's perspective, the issues facing the parcels in both catalytic sites are prior to and independent of parcelization. Parcelization could potentially become a problem along SW Capitol Hwy once the market takes shape and zoning codes are amended. Some of these parcels are wide and narrow, which makes accessibility for mixed-use retail and residential development difficult. The parcels within Site 1 are roughly 20,000 square feet on average. To the extent local plans call for mixed-use residential, this lot size is too small for these building types (F, I, I1, J) and is more suitable for

lower density development (C, D, H, H1). Site 2 parcels average roughly 27,000 square feet, and are also not suitable for high intensity uses absent land assembly.

B.4 GRESHAM - ROCKWOOD

Figure B.4.1. Gresham - Rockwood study area.



Data sources: Metro RLIS, April 2012; Bing aerial basemap 2012.

Study area summary

The Gresham - Rockwood study area includes areas within the Rockwood – West Gresham Urban Renewal Area, and within a quarter mile of E Burnside St between two light rail stops (E Burnside St and 148th Ave to the west and E Burnside St. and 197th Ave in the east). Catalytic Site 1 contains the immediate area around E Burnside St and SE 172nd Ave. Catalytic Site 2 claims the intersection of E Burnside St and SE 181st Ave, and stretches north-south along 181st Ave a quarter mile from E Burnside St.

Figure B.4.2 displays summary statistics for the study area and the two catalytic sites. According to this figure, the study area is made up largely of three uses: commercial, single family residential, and multi family residential. Catalytic Site 1 is two-thirds single family residential, with most of the remaining uses (commercial and multi family residential) located along E Burnside St. Catalytic Site 2 is much more commercially oriented (70.0% of total) than the study area and Catalytic Site 1. Parcels within the two catalytic sites are smaller, on average, relative to the study area. In Site 2, there are almost twice as many parcels per acre compared to the entire study area. Assessor-estimated market values for land and improvements are higher per square foot within Catalytic Site 2 relative to the study area and Catalytic Site 1. Catalytic Site 1 has low land values but high improvement values, indicating existing development but little market interest in the area.

Figure B.4.2. Gresham - Rockwood study area summary statistics.

		Catalytic Site		Study Area
Statistic	**Units**	**1**	**2**	**Gresham**
Area/Density				
Area	Acres	58.7	71.5	934.9
Parcels (excl. res, public)	Total/Acre	1.6	2.0	1.1
Land Use				
Commercial	Pct of Total	6.5%	70.0%	23.9%
Industrial	Pct of Total	0.0%	0.0%	2.5%
Single Family Residential	Pct of Total	66.8%	11.7%	38.5%
Condominium	Pct of Total	1.8%	3.7%	0.8%
Multi-Family Residential	Pct of Total	20.2%	9.2%	20.2%
Public/Institutional/Utility	Pct of Total	0.4%	0.7%	4.1%
Unused / Unoccupied	Pct of Total	4.3%	4.6%	10.1%
Other	Pct of Total	0.0%	0.0%	0.0%
Real Market Value				
Land Value	$/SqFt	$ 8.47	$ 13.52	$ 9.01
Improvement Value	$/SqFt	$ 22.53	$ 17.93	$ 15.30
Total	$/SqFt	$ 31.00	$ 31.45	$ 24.30

Source: ECONorthwest.
Note: Real market value figures exclude public, institutional, and esidential uses.

Development assessment

Figure B.4.3 below presents a quantitative assessment of development challenges facing the two catalytic sites, in addition to measures of parcelization. According to the metrics, Catalytic Site 1 is not facing many challenges with regards to physical site characteristics relative to the study area. Although there is less vacancy per acre, there is less land identified as brownfield or in danger from floodplains and erosion (Title 3 land). Based on assessor market values, both catalytic sites are about as developed on a per acre basis as the rest of the study area (IMP/LV ratio). Catalytic Site 2 has different land availability constraints: it has more vacancy but a greater concentration of brownfields relative to the study area and Catalytic Site 1.

Figure B.4.3. Gresham – Rockwood development assessment metrics.

Metric	Units	Catalytic Site Relative to Study Area		Average Values for:	
				Study Area	Region
		1	2	Gresham	UGB
of Land Availability					
Vacancy	SqFt/Acre	✖	○	1,639.8	7,309.9
Brownfields	SqFt/Acre	○	✖	583.6	1,917.7
IMP/LV Ratio	SqFt/Acre Over .75	■	■	25,920.4	15,122.9
Metro Title 3 Land	SqFt/Acre	○	○	1,285.1	5,167.5
of Parcelization					
Parcel Size	Parcels/Acre	✖	✖	1.1	0.6
Ownership	Owners/Acre	✖	✖	1.3	0.3
Lot Coverage	SqFt/Acre	■	■	7,546.7	5,212.4

Source: ECONorthwest
Note: Excludes public, institutional, utility, single family residential, and condo uses.

The parcelization metrics in Figure B.4.3 indicate that both of the catalytic sites exhibit characteristics of parcelization relative to the study area and the UGB. For each site, the number of parcels and owners are higher per acre compared to the study area, suggesting additional potential obstacles for land assembly. Lot coverage is consistent across the catalytic sites and study area, however, indicating development of consistent density.

Both of the areas within the catalytic sites were annexed to Gresham in 1988 and some historic county lot patterning and land uses still affects development today. Today, the 181st Ave corridor within Catalytic Site 2 is a point of entry to Gresham, is in the urban renewal area, and is partially in the Central Rockwood Plan area indicating a desire by the City to catalyze development. According to city staff, parcelization has manifested itself within both catalytic sites in the form of small lots with a deep and narrow configuration. Lots that are much deeper than they are wide make it challenging to have good site access to all parts of the site; small lot sizes pose challenges for more intense development.

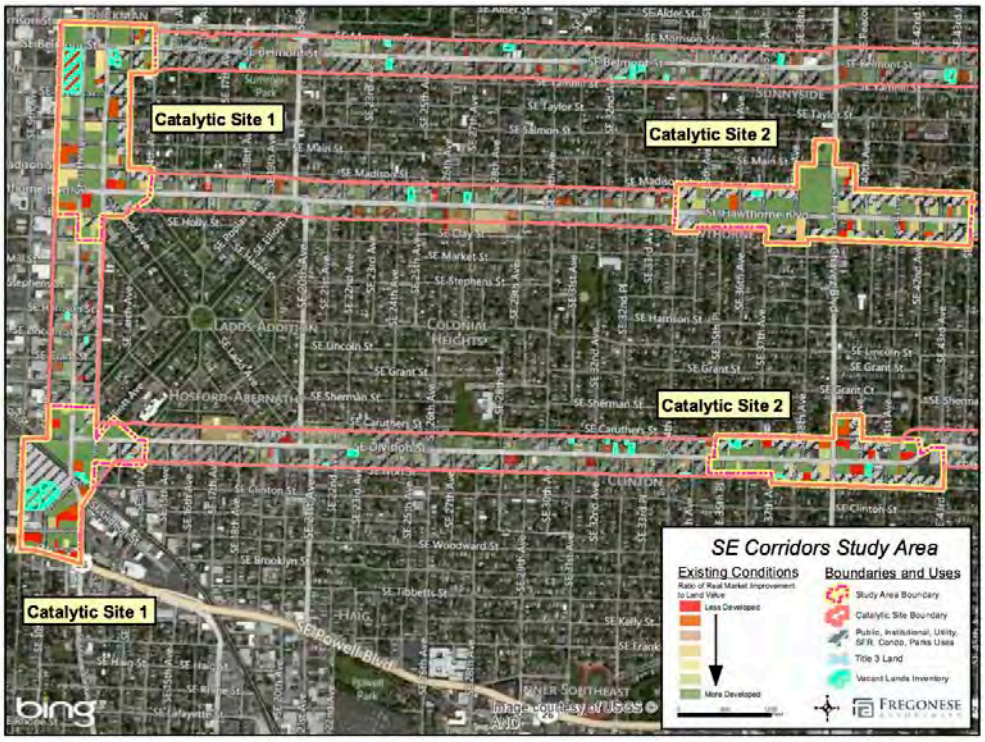
The catalytic sites also face infrastructure constraints that pose challenges for increased development investment: a relatively wide street with infrequent crossing opportunities provides few opportunities for dense pedestrian-friendly development. Developers indicate that an existing lack of market interest, rather than parcelization, is the greatest existing challenge for development. The area needs to show it can drive auto and pedestrian traffic before development will follow. The developers note that an initial infrastructure investment of park and ride lots situated around the MAX line will draw auto traffic to the area, but it will require a challenging market-driven change to catalyze pedestrian friendly uses to the area – perhaps through adaptive reuse of the parking structures well after the auto traffic has been generated.

Within the catalytic sites, the following building types are generally permitted by code: C, D, E1, E2, F, H, H1, plus L1 and L4 for Site 2. Other types are a higher density than permitted by code. Some higher density types (H2, H3, I) may be considered in the future. Average parcel sizes of roughly 27,000 (Site 1) and 22,000 square feet are too small for the moderate to high density building types (all except

for C, D attached housing; E1, F high density multi-family residential; and L4 main street commercial), indicating the need for land assembly for higher intensity regionally preferred uses.

B.5 SE CORRIDORS

Figure B.5.1. SE Corridors study area.



Data sources: Metro RLIS, April 2012; Bing aerial basemap 2012.

Study area summary

The SE Corridors study area includes a one block buffer of the following SE corridors: SE Hawthorne Blvd, SE Division St, SE Belmont St, between 12th Ave. and 50th Ave. Catalytic Site 1 contains two nodes along 12th Ave at intersections with SE Belmont St, SE Hawthorne Blvd, and SE Division St. Catalytic Site 2 includes two nodes at the intersection of SE Cesar Chavez Blvd with SE Hawthorne Blvd and SE Division St.

Figure B.5.2 displays summary statistics for the study area and the two catalytic sites. According to this figure, a majority of the study area is single family residential (41.4%), followed by commercial uses (36.0%), indicating the mix of residential and low-intensity commercial uses found in these corridors. Catalytic Site 1 is a mix of commercial and industrial, and Catalytic Site 2 is predominately commercial with nearly four-tenths of the area made up of single family uses. Site 1 and Site 2 contain parcels roughly the same size per acre, relative to the study area average. Assessor-estimated market values for land and improvements are consistent across the study area and catalytic sites, except for Catalytic Site 2 improvement values which are significantly higher.

Development assessment

Figure B.5.3 presents a quantitative assessment of development challenges related to land availability facing the two catalytic sites, in addition to measures of parcelization. According to the metrics, Catalytic Site 1 is not facing many challenges with regards to land availability: relative to the study area (excluding single family and public/institutional uses), there exists more vacancy and less land within

Figure B.5.2. SE Corridors study area summary statistics.

		Catalytic Site		Study Area
Statistic	Units	1	2	SE Corridors
Area/Density				
Area	Acres	73.2	73.3	490.1
Parcels (excl. res, public)	Total/Acre	4.2	4.9	4.7
Land Use				
Commercial	Pct of Total	36.7%	56.4%	36.0%
Industrial	Pct of Total	24.2%	0.0%	5.6%
Single Family Residential	Pct of Total	13.6%	36.3%	41.4%
Condominium	Pct of Total	0.0%	1.0%	1.9%
Multi-Family Residential	Pct of Total	3.7%	4.5%	9.5%
Public/Institutional/Utility	Pct of Total	11.8%	0.2%	2.1%
Unused / Unoccupied	Pct of Total	10.1%	1.7%	3.2%
Other	Pct of Total	0.0%	0.0%	0.3%
Real Market Value				
Land Value	$/SqFt	$ 27.56	$ 29.75	$ 26.01
Improvement Value	$/SqFt	$ 57.75	$ 83.76	$ 63.86
Total	$/SqFt	$ 85.32	$ 113.51	$ 89.87

Source: ECONorthwest.
Note: Real market value figures exclude public, institutional, and residential uses.

floodplain and erosion zones (Title 3 land). Based on assessor market values, this site is consistently developed as a function of estimate land to improvement values (IMP/LV ratio), relative to the study area. Site 1 has, however, more area designated as brownfield. Catalytic Site 2 also has few obstacles related to land availability relative to the study area: a lower average of brownfield and natural hazard designated sites per acre. Less vacant land exists, per acre, in Site 2 relative to the study area.

Figure B.5.3 SE Corridors development assessment metrics.

Metric	Units	Catalytic Site Relative to Study Area		Average Values for:	
				Study Area	Region
		1	2	SE Corridors	UGB
of Land Availability					
Vacancy	SqFt/Acre	○	✖	662.4	7,309.9
Brownfields	SqFt/Acre	✖	○	1,899.2	1,917.7
IMP/LV Ratio	SqFt/Acre Over .75	■	■	30,826.1	15,122.9
Metro Title 3 Land	SqFt/Acre	○	○	-	5,167.5
of Parcelization					
Parcel Size	Parcels/Acre	○	■	4.7	0.6
Ownership	Owners/Acre	■	■	5.1	0.3
Lot Coverage	SqFt/Acre	■	■	12,149.9	5,212.4

Source: ECONorthwest
Note: Excludes public, institutional, utility, single family residential, and condo uses

The parcelization metrics in Figure B.5.3 indicate the catalytic sites are no more parcelized than the study area as a whole. For each site, the number of parcels and owners are consistent per acre compared to the study area. Lot coverage is also consistent, indicating the catalytic sites are about as dense as the study area. Relative to the UGB, however, the parcelization metrics indicate that the area exhibits characteristics of parcelization. This result is expected: the SE Corridors area is made up of dense, urban neighborhoods. Although this density imposes constraints on large-format development (e.g., of a half acre or larger), some areas such as SE Division St are experiencing development of the type local plans desire.

According to local developers, existing zoning is a major obstacle for development within the study area and catalytic sites: 45 feet is the highest allowable building height along these corridors—and given the high land prices and acquisition prices in this area, it is very difficult to reach a positive return on investment with this height limitation. An allowable height increase along 12th Ave in the south portion of Site 1, for instance, would increase development interest especially given its proximity to a new MAX line. Parking requirements represent another obstacle: in many areas along the corridors, you must build at a parking ratio less than one (e.g., units outnumber parking spaces), and this can only be accomplished where it is allowed by zoning code.

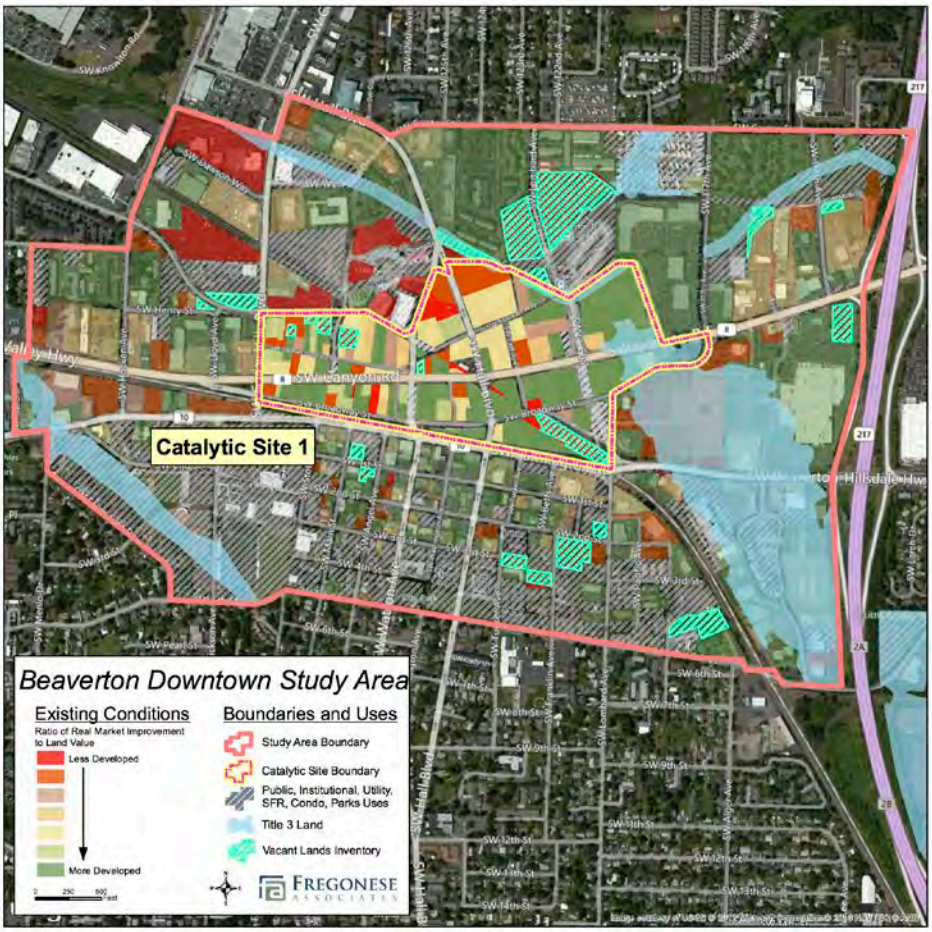
City staff report a handful of reasons why development has lagged within the catalytic sites. The presence of gas stations and the lack of an established sense of "place" for some of the areas make some intersections unattractive for residential development. Also the perception that many of these areas are located on busy streets has inhibited development. The market for new development or redevelopment in the area is improving, as witnessed by a recent string of development proposals along SE Division St. SDC fees, however, are high in some areas and this may act to deter potential developers to the area.

Both the developers and city staff note that the area does face parcelization challenges. A large scale development would be very difficult to produce; there are 8 to 9 times more parcels per acre than the UGB average and an average size of 9,000 to 10,000 square feet is too small for any of the regionally viable *Climate Smart Communities* building types, except for E or L4. A developer would need to assemble or acquire at least a half acre of land to achieve a financially feasible development, and as a result developments are becoming increasingly smaller (as a measure of overall structure footprint) within the study area, with lower parking ratios.

Recently, well-designed buildings with open air common areas for all or some residents have been successful (e.g., The 20 on Hawthorne). Upcoming buildings with no on-site parking have generated a bit of controversy from people worried parking demand will spill onto the street.

B.6 BEAVERTON DOWNTOWN

Figure B.6.1. Beaverton Downtown study area.



Data sources: Metro RLIS, April 2012; Bing aerial basemap 2012.

Study area summary

The Beaverton Downtown study is roughly the area within one-third to one-half mile of the intersection of SW Canyon Rd, SW Beaverdam Rd, and SW Millikan Way. SW Canyon Rd and SW Beaverton-Hillsdale Hwy are the major east-west oriented roads and highways intersecting the area. Interstate 5, which makes up the eastern boundary of the area is the major north-south arterial. Catalytic Site 1 is centered roughly one-tenth to one-third mile around the same intersection

Figure B.6.2 below displays summary statistics for the study area and the catalytic site. According to this figure, half of the study area is commercial and one-fifth is designated as public/institutional/utility use. Catalytic Site 1 is predominately commercial. Site 1 has almost twice as many average parcels per acre relative to the study area. Assessor-estimated market values for land and improvements are higher per square foot within the catalytic site, owing to its central location and higher proportion of commercial uses relative to the study area.

Figure B.6.2 Beaverton Downtown study area summary statistics.

Statistic	Units	Catalytic Site 1	Study Area Beaverton Downtown
Area/Density			
Area	Acres	73.3	513.4
Parcels (excl. res, public)	Total/Acre	2.7	1.4
Land Use			
Commercial	Pct of Total	85.8%	49.8%
Industrial	Pct of Total	0.0%	0.2%
Single Family Residential	Pct of Total	0.0%	8.2%
Condominium	Pct of Total	0.0%	1.0%
Multi-Family Residential	Pct of Total	1.9%	9.9%
Public/Institutional/Utility	Pct of Total	4.8%	22.1%
Unused / Unoccupied	Pct of Total	7.5%	8.8%
Other	Pct of Total	0.0%	0.0%
Real Market Value			
Land Value	$/SqFt	$ 17.78	$ 15.15
Improvement Value	$/SqFt	$ 25.89	$ 22.82
Total	$/SqFt	$ 43.67	$ 37.97

Source: ECONorthwest.
Note: Real market value figures exclude public, institutional, and residential uses.

Development assessment

Figure B.6.3 below presents a quantitative assessment of development challenges related to land availability facing the catalytic site, in addition to measures of parcelization. According to the metrics, Catalytic Site 1 is does not face obstacles related to land vacancy or presence of

floodplains (Title 3 land) relative to the study area. Site 1 does, however, have more land designated as brownfield. Based on assessor market values, it is roughly as developed on a per acre basis as a function of estimate land to improvement values (IMP/LV ratio). Compared to the UGB, the study area and Site 1 have significantly less vacant land per acre and are more developed overall as a function of the IMP/LV metric.

Figure B.6.3. Beaverton Downtown development assessment metrics.

Metric	Units	Catalytic Site Relative to Study Area	Average Values for: Study Area	Region
		1	Beaverton Downtown	UGB
of Land Availability				
Vacancy	SqFt/Acre	○	1,420.4	7,309.9
Brownfields	SqFt/Acre	✖	2,122.1	1,917.7
IMP/LV Ratio	SqFt/Acre Over .75	■	27,664.4	15,122.9
Metro Title 3 Land	SqFt/Acre	○	6,569.0	5,167.5
of Parcelization				
Parcel Size	Parcels/Acre	✖	1.4	0.6
Ownership	Owners/Acre	○	1.5	0.3
Lot Coverage	SqFt/Acre	✖	7,756.9	5,212.4

Source: ECONorthwest
Note: Excludes public, institutional, utility, single family residential, and

The parcelization metrics in Figure B.6.3 indicate the catalytic site may be more parcelized than the rest of the study area: on average there are almost twice as many parcels per acre in Site 1 relative to the study area, but there are fewer owners per acre suggesting a concentration of ownership and fewer barriers for land assembly. Lot coverage is greater within the catalytic site, however, indicating denser development and less surface parking on average for each parcel. Relative to the UGB, however, the study area and Site 1 indicate parcelization: there are roughly twice as many parcels per acre in the study area, and five times as many owners per acre.

Although the metric for ownership in Figure B.6.3 suggests that this may not be a factor affecting development relative to the study area, the developers we spoke with report a perception that development in the area has been inhibited due to a high number of individual owners; regardless of the number of owners in a given area, it may only take one hold-out to inhibit land assembly. This is especially a problem in the old town area south of SW Beaverton-Hillsdale Hwy. Entrenched uses within Site 1 have little incentive to redevelop their properties or sell (e.g., for instance car dealerships that have long-term lease relationships with property owners).

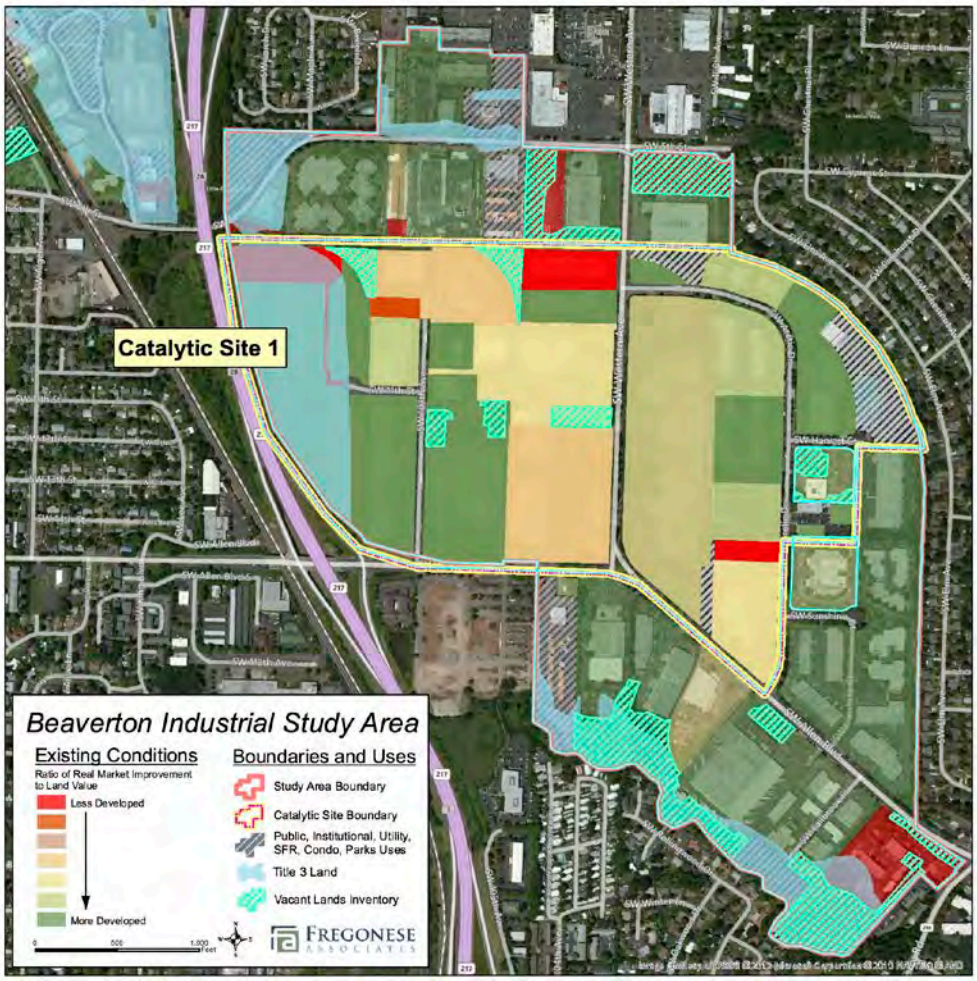
Site 1 also lacks connectivity and suffers from needed infrastructure improvements. Unlike the old town area to the south, Site 1 is not arrayed in a grid pattern and the existing street system is unpredictable for those unfamiliar with the area. The street system creates oddly shaped blocks and parcels (e.g., triangles or narrow and long rectangles) that make development of traditional square building products difficult. Oddly shaped parcels also limit automobile accessibility and on-site parking opportunities (e.g., little to no space for parking in front or in back of the property).

The developers also report that achievable rents in the Beaverton downtown area are not high enough to make desired development products pencil out at this time. If rents are not high enough, developers cannot justify building to the density and parking ratios local plans and zoning codes desire (e.g., higher parking ratios necessitate more costly underground parking). This is a major factor inhibiting redevelopment in the area, and it is an issue driven by the current state of the market rather than existing policy.

A large scale development would be very difficult to produce; there are 4.5 times more parcels per acre within Site 1 relative to the UGB average, with an average size of roughly 16,000 square feet. This size is too small for any of the regionally viable *Climate Smart Communities* building types without land assembly, except for low – to – medium density attached and multi-family housing (C, D, E, E3, E4, H, H1), and small scale commercial (L4). The narrow lots, non-traditional street system, and owners with little incentive to redevelop work together to make land assembly a very difficult task in this area.

B.7 BEAVERTON INDUSTRIAL

Figure B.7.1 Beaverton Industrial study area.



Data sources: Metro RLIS, April 2012; Bing aerial basemap 2012.

Study area summary

The Beaverton Industrial study area includes the Beaverton urban renewal commercial, office, and industrial employment area, including Metro Title 4 lands east of Highway 217. The study area is bisected by SW Western Ave; Highway 217 falls along the western boundary. Catalytic Site 1 is bounded by SW Allen Rd to the south and cuts along railroad tracks in the north.

Figure B.7.2 below displays summary statistics for the study area and the catalytic site. According to this figure, the study area is predominately land used for industrial purposes, with commercial uses making up roughly one-tenth of the area. Catalytic Site 1 has an even greater share of industrial land (65.1%). The unused/unoccupied land within the study area and catalytic site may have been previously used for industrial purposes. Parcel size, on a per acre basis, is consistent between the study area and Site 1. Assessor-estimated market values for improvements are higher in the study area: this fact is confirmed by Figure B.7.1, which suggests high levels of development on parcels across the study area. Much of the future development in the area, if it occurs, will have to involve re-use of existing industrial buildings or tear-downs. Real market land values are consistent between the two areas; these values are low relative to denser and more urban case study areas.

Figure B.7.2 Beaverton Industrial study area summary statistics.

Statistic	Units	Catalytic Site 1	Study Area Beaverton Industrial
Area/Density			
Area	Acres	172.0	313.6
Parcels (excl. res, public)	Total/Acre	0.2	0.3
Land Use			
Commercial	Pct of Total	2.1%	12.7%
Industrial	Pct of Total	65.1%	56.5%
Single Family Residential	Pct of Total	0.0%	0.0%
Condominium	Pct of Total	0.0%	0.0%
Multi-Family Residential	Pct of Total	0.0%	0.0%
Public/Institutional/Utility	Pct of Total	5.0%	9.8%
Unused / Unoccupied	Pct of Total	27.8%	21.0%
Other	Pct of Total	0.0%	0.0%
Real Market Value			
Land Value	$/SqFt	$ 4.39	$ 5.09
Improvement Value	$/SqFt	$ 8.06	$ 11.71
Total	$/SqFt	$ 12.44	$ 16.80

Source: ECONorthwest.
Note: Real market value figures exclude public, institutional, and residential uses.

Development assessment

Figure B.7.3 below presents a quantitative assessment of development challenges facing the catalytic site, in addition to measures of parcelization. According to the metrics, Site 1 is facing challenges posed by some metrics but not others: there is less vacancy per acre and more land designated as brownfield relative to the study area. Floodplain-designated land is less concentrated per acre and based on assessor market values, Site 1 is also less developed as a function of estimate land to improvement values (IMP/LV ratio). The study area has almost six times the brownfield designated land per acre than the UGB, owing the high proportion of industrial uses.

Figure B.7.3 Beaverton Industrial development assessment metrics.

Metric	Units	Catalytic Site Relative to Study Area	Average Values for:	
			Study Area	Region
		1	Beaverton Industrial	UGB
of Land Availability				
Vacancy	SqFt/Acre	✖	3,374.8	7,309.9
Brownfields	SqFt/Acre	✖	12,509.8	1,917.7
IMP/LV Ratio	SqFt/Acre Over .75	○	28,451.5	15,122.9
Metro Title 3 Land	SqFt/Acre	○	6,143.1	5,167.5
of Parcelization				
Parcel Size	Parcels/Acre	■	0.3	0.6
Ownership	Owners/Acre	✖	0.3	0.3
Lot Coverage	SqFt/Acre	■	11,676.4	5,212.4

Source: ECONorthwest
Note: Real market value figures exclude public, institutional, and residential uses.

The parcelization metrics in Figure B.7.3 indicate Site 1 exhibits characteristics of parcelization: compared to the study area, Site 1 has greater than 10% more owners per acre. Relative to the UGB, however, neither the study area nor Site 1 are parcelized: both areas have larger parcels, on average, compared to the UGB. The study area parcels are equal, however, to the average size of industrial parcels across the entire UGB (0.3 parcels per acre, or roughly 3.3 acres per parcel).

From the developer's perspective, the intent of the Beaverton Civic Plan is to catalyze job growth in the area. But this cannot be done without connectivity: it is vital to get rid of anything that impedes traffic flow and connectivity, and make the area accessible to the already-existing WES commuter line. The truck traffic moving on and off Highway 217 will be an impediment to creating pedestrian friendly zones within the area. The City should also make clear what it envisions for the area in the future: Does it make sense to reduce the intensity of the industrial uses and work to achieve commercial or flex (e.g., office industrial)? Are retail and restaurant uses desirable and feasible in the future?

It does appear, however, that parcelization is not a problem here—in fact, parcels are too big, and too institutional if the goal is to encourage less intense industrial and commercial uses. The parcels, as they currently exist, are likely too large to encourage incubator or flex spaces. In fact, the large parcels produce a development opportunity because they can be master planned, if necessary, and subdivided for smaller-scale and/or higher density uses as existing and future zoning allows.

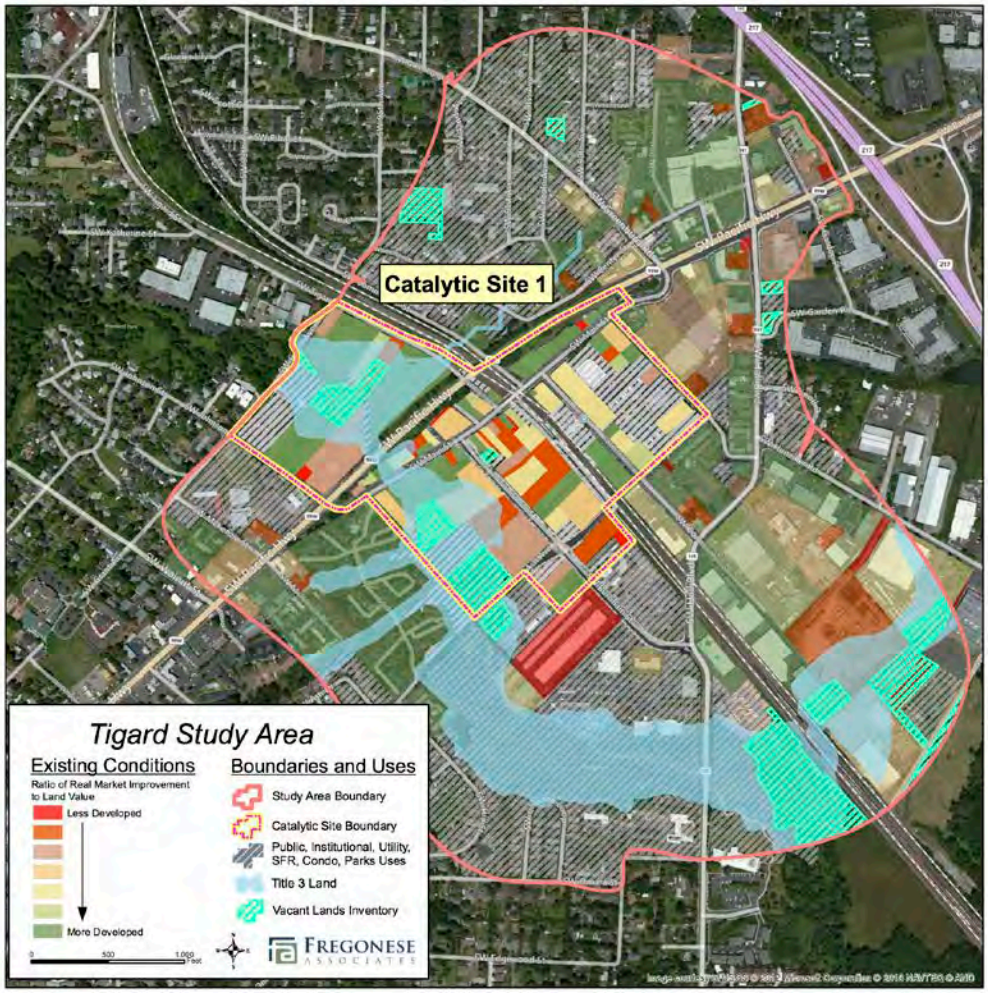
City staff indicate that Site 1 is a priority area for the City for employment growth and reinvestment as identified in the Civic Plan. The City has few Industrial or Office Industrial lands within its limits, and this area is identified as a primary redevelopment opportunity for Office Industrial in the near future. The study area is within a recently approved Urban Renewal Area, which was created to help overcome known development impediments related to infrastructure and floodplain, and spur development of these types of uses.

The average Site 1 parcel size is roughly 222,000 square feet, which is large enough for any of the *Climate Smart* building types. This average is twice as large as the UGB average. While any of the regionally viable building types could conceivably fit on parcels of this size, a developer interested in a 40,000 square foot redevelopment project, for instance, may not wish to purchase a site this large –

especially if existing conditions may drive up the cost of the project (e.g., as a result of brownfield remediation or demolition).

B.8 TIGARD

Figure B.8.1 Tigard study area.



Data sources: Metro RLIS, April 2012; Bing aerial basemap 2012.

Study area summary

The Tigard study area includes the Metro SW Corridor Plan Downtown Tigard focus area. The major east-west oriented highway intersecting the study area is SW Pacific Hwy (99W). , SW Hall Blvd bisects the study area north-south, and Interstate 5 follows the eastern boundary. Catalytic Site 1 contains the historic downtown area and is bounded roughly by SW Grant Ave to the north and SW Ash Ave to the south. It is bisected by railroad tracks that carry the WES transit line.

Figure B.8.2 below displays summary statistics for the study area and catalytic site. According to this figure, the study area is not dominated by any single use, and is made up of a mix of commercial, industrial, SFR, and public/institutional/utility uses. Catalytic Site 1 is predominately commercial, with public/institutional/utility uses making up almost one-quarter of the area. There are roughly twice as many parcels per acre, on average, in Site 1 relative to the study area. Assessor-estimated market values for land and improvements are higher per square foot within the catalytic site, owing to a higher percentage of commercial uses, its central location, and proximity to transportation infrastructure.

Figure B.8.2 Tigard study area summary statistics.

		Catalytic Site	Study Area
Statistic	**Units**	**1**	**Tigard**
Area/Density			
Area	Acres	84.5	427.0
Parcels (excl. res, public)	Total/Acre	1.9	1.1
Land Use			
Commercial	Pct of Total	50.2%	23.1%
Industrial	Pct of Total	13.0%	16.7%
Single Family Residential	Pct of Total	6.0%	18.5%
Condominium	Pct of Total	0.0%	0.2%
Multi-Family Residential	Pct of Total	5.9%	11.8%
Public/Institutional/Utility	Pct of Total	22.5%	26.3%
Unused / Unoccupied	Pct of Total	2.4%	3.4%
Other	Pct of Total	0.0%	0.0%
Real Market Value			
Land Value	$/SqFt	$ 12.96	$ 9.96
Improvement Value	$/SqFt	$ 15.11	$ 14.25
Total	$/SqFt	$ 28.07	$ 24.21

Source: ECONorthwest.
Note: Real market value figures exclude public, institutional, and residential uses.

Development assessment

Figure B.8.3 below presents a quantitative assessment of development challenges facing the Catalytic Site 1, in addition to measures of parcelization. According to the metrics, Catalytic Site 1 is facing many challenges with regards to physical site characteristics: relative to the study area (excluding single family and public uses), there exists more brownfields and land with natural hazard risk (Title 3 land) on a per acre basis. Vacancy, however, is greater than 10% above the study area average. Based on assessor market values, the site is just developed as a function of estimated land to improvement values (IMP/LV ratio), and each are more developed than the UGB on average. Compared to the UGB, the study area has significantly more identified brownfields and land at risk for flood and landslide hazards, on a per acre basis.

The parcelization metrics in Figure B.8.3 indicate Catalytic Site 1 is more parcelized than the study area as a whole: The number of parcels and owners are higher per acre relative to the study area. Lot coverage is roughly similar, however, indicating development of consistent density.

Figure B.8.3. Tigard development assessment metrics.

Metric	Units	Catalytic Site Relative to Study Area	Average Values for: Study Area	Region
		1	Tigard	UGB
of Land Availability				
Vacancy	SqFt/Acre	○	2,177.6	7,309.9
Brownfields	SqFt/Acre	✖	6,205.4	1,917.7
IMP/LV Ratio	SqFt/Acre Over .75	■	26,214.3	15,122.9
Metro Title 3 Land	SqFt/Acre	✖	8,891.1	5,167.5
of Parcelization				
Parcel Size	Parcels/Acre	✖	1.1	0.6
Ownership	Owners/Acre	✖	1.5	0.3
Lot Coverage	SqFt/Acre	■	7,692.6	5,212.4

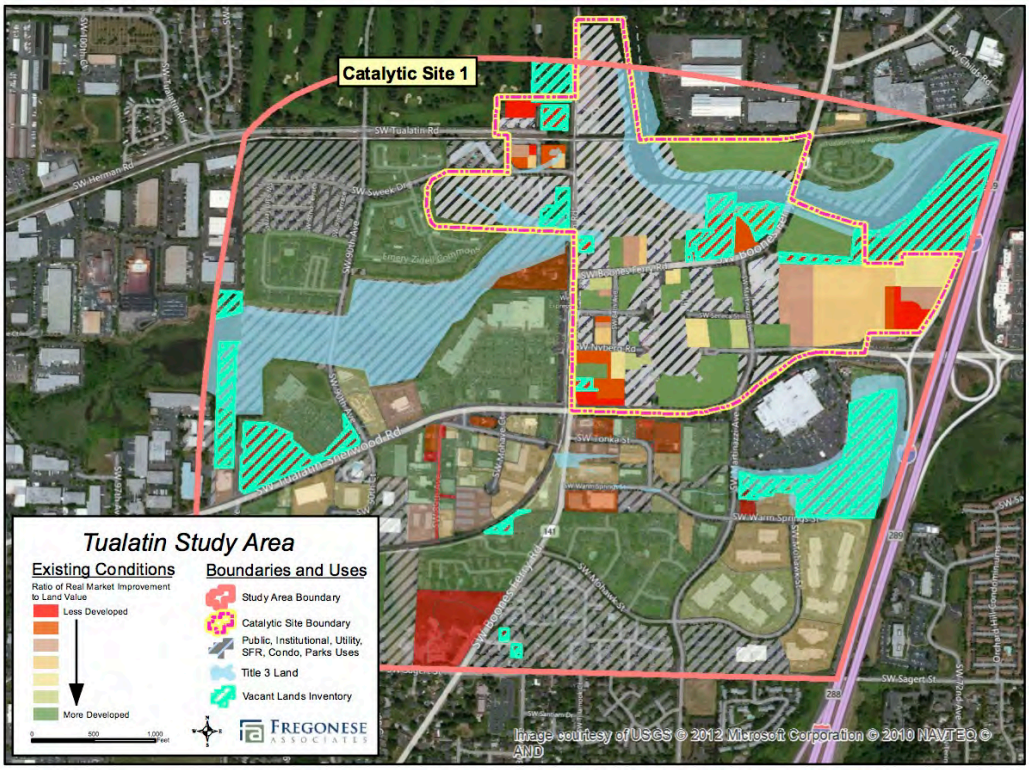
Source: ECONorthwest
Note: Excludes public, institutional, utility, single family residential, and condo

According to City staff, multiple Tigard-area redevelopment opportunity studies have recognized achievable rents as not being high enough to make desired development products pencil out as the main obstacle inhibiting Downtown Tigard redevelopment. If rents are not high enough, developers cannot justify building to the density and parking ratios local plans and zoning codes desire (e.g., higher parking ratios necessitate more costly underground parking). The Tigard City Center Redevelopment Agency is willing to consider incentives for private sector developers to help mitigate these issues, but the right project has not yet been proposed. Additionally, there exist many owners with fully capitalized development, stable rents, and thus little to no compelling reason incur risk and redevelop.

City staff also noted that parcelization has proven a factor that has inhibited study area development. Developers looking for 4 acre sites, for instance, have only been able to find one or two suitable options. Average parcel sizes within Site 1 are a fraction of this amount: 23,000 square feet (0.5 acres). Of the *Climate Smart Communities* building types consistent with existing zoning (C, D, E, E1, E2, F, H, H1, H2, L1, L4) land assembly would be required for all except for C or D (medium to high density attached housing), E, E1, F (multi-family residential), H1 (low density mixed use residential/retail), or L4 (small scale main street commercial). Development of C, D, or H1 would only be feasible—regardless of current zoning—on just fewer than half of the parcels within Site 1. Commercial development consistent with the size and density of L4 would be feasible —regardless of current zoning— on roughly 71.5% of the parcels before assembly. Many of the parcels, such as those facing SW Main St on the south side of the street, are long and narrow, which may pose issues of accessibility (e.g., little to no space for parking in front or in back of the property) for some potential users. The remaining building types require parcel sizes of greater than 25,000 square feet, and would be difficult to develop without assembly on all but a handful of parcels. Larger sites would make development of more desired building products easier, but this factor alone would not change the

overall equation: expected rents are not yet high enough to attract private sector investment without public incentives.

Figure B.9.1 Tualatin study area.



Data sources: Metro RLIS, April 2012; Bing aerial basemap 2012.

Study area summary

The Tualatin study area is identical to the Metro SW Corridor Plan Downtown Tualatin focus area. Major east-west oriented roads and highways intersecting the study area are SW Nyberg Rd, with SW Sagert St as the southern boundary. SW Tualatin Rd bisects the study area north-south and Interstate 5 is the eastern boundary. Catalytic Site 1 is generally the area bounded by SW Tualatin Rd, SW Nyberg St, Interstate 5, and SW Boones Ferry Rd.

Figure B.9.2 displays summary statistics for the study area and the catalytic site. According to this figure one-third of the study area is made up of commercial uses with roughly one-fifth being public, institutional, and utility uses. Catalytic Site 1 is over one-third commercial, with a higher percentage used for public, institutional, and utility uses (42.3%). Relative to the rest of the study area, Site 1 has almost three times as many parcels per acre on average. In addition to being more dense, assessor-estimated market values for land and improvements are significantly higher per square foot within the catalytic site.

Figure B.9.2 Tualatin study area summary statistics.

Statistic	Units	Catalytic Site 1	Study Area Tualatin
Area/Density			
Area	Acres	143.1	634.1
Parcels (excl. res, public)	Total/Acre	1.1	0.4
Land Use			
Commercial	Pct of Total	35.3%	32.2%
Industrial	Pct of Total	4.9%	11.8%
Single Family Residential	Pct of Total	0.9%	2.8%
Condominium	Pct of Total	3.2%	4.7%
Multi-Family Residential	Pct of Total	5.4%	19.1%
Public/Institutional/Utility	Pct of Total	42.3%	21.3%
Unused / Unoccupied	Pct of Total	8.0%	8.1%
Other	Pct of Total	0.0%	0.0%
Real Market Value			
Land Value	$/SqFt	$ 15.75	$ 10.17
Improvement Value	$/SqFt	$ 20.36	$ 15.53
Total	$/SqFt	$ 36.12	$ 25.70

Source: ECONorthwest.
Note: Real market value figures exclude public, institutional, and residential uses.

Development assessment

Figure B.9.3 below presents a quantitative assessment of development challenges facing the study area and catalytic site, in addition to measures of parcelization. According to the metrics, Catalytic Site 1 is not facing many challenges with regards to physical site characteristics: relative to the study area (excluding single family and public uses), there exists nearly the same amount of vacancy and land identified as at risk for flood and

landslide hazards (Title 3 land). Based on assessor market values, Site 1 is less developed as a function of estimated land to improvement values (IMP/LV ratio), and has significantly less brownfield-identified land per acre. Compared to the rest of the UGB, the study area and catalytic site has less vacancy and is more developed on a square foot per acre basis. The study area also has higher instances of brownfields. Compared to the UGB, the study area is displaying more obstacles for development in terms of land availability.

The parcelization metrics in Figure B.9.3 indicate the catalytic site is more parcelized than the study area as a whole. Within Site1 the concentration of parcels and owners is greater than 10% higher, per acre, compared to the study area. Lot coverage is lower within the catalytic site, however, indicating that while parcel sizes are smaller their uses are not as dense relative to the study area.

Figure B.9.3. Tualatin development assessment metrics.

Metric	Units	Catalytic Site Relative to Study Area	Average Values for: Study Area	Region
		1	Tualatin	UGB
of Land Availability				
Vacancy	SqFt/Acre	■	3,049.3	7,309.9
Brownfields	SqFt/Acre	○	2,845.6	1,917.7
IMP/LV Ratio	SqFt/Acre Over .75	○	25,396.2	15,122.9
Metro Title 3 Land	SqFt/Acre	■	5,868.8	5,167.5
of Parcelization				
Parcel Size	Parcels/Acre	✖	0.4	0.6
Ownership	Owners/Acre	✖	0.6	0.3
Lot Coverage	SqFt/Acre	○	5,913.2	5,212.4

Source: ECONorthwest
Note: Excludes public, institutional, utility, single family residential, and condo uses.

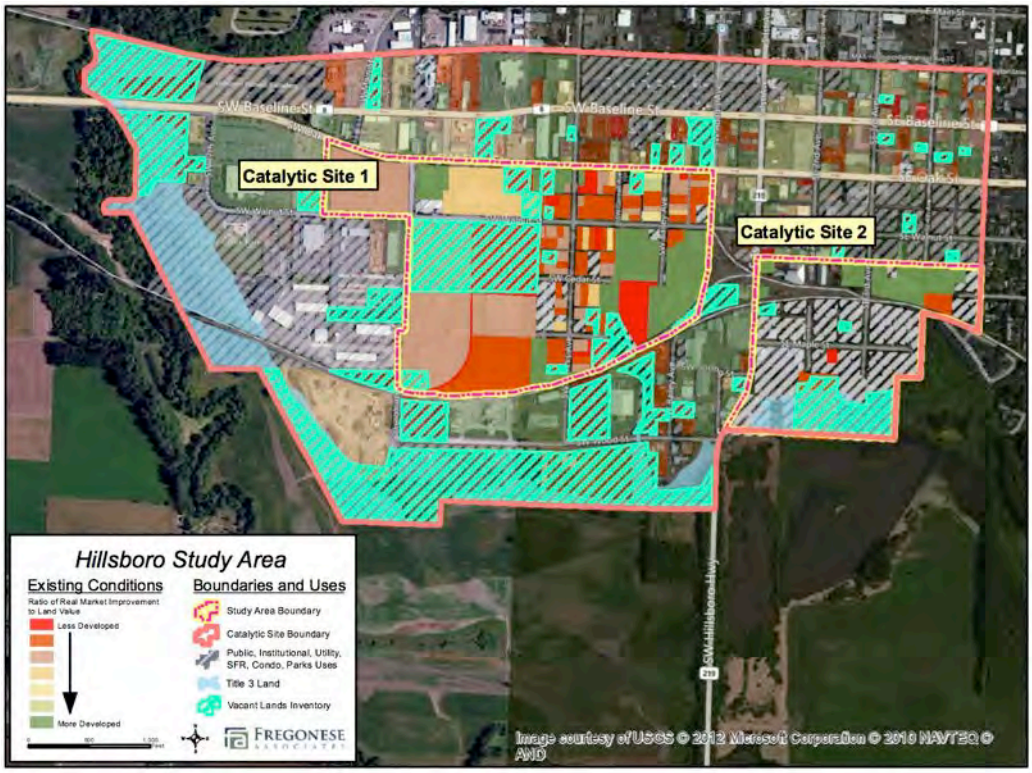
The City has long recognized that the development of Tualatin's downtown has been challenging due to fragmented parcels. In 1975, Tualatin created the Central Urban Renewal District to help solve this issue and spur development of a more vibrant town center. City staff note that it is not surprising that two of the highest valued properties and most successful developments are the two largest parcels at the northwest corner of SW Tualatin-Sherwood Rd and Martinazzi Avenue (located in the southeast corner of Catalytic Site 1). City staff also recognizes that opportunities for catalytic development exist in areas such as the northeast corner of Tualatin-Sherwood Road and Boones Ferry Road but it is being hampered by parcelization and competing desires of multiple owners. In addition, several of the properties north of SW Boones Ferry Rd face wetland and floodplain issues (hence the large amount of park land in the northern part of the study area).

The metrics in Figure B.9.3 indicate that there is room for additional development within Catalytic Site 1, and that parcelization may be inhibiting that growth. The area is also facing market-related challenges. Developers indicate that land values are still a little too high in the study area to make spec office/commercial developments (e.g., built with no prelease) feasible. Further, targeted infrastructure improvements could improve connectivity among pedestrians, cars, and transit riders. A land use visioning process now in a draft stage, Linking Tualatin, promises to address these issues and increase area densities.

Linking Tualatin identifies a target density of about 18 dwelling units/acre for multi-family residential developments in the downtown area. For commercial and retail uses, densities envisioned are roughly 20 jobs/acre. Comparable *Climate Smart Communities* building types suggest uses at these densities require 20,000 (MFR) and between 5,000 and 40,000 (office, commercial, mixed-use) square foot lots. The average lot size in Site 1, excluding public/institutional, and SFR uses is roughly 39,000 square feet. Therefore, land assembly—by pulling together adjacent commercial, MFR uses, or converting land with an institutional use—would be necessary to achieve high intensity commercial and mixed-use building types, but may be large enough for moderate density multi-family residential building products. Adapting policy to allow lower parking ratios and increased maximum heights could be a solution, but such development may not prove feasible due to higher construction costs (and rents), and a lack of desire by residents to live without a parking stall.

B.10 HILLSBORO

Figure B.10.1 Hillsboro study area.



Data sources: Metro RLIS, April 2012; Bing aerial basemap 2012.

Study area summary

The Hillsboro study area is roughly identical to the Old Town Refinement Plan Southwest Plan Area Major east-west oriented roads and highways intersecting the study area are SW Baseline St and SW Oak St. SW Hillsboro Hwy (S 1st Ave) bisects the area north-south. Catalytic Site 1 contains the intersection of SW Walnut St and SW Dennis Ave, and is bounded to the south by railroad tracks.

Catalytic Site 2 falls to the southeast of the study area, and contains the intersection of SE Maple St and SE 3rd Ave.

Figure B.10.2 below displays summary statistics for the study area and the two catalytic sites. According to this figure, the study area is roughly equal parts commercial, industrial, and public/institutional/utility uses. The City of Hillsboro Downtown Community Plan building use inventory from November 2009 suggests that the case-study area (and Site 1) have more single family residential uses and fewer commercial/industrial uses than Figure B.10.2 indicates. Half of the Catalytic Site 2 area is used for single family residential, with industrial uses being the second most predominate use. Average parcel size, per acre, is consistent between Site 1 and the study area; non-residential and

Figure B.10.2. Hillsboro study area summary statistics.

		Catalytic Site		Study Area
Statistic	Units	1	2	Hillsboro
Area/Density				
Area	Acres	105.7	53.9	513.4
Parcels (excl. res, public)	Total/Acre	1.5	1.0	1.5
Land Use				
Commercial	Pct of Total	27.8%	4.3%	27.5%
Industrial	Pct of Total	50.0%	22.1%	25.1%
Single Family Residential	Pct of Total	2.6%	49.2%	7.0%
Condominium	Pct of Total	0.0%	0.0%	0.0%
Multi-Family Residential	Pct of Total	0.0%	0.0%	0.5%
Public/Institutional/Utility	Pct of Total	2.5%	17.8%	28.5%
Unused / Unoccupied	Pct of Total	17.0%	6.6%	11.5%
Other	Pct of Total	0.0%	0.0%	0.0%
Real Market Value				
Land Value	$/SqFt	$ 6.79	$ 2.23	$ 7.51
Improvement Value	$/SqFt	$ 4.01	$ 7.63	$ 7.91
Total	$/SqFt	$ 10.80	$ 9.86	$ 15.42

Source: ECONorthwest.
Real market value figures exclude public, institutional, and residential uses.
Note: City of Hillsboro Downtown Community Plan building use map (Nov 2009) suggests that the case-study area and Site 1 have fewer commercial and industrial uses, and more single family residential uses, than the Metro RLIS data and Figure B.10.2 indicate.

public parcels within Site 2 are larger, on average. Land and improvement values in both sites are lower than the study area average (Site 1 having significantly lower improvement values; Site 2 having significantly lower land values).

Development assessment

Figure B.10.3 below presents a quantitative assessment of development challenges facing the two catalytic sites, in addition to measures of parcelization. According to the metrics Catalytic Site 1 has more brownfields relative to the study area, owing to the large proportion of industrial uses, but does not face additional land availability challenges. Catalytic Site 2 has additional constraints due to vacancy and Title 3 land (located in the southern portion of the site) but has less brownfield identified land relative to the study area and Site 1. Based on assessor market values, Site 2 is just as developed as a function of estimate land to improvement values (IMP/LV ratio

The parcelization metrics in Figure B.10.3 indicate that Catalytic Site 1 features characteristics of parcelization relative to the study area, with greater than 10% more parcels and lot coverage per acre. Catalytic Site 2 has the opposite characteristics: fewer than 10% less parcels and owners per acre than the study area. Lot coverage is greater within each catalytic site, indicating higher development densities relative to the study area.

Figure B.10.3 Hillsboro development assessment metrics.

Metric	Units	Catalytic Site Relative to Study Area		Average Values for:	
				Study Area	Region
		1	2	Hillsboro	UGB
of Land Availability					
Vacancy	SqFt/Acre	■	✖	8,264.6	7,309.9
Brownfields	SqFt/Acre	✖	○	3,060.7	1,917.7
IMP/LV Ratio	SqFt/Acre Over .75	○	■	16,984.8	15,122.9
Metro Title 3 Land	SqFt/Acre	○	✖	4,980.8	5,167.5
of Parcelization					
Parcel Size	Parcels/Acre	■	○	1.5	0.6
Ownership	Owners/Acre	✖	○	2.8	0.3
Lot Coverage	SqFt/Acre	✖	✖	6,304.8	5,212.4

Source: ECONorthwest
Note: Excludes public, institutional, utility, single family residential, and condo uses.

City staff reports that a multitude of owners with sometimes competing interests is a contributing factor in the lack of coordinated redevelopment and reuse in the area to date. Another likely factor is the low cost of ownership for many property owners who have fully capitalized residential or commercial rental units on their property. For cash-flow reasons, these owners have little incentive to tear down existing, low intensity uses in order to invest significant capital in redevelopment of small sites.

Catalytic Site 2 faces several challenges unrelated to parcelization: for instance, the presence of aging mobile home parks, poor infrastructure (e.g., especially unimproved streets and lack of lighting, little pedestrian or bike access, etc.). Many of the sites have historic industrial/agriculture use, causing brownfield issues. One brownfield site, the City's fleet and facilities site along S 1st Ave, would make an attractive transit-oriented mixed-use redevelopment opportunity if issues with cleanup could be resolved. Catalytic Site 1 also contains a couple of old mobile home parks that present unique challenges for redevelopment (partially because of their protected status under state law) if an appropriate opportunity presented itself. This area might be appropriate for small-scale manufacturing reuse or even mixed use redevelopment in the future if market conditions improve and produce a return on investment (ROI) high enough to attract private investment.

In the Old Town area, according to city staff, redevelopment challenges partially spring from the economics of redevelopment (e.g., the cost of land plus redevelopment costs do not create an ROI sufficient to spur changes in use or attract investment). Redevelopment has occurred recently in the style of single-family residential "plexes" (similar to building type E) south of the railroad tracks and

north of Jackson Bottom along SE Heathcliff Ln and SE Bronte Way. The City's Downtown Framework Plan suggests building types such as H, H1 mixed with L1, M1 and even L4 along SW Oak and SW Baseline St would be appropriate. The average parcel size in Site 1, excluding public/institutional uses, is under 30,000 square feet and may only be large enough for small scale commercial (L4), attached housing (C or D), or moderate density multi-family residential (E, E1, E3) without land assembly.

Appendix C Policy Options for Addressing Parcelization

A key problem for economic development policy relates to land for larger-scale development: large projects need more land. If larger sites are not available because land has over time been divided into and developed on smaller and smaller parcels, larger parcels have to be assembled from smaller parcels.

Chapter 2 and 3 of this report discussed a range of obstacles to development of larger projects, only one of which was parcelization. This appendix looks *only* at the potential problem of parcelization and looks at policies the public sector (primarily local governments with land-use authority: cities and counties) might take to reduce that problem. In particular, it focuses on *land assembly*, which is a rewind of the parcelization process: if parcels are now so small and so many that they are obstacles to desired types of development, then the parcels need to be consolidated (assembled) back into larger parcels.

The fundamental issue is not the size of the parcels per se. Rather, the problem is that small parcels suggest more owners per acre, and multiple owners is an obstacle to development. The more people that have a stake and a right to be involved in a decision (combined with the fact that all parties have veto power), the more difficult, time-consuming, and costly it is to get to an agreement on action.

This appendix divides actions related to land assembly into two broad categories: (1) assembling land under a single ownership (which ultimately requires purchasing the land from prior owners and eliminating them from the subsequent development process); or (2) assembling land under multiple ownerships, which may or may not include purchase but may also include legal arrangements that allow a developer to make decisions efficiently even though there is multiple ownership (corporations are a good example: multiple owners [shareholders] but clear executive authority to make operational decisions).

The analysis provided in this appendix relies on professional judgment, interviews with developers, and a review of relevant literature.[1]

[1] The text in this appendix draws on work ECONorthwest did in 2011 for Oklahoma City and published in 2012 as Appendix E of the City's Employment and Industrial Land Analysis. Larry

In other related research, ECONorthwest has organized the typical policies that the public sector can take to address land-use and land-supply aspects of economic development into four categories:

1. Land use regulation and policy
2. Infrastructure availability, proximity, and capacity
3. Characteristics of parcel sizes, configuration and surrounding development of employment lands
4. Institutions (public and private) whose interactions impact the success of locating desired development into targeted areas

This appendix addresses parts of the third category, and does so in three parts. and is organized as follows:

- **C.1 Policies to reduce *new* parcelization** starts by noting that not all parcelization is bad: some local and regional development goals stress greater density, which probably increases (though not always) smaller parcels (parcelization). At a minimum, in locations where significant or different development or redevelopment is desired, local governments should review their plan and zone designations to make a judgment about whether they are getting parcelization they want, or parcelization they do not want. In other words, even before going to the effort of assembling land, a jurisdiction can address the question of whether it wants to reduce the rate at which it is being parcelized, or the increase the ultimate minimum lot size.
- **C.2 Policies to reduce *existing* parcelization (land assembly)** focuses on land assembly as the primary method for reducing existing parcelization. It discusses the factors—market, policy, social, or otherwise—that may prevent land assembly from occurring, explains several methods for land assembly where the public sector remains the sole owner of the assembled parcel, and explains methods where benefits and risk associated with the final assembled parcel are shared among multiple owners (usually a mix of public and private entities). This section also summarizes successful management practices and techniques that public sector entities across the nation have used.
- **C.3 Policies to reduce problems *caused* by parcelization** explains that development feasibility and parcel availability can be increased by reducing construction costs or increasing potential investment returns (revenues). There are public policy options available to help

Pederson of IronWolf did the initial draft and was lead author. ECO (Terry Moore) and IronWolf discussed the draft and ECO rearranged, edited, and added to create the final product.

make small parcels work for development in the absence of land assembly, thereby reducing the negative impacts of parcelization

C.1 POLICIES TO REDUCE *NEW* PARCELIZATION

Section 2.1.1 of the main report makes the case that not all parcelization is bad: most of it is probably good. But in locations where public policy wants to see redevelop, it is possible for small parcels to make redevelopment difficult.

Zoning (which implements plan designations) is the typical way that local governments describe (among other things) the level of parcelization that they deem appropriate and allowable. A zone's minimum lot size or various setback requirements translate into a number of dwelling units or square footage per acre. Sometimes minimum (or even maximum) parcel sizes are directly specified.

Thus, local planning aimed at "smart growth" faces a dilemma. On the one hand, it supports greater density, which probably increases (though not always) the number of smaller parcels (parcelization). On the other hand, it wants redevelopment and integrated mixed-use development that creates functional and walkable commercial districts in designated centers, which is hindered if parcels are small and many.

Trying to assemble land after it has been parcelized (Section 4.2 of the main report) may be harder than reducing additional parcelization now. In concept, the public policies to do that are in the local comprehensive plan and implementing zoning. If a jurisdiction wants less parcelization, it can increase the minimum allowable parcel size.

The reality, however, is more complicated and nuanced. A city may want a zone to work one way in general and in most parts of the city, but it may want to adjust the allowances and requirements in one or two specific subareas.

This study was not scoped to go into the detail of local land-use ordinances. Our recommendation here is thus general. At a minimum, in locations where significant or different development or redevelopment is desired, local governments should review their plan and zone designations to make a judgment about whether they are getting parcelization they want, or parcelization they do not want. If the later, they should consider amending land-use policies and ordinances.

C.2 POLICIES TO REDUCE *EXISTING* PARCELIZATION (LAND ASSEMBLY)

C.2.1 BARRIERS TO LAND ASSEMBLY

Assembling multiple parcels into a site suitable for development can be a very difficult task. Among the difficulties:

- Property owners may be unwilling to sell (for many reasons: price, tax impact, sentimental value, replacement costs, viable alternative locations)
- Land is expensive, and owners may have an inflated expectation about its value
- Just *one owner* in a larger site assembly has the power to stop a deal that all others support
- After assembly the properties may be too small, fragmented, or oddly shaped to adequately site desire development
- Local politics and neighborhood might make a certain development type unfeasible, regardless of property conditions
- In the case of outright purchase by a county, a city, or another public entity the carrying cost of major land holdings for future development could be significant
- Ownership interests are fractured (often true in family inheritance situations); this issue often is combined with absentee ownership, so that owners don't really have a "stake" in the transaction and its potential development/economic impact on the community
- The regulatory environment (zoning, environmental overlays, mandated parcel size) adds to costs, and all the benefits of the regulations may not accrue to property owners and developers
- Infrastructure demands caused by land assembly, and the commensurate ability to finance necessary improvements, often create barriers
- Legal issues, including clear title, easements, and encumbrances, are obstacles
- Existing development or structures on site or on neighboring parcels is especially a problem when a property owner has a fully capitalized stake in his or her property and is realizing a perpetual positive cash flow from tenants – in this case there is little incentive to risk this cash flow for perhaps a slightly higher return from redeveloping.

Given the difficulties these problems may present in assembling a larger development site from smaller parcels, one can see why fragmented ownership may be a "deal-killer" for developers who do not have the time, patience, or expertise to wade through a possible quagmire of issues.

C.2.2 LAND ASSEMBLY UNDER A SINGLE OWNERSHIP

There are many ways that the public sector can assist with land assembly; this section focuses on best practices for land ownership under a single ownership. The rest of this section discusses:

- Outright purchase by public sector
- Donation or grant to public sector
- Acquisition and holding by foundations
- Purchase options
- Acquisition of surplus state or county land

C.2.2.1 Outright purchase

The ultimate in property control for a public entity is outright ownership. This ownership allows the community to set its own criteria and requirements for potential purchasers of the property, in terms of uses, compatibility, targeted industries, and other factors. Additionally, public entities can represent "patient money"; i.e. the desire to turn land quickly for a profit is often not as pronounced with public sector ownership as it is with private sector purchases. The initial investment in land can be very significant, and when combined with holding costs can make the decision whether or not to use this tool difficult.

Cities around the region, state and country have taken this course of action, usually in the form of creating a business park. Sometimes, as in the case of Corsicana, Texas' I-45 Park, city property ownership allows creative deal making for targeted businesses. In Corsicana's park, a desired business that meets the threshold for investment and employment ($10 million and 50 FTE) is eligible for a 20 year grant/loan, with 1/20 of the land value forgiven for each year of operations within the stated guidelines. In the case of Chillicothe, Missouri, the city's industrial park is so successful that it was recently expanded by a purchase of an additional 174 acres.

As a cautionary note, these business parks exhibit a wide range of outcomes, from those that are fully occupied, to those that sit vacant for years and can end up being a dump site for debris. In some instances, public-owned property is seen as an "unfair" competitor to privately-held property; this is currently a topic of debate in Wichita, Kansas. Cities that

have invested in business parks often change criteria for their targets based on changed composition of city leadership and staff; in smaller communities, "who you know" can influence whether your project (often in non-compliance with stated goals) will be allowed in the business park. As time goes on, and the parks do not provide the economic activity desired, initial criteria often are relaxed or abandoned completely in order to get something going.

Land acquisition can play a role in smaller-scale redevelopment efforts. The City of Burien, WA spent three years assembling land for a 10-acre Town Square development.[2] The land assembly, which was funded by set-aside municipal real estate taxes, provided the contiguous parcels that now house Burien's City Hall, public library, and retail, office, and residential space. Burien has also purchased several parcels adjacent to an existing transit center in order to facilitate a transit-oriented development project.

C.2.2.2 Donation or grant

This form of property transfer can have many motivations on the part of the grantor: tax reasons, designation for specific use or purpose, a family or personal memorial, or many others. Clearly, the benefit to the public sector is the minimal "cost basis" in the property. The minimal initial cost can sometimes be offset by significant ongoing costs for maintenance and upkeep on donated properties. Additionally, observing the wishes of the grantor can lead to a very narrow range of alternative uses.

Prime industrial land, without environmental constraints or other encumbrances like easements, is rarely a subject of grants or donations. Research regarding land donations around the country indicated that undeveloped land contributions to public entities are almost universally targeted at some public purpose, such as parks and open spaces, or for the construction of a public building such as a school or community center. No specific instances were found of land contributions to public entities where the entity in turn could use that property for for-profit development. Some cities that have recently benefited from donated land are:

- Irvine, CA: land to be used for affordable housing development
- Knoxville, TN: land to be used for parks and open spaces

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[2] *Job and Housing Growth in King County's Urban Centers: Factors, Strategies, and Tools Influencing Development*. King County Benchmark Program, 2006. http://your.kingcounty.gov/budget/benchmrk/UC_Study/UC_STUDY_EXEC_SUMMARY.pdf. Greenberg, Scott. *King County Growth Management Planning Council Agenda Item: Designation of Downtown Burien as an Urban Center*, 2004 your.kingcounty.gov/ddes/gmpc/2004/052604_III_BurienRpt.doc.

- Conroe, TX: land to be used for parks and open spaces.

C.2.2.3 Acquisition and holding by foundations

Foundations can often acquire and hold land as a part of their investment portfolios. Most often, the land in question would need to be a productive asset that would provide a financial return that could be used to fund the foundation's programs. Alternatively, various foundations hold land for conservation purposes, as in the case of the Conservation Foundation of the Gulf Coast (FL) and the Land Conservation Foundation of Illinois.

An exception to this would be a foundation created specifically for economic development purposes like acquiring and holding industrial land, such as the Abilene (TX) Industrial Foundation. That foundation is empowered to use its funds for a variety of economic development purposes, including providing sites at reduced cost to users who meet program qualifications.

The advantage to public entities is that the holding of land by foundation(s) represents "patient money" (i.e., not seeking a quick turnover and capital gain). Alternatively, land in a foundation portfolio might not easily be sold to prospective users and foundations often prefer to hold title to land and have lease-only structures if program revenues are the objective of property ownership.

As evidenced by the lack of interest in lease-only properties in many metro areas, a foundation taking this approach would be of limited benefit to the public sector if the purpose of the foundation was to generate long term funding from revenues generated by land leases.

C.2.2.4 Purchase options

Frequently in large-scale land transactions, options are negotiated with sellers by a prospective buyer. Often those options cover a definitive time frame (e.g., 3 months, 6 months, or longer), with the ability of the buyer to extend the option through additional financial considerations. Options for a shorter term (0-3 months, depending on the strength of the market and regional conditions) frequently are done with little or no "hard money" (i.e., the prospective buyer does not pay anything for the short term). The prospective buyer can then activate an extension beyond that short term in return for a specified payment to the seller. Agreements between public and private entities, however, usually require options for a period of 12-18 months or longer (with extension allowances) for one to two percent of the agreed upon land price, particularly for larger sites. The buyer typically

uses this time to conduct due diligence on environmental and development issues that they then can compare with alternative locations.

In this control methodology, the public sector or its designated agent(s) could use the option process to assemble parcels from multiple ownerships in order to support the requirements of a particular prospective user, or for the development of a specified targeted area. The options could allow holding property off the market as infrastructure is provided, in order to prevent possible development of competing (and inconsistent) uses such as residential tracts.

The assembly of options on larger parcels for nominal cost is definitely an advantage of the option process, as is fixing a transaction price for each of the multiple ownerships. The public sector or its agent(s) could consider using a third party in the optioning process, since frequent public sector interest in properties can drive prices upward in excess of true market values. It is not unusual for property options to be negotiated confidentially with the identity of the prospective purchaser not disclosed.

The assignment of options is also a common occurrence in property transactions. Companies frequently option property without having fully analyzed the best ownership structure for the transaction. In some cases, companies create a specific LLC for land holdings; in other cases, owner(s) of the company own the land and buildings and lease them back to the company as an additional source of guaranteed revenue for themselves. No additional costs or compensation accrue to the option due to its assignability, according to real estate professionals contacted for the purposes of this study.

C.2.2.5 Acquisition of surplus state or county land

This option is obviously not available in all situations—it applies only in special cases. It can occur when surplus land is created through infrastructure improvements, such as airport or road projects that create remnants that are not used for the actual project. Less frequently, land or buildings that become surplus can be granted or sold to the local jurisdiction by other entities (e.g., school districts, state agencies, public utilities) when they no longer serve their intended purpose.

C.2.3 LAND ASSEMBLY AMONG MULTIPLE OWNERS

There are many ways that the public sector can assist with land assembly; this section focuses on assembling land where benefits and risk associated with the final assembled parcel are shared among multiple owners, usually a mix of public and private entities. In some cases, one

partner receives benefits in the form of infrastructure or tax credits rather than a share of outright ownership.

The rest of this section discusses:

- Cooperative land bank
- Public/private partnership
- LLC formed with public and private sector property owners as pro-rata share holders
- Horizontal development entity

C.2.3.1 Cooperative land bank

Land banking as collaboration between a government and private sector or non-profit interests is not uncommon, but typically is targeted for housing or mixed-use development needs. In cities and counties where abandoned or deserted properties are a problem, governments take such properties over and place them in a land bank.[3] In most cases the public sector (or their agent, like an urban renewal agency) will gain control over a parcel/parcels and then join with for-profit or non-profit organizations who control additional parcels in order to reach a critical mass for development/redevelopment. The "rust belt" in Michigan, Ohio, and the industrial northeast has seen the most activity for land banks of this type.

Another, less frequent purpose of land banking is for open space and natural resource preservation. Nantucket Island, MA is a case in point, where natural areas are preserved in a land bank. The only identified instance of an industrial/commercial land bank was in Cleveland, OH. As their web site indicates:

> The Industrial-Commercial Land Bank was established in 2005 by the City as a proactive approach to reusing properties with serious real estate obstacles, such as environmental contamination and/or economic hardships. This land bank provides the opportunity for the City to strategically assemble properties to attract businesses and create long-term economic and community investments.

This form of property control may require public entities to purchase parcels outright; in the case of abandoned properties the jurisdictions with taxing power could take them over in lieu of unpaid taxes. In any event, this could be an effective tool when public sector efforts complement development/redevelopment efforts of the private sector.

[3] Examples include the Cuyahoga Land Bank in Cleveland, OH (http://www.cuyahogalandbank.org/assembly.php), the Genesee County Land Bank (Flint, MI; http://www.thelandbank.org/default.asp), and the Fulton County Land Bank in Atlanta, GA (http://www.fccalandbank.org/index.htm).

A 2005 literature review by the Great Lakes Environmental Finance Center identified a number of best practices for successful land banking.[4] In general, successful land banks have:

- Narrow, well-defined goals;
- Citywide coordination and cooperation between internal and external partners;
- Corporate legal structures that provide some measure of independence from local government;
- Integration of land banking with long-term strategic visioning;
- Streamlined processes for eminent domain and judicial foreclosure;
- Broad discretion for determining the terms of sale of land bank properties;
- A robust information system that contains parcel-specific data;
- Flexible, diverse funding sources.

C.2.3.2 Public-private partnerships

According to the U.S. Economic Development Administration (EDA):

> Public-private partnership (referred to as "PPP" or "PPPs") is now a standard concept in business and state and local government circles, especially in the economic development realm. Some regard PPPs as "the" answer to many economic growth and development problems facing state and local governments today, while others express varying degrees of skepticism about their attractiveness and effectiveness. Nonetheless, most seem to agree that PPPs will likely remain an important approach to designing and implementing economic development strategies.

The importance of PPPs is evidenced by the number of governmental and economic development organizations that have devoted energy and resources to the issue; these include the National Council on Public-Private Partnerships (NCPPP), the National Association of State Development Agencies (NASDA) and the International Economic Development Council.

The Ronler Acres Urban Renewal Area (URA) in Hillsboro had a very successful collaboration with real estate developer PacTrust on land assembly that resulted in the creation of a site for Intel at Ronler Acres and the Orenco Station mixed-use development that was one of the pioneers of

[4] Great Lakes Environmental Finance Center, and Maxine Goodman Levin College of Urban Affairs, Cleveland State University. *Best Practices in Land Bank Operation*. Prepared for The Department of Economic Development, City of Cleveland, 2005. http://urban.csuohio.edu/publications/center/great_lakes_environmental_finance_center/land_bank_best.pdf

"new urban form." Additionally, the URA facilitated acquisition and development by local electric utility Portland General Electric (PGE) of significant industrial properties in that same area.

As productive as these partnerships can be, they potentially require significant public funds to be successful. In the case of Hillsboro, OR, the Ronler Acres URA had access to very sizeable tax increment funds to facilitate the partnerships noted above, both in terms of property acquisition and infrastructure investment. As a result, there was an ability to have an equivalency of financial interests with the private sector partners.

The EDA, in a study focused on PPP several years ago, called out examples of partnerships that in their estimation provided effective models for development:

> Various public and quasi-public entities have been established in different cities and states to play the role of the public partner in real estate development projects in the first category. Genesis LA (Los Angeles), the Penns Landing Corporation (Philadelphia), and the National Capital Revitalization Corporation (NCRC, Washington, DC) are illustrative examples. On its website, Genesis LA identifies itself as "a cutting-edge initiative aimed at transforming abandoned and blighted properties throughout Los Angeles' most disadvantaged communities" via "innovative financing vehicles that provide "last resort" gap financing" for real estate development in the inner city. Penns Landing Corporation was established by the City of Philadelphia as a PPP to develop and manage the central Delaware riverfront, providing land, public financing, and associated services to private developers. According to its website, NCRC is "a public-private entity designed to serve as an important manager of major development projects in the District of Columbia," with a mandate to use "a myriad of incentives and other economic development tools . . . to shape development in the District's downtown and neighborhoods."[5]

Metro's 2010 Community Investment Strategy repeatedly emphasizes the need for innovative and effective public-private partnerships. In his recommendations, the chief operating officer calls on Metro to:

- "Retool regional policies and maps to support local aspirations and focus public investments in downtowns, on main streets and near transit to stimulate private investment.
- "Jump start private investment by focusing public investments and efforts on specific priority projects.
- "Adopt a plan with strategies to guide public investment in partnerships with the private sector and to ensure limited public resources generate maximum private investment and complement the region's investment in transit."[6]

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[5] Additional case studies can be accessed on the National Council of Public-Private Partnerships at: http://ncppp.org/cases/index.shtml#ecdev

[6] "Community Investment Strategy: Building a sustainable, prosperous and equitable region," Recommendations from Metro's Chief Operating Officer, August 10, 2010. pp 12-13. http://library.oregonmetro.gov/files//aug_2010_metro_coo_recommendations.pdf

The Community Investment Strategy also references several successful PPPs in the Metro region, including Historic Downtown Gresham, College Station, and Troutdale Reynolds Industrial Park.

The ability of public entities to control the type, direction, and speed of development that a PPP will take is a key element in reaching objectives for maximizing industrial/commercial opportunities and investment in public infrastructure.

C.2.3.3 Limited Liability Corporation (LLC) formation

As another type of control mechanism, public entities could join together with private landowners and form an LLC for a specified property or parcel. The public sector's contribution could be investment in infrastructure, with the private owners contributing their land. Ownership of the LLC would then be on a pro-rata basis in proportion to the value of the contribution.

The LLC could be created as a specific-purpose entity to expressly assemble and make development-ready a certain site or sites. As a representation of the desired development pattern for the property, the public entities can be specific about the type(s) of enterprises and industries targeted for that area consistent with investment and employment goals. The group could then designate a price for the assembled property and represent a single point of contact for any future negotiations. The negotiations to form this specific-purpose LLC could be somewhat tricky, given that private sector landowners are more accustomed to selling on a "first come first served" basis, and might take some convincing that the public sector's objectives can be met while at the same time preserving the value of the property and timeliness of its sale.

The benefit from a public sector standpoint would be to maximize the value of their infrastructure investments, and possibly make some or all of these infrastructure investments reimbursable when the subject property sells due to pro-rata ownership of the LLC. The creation of an LLC would be a more formalized form of public-private partnership through the formation of a legal entity.

C.2.3.4 Horizontal development entity

Most land assembly is achieved when one party purchases the holdings of other to create a larger land parcel for development. One alternative that enables multiple property owners to benefit from larger scale redevelopment is the creation of a "horizontal development entity," or HDE.

HDEs are formed when willing individual property owners who control contiguous parcels voluntarily assign their land interest to a legal entity that is responsible for positioning and preparing the smaller parcels into one large development holding.

While the mechanics for establishing an HDE can vary, it is usually created when individual property owners realize they have more to gain by assembling their land into a legal entity to be able to better capture new, larger-scale development than they otherwise would be able to do if they acted only on their individual land holdings. Property owners can assemble larger parcels by agreeing to convert the value of their individual holdings into shares of a larger property holding entity. In this way each owner benefits from development over time regardless of where on the newly created assembled site the development occurs. Owners/shareholders also take on joint responsibility for improvements needed to make the land development ready. This effort can include partnerships with public agencies which may find it more effective and easier to work with one land holding entity rather than several to achieve objectives that would be in the interests of both the public and private sector.

HDEs will often (alone or in partnership with public agencies) prepare newly created larger sites for redevelopment by securing needed entitlements and constructing essential improvement such as roads and other infrastructure. HDEs may also elect to participate in vertical development as they sell off or ground lease portions of the newly created land holding.

Recent examples of HDEs include the central district of South Waterfront where a public university and private property owner formed a collective entity to prepare about 33 acres for more intensive mixed use development. Lake Owego's Foothills property owners have also been working toward establishing an HDE to facilitate phased redevelopment of an industrial area adjacent to downtown into a mixed-use residential and retail district.

C.2.4 BEST PRACTICES IN LAND ASSEMBLY MANAGEMENT

A 2005 literature review by the Great Lakes Environmental Finance Center identified a number of best practices for successful land banking.[7]

[7] Great Lakes Environmental Finance Center, and Maxine Goodman Levin College of Urban Affairs, Cleveland State University. *Best Practices in Land Bank Operation*. Prepared for The Department of Economic Development, City of Cleveland, 2005. http://urban.csuohio.edu/publications/center/great_lakes_environmental_finance_center/land_bank_best.pdf

Many of these best practices apply to other land assembly tools where the public and private sector form partnerships and share in the benefits and risk associated with the final assembled parcel. The State of Georgia Department of Community Affairs has also created a toolkit for assembling land through public and private cooperation in order to meet mixed-income housing objectives: increasing supply of affordable housing; and increasing housing supply near employment areas.[8] These reports, combined with the experience of ECONorthwest, suggests that "best practices" would use:

- **Narrow, well-defined goals.** These goals will clarify the function and responsibility of public entities and departments for land assembly, and will also define the role the private sector will play and how risk will be shared across all cooperating parties.
- **Citywide coordination and cooperation between internal and external partners.** From the public sector perspective, coordination should be made across planning departments and development organizations so that local area goals for housing and employment are met. It is key that the private sector understands the goals of these departments, and is informed of all codes and ordinances that may affect land assembly operations. Coordination includes all the relevant and obvious stakeholders: developers, real estate professionals, lenders, housing authority representatives, citizens, community leaders, and affected public entities.
- **Legal structures that provide some measure of independence from local government.** Independent legal entities (e.g., and economic development authority or urban renewal district) will have more control and flexibility to pursue more narrow land assembly objectives.
- **A robust parcel management information system.** A database such as Metro's RLIS parcel / taxlot file can help to quickly identify parcel characteristics and boundaries. Being able to determine parcel size and contiguity is key. One of the barriers to land assembly is clear title, and databases with clear and accurate legal ownership history can streamline the acquisition process.
- **Integration of land assembly and banking with a long-term strategic visioning.**
- **Limited or streamlined processes for eminent domain and judicial foreclosure.** Both of these processes are extreme solutions and

[8] http://www.dca.state.ga.us/intra_nonpub/Toolkit/Guides/LndAsmblyRedevt.pdf

unpopular with both citizens and elected officials unless there is a very strong public purpose. Best practice probably does not use these tools. When unavoidable (e.g., hold-out parcels and very strong public purpose with no alternatives with comparable cost-effectiveness) then the process should be clear, well-documented, and streamlined.

- **Flexible, diverse funding sources.** If an entity is created for managing and redeveloping assembled parcels, having stable financing sources is key. Reliance on one source is too risky, and if one source falls through, finding another public or private source such as a foundation can be a long-term process.

Most of those recommendations are noted in the literature and are general and common sense. To go deeper, we interviewed developers with experience with land assembly about both issues and best-practices for resolving them:

- **Streamline the process.** Institutional lenders can lose patience while waiting for developers to negotiate purchase agreements with property owners. The longer it takes it assemble a site, the riskier the deal becomes: one or more owners are more likely to hold onto full interest in their property, and developer staff costs accumulate. A solution for developers, of course, is to have the public sector do some, most, or all of the work. For example, urban renewal districts often assemble land and then offer sites for development.
- **Align terms when closing multiple parcels for assembly.** All parcels should be closed as close together as possible. Developers should and probably will not spend time and money on design and due diligence unless they are sure all targeted parcels will close. Any parcel left open for continued negotiation is a liability.
- **The simpler the deal, the better.** Simplicity means assembling as few parcels as possible, and dealing with as few owners as possible. Partnership arrangements, such as horizontal development entities, can become complex as multiple owners have different interests, incentives, and visions for the development.
- **Take full control of parcels for assembly.** Before the real estate market recession began in 2008, equity requirements for borrowers were roughly 10% to 15% of the total development cost. A developer could form a partnership with a landowner who would put the value of his land into the deal for a stake in the final development outcome. The developer would not have to raise much more money to reach the 10% to 15% equity requirement. Today, lenders require roughly 30% to 35% equity, and the land value is a smaller

percentage of the requirement. It is probably easier and less risky in most cases to gain full control of parcels from the outset and not form partnership arrangements. Institutional lenders are more willing to lend to a developer who can show the ability to gain full control of all final assembled parcels.

- **Be careful about entering into master planning arrangements.** Master planning can, for instance, obligate a developer to start a new project every other year. This can be risky if the market for new residential or mixed-use development softens. Portland's South Waterfront has seen some luxury condominium towers turn into apartments after the real estate market recession began in 2008.
- **Expect landowners to negotiate a price well above the appraised amount.** Since 2008, property values have diminished and appraisers (with directives from lenders) have been conservative in their valuations. There is now a large gap between what properties are appraised for and the property owner's asking price. In partnership arrangements, this means that land contributions from existing owners are worth less, and more equity is required to secure lending.
- **There are other ways to assemble land besides initial outright purchase.** Full parcel acquisition can be an expensive proposition for both private and public entities in their effort to assemble viable developable sites. A less expensive alternative involves optioning land (described above in Section 4.2.2 of the main report; Section C.2.2.4 of this appendix): *purchasing an option* to buy the property at some later date at some agreed upon price. Options can provide a development entity site control for a long enough period to develop a concept for a site and enhance its chances to succeed while reducing financial exposure at the front end. The Portland Development Commission employed an options approach when assembling land for the Burnside Bridgehead project. Another alternative a *land swap* for another parcel, usually one already owned by the public or private entity wanting to make the acquisition. Land swaps involve securing agreement between the swapping parties on many aspects particularly the value of the parcels involved

C.3 POLICIES TO REDUCE PROBLEMS *CAUSED* BY PARCELIZATION

If local jurisdictions do not take steps to reduce the *amount* of parcelization by any of the methods described in Section C.1 and C.2 above,

can they do anything to reduce the obstacle that parcelization poses for the kind of development desired in urban centers?

Broadly, of course, cities have dozens of policies that they can bring into play to encourage certain types of development by reducing the costs of that development. Ultimately, the developer perspective must get to a bottom line about return on investment. Anything that a local government can do to increase the amount or reduce the uncertainty of revenue (e.g., helping secure federal assistance for low-income renters of buyers of housing products; pre-leasing space for government operations) or reduce the amount or risk to costs (e.g., expedited permitting, including public involvement; reduced development requirements or fees; provision or cost sharing of need infrastructure and amenity; tax exemptions) will make development more attractive.[9] The better the financial pro-forma looks, the more room a developer has to incur the costs of negotiating with multiple owners to find an arrangement that allows a site of multiple parcels to get clear for development.

This appendix does not address everything on the long list of things a local government can do to increase demand or reduce costs for developers. Rather, it focuses on a few policies related directly to costs that parcelization creates. Such policies are hard to separate from policies aimed at land assembly (Section C.2).

Land assembly can be costly—in terms of time and dollars—and may prove too costly for some development proposals. For example, to assemble the public storage parcel that would become Elizabeth Caruthers Park in Portland's South Waterfront developers negotiated a purchase agreement over a period of almost two years at a cost above the appraised amount. If a developer concludes that parcelized ownership makes the cost of creating a developable site to high relative to anticipated return on investment, and if local governments do not take actions to substantially reduce those specific costs, **what public policies can help make small parcels work for development in the absence of land assembly?**

- **Reduce parking requirements.** Surface parking takes up valuable land area on small parcels. On small parcels and for certain types of development, it may be impossible to provide the on-site parking required by codes without building structured parking. A parking space in a parking structure costs, on average, five to ten times more than a surface space. The difference can easily add 10 percent or

[9] Section 2.1.4 discusses all the factors that can affect a developer's revenues, costs, and return on investment.

more to the full cost of a residential, retail, or office development project, which is enough to eliminate a developer's typical fee.

Reducing the number of parking spaces required per residential unit or per commercial square foot basis reduces the cost of development. Such reductions are especially helpful if they eliminate the need for structured parking.

Such reductions are also consistent with regional and many local plans that want to emphasize mixed-use and walkable development, and the ability to reduce trips by automobile (and, thus, reduce congestion and air emissions).

But those benefits are not without costs. The loosening of parking standards may be a point of indifference to one- and two-person households that are mainly renters, may of one car or none, and looking for affordable rents in close-in neighborhoods that allow transportation by non-auto modes of travel. But homeowners in those same neighborhoods may oppose the reduced parking based on the belief that some of the occupants will still have cars and will now be competing for already limited parking spaces on streets. A proposed four-story apartment building at SE Division and SE 37th Ave is being opposed by local residents for this reason.

- **Relax building restrictions.** Developers can only exact rent from usable building square footage. There are many fixed costs to development that may not increase at all or at the same rate as the size of the development (for example, permitting, design, on- and off-site requirements for infrastructure and amenity). That means that the price per unit or square foot can decrease with scale. That can be true for the construction costs as well. Once a developer is into a multi-story building, he may want to go to the maximum density possible before new levels of costs are incurred (e.g., structural issues that require a shift from wood to steel).

  Building height restrictions reduce the amount of usable building square footage a developer can build, and the square footage lost probably costs less on average than the square footage allowed. By relaxing building height restrictions in the zoning code (and / or FAR standards), local governments may allow developers to improve their return on investment without changing the size of their parcel or building footprint.

  As with parking, taller buildings may be controversial in some neighborhoods. Historically an underlying (if unstated) function of zoning has been to protect single-family neighborhoods. Existing residents may worry about block viewed, reduced sunlight, parking, congestion, "incompatible" neighbors, and more.

Similarly, reduced setbacks and landscaping requirements can increase slightly the amount of leasable space on a given parcel, and reduce some cost, but with the potential effect of being less acceptable to surrounding residents and businesses.

- **Provide off-site the amenities that small parcels cannot provide on-site.** People are buying or renting a building because it delivers a bundle of services: shelter, of course, but also access to good and many employment opportunities, parks, schools, restaurants, and more. As private space gets compressed on smaller parcels (smaller units, smaller yards) they can hold or increase their value if the are surrounded by substitutes (e.g., restaurants, gyms, parks, transit).

These solutions reduce the problems caused by parcelization by making it less costly for developers to use small parcels, or by increasing the returns they can get on a given investment because of increasing value of surrounding amenity.