600 NE Grand Ave.
Portland, OR 97232-2736

Metro | *Agenda*

Meeting: Metro Policy Advisory Committee (MPAC)
Date: Wednesday, Aug.13, 2014
Time: 5 to 7:00 p.m.
Place: Metro, Council Chamber

5:00 PM	**1.**		**CALL TO ORDER**	**Jody Carson, Chair**
5:05 PM	**2.**		**SELF INTRODUCTIONS & COMMUNICATIONS**	**Jody Carson, Chair**
5:10 PM	**3.**		**CITIZEN COMMUNICATIONS ON NON-AGENDA ITEMS**	
5:15 PM (5 Min)	**4.**		**COUNCIL UPDATE**	**Metro Council**
5:20 PM (5 Min)	**5.**	*	**CONSENT AGENDA:** • Consideration of July 23, 2014 Minutes	
5:25 PM (15 Min)	**6.**	*	**LAND CONSERVATION AND DEVELOPMENT COMMISSION STRATEGIC PLAN – INFORMATION / DISCUSSION**	**Carrie MacLaren, Oregon Dept of Land Conservation and Development (DLCD)**
5:40 PM (45 min)	**7.**	*	**STREETCAR EVALUATION METHODS PROJECT: DISCUSS PRELIMINARY RESULTS OF FTA FUNDED RESEARCH PROJECT FOCUSED ON DEVELOPING A TOOL TO BETTER UNDERSTAND ECONOMIC IMPACTS OF STREETCAR INVESTMENTS – INFORMATION/DISCUSSION**	**Elissa Gertler, Metro** **Jamie Snook, Metro** **Eric Engstrom, City of Portland**
6:25 PM	**8.**		**MPAC MEMBER COMMUNICATION**	
7:00 PM	**9.**		**ADJOURN**	**Jody Carson, Chair**

* Material included in the packet.
** Material will be distributed in advance of the meeting.

Upcoming MPAC Meetings:
- Wednesday, September 10, 2014 MPAC Meeting
- Wednesday, October 8, 2014 MPAC Meeting
- Wednesday, Oct. 22, 2014 MPAC Meeting

For agenda and schedule information, call Jessica Rojas at 503-813-5891, e-mail: Jessica.rojas@oregonmetro.gov
To check on closure or cancellations during inclement weather please call 503-797-1700.

Metro's nondiscrimination notice: Metro respects civil rights. Metro fully complies with Title VI of the Civil Rights Act of 1964 that bans discrimination on the basis of race, color or national origin. For more information on Metro's civil rights program, or to obtain a Title VI complaint form, visit www.oregonmetro.gov/civilrights or call 503-797-1536. Metro provides services or accommodations upon request to persons with disabilities and people who need an interpreter at public meetings. All Metro meetings are wheelchair accessible. If you need a sign language interpreter, communication aid or language assistance, call 503-797-1536 or TDD/TTY 503-797-1804 (8

Continued on back…

a.m. to 5 p.m. weekdays) 7 business days in advance of the meeting to accommodate your request. For up-to-date public transportation information, visit TriMet's website at www.trimet.org.

600 NE Grand Ave.
Portland, OR 97232-2736
www.oregonmetro.gov

Metro | *Making a great place*

2014 MPAC Tentative Agendas

As of 7/31/2014

Items in italics are tentative; ***bold*** *denotes required items*

MPAC Meeting Wednesday, August 13, 2014 • Land Conservation and Development Commission strategic plan – Information / Discussion (30-45 Min, Carrie MacLaren, DLDC) • Streetcar Predictive Model: Provide information on an FTA funded research project focused on developing a tool to better understand economic impacts of streetcar investments – ACTION: Information/Discussion (30-45 min, Elissa Gertler / Jamie Snook, Metro, & Eric Engstrom)	**MPAC Meeting** Wednesday, Sept. 10, 2014 • *Climate Smart Communities Scenarios Project: Discuss evaluation results and public review draft preferred approach– Information / Discussion (45-60 min, Kim Ellis)* • *Growth Management Decision: Results of regional Residential Preference Survey – Information / Discussion (30 Minutes, Ted Reid)* • *Solid Waste Community Enhancement Program Changes – Information / Discussion (30 Minutes) (Primary Staff: Roy Brower)* **FYI: A comment period is planned from Sept. 18 to Oct. 20, 2014 on the Climate Smart Communities public review draft preferred approach.** **FYI: 2014 Rail~Volution, Minneapolis, MN, September 21 – 24**
MPAC Meeting Wednesday, Oct. 8, 2014 • *Growth Management Decision: Discuss recommendation to Metro Council on whether Council should accept 2014 Urban Growth Report as basis for subsequent growth management decision – discussion and begin drafting recommendations (Ted Reid)* • *2015 legislative session and possible shared regional agenda – Discussion*	**MPAC Meeting** Wednesday, Oct. 22, 2014 • *Climate Smart Communities Scenarios: Discussion of public comments, potential refinements and recommendation to Metro Council – Information/discussion leading to joint meeting on Nov. 7th and recommendation on Dec. 10th (30 min, Kim Ellis)* • *Growth Management Decision: Continued discussion and finalization of recommendation to Metro Council – Discussion – leading to recommendation on Nov. 12th (Ted Reid)*

MPAC Meeting
Wednesday, Nov. 12, 2014

- *Climate Smart Communities Scenarios: Continued discussion of public comments, potential refinements and recommendation to Metro Council – Discussion leading to Dec. 10th recommendation (30 min, Kim Ellis)*
- *Growth Management Decision: Recommendation to Metro Council on whether Council should accept 2014 Urban Growth Report as basis for subsequent growth management decision – Recommendation to Metro Council (Ted Reid)*

HOLD: Nov. 7th Joint MPAC/JPACT meeting: CSC

- FYI: National League of Cities Congress of Cities and Exposition, Austin, TX, November 18 - 22

Parking Lot:

- Presentation on health & land use featuring local projects from around the region
- Affordable Housing opportunities, tools and strategies
- Greater Portland, Inc. Presentation on the Metropolitan Export Initiative
- MPAC composition
- "Unsettling Profiles" presentation by Coalition of Communities of Color
- Tour of the City of Wilsonville's Villebois community

600 NE Grand Ave.
Portland, OR 97232-2736
www.oregonmetro.gov

Metro | *Making a great place*

METRO POLICY ADVISORY COMMITTEE (MPAC)

July 23, 2014

Metro Regional Center, Council Chamber

MEMBERS PRESENT	**AFFILIATION**
Ruth Adkins	PPS, Governing Body of School Districts
Jody Carson, *Chair*	City of West Linn, Clackamas Co. Other Cities
Sam Chase	Metro Council
Tim Clark, 2nd *Vice Chair*	City of Wood Village
Jennifer Donnelly	Oregon Dept. of Land Conservation & Development
Denny Doyle	City of Beaverton, Washington Co. 2nd Largest City
Andy Duyck	Washington County
Kathryn Harrington	Metro Council
Dick Jones	Oak Lodge Water District
Keith Mays	Washington Co. Citizen
Anne McEnerny-Ogle	City of Vancouver
Doug Neeley	City of Oregon City, Clackamas Co. 2nd Largest City
Wilda Parks	Citizen, Clackamas Co. Citizen
Craig Prosser	Trimet
Martha Schrader	Clackamas County
Loretta Smith	Multnomah County
Bob Stacey	Metro Council
Jerry Willey	City of Hillsboro, Washington Co. Largest City

MEMBERS EXCUSED	**AFFILIATION**
Peter Truax*, 1st Vice Chair*	City of Forest Grove, Washington Co. Other Cities
Jerry Hinton	City of Gresham

ALTERNATES PRESENT	**AFFILIATION**
Gretchen Buehner	Washington Co. Other Cities
Jeff Gudman	City of Lake Oswego

Staff:

Alison Kean, Troy Rayburn, Ted Reid, Jessica Rojas and John Williams.

1. CALL TO ORDER AND DECLARATION OF A QUORUM

MPAC Chair Jody Carson called the meeting to order and declared a quorum at 5:01 p.m.

2. SELF INTRODUCTIONS & COMMUNICATIONS

3. CITIZEN COMMUNICATION ON NON-AGENDA ITEMS

No citizen communications on non-agenda items.

4. COUNCIL UPDATE

Councilor Harrington provided members with an update on the following items:

The Metro Council approved the Regional Transportation Plan (RTP) on July 17, 2014 and includes the Active Transportation Plan (ATP) and Regional Safety Plan (RSP). Metro will be working with local governments and transportation agencies to implement the plans.

Metro Council recently approved $4.5 million in Nature in Neighborhood capital grants, funded by the 2006 natural areas bond measure and includes 12 projects funded across the region. The Projects require a two to one match in other resources.

Metro Council approved $700,000 in the Nature in Neighborhood Conservation Education grants, that were funded by the 2013 Natural Areas Levy and includes 15 projects funded throughout the region. The grant awards are in three categories: community partnerships, environmental literacy and developing conservation leadership. For more information please visit www.oregonmetro.gov/nature

Metro's "Let's Talk Trash" series continues with the GLEAN and "Waste Not". GLEAN, now in its fourth year is collaboration between Metro, Recology and crackedpots, features five local artists that are given access to a Metro transfer station to pull discarded items from the waste stream, and create incredible works of art. Local artist, Natalie Sept, has painted portraits of people who work with our garbage every day, illustrating the human side of dealing with waste.

Both shows have opening receptions on Friday, August 8th, from 6 to 9 p.m. at Disjecta, just off the Kenton stop on the Yellow MAX Line in North Portland and are free to attend to all. Both shows are open on Friday, Saturday and Sunday afternoons through month of August.

5. CONSENT AGENDA

- Consideration of June 25, 2014 Minutes

MOTION: Moved by Mayor Jerry Willey and seconded by Mayor Denny Doyle.

ACTION: With all in favor, the motion passed.

6. REFERRAL OF METRO CHARTER LANGUAGE ON SINGLE FAMILY NEIGHBORHOODS

Chair Carson offered opening remarks on the Referral of the Metro Charter on Single Family Neighborhoods. Alison Kean, Metro attorney, discussed the Metro Council Resolution 14-4545 and the details of the vote on whether or not to continue the charter. Ms. Kean informed members that the resolution is a legal requirement as addressed in the footnote of the charter. The language in the footnote requires Metro to bring the language before the voters for submission with the exact same language as before, including the footnote, in the November 2014 election. Ms. Kean shared the language in the ballot titles, explanatory statement and summary with members. Ms. Kean informed

members that Metro Council will vote on the Charter August 14th and then submit to Multnomah County which will later place on the ballot for the voters.

Member comments and questions included:

- Members asked clarifying questions as to why any charter amendment is required to go back before the voters.

Ms. Kean confirmed that any charter amendment would require a vote by the people.

- Members asked questions as to the logic of retaining the footnote.

Ms. Kean responded that if the footnote was not there the charter would not sunset and referred the question to other staff.
Councilor Bob Stacey clarified the purpose of the footnote as continuing to to allow voters to engage in the same process as originally intended in regards to the content.

MOTION: Moved by Andy Duyck and seconded by Mayor Doug Neeley.

ACTION: With all in favor, the motion to approve the Referral of the Metro Charter on Single Family Neighborhoods passed.

7. GROWTH MANAGEMENT DECISION: RELEASE DRAFT 2014 URBAN GROWTH REPORT

John Williams of Metro offered opening remarks in regards to the 2014 Urban Growth Report (UGR). Ted Reid, Senior Regional Planner of Metro presented the 2014 Urban Growth Report to members and referred to the full report with appendices that can be accessed online at oregonmetro.gov/urban-growth-report

The timeline for making decisions in regards to the report was discussed with final adoption of the report set for December 2014 and Council adopting measures to meet housing and employment needs by December 2015.

Ted Reid shared a video with members over viewing the 2014 Urban Growth Report on Vimeo.

Mr. Williams posed the question to members as to whether the 2014 UGR offered members the necessary information to make an informed decision on the Urban Growth Boundary (UGB). Mr. Williams shared a list of names that have been contributed to the process and discussed the necessary steps in each phase of adoption and implementation for the report. Mr. Williams reviewed a list of dates that are geared towards discussion and to engage with each topic in relation to the UGR.

The core question Mr. Reid posed is how to accommodate growth in the region, sharing with members a diagram that highlighted past growth populations, jobs, and available acres for development, in comparison to past projections. Mr. Reid discussed with members the difference in

a range forecast and reminded members of the processes involved in coordinating with local jurisdictions throughout region. Mr. Reid walked members through the steps of the forecast cycle, detailing what each step includes.

Takeaway questions included:

- Policy considerations when planning for potential population & job growth such as what if we plan for low growth and high growth occurs? What if we plan for high growth and low growth occurs?
- Who will realize benefits and who will realize burdens of getting it wrong in either direction?
- What is the best course of action, knowing that we will update the forecast in six years?
- Which choices will help the region to achieve desired outcomes?
- Is the real challenge land readiness or land supply?
- How can we encourage "family-friendly" housing in urban areas?
- What is the right mix of housing in UGB expansions?
- How should policy makers balance housing preferences with other concerns such as infrastructure provision and affordability?
- How much can we rely on growth capacity in Damascus? Are there other options that are more viable, either in existing urban areas or urban reserves?

Member comments and questions included:

- Members expressed concern that there are not enough appropriate sites to develop and offered comments as to why developing Brownfields are challenging.
- Members commented on their perceptions of the accuracy of the report.
- Members offered comments in the Damascus situation and spoke to that sentiment that is left out of the report. Members discussed allowing the UGB expansion into areas that want it to happen versus places that are not ready for it.

Ted Reid responded to the experience that land brokers face that differs from Metro's focus of work.

- Members commented on the comments made and asked clarifying questions as to how recommendations are included in the report by working closely with local jurisdictions.
- Members asked clarifying questions as to how the Hillsboro North industrial site and how sites are counted for and included as a site.
- Chair Carson asked members if it would be helpful if MPAC revisits these aspects deeper with greater breakdown.

Councilor Stacey commented on the status of some of the sites included in the UGR, it would be useful to revisit this.

- Members expressed concern that the inventory is at a low and the need at are at an all time high.

- Members expressed concern for legitimacy of the information and sited issues in regards to long term property owners will sell that land, the cleanup of brownfield sites that requires clean up.
- Members expressed concern that there are more jobs available for people without degrees that with and discussed how this will affect the local job and housing market.
- Members expressed concern that the poverty rate has increased.

John Williams referred members to a list of the appendices and informed members that Metro is taking notes on the topics that are coming up.

- Members commented on the residential preference questions in the assumptions being made in Damascus and asked if this was being done in Oregon City and Sherwood and asked clarifying questions about the assumptions for single family units.
- Members discussed the trends between a recession, development and annexation.
- Members asked questions about the process of putting a bridge in the UGR.
- Members offered suggestions as to looking at general industrial capacity needs and asked clarifying questions in regards to the redevelopment of tax lots.
- Chair Carson reminded members that the Residential Preference Study will be available in September in relation to this item. If members have questions they can email Ted Reid directly.

Member communications:

Chair Carson thanked Mayor Truax for hosting the tour at Grove Link.

Mayor Doyle commented that folks are looking for that type of ridership potential.

Loretta Smith commented on a recent Mayor and Commissioners conference call with Vice President Biden that there is going to be a deficit of 11 million workers in 2022 and suggested making provisions to train young people. Multnomah County efforts were sited to engage high school youth in local government. Ms. Smith mentioned that there will be a mass of "baby boomers" retiring and the region is going to need to have a trained workforce for those jobs.

8. MPAC MEMBER COMMUNICATION

Chair Carson adjourned the meeting at 6:43 p.m.

Respectfully Submitted,

Jessica Rojas

Jessica Reyes

Recording Secretary

ATTACHMENTS TO THE PUBLIC RECORD FOR JULY 23, 2014

ITEM	DOCUMENT TYPE	DOC DATE	DOCUMENT DESCRIPTION	DOCUMENT NO.
7.	Handout	N/A	Urban Growth Boundary Timeline	72314m-01
7.	PPT	N/A	Urban Growth Boundary Presentation	72314m-02
7.	Video Link	N/A	Urban Growth Boundary Vimeo Link	72314m-03
4.	Postcards	N/A	Let's talk Trash Series	72314m-04

MPAC Worksheet

Agenda Item Title: Streetcar Predictive Model

Presenter: Elissa Gertler, Metro; Jamie Snook, Metro; and Eric Engstrom, City of Portland

Contact for this worksheet/presentation: Jamie Snook, Metro ext 1751

Council Liaison Sponsor:

Purpose of this item (check no more than 2):

Information __X__
Update _____
Discussion _____
Action _____

MPAC Target Meeting Date: _8/13/14

Amount of time needed for:
Presentation _15_
Discussion __15__

Purpose/Objective (what do you expect to accomplish by having the item on *this meeting's* agenda):
(e.g. to discuss policy issues identified to date and provide direction to staff on these issues)

Provide an overview and discuss the Streetcar Predictive Model tool.

Action Requested/Outcome (What action do you want MPAC to take at *this meeting?* State the ***policy*** questions that need to be answered.)

Inform regional partners of a new analysis tool and understand how the model can be applied.

Background and context:

Federal Transit Administration (FTA) and Metro have been working for years to integrate land use and development into the New Starts/Small Starts criteria. FTA agreed to fund our efforts to create innovative evaluation methods.

Metro partnered with TriMet, City of Portland, City of Hillsboro and Portland Streetcar Inc (PSI) to build an economic tool that would help link transportation investment to development outcomes. Johnson Economics was hired to help us with this endeavor.

The process of building the model was illustrative in itself. We not only built it, but learned we had to test it and calibrate the model.

Staff is excited about the opportunity to apply this tool locally and regionally to help us look at future public and private investments.

Staff wants to share key lessons with so we can consider how this model can be applied.

What has changed since MPAC last considered this issue/item?

NA

What packet material do you plan to include? (must be provided 8-days prior to the actual meeting for distribution)

The *Streetcar Corridor Evaluation Methods: Economic Impact Analysis Predictive Model Final Project Report* will be included in the packet.

What is the schedule for future consideration of item (include MTAC, TPAC, JPACT and Council as appropriate):

Metro Council Worksession (July 29)
MTAC (August 6th)
MPAC (August 13th)
TPAC (August 29th)
JPACT (September 11th)

STREETCAR CORRIDOR EVALUATION METHODS: ECONOMIC IMPACT ANALYSIS PREDICTIVE MODEL

FINAL PROJECT REPORT

PREPARED FOR:
METRO
DECEMBER, 2013

JOHNSON REID
LAND USE ECONOMICS

Angelo planning group

TABLE OF CONTENTS

ACKNOWLEDGMENTS

The following staff and contributors were instrumental in this project.

Project Manager
Catherine Ciarlo, CH2M Hill

Steering Committee
Elissa Gertler, Metro
Megan Gibb, Metro
Jamie Snook, Metro
Meganne Steele, Metro
Rick Gustafson, Portland Streetcar Inc.
Eric Hesse, TriMet
Alan Lehto, TriMet
Eric Engstrom, Portland Bureau of Planning and Sustainability
Grant Morehead, Portland Bureau of Transportation
Art Pearce, Portland Bureau of Transportation

Technical Advisors
Dennis Yee, Metro
Tom Armstrong, City of Portland
Tyler Bump, City of Portland
Tess Jordan, City of Portland
Brad Choi, City of Hillsboro

Expert Peer Reviewers
Keith Bartholomew
Associate Dean, College of Architecture + Planning
University of Utah

Robert Cervero
Friesen Chair of Urban Studies
University of California Berkeley

William Lee
Bill Lee Land Econ Consultants

Model Development Consulting Team

Johnson Reid LLC
Jerry Johnson, Principal
Brendan Buckley, Project Manager
Jon Spikkeland, Analyst

Angelo Planning Group
Cathy Corliss, Principal
Serah Breakstone, Planner
Andrew Parish, Planner

This project was funded through a grant from the Federal Transit Administration (FTA) to Metro.

I. EXECUTIVE SUMMARY

A. About this Project

This report is prepared as the main written component of the *Streetcar Evaluation Methods* project, funded by grant from the Federal Transit Administration (FTA) to Metro, the regional government of the Portland Metropolitan Area. Many local and regional partners have partnered with Metro in guiding and advising this effort. The main objective of this project is the development of a predictive computer-based model (Model) which projects the potential new economic development within a proposed streetcar transit corridor.[1]

This report describes the process undertaken to inform and build the Model, provides an overview of the Model's methodology, and discusses the results of test runs of the Model on four corridor types.

This report is accompanied by a *Technical Appendix* which describes the model in further detail and provides instructions for operating it.

B. Economic Development is Just One Consideration in Assessing Streetcar Service

The Model described here is designed to project economic development impacts, defined here as *real estate development activity* and the resulting number of new housing units, commercial space, and real market value in the proposed streetcar corridor.

Economic development, as measured by an increase in real estate development activity and property values, is just one policy consideration among many in deciding whether or not a streetcar line should be built. The recently updated guidance from the FTA for the New Starts and Small Starts

[1] For the purposes of this project a corridor is defined as ¼ mile from the centerline of the street being considered for the improvement.

transit grant programs[2] emphasizes that the FTA evaluates transit grant proposals on six distinct but inter-related measures:

1. Mobility Improvements
2. Economic Development Effects
3. Environmental Benefits
4. Cost Effectiveness
5. Land Use Benefits
6. Congestion Relief

As these categories attest, economic development is just one among many considerations in evaluating the benefits of a proposed streetcar line. Furthermore, while real estate development activity is a critical means of measuring economic development, there are multiple factors influencing that activity, including some that may not be quantifiable by this Model.

This Model is meant to address only the economic development criterion in evaluating streetcar service. If being used to inform an FTA grant application process, the quantitative results of this Model are meant to complement the required qualitative discussion as outlined in the "Economic Development Effects" section of the FTA New Starts and Small Starts policy guidance document. These outputs are also important to local developers, investors and decision makers.

C. Overview of the Economic Development Model

The Model designed during this process is an Excel-based model which uses inputs on existing conditions in a corridor to predict the magnitude of new development that could be expected over time as a result of a streetcar investment in that corridor.

Recognizing that streetcar projects encompass more than merely tracks and streetcars, the Model is designed to consider a bundle of actions of the type that often accompany streetcar investments, including new stations and streetscape improvements, improvements

[2] "New and Small Starts Evaluation and Rating Process, Final Policy Guidance, August 2013", Federal Transit Administration, 2013

to walkability, and the addition – or attraction – of local amenities. Together this bundle is referred to here as "streetcar improvements" (see Section II of this report).

The Model uses development pro forma analysis[3] to project the highest incremental increase in property values based on uses that are feasible and permissible by zone. It allows the user to assess whether that increase would justify the redevelopment of individual parcels based on their current value. The projected increase in property values and development activity resulting from a streetcar investment can then be considered as part of a broader cost/benefit analysis for the investment.

To project the increase in value catalyzed by a streetcar investment, the Model is run twice to provide two separate projections:

1. First, a "baseline" projection of development assuming no new streetcar line; and
2. A second projection assuming that new streetcar improvements are built.

The results of the two scenarios are then compared to create an estimate of how much the streetcar might increase economic development activity over normal baseline predictions.

It is impossible to precisely quantify future activity in a broad real estate marketplace with thousands of different property owners, businesses, and other interests with differing levels of public involvement. Therefore, while this Model does provide specific quantified estimates, *it is more appropriate to see the results as a broader estimate of the relative magnitude of economic development* under the two scenarios.

More detail on the methodology used in the Model is included in Section III of this report.

D. General Findings

The following trends and relationships were identified through the process of developing this Model, including preliminary research, expert feedback, building the Model and performing test runs. These findings address where and how streetcar improvement may have the greatest impact on property values in a proposed corridor.

[3] In real estate, a pro forma is a document designed to estimate the performance of a property investment or new development by modeling the expected income and expenses of the property once operating. The pro forma provides an estimate of the expected performance and economic return on a prospective investment. The Model developed for this project uses a series of these prototypical pro forma worksheets for multiple land use and building types. This approach most closely simulates the decision-making process of real world developers, investors and lenders in judging when redevelopment is feasible and profitable in the proposed streetcar corridor.

- The Model tends to confirm available research and expert opinion indicating that streetcar improvements generally have a positive impact on the development potential in a corridor. The magnitude of that impact will vary based on the nature of the proposed corridor and the type of improvements proposed.

- Streetcar improvements can encourage greater development by increasing transit access, improving the pedestrian environment and supporting local amenities. These changes in turn can improve the marketing and pricing potential for new and existing real estate in the area. These favorable market fundamentals make the area more attractive for new development activity on the margin.

- Streetcar improvements will have the greatest marginal impact where they represent a larger improvement over existing conditions, such as significantly reducing transit headways, or significantly improving access, safety or attractiveness. Streetcar improvements will likely have a smaller relative impact on corridors that already feature strong transit service and walkability.

- The Model finds significant overlap between the parcels found to be "developable" under the baseline and streetcar scenarios. Streetcar improvements boost projected development results by increasing the likelihood of development on these parcels: for instance, turning a "somewhat likely to develop" parcel into a "most likely" parcel. In this way, streetcar improvements can help accelerate development in an area, hastening real estate activity that may otherwise happen at some indeterminate date in the future.

- One important role of streetcar investment is to focus the attention of developers, lenders, businesses and other interests on the corridor, helping to create "buzz." Streetcar improvements may enhance the marketability of nearby properties and improve perceptions of an area. Developers, lenders, residents, businesses and other users, tend to recognize and respond to this new investment and the sense that policy makers are committed to the area. For developers, this can reduce the perceived risk of investing in the area, improve borrowing potential, lower vacancy, and strengthen rent and pricing

levels. In a metro area with many potential development opportunities, major investments such as streetcar improvements can help direct development.

- The project team performed four test runs of the Model on four different corridor types in the Portland Metro area. In the test runs of the Model, there were few instances where proposed streetcar improvements actually changed the likely development forms in the corridor (triggering, for instance, a change from low-density development under the baseline scenario to mid-rise development in the streetcar scenario.) Instead, the increase in development comes mostly from higher likelihood that parcels will develop – albeit with the same predicted building form.

- The smaller the share of existing low-density zones in the area, the greater the redevelopment potential for transit-supportive density. Corridors where medium and higher-density zones extend into the surrounding neighborhoods have the greatest potential for meaningful redevelopment into a transit-oriented atmosphere. This is due in part to the fact that low density zones support less development in general. Additionally, built-out low-density neighborhoods a redeveloped housing unit is more likely to be replaced by another single unit - or at most a duplex – which has a lower marginal impact on increasing housing numbers.

- It is useful to divide the streetcar corridors into smaller segments for analysis, as market conditions are likely to change over corridors that exceed a mile in length. Corridors can be broken into distinct segments, with the Model run on each. Results can be compared, and then combined to judge the performance of the entire corridor.

- The Model produces quantified outputs of development activity measures: construction investment, new housing units, new commercial space, and new real market value. While the Model is designed to produce precise numerical outputs for each of these measures, it is impossible to accurately predict development activity with such precision over time.

  Therefore, **the results of this Model are best seen as an indicator of the estimated magnitude of impact from streetcar improvements.** For example, a conclusion that "Streetcar Scenario A may boost housing production by around 15%" is more accurate and defensible than one stating "the Streetcar Scenario will lead to an additional 437 units." The first provides useful reference for discussion, while the second is overly precise and thus highly likely to be proven incorrect.

- The results from this Model may best be presented in the form of a range. Because the Model allows calibration, it can be used to adjust assumptions and test results under different scenarios: "If the streetcar improvements achieve a rent increase of 5%, then the corridor may achieve X level of development. If the corridor sees a rent increase of 10%, it may achieve X+1 level of development." The Model allows for changes to the input assumptions of future zoning and level of streetcar improvements to test how such changes might impact development.

- The Model uses specific parcel-level data to generate quantified measures of predicted development activity, but it is important to remember that this Model is actually generating a broad study-area-wide estimate of development activity. **In no event should this Model be used to reach definitive conclusions about what will happen on any given parcel.** Any data provided that identifies parcels, be it in map or data base form, must specify that **it is making no firm predictions or guarantees on the eventual development or lack of development on specific properties.**

- Because the Model is an indicator of broader trends in the study area, it may actually provide a better approximation of development changes over a longer period of time. A five- or even ten-year period will be highly dependent on the current and near-term trends in the real estate development environment. A shift in the market soon after the Model is run could impact the development environment for years, changing the dynamics for a large share of the study period. A longer period of fifteen to twenty years will include more fluctuations in the market cycle. Market ups and downs are more likely to be averaged out, reducing the distorting impact of any one turn in the cycle.

E. Next Steps and Further Research

The process of developing and testing this Model revealed ample evidence that streetcar improvements are seen as positive amenities and can have a positive impact on the development environment. However, the exact size of this impact remains a topic for further investigation.

The Model will benefit from new research and data allowing finer calibration over time. In particular, the lack of published research specifically describing the impacts of a streetcar line on property values and/or rents represented a significant knowledge gap at the time of Model development.

It is hoped – and expected – that additional data (some of which will be collected by the application and calibration of this Model) will ultimately serve as the basis of a hedonic

regression analysis to attempt to quantify the impact of streetcar improvements on value and pricing, relative to other factors that impact real estate pricing. Further modeling of additional corridor types will increase understanding of streetcar impacts in different types of urban or suburban environments.

An additional research avenue would be application of the Model retroactively to an existing streetcar corridor to see how well it simulates the development that occurred there. This step would be helpful in further calibrating the model to real world conditions.

II. WHAT ARE STREETCAR IMPROVEMENTS?

The successful implementation of new streetcar service involves more than simply installing tracks on an existing street. In practice, the development of streetcar lines includes a number of linked physical improvements and actions, which are difficult to unbundle. These include streetscape improvements, changes in entitlements and other public actions to capitalize on the investment.

Since evaluating the marginal impact of specific components within this bundle is difficult, the Model is designed to address the bundled nature of streetcar improvements and related actions. These bundled investments are referred to collectively in this report as "streetcar improvements."

Depending on the goals and resources of the implementing jurisdiction, streetcar improvements may include:

Physical Improvements

- **Tracks & Vehicles:** The most basic component is simply the installation of tracks and the one or more streetcar vehicles which will operate on them.
- **Stops or Stations:** Improvements to provide functional stops for the streetcar may include elevated platforms, curb extensions, or more elaborate transit stations for the intersection of multiple lines or transit modes. Stops and stations may also include amenities such as lighting, shelters, signage, and plantings.
- **Streetscape Improvements:** In addition to improvements at the stops, a new streetcar line may include broader streetscape improvements and/or sidewalk reconstruction. Other improvements may include, but are not limited to: repair of aging sidewalks, wider sidewalks, curb cuts, new and/or broader planter strips, space for outdoor dining or other activities, bike racks, and new street trees.
- **Other Street Improvements:** Disruption of a street for streetcar installation creates an opportunity for broader redesign and/or re-marking of streets and intersections. Such improvements may include, but are not limited to: resurfacing and re-marking, redesign

of auto lanes, addition of bike lanes, new or better signalization, improved crosswalks, and medians.

Environmental Improvements

- **Mobility & Reduced Auto Dependence:** It is assumed that streetcar improvements will enhance transit service to some degree by adding a new travel option, increasing service times (reducing headways), and reducing auto dependence for residents, employees, customers and other users of the corridor. In some cases, the new streetcar line may include a better connection to a major destination district by crossing a barrier such as a freeway or waterway that previously blocked auto traffic.
- **Increased Amenities:** Beyond the benefits of the streetcar itself and the investment in physical public improvements, a successful streetcar will attract other amenities, including new businesses and activities, to take advantage of increased foot and transit traffic and an atmosphere of reinvestment and revitalization.
- **Marketability & Perceptions:** Streetcar improvements may enhance the marketability of nearby properties and improve perceptions of an area. Developers, lenders, residents and business owners tend to recognize and respond to this new investment and a sense that policy makers are committed to the area. For developers, this can reduce the perceived risk of investing in the area, improve borrowing potential, lower vacancy, and strengthen rent and pricing levels.
- **Complementary Public Policy:** To make the most of the public investment, streetcar improvements are generally accompanied by policy initiatives to help spur transit-oriented development and rehabilitation. These include goals for creating and investing in streetcar corridors, followed by zoning that permits and encourages those goals. Additional public steps can include master planning of the corridor and the creation of public financing tools such as fee waivers, entitlement bonus programs for TOD, or more direct subsidies. The greatest impact comes from well-funded programs such as urban renewal (or equivalent economic development funds) that allow direct public participation in land assembly, purchase of key sites, and public/private partnerships.

A city or local agency planning for a new streetcar may have an estimate of the scope and scale of planned improvements including some or all of the above components. Agencies preparing a New and Small Starts grant application may have this information prepared for inclusion in their application packet. In the absence of this information, agencies seeking to use the Model can estimate what physical public improvements would be built in conjunction with a new streetcar line, how it will improve mobility, whether new supportive public policies will be put in place and how generous those policies will be. Improvement in livability and marketability are integrated into the Model's calculations.

III. OVERVIEW OF MODEL METHODOLOGY

This section of the report discusses how an assumed package of streetcar improvements is applied to generate Model outputs.

A. General Approach

The Model is an Excel-based model which translates user inputs on existing and expected conditions in a corridor into an estimate of the magnitude of new development projected over the planning period. The following steps describe an application of the Model:

1. The user **inputs a range of indicators** on existing conditions in the area, as well as anticipated future conditions after streetcar improvements have been implemented.
2. The model **generates a "baseline scenario"** based on existing conditions.
3. The model **is re-run to generate a "streetcar scenario"** based on the anticipated conditions resulting from streetcar improvements.
4. The Model **produces projections of the anticipated amount of development** in the corridor under each scenario.
5. The Model provides a **comparison of the baseline vs. streetcar scenarios**. The difference represents how much additional development, if any, streetcar improvements may encourage.

A key component of this approach is the utilization of a "production" model, which is intended to mimic a developer's decision tree. As such, the Model solves for the "highest and best use" development form on the basis of predicted financial return.

To do this, the Model uses a pro forma based predictive model to generate predominant development profiles for the study area. This model evaluates highest and best use development forms under a range of assumptions, based on the implied residual property value[4] under each use. This allows a calculation of the likely predominant development form within the study area and subareas, based on market dynamics and zoning entitlements. It also establishes a residual property value for the area, which enables an evaluation of the extent to which existing properties can be expected to redevelop.

[4] "Residual Property Value" reflects the maximum supportable acquisition value of the property under an assumed development program (i.e. what the developer is willing to pay given the planned and permitted uses of the site). The permitted use that yields the highest Residual Property Value is considered the most attractive use in terms of financial return to the developer.

B. User Inputs

The major categories of user input in the Model are as follows:

- **Transit Service, Connectivity & Accessibility** – These inputs are intended to help answer the following questions:
  - What is the quality of the current transit service connectivity and accessibility within the corridor?
  - Will the streetcar project improve transit service and connectivity?
  - How will it change transit service and connectivity in the corridor?
- **Pedestrian Environment** – The assessment of the pedestrian environment takes into account attributes such as sidewalks, street trees, availability of services, and other elements that impact the pedestrian experience. These inputs are intended to help answer the following questions:
  - What is the current pedestrian environment like within the corridor?
  - Does the streetcar project include any pedestrian improvements?
  - How will those improvements change the pedestrian environment?
- **Public Policy** – These inputs are intended to help answer the following questions:
  - Are there public policies and/or funding tools available within the corridor to support streetcar? This would include urban renewal or other improvement districts.
  - Will changes to public policy be made as part of the streetcar project?
  - How will those changes affect availability of public tools in the corridor?
- **Zoning** – An assessment of existing zoning is included because of its relevancy to future development in the corridors, as follows:
  - Is zoning in the corridor supportive of streetcar in terms of permitted uses and development/design standards?
  - Will any changes to current zoning be needed as part of streetcar development?
- **Market Indicators** – Inputs on market pricing levels, financing terms, cost and vacancy assumptions:
  - What is the current strength and attractiveness of the market for new development?
  - Will the streetcar make development more likely by improving market fundamentals?
- **Study Area Parcels** – Information on all study area parcels by identifier (address or parcel i.d.), size, zoning, and estimated market value.

As described in Section II of this report, the development of streetcar lines and corridors typically includes a number of linked physical improvements and actions, which are difficult to unbundle. The result is that evaluating the marginal impact of specific components within the bundle is difficult.

In response to this challenge, the **Initial Input Screen** was developed to help capture this bundle of quantitative and qualitative factors that can accompany streetcar service and contribute to the impact on the development environment. For instance, a streetcar investment may include new streetscape improvements, new station areas, better pedestrian mobility, or increased business and service amenities in the neighborhood, all of which can have a synergistic effect in strengthening a real estate market.

Taken together, streetcar improvements affect specific levers that impact the feasibility of development in a corridor.

C. Streetcar Improvement Levers of Impact on Development

Key inputs to the Model are those that impact the revenues, costs, return parameters and site entitlements of a prospective (re)development project.

The Model is predicated on an assumption that streetcar improvements will substantively impact a number of variables that influence the perceived development environment, triggering a predictable response in the market. Figure 3.1 lists impacts commonly associated with streetcar improvements. Each of these is categorized by category, as well as color coded to denote general impact on the Model's predictive development component. Marginal shifts in assumptions about the variables are converted into changes in residual land values, and in some instances changes in development form.

The development variables used in the model can be broken into three primary categories that help determine final development form: **achievable pricing**, **cost to develop**, and **threshold returns**. Shifts in these inputs can alter associated patterns of

FIGURE 3.1: LEVERS OF IMPACT ON DEVELOPMENT

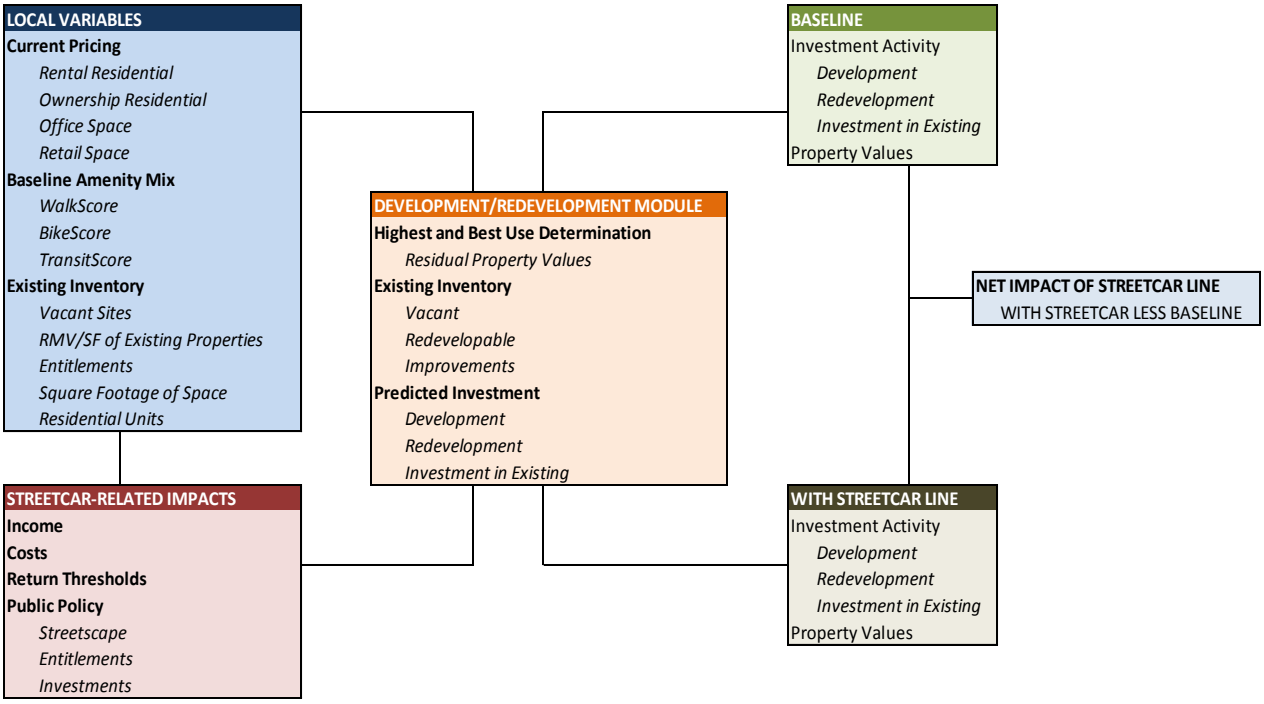
INCREASED ATTRACTIVENESS/MARKETABILITY TO TENANTS
Higher Achievable Pricing
Higher Absorption Rates
Lower Vacancy/Collection Losses
Less Tenant Turnover
INCREASED ATTRACTIVENESS TO INVESTORS
Lower Capitalization Rates/Return Thresholds
Greater Availability of Financing
IMPACT ON CONSTRUCTION COSTS
Reduced required parking ratios
Reduced Off-Site Improvements
RELATED PUBLIC SECTOR ACTIONS
Entitlement Changes
Related Streetscape Improvements
Active Efforts to Encourage Related Development
Grants/Loans/Financing Mechanisms
Property Disposition

REVENUE
COST
RETURN
ENTITLEMENTS

investment. In this model, streetcar improvements are assumed to impact some of these inputs, and therefore potentially alter investment and development patterns.

The following is a schematic of the model, followed by a discussion of the key components.

FIGURE 3.2: SCHEMATIC OF MODEL



D. Local Variables

Information on local variables is entered into the model to describe the existing characteristics of specific study areas. The variables to be collected include information on pricing, amenities and physical property characteristics at the parcel level. It is anticipated that model users will rely on local GIS or other mapping data and tax assessor data to collect data on physical conditions in the study area. Local economic development staff or real estate market professionals may be needed to provide data on market variables such as rents and construction costs.

FIGURE 3.3: CATEGORIES OF LOCAL VARIABLES

- **Pricing**

  Assumptions with respect to current pricing in the area, reflecting the estimated anticipated pricing for new product by category, need to be generated as an input. This includes per-square-foot rental rates for rental apartments, sales prices per square foot for ownership residential units, and net lease rates per square foot for office and retail space. In addition, assumptions need to be developed with respect to achievable pricing for parking spaces. **These variables should be set to reflect the achievable pricing that a developer would assume for a new construction project in the area being studied.**

  The current achievable pricing structure in an area is an important variable to consider in predicting the marginal impact of any changes in the development environment. It is a significant factor in determining the form of development as well as predicting residual property values in the district. While the pricing experience of new comparable projects can be a strong predictor of achievable pricing, in some markets there may be limited or no new product to establish a reliable price. Nonetheless, **an assumption of current achievable pricing in a study area will be necessary to run the model.**

Determination of this variable will be somewhat subjective, based on a few universally available data sources. Model users will likely need to consult the expert opinion of local brokers, realtors and other real estate professionals. This can be supplemented with readily available secondary data sources such as *CoStar* for commercial space, *Zillow* for residential pricing, local multiple listing service data and other third party data sources.

- **Physical Characteristics of Corridor Properties**
  As with pricing, the physical characteristics of prospective corridors will be a major factor in the predicted magnitude and character of redevelopment. The model incorporates an assessment of existing properties at the parcel level, for both improved and vacant sites. Parcel assessment inputs include the following:
    - The estimated Real Market Value (RMV) of Improved sites at the parcel level (This variable is used as a proxy for the market value of the site in and found in assessor records);
    - Parcel size/square feet; and
    - Current entitlements (zoning) by parcel.

  Within the model, the attributes of individual parcels are used to predict the likelihood of redevelopment, with properties that have a high current value of improvements being more challenging to redevelop. Zoning entitlements by parcel are used as a screen, which limits potential redevelopment scenarios to those allowed under the zoning.

- **Existing Amenity Mix**
  The existing amenity mix reflects the current level of amenity in the district, and is important to help predict the marginal impact of new streetcar investments on the local amenity base. The Model assumes that a streetcar investment will expand the local amenity base and increase marketability, but this impact will likely be less pronounced in areas that have a relatively high existing amenity base. Our hypothesis is that the marginal impact on marketability of a new amenity such as streetcar service would be reduced in areas that are already highly amenitized. The ability to input information on the current level of amenity in the area is included on the Initial Input Screen. This variable is included in recognition that it may have some explanatory power with respect to the results.

E. Streetcar Related Impacts

This component of the model summarizes the anticipated marginal impact associated with the streetcar investment, including impacts on income, costs and return parameters. The impact of the streetcar improvements assumed in the model are expressed in terms of a percentage shift

in income, costs and return thresholds. Incremental improvements to transit service, walkability, streetscape and other factors related to streetcar investment have a marginal impact on these variables. Assumptions with respect to marginal shifts attributable to the streetcar improvements are based on available studies and the input of real estate professionals with experience in streetcar corridors and transit oriented development. Evaluation of these types of impacts is ongoing, and more accurate information will help adjust these assumptions over time.

A hedonic study focusing specifically on the impact of streetcar on real estate pricing, costs and other market levers has not been identified in the literature and is beyond the scope of this project. In the future, a jurisdiction applying this model might seek to inform their variable assumptions with such a study, should it become available

FIGURE 3.4: CATEGORIES OF PROSPECTIVE IMPACTS FROM STREETCAR IMPROVEMENTS

STREETCAR-RELATED IMPACTS
Income
Costs
Return Thresholds
Public Policy

As part of its projection of streetcar-related impacts, the Model is capable of evaluating some policy-sensitive actions that may have a significant impact on future investment patterns. The primary policy input incorporated into the model is entitlements (zoning. range of allowable uses, allowable densities, etc.). To the extent that public policy mechanisms such as urban renewal, land assembly, fee waivers, property tax abatements, subordinated debt and/or other economic development tools are included as part of the streetcar bundle of actions, the impact of these interventions is addressed through associated shifts in income, costs and return thresholds on the Initial Input Screen.

F. Development/Redevelopment Module

The development/redevelopment module is intended to simulate the development decision tree, factoring in the impact of the key inputs on decisions to undertake development activity. The model is based on a series of simplified pro formas for 27 theoretical development programs that characterize the relationship between key variables, predicted development form and associated residual property values. The module generates a generalized determination of the "highest and best economic use" based on the theoretical development programs, as well as an associated residual property value associated

FIGURE 3.5: COMPONENTS OF THE DEVELOPMENT/ REDEVELOPMENT MODULE

DEVELOPMENT/REDEVELOPMENT MODULE
Highest and Best Use Determination
Residual Property Values
Existing Inventory
Vacant
Redevelopable
Improvements
Predicted Investment
Development
Redevelopment
Investment in Existing

with each program under both the baseline and streetcar scenarios. This information is reconciled with information on the existing inventory information and zoning, resulting in a predicted pattern of investment.

"Highest and Best Use"

The development/redevelopment module initially solves for a development solution that represents the highest and best use of the property under the assumptions used, as well as outputting an associated residual property value. **The highest and best *economic* use of the site is defined as the allowable land use program that yields the greatest return to the existing property, and the residual property value reflects the maximum acquisition value supported by that program under the assumptions used.** There may be additional considerations in determining the *overall* highest and best use of land from a community and planning perspective, but this Model focuses on the economic component which tends to be most relevant to private developers.

The highest and best use determination is based on the allowable use that has the highest indicated residual property value. The model currently incorporates a total of 27 theoretical development programs, but the number and nature of program options can be varied. An entitlement screen is necessary, since use types identified as having the greatest residual values may not be allowed under existing zoning. In the model, this is done using a matrix that evaluates whether or not the theoretical programs are allowable under the range of zoning codes in the study area. If the use is not allowed, the highest and best *allowed* use is determined.

The model allows for the testing of different zoning scenarios to see if changes to zoning entitlements may change the ultimate built environment by allowing uses which are currently prohibited.

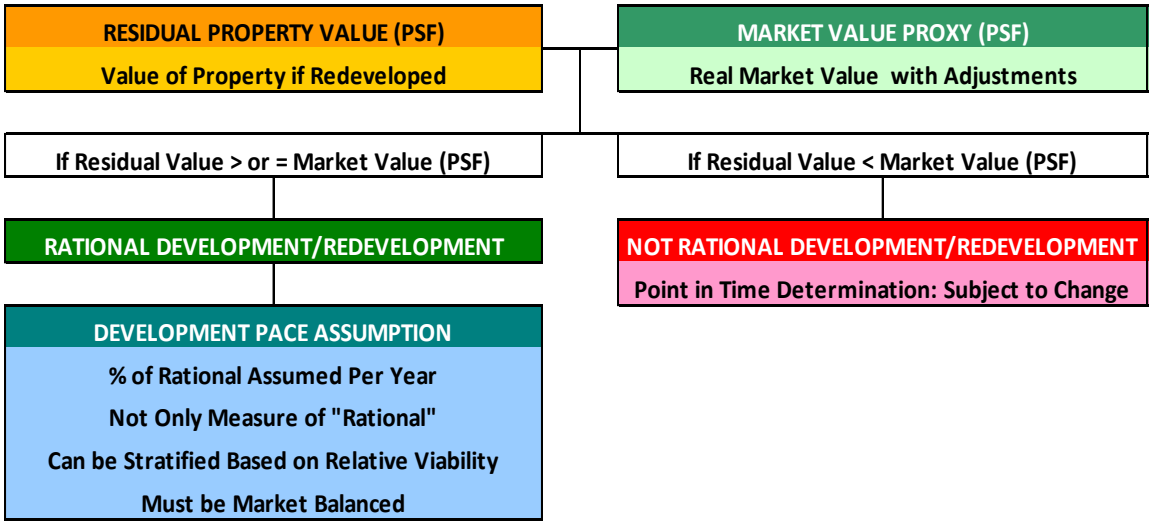
Threshold for Development

Development and redevelopment activity is predicted by the model **when the residual property value exceeds the property value under the existing use**. If the residual value is greater than or equal to the market value of the property, it is assumed to represent a "rational" development or redevelopment opportunity – i.e. a developer can purchase the property at current market value for anew intended purpose that places a greater value on the site (Figure 3.6).

While development and/or redevelopment is considered viable in these instances, it does not necessarily mean that it will occur within the study time frame. There are a number of additional factors that impact redevelopment, and the Model assumes that only a portion of opportunities identified as viable will be realized within the study horizon. The assumed rate of redevelopment should be based on historic trends in the study area, and is an input on the

Initial Input Screen. (This means looking at the amount of land area in the study area which has developed over the prior 10 to 20 year period, to come up with a realistic estimate of development rate. Permitting data or GIS data can provide indicators of historical development activity.)

FIGURE 3.6: COMPARISON OF RESIDUAL PROPERTY VALUE TO REAL MARKET VALUE (PER SQUARE FOOT)

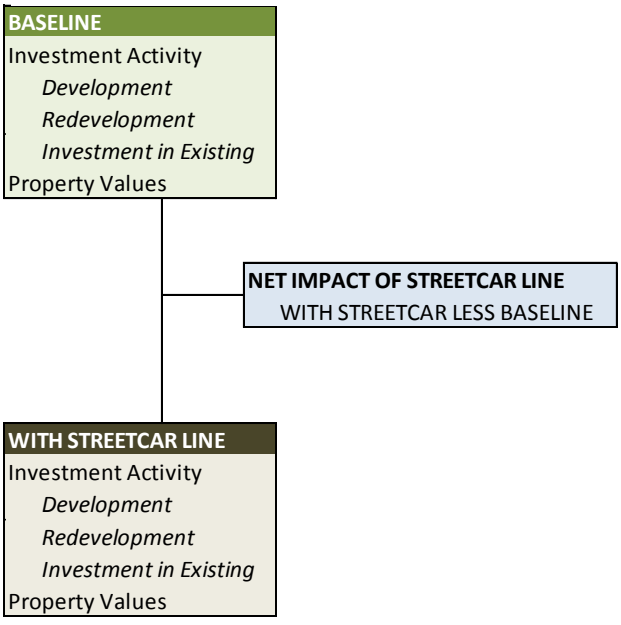


G. Measures of Development Impacts (Outputs)

The development/redevelopment module is run twice: first under baseline assumptions and subsequently with assumptions reflecting streetcar investments. Comparison of the two scenarios provides the basis for estimating the net impact of the proposed streetcar investments.

The net impacts associated with streetcar investments are broken down into multiple categories: 1) predicted levels of new development, 2) predicted levels of redevelopment, and 3) investment in existing structures. To determine the net impacts, the model solves for the differential between the

FIGURE 3.7: COMPARISON OF OUTPUTS BASELINE AND STREETCAR SCENARIOS



baseline scenario and the streetcar scenario. The units of measure include:

- The dollar value of construction and investment activity in physical improvements.
- Projected net change in real market value in the study area associated with new construction
- Net change in square footage of commercial space, as well as residential units in the study area.

The model does not address the direct, indirect or induced impact of the construction activity funded, nor the costs of ongoing operations of any streetcar lines.

H. Limitations and Assumptions

As with any model, this Model has limitations resulting from gaps in knowledge and data.

- First and foremost, it is impossible to precisely predict future development activity in a large study area given the multitude of property owners, individual investment decisions, real estate market cycles, general economic conditions and unforeseeable events. For this reason, **it is recommended that this Model be used to consider the *potential magnitude* of impacts in a proposed streetcar corridor, rather than the precise numerical results generated.** Individual results should be seen as an indicator of magnitude.

- The project team encountered various gaps in research which necessitated the use of assumptions where the literature or expert review was unable to provide more exact factors for use in the Model. In particular, hedonic regression analysis seeking to isolate and quantify the impact of streetcar specifically on real estate pricing, costs and other market levers was not identified in the existing literature at the time of Model development. Such a study was beyond the scope of this project to conduct. To help compensate for this deficiency, a collection of studies identifying such impacts in various environments around light rail lines and stations was used to form an assumption of the potential range of rent impacts from streetcar improvements. Data collection and more precise studies in the future will allow for calibration of the Model over time.

- The Model is designed to address the fact that streetcar improvements include a series of bundled actions, and evaluating the marginal impact of specific components within this bundle is difficult. Components include not only the streetcar line itself, but also streetscape improvements, changes in entitlements and other public actions and interventions to capitalize on the investment. The user must have at least a preliminary understanding of which components will accompany a proposed streetcar investment in a corridor.

- The Model uses specific parcel-level data to generate quantified measures of predicted development activity, but it is important to remember that this Model is actually generating a broad study-area-wide estimate of development activity. In no cases should this Model be used to reach definitive conclusions about what will happen on any given parcel. Any Model outputs that identify parcels, whether in map or database form, should specify that *it is making no firm predictions or guarantees on the eventual development or lack of development on specific properties.*

- This methodology assumes a base level of data availability on existing conditions, market factors, Walk Score and other third-party metrics, and parcel-level data. The methodology is designed to strike a balance between requiring information that should be available for most mid-sized cities, while not simplifying to the extent that the methodology is compromised.

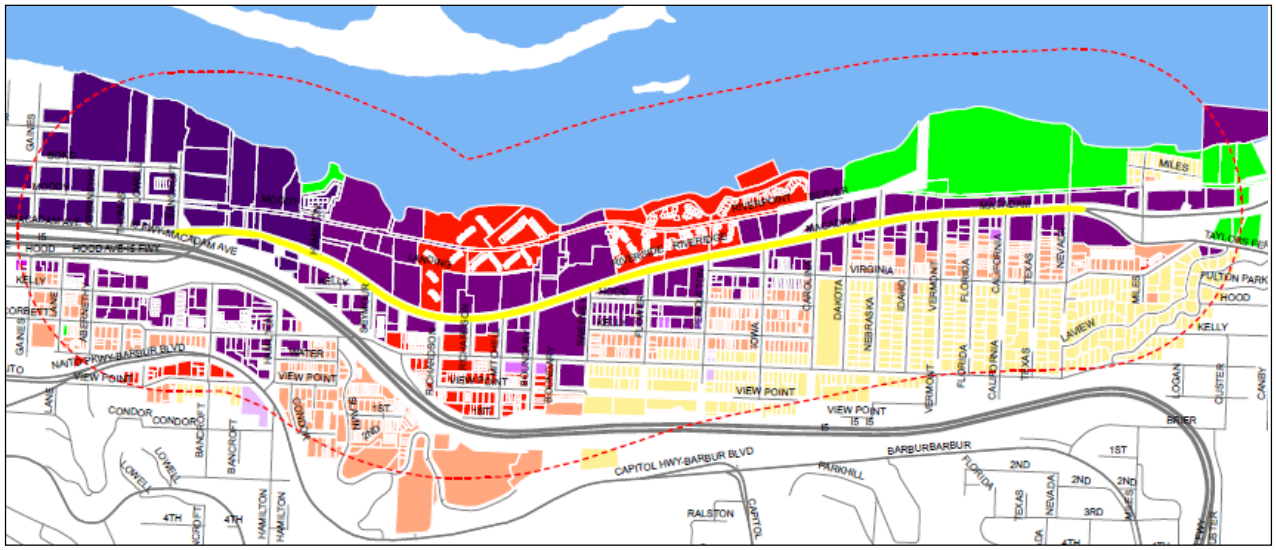
IV. TEST RUN OF MODEL

As part of this project, the project team performed test runs of the Model on four corridor types in the Portland metropolitan area. While specific corridors were used, the point of the exercise was not to make corridor-specific determinations at this time, but to apply the Model to representative corridor typologies, in order to test the Model and provide more universal insights. The four corridor types considered included:

- An auto-oriented commuter corridor as it enters the Central Business District
- A historical streetcar route in an inner neighborhood
- A classic auto-oriented retail strip on an urban highway route
- A new-urbanist planned community in a suburban community

The test runs of the Model were instrumental in learning how it works in practice, identifying trends among corridors and how they differ, and finding unforeseen bugs. A more detailed discussion of the test run results is presented in Appendix C.

FIGURE 4.1: EXAMPLE TEST CORRIDOR



Source: Angelo Planning Group, Metro RLIS

The general conclusions from these test runs of the Model are included in the General Findings section of this report. However, some of the findings which were more specific to these test runs are presented below.

General Conclusions from the Test Application

- The Model projected that streetcar improvements would increase the development potential in the test corridors, averaging 15% more investment and 20% more growth in property value than the baseline scenario.

- Streetcar improvements showed the greatest relative impact in the test corridor where these improvements had the most potential to improve transit service, sidewalks and crossings. In the test corridor that was already strongest in these areas, the additional marginal impact of streetcar improvements was projected to be less. Similarly, the planned new-urbanist community is already projected to have excellent walkability and amenities when developed; therefore the Model prediced that streetcar would provide a smaller relative improvement on these measures.

- In the test runs of the Model, there were few instances where proposed streetcar improvements actually changed the likely development forms in the corridor, triggering a change, for instance, from low-density development under the baseline scenario to mid-rise development in the streetcar scenario. Instead, the increase in development mostly comes from increasing the likelihood of development of parcels with the same building form.

- The smaller the share of existing low-density residential zones in the area, the greater the redevelopment potential for transit-supportive density. Corridors where medium and higher-density zones extend into the surrounding neighborhoods have the greatest potential for meaningful redevelopment into a transit-oriented atmosphere.

- As the Model outputs multiple measures of development, there are different ways to compare the projected "success" of streetcar improvements in different corridors. For example, based on public policy in a particular area, housing production may be the most important metric in one corridor, while in another, new taxable assessed value is considered most important.

There are many measures of streetcar success, including mobility, equity and land use considerations. As stated in the Executive Summary, this Model focuses on the economic development impacts only, but does not claim that these impacts are more or less important than other considerations. Moving forward, all of these general conclusions will be further examined by Model application and calibration.

V. LITERATURE & RESEARCH REVIEW

An essential early step in this project was the review of existing reports and studies from government, academic and other sources. The purpose of this review was to identify what data and conclusions were already available regarding the central relationships to be modeled in this project regarding the following questions:

- Is there any existing data demonstrating and/or quantifying the impact of streetcar improvements on real estate development in the streetcar corridor or station areas, including impact on rent and pricing levels, construction costs or lending terms?
- Is there existing research on the impacts of other types of rail and transit on real estate development?

A. Overview

TO JOHNSON REID's knowledge, only two studies have so far endeavored to document the impact of new streetcar lines on property development and values with quantitative research. Both studies are limited in scope, and do not attempt to isolate the effects of streetcar from other factors that may have affected property development and pricing along the corridors at the time. The literature on light-rail systems is considerably more extensive, and arguably provides a better basis for estimating likely benefits of new streetcar projects. Significant attention is therefore given to research on light-rail in this summary.

However, for the purpose of modeling impacts of new streetcar lines, studies focused on value premiums may be more useful than studies of changes in development. This is due to the different ways in which property values and development activity respond to market signals. Changes in value tend to affect both undeveloped and developed properties, and occur in small increments that can be observed in sales transactions. Compared to the development impact, the value impact can thus be measured more reliably, with greater precision, and more independently of local, non-transit factors. Secondarily, the value premium is a more crucial input when modeling the impacts of a new streetcar line, as increases in achievable pricing usually precede development decisions. The following review therefore focuses mainly on value premiums.

A total of 35 research publications were reviewed for this project. Emphasis was placed on recent studies that employ hedonic modeling, a technique that uses multiple regression to estimate the marginal value of individual benefits known to impact property values. Only the most relevant studies and findings are included in this summary. A comprehensive bibliography of reviewed literature is included at the end of this report.

B. Relevant Studies and Findings

STREETCAR STUDIES

- E.D. Hovee & Co. (2005) studied the impact of the original west side Portland Streetcar alignment on property development by comparing densities along the line before and after the alignment was committed. After the construction of the street car was announced in 1997, properties within one block of the line were shown to capture a large share of new development and significantly higher densities than areas further out. Impacts on pricing levels were not quantified.

  The study did not attempt to quantify the contributions of streetcar in isolation from urban renewal efforts or to make a judgment on the amount of development that would have taken place without streetcar. However, developer interviews referenced in the report indicate that the alignment decision was interpreted by developers as a guarantee of public-private commitment to the affected neighborhoods, and thus came to represent investments and amenities not directly related to streetcar.

- As part of a funding assessment for D.C. Surface Transit, Re-Connecting America conducted a case study of streetcar impacts in three cities (Brookings, 2009). The value impact, estimated by comparing changes in tax assessments for streetcar-adjacent properties to average city-wide changes, was found to be strong and positive in Seattle and Portland but negative in Tampa. No consistent pattern was observed regarding the relative effect on different property types. Tampa saw the greatest benefit for hotels and multifamily properties, whereas vacant land saw the greatest boost in Portland and Seattle. During the planning stage and early operation of the line, Portland also saw significant appreciation for commercial properties and sub-dividable single-family parcels, while multifamily properties saw greater relative appreciation after completion. As with the E.D. Hovee report, the authors did not attempt to distinguish the marginal impact of streetcar from the effects of other efforts.

- A recent study by the Institute for Transportation and Development Policy (ITPD, 2012) examined development in 21 different transit corridors including streetcar, light rail, bus rapid transit, and bus service. Out of the 21 corridors, two were streetcar corridors in Portland and Seattle. The study attempted to quantify the development return in the corridors, compared to the cost of constructing the transit improvements. The study identified other factors in the corridors that might have impacted development, such as the existing development potential, government support for TOD. The analysis determined qualitative rankings for these factors such as “weak, moderate, or strong”.

This study found no correlation between the type of transit and level of TOD investment. Instead, the most important factor in encouraging development was found to be the level of government investment in TOD. The second most important factor was the existing "development potential" of the corridor prior to transit improvements. The best performing categories were rated as having "emerging" or "strong" potential irrespective of the transit improvements. Those rated as having "limited" potential fared the worst in terms of development in the corridor after transit improvements.

LIGHT-RAIL STUDIES

Considerable resources have been committed to measure the impact of new light-rail lines on property values over the last three decades. Most researchers have followed a cross-sectional approach, measuring variations in property values at different distances to transit stations. Some have also employed a longitudinal approach, comparing changes in values over time inside and outside defined station areas.

Though estimated property value or rent premiums vary widely from city to city (and sometimes even within a city), the majority of studies find statistically significant value premiums for properties located around light-rail stations. A quantitative summary of hedonic studies conducted prior to the early 2000s has been provided in the form of a meta-analysis by Debrezion et al. (2007). Light-rail represented 16 out of the 57 sets of study results included in the analysis. The average value premium across the light-rail studies was 7.1% for properties located within a quarter mile of a station, and 2.7% per 250 meter closer a property was to a station. The authors observed wide differences in the results of the underlying studies, with estimates of the quarter-mile premium ranging from -7% to 30%.

The authors estimated the premium differential between commercial and residential properties through a meta-regression of the underlying study results (all transit forms). Within the quarter-mile radius, the commercial premium was found to be higher by 12.2 percentage points. However, per 250-meter increment, the residential premium was 2.3 percentage points higher than the commercial premium. As explained by the authors, the apparent inconsistency reflects that commercial properties have rent curves that are steep immediately around transit stations and flat further out, with the flat part dominating the calculation. The authors did not distinguish between retail and office properties, but research not included in the meta-study has shown that the rent curve for office properties need not be that steep.[5]

[5] Weinberger (2000) found rent premiums of 11% for office properties within ¼ mile and 6% for properties between ¼ and ½ mile of light-rail stations in Santa Clara County.

Debrezion et al.'s findings lead to premium estimates for light-rail presented in the table below. The estimates are based on the premium differentials calculated for all transit forms. Research by Cervero (2003) indicates that the differential might be considerably lower for light-rail than for commuter rail. Consequently, the estimates for residential and commercial premiums below should perhaps be pulled closer to the overall average. In addition, the estimates might need a downward adjustment. Debrezion et al. find that the lack of variables to account for access to highways and other transportation in some of the underlying studies inflates the overall estimates.[6]

FIGURE 5.1: META-REGRESSION RESULTS, LIGHT-RAIL PREMIUM ESTIMATES

	Premium within 1/4 mile of station	Premium per 250m closer to station
Overall	7.1%	2.7%
Residential	4.2%	3.2%
Commercial	16.4%	0.9%

SOURCE: Debrezion, et al., 2007, Johnson Reid

Recent research largely confirms the work by Debrezion et al. Many newer studies focus on residential properties alone, and present premium estimates in dollars per foot or meter. When converted to a quarter-mile radius, these premiums typically range between 2-6% (Cervero 2003; Garret 2004; McMillen and McDonald 2004; Hess/Almeida 2007; Goetz et al. 2010; Yan et al. 2012).

One recent study from Dublin, Ireland should be given special attention because of its potential relevance for streetcar. Not unlike Portland's MAX system, the Luas light-rail system in Dublin resembles streetcar in downtown stretches by making frequent stops and using at-grade tracks integrated with other street traffic. Mayor et al. (2008) distinguished central residential stretches of the line (Zone 2) from the more suburban (Zone 3), and found that homes within 500 meters (0.3 miles) of Zone 2 stations command a 6% premium, while the premium in the suburbs was 13.2%. The authors point out that affected districts had high level of congestion and inadequate transit service prior to the new line, something that likely widened the premiums. The study also revealed a greater willingness to walk than is usually seen in North America, which might also have bolstered the premiums.

[6] The authors do not provide average premiums for the studies that include such variables, but calculate the regression coefficient for including such variables, based on all transit forms. Applying this coefficient to light-rail, which may be misleading, indicates that the overall ¼-mile premium should be reduced from 7.1% to 3%.

OTHER FINDINGS

Existing research reveals no clear pattern for how proximity premiums are capitalized over time. But in general, single-family residential properties appear to have the most gradual appreciation, with a significant portion of the premiums developing after the line is completed. In one case, statistically significant premiums appeared four years after announcement of the line, and were still widening two years after completion (McMillen and McDonald 2004). Commercial properties often see capitalization concentrated around the construction phase. Multifamily properties generally occupy a middle ground between commercial and single-family properties.

The size of the impact radius around rail transit stations appears to be strongly correlated with service coverage. For light-rail, researchers generally find that the proximity premium disappears between a quarter of a mile and half mile of a station (Chen et al. 1998; Garrett 2004; Goetz et al. 2010).

Though demographic factors in many studies are shown to impact premiums, the direction of the impact is not consistent (e.g., Gatzlaff/Smith 1993, Kahn 2007, Hess/Almeida 2007). In their meta-study, Debrezion et al. found that the overall effect of including demographic variables was insignificant.

To our knowledge, no one has yet documented the impact of transit station proximity on investor return requirements. However, Pivo and Fisher (2008) found that "responsible properties" – properties that are either energy efficient, within half a mile of a rail transit station, or within an urban regeneration zone – had capitalization rates 0.45% below other properties.

C. Limitations and Gaps in Knowledge

The wide range of premium estimates in the research literature reveals that it is difficult, even with hedonic modeling, to estimate the market premium on transit proximity completely free from local and non-transit influences. One challenge with hedonic modeling is that it is dependent on the researcher's ability to correctly identify and reliably measure relevant variables. A number of factors, like congestion and attitudes to public transit, are difficult or costly to measure in practice. Moreover, hedonic modeling can only estimate the impact of variables that have significant variation within the collected data. Thus, a study area with a uniform, transit-reliant population would likely yield higher proximity premiums than other study areas. Significant resources are required to produce accurate estimates that can serve as reliable baseline predictions for new study areas.

Due to the lack of research on streetcar systems, baseline premium estimates for new lines must be deduced from research on light-rail. This process must take into account the differences between the two transit systems. But no formula or procedure for this translation process presents itself in the literature. Several studies, including Debrezion et al., indicate a correlation between service coverage and premiums, which would point to lower premiums for streetcar assuming it covers less area than a light rail system. However, streetcar may represent less dis-amenity in the form of noise, visual nuisance and perception of station-area crime, and may also have a positive impact by virtue of representing urban vitality and enhancing walkability. Estimating baseline streetcar premiums requires a subjective weighting of these factors.

D. Conclusions for Model Development and Application

Based on premium estimates from the most recent light-rail research and the meta-study by Debrezion et al. (with the above suggested adjustments), residential properties within a quarter mile of light-rail stations might be expected to capture value premiums of around 3-6%, and commercial properties might see premiums of twice the magnitude.

To translate these estimates into a streetcar context, for Model development purposes we assumed that for residential properties the reduced nuisance and added walkability/vitality benefits of the streetcar largely offset its narrower coverage and slower speeds. This assumption may not hold for commercial properties, for which passerby traffic (ridership) and accessibility (speed, coverage) are crucial determinants of pricing (cf. Cervero 2003). This leads us to a baseline premium estimate of 4% for residential properties and 6% for commercial properties within a quarter mile of streetcar stations.

In future applications, the Model should be adjusted to local conditions before applying the baseline estimate to a particular study area. Because part of the premium represents accessibility to the city center and other important nodes, and because the benefit of increased accessibility is greatest where the existing accessibility is the poorest, the estimated premiums should be adjusted to reflect a neighborhood's existing accessibility. Premiums should be reduced in neighborhoods with short walking distance to important nodes or with nearby access to alternative transportation modes that provide faster or more far-reaching service. And premiums should be increased in dense and congested areas where the opposite is the case. In the same way, premiums should be adjusted to reflect a proposed alignment's length and connectivity with other transit lines.

New research on the economic impacts of modern streetcar systems will continue to inform and improve upon our knowledge and modeling capabilities. Such research is highly welcome and could be invaluable to planners, decision-makers, and anyone involved in evaluating the feasibility of proposed investments. Especially helpful would be detailed hedonic analysis of the

impact of streetcar service specifically on property values and/or pricing levels, as well as spatial variables that can determine the impact radius and temporal components that can reveal causality.[7]

[7] When determining whether identified premiums are caused by a new transit line or whether the transit line was placed along a corridor that already enjoyed value premiums, streetcar systems are more prone to false cause fallacy than light-rail systems. Light-rail corridors will normally show a pattern of accessibility premiums around stations and nuisance discounts around tracks, which safely can be assumed to stem from the light-rail line. But streetcars have more frequent stops and cause less nuisance along its tracks, and also offer retailers along the line more even exposure. As a result, pricing will be more homogenous along the corridor, and studies without a temporal component may falsely attribute pre-existing premiums to the new line.

VI. PROFESSIONAL FOCUS GROUP AND TECHNICAL REVIEW

During the process of developing and testing the model, the project team sought feedback from local real estate experts and regional technical advisors who may be using the model. This section provides an overview of these efforts and summary of the takeaways from each.

A. Developer and Real Estate Professional Focus Group

A focus group of local developers and real estate professionals with experience around existing Portland Streetcar lines (and in other parts of the region) was convened to discuss how streetcar improvements impact the private market dynamics and decision-making process, which may result in new development in these corridors.

The discussion included five professionals of long experience in the area, representing development and lending perspectives. The following is a summary of the major takeaways from this conversation.

Summary of Discussion and Major Themes

- Participants tended to agree that streetcar is a positive amenity for real estate end users, but that measuring its effect is difficult. There was general acknowledgement that being located near rail transit could increase achievable rents for different types of space. This effect is caused by a group of inter-related factors which include the streetcar itself, but also includes the general location, livability, and amenities that accompany a streetcar line.
- One participant stated that there are three common elements of revived urban neighborhoods, regardless of the city: access to transit, services and walkable neighborhoods. The three are inter connected and rely on each other.
- Some think of the streetcar as an "extender" for pedestrians to travel a bit farther than they otherwise would. It is a local service, vs. the regional service of a light rail line. Its difference from bus transit is perception and socioeconomics. Another expressed that it is "an attraction," that doesn't serve a robust transit function, but is valuable for community marketing and tourism. Streetcar doesn't run all the time, and so people can't rely on it as primary transport 24-hours a day.
- There was agreement that location near rail service reduces parking needs, at least for residential buildings, which saves costs for developers.

- The group felt that the presence of a streetcar will generally not impact the thinking of lenders or the terms they offer, but it is a nice extra, and makes lenders more likely to consider somewhat reduced parking ratios.
- One developer stated that streetcar may be like green features in a building, in that it may not increase rents much, but will increase absorption and retention of tenants.
- There was discussion of the strength of location for streetcar, with emphasis on proximity to the Central City. Some expressed that even Portland's Eastside Loop was "ahead of the market". One participant emphasized keeping the streetcar tightly focused in the Central City. Many agreed that Macadam Avenue (a commuting corridor just outside and feeding into the Central City) would be a good candidate for streetcar service if coupled with zoning changes to allow increased density.
- Streetcar may be most successful where the real estate market is already strong or growing, or perhaps it can help bridge adjacent neighborhoods to those which are already strong. One question for policy makers is: how much are you asking developers to lead the market? Their willingness will vary according to the perceived risk.
- Another important factor is existing public support in a proposed corridor. Because many impacts of streetcar are intangible, community support vs. resistance will make a big difference in the predicted success of a new line.

Lessons for the Economic Development Model

The focus group discussion provided many good insights into how developers may perceive the addition of streetcar improvements. The group gave support to the basic perception that streetcar improvements are seen as a positive addition which should benefit rent levels and perhaps reduce parking requirements. There was little support for the idea that the presence of streetcar by itself would improve lending terms in the area, but agreement that general improvements to livability, walkability and pricing levels that can accompany streetcar may improve lending terms.

This group remained somewhat conservative in its assessment of the development prospects of different neighborhoods, signaling that neighborhoods with emerging or strong market fundamentals will still have the most support, while streetcar may not be enough to attract significant new investment to riskier areas. This is in keeping with some other research reviewed (see previous section of this report.)

The professional focus group informed various aspects of Model development. It supported the guiding assumption that streetcar is a positive amenity that can marginally improve the development environment. Streetcar can be expected to boost rent levels and perhaps reduce costs, particularly be decreasing parking needs on-site. In addition, the discussion supported

the idea that streetcar service is part of a larger bundle of improvements to transit, streetscape and livability which have synergistic effects on neighborhoods. This assumption underlies the design of the Model's Initial Input Screen which addresses some of these other factors.

B. Technical Advisory Committee

As the preliminary Model took shape, the project team gave a presentation to a Technical Advisory Committee (TAC) regarding the planned operation and methodology. The TAC was attended by representatives of local and regional governments and transit agency who bring technical expertise and may use the Model in practice.

After the presentation of the preliminary Model, the TAC engaged in discussion and asked questions regarding the methodology and functionality. The following is a summary of the major takeaways from this conversation.

Summary of Discussion and Major Themes

- Participants discussed the need to properly reflect differences in zoning entitlements and test different zoning scenarios. One particular focus was the need to accurately reflect the difference in parking requirements in transit-oriented zones, to get the full benefit of reduced parking requirements which save developer's costs and allow more leasable space to build on a site. The project team described the pro forma and zoning input sections of the Model to explain how zoning is addressed and how different development assumptions can be modeled.
- Participants asked if there was value added for master planning or other TOD-specific planning actions in conjunction with streetcar. This concern was ultimately addressed in the Model's Initial Input Screen by reflecting the positive impact of additional public policy steps on enhancing streetcar outcomes.
- Existing amenities will impact the marginal impact of streetcar improvements. If a corridor is loaded with amenities, and pricing is already relatively strong, the streetcar is likely to have a lower marginal impact then where it will help incent these amenities itself.
- There was some discussion of how to treat small parcels (such as 5,000 s.f. lots typical of single family development). Simply aggregating this square footage with larger parcels may overstate the development potential of small and fragmented parcels. This is handled two ways in the Model. For built-out low-density single-family zoned land, the development potential is judged to be negligible because few lots remain, and because redeveloped lots are generally replacing one home with one home, for no net gain of housing. For small lots on high-density zoned land, a function was added to the Model which assumes that a more restrained amount of development will happen on these parcels.
- Similarly, the TAC discussed the case of multiple developable sites adjacent to each other and whether the Model would reflect the enhanced development potential of such sites or treat them as distinct development opportunities. The project team explained that because the Model seeks to identify conditions over a large area, it assesses parcels in "bulk", and

such adjacent opportunities will be treated like other sites. Part of applying this model to a given real-world corridor is that the results must be "truth tested" afterwards by knowledgeable local users to identify if the developability of key sites has been correctly modeled. It is inherent in the model that special cases will be missed and must be reviewed.

- The group discussed the lack of hedonic analysis specifically on the impact of streetcar. It was agreed that such analysis would be valuable, and ways to best approximate it were discussed. No clear approach was identified short of doing a future hedonic analysis.
- One participant remarked that the Model could be run iteratively, with results given as a range. For instance, the results might say "if the streetcar improvements lead to a 3% increase in rents, you may get X development; if the improvements lead to a 10% increase in rents, you may get X development." This suggestion was not integrated directly into the model, but is one way of presenting results. The Initial Input Screen of the Model allows for directly entering different percentage impacts to pricing/rent and costs, to allow for testing this range of outcomes.
- There was discussion about modeling the demand side of development, and whether the Model assumes that streetcar improvements can generate new demand and development, or is it really helping to steer the location of existing demand within a city. The Model does not include a screen for market demand, and does assume that the streetcar is about steering the location of TOD within a city, which may be a legitimate public policy goal.

Lessons for the Economic Development Model

In contrast to the professional focus group, which identified larger themes, the TAC discussion was more narrowly focused on the preliminary methodology presented to the group. The discussion led to some adjustments to the Model, which are outlined in the points above.

VII. EXPERT PEER REVIEW

As the preliminary Model took shape, an in-depth description of the approach and methodology was submitted to three national experts who have done studies in this field to provide peer review. The reviewers were:

- **Keith Bartholomew, JD**
  Associate Dean, College of Architecture + Planning
  University of Utah

  Keith Bartholomew is an expert in a range of transportation and land use planning subjects relevant to this project. He has published many papers on transit and transit-oriented development, with particular focus on planning and modeling future transportation and build-out scenarios.

- **Robert Cervero, PhD**
  Friesen Chair of Urban Studies
  University of California Berkeley

  Dr. Cervero has decades of experience in teaching, consulting and publishing on transit and development. He authored or contributed multiple studies reviewed for this project. His books include *Transforming Cities with Transit* (World Bank, 2013), and *Developing Around Transit: Strategies and Solutions that Work* (ULI, 2004).

- **William Lee**
  Bill Lee Land Econ Consultants

  Bill Lee has provided real estate market analysis and economic development services for over 30 years to a full range of public and private clients. Prior to creating his own firm, he was the Managing Principal of Economics Research Associates (ERA) San Francisco and Executive Vice President of AECOM Economics. Bill Lee recently consulted on the economic impact analysis of the Downtown Los Angeles streetcar project.

Peer Reviewer's Charge

The selected peer reviewers were charged with assessing the proposed methodology of the Streetcar Evaluation model. Reviewers received detailed written documentation of the model, and not the model itself. Reviewers had access as needed to the consultant team to ask follow up questions during the evaluation period.

The reviewers provided written feedback, either positive or negative, regarding the appropriateness and efficacy of the methodology. The reviewers were instructed that written

feedback could be as brief or long as warranted, but should cover each of the reviewer's concerns in sufficient detail for the issue to be understood by the project team.

Peer Reviewer Response

The reviewers submitted written comments regarding the model. In general, the reviewers supported the theoretical underpinnings of the proposed pro-forma-based approach to modeling future development activity. They agreed that the lack of solid hedonic analysis to provide more precise measures of the impact of streetcar service was problematic.

The peer reviews raised many key points and questions regarding the methodology, which are outlined in the following tables, along with the project team's response. (The full written comments of the peer reviewers are included in the Appendices.)

FIGURE 7.1: KEITH BARTHOLOMEW, COMMENTS AND RESPONSES

Keith Bartholomew		Addressed in Model	Model Modified	Special Instructions	Out of Scope
Issue Raised	***Response***				
▪ ***Are market indicators averaged across the corridor? The model may need greater geographic differentiation.***	*This issue is one that can be highly relevant to the outcome. When utilizing the model, we would recommend that the geographic coverage is limited to market segments with somewhat homogeneous conditions. In some cases, this may require a corridor to be evaluated in several segments. Users will need to recognize when they have a corridor that includes submarkets with substantially different market parameters.*	X		X	
▪ ***There are possible problems with pricing and other variables if they are determinant of pricing. Need to be careful to not double count variables.***	*We recognize that a number of the variables are bundled into achievable pricing, as well as into other key factors such as capitalization rates. This is primarily an issue on projections of marginal shifts, and we have reduced the number of input variables to address the issue of double counting.*		X		
▪ ***Recommends a high/medium/ low scale for other measures such as amenities (Likert scale)***	*The model has been adjusted to allow for this type of input. It should be noted that while a Likert-type scale is commonly used, it does add an additional level of qualitative input, and a user should understand this and use the model to test sensitivities to these inputs.*		X		
▪ ***Deciding the adjustment factors relies solely on professional judgment. Recommends a mixed-method approach combining some quantitative and qualitative and professional judgment.***	*The model does rely substantially on professional judgment for the variables, reflecting the relative lack of reliable quantitative evidence of the hypothesized impacts. We have adjusted the model to limit the range of assumptions regarding issues such as pricing, capitalization rates and construction costs. As written, the model is capable of simple refinement as the quantification of key input variables improves through ongoing research.*		X		
▪ ***Their research has found that quantitative tends to overestimate impacts while qualitative tends to underestimate impacts***	*Similar to our response on the previous issue, the model recognizes that the research on these types of improvements is evolving and improving, and the model has been designed to allow for refinement as these variables are better understood. We have added an input sheet using Likert-type scale adjustments, which allows it to incorporate additional qualitative assessments.*		X		
▪ ***Existing zoning may be a limitation on possible development impacts. Need to allow for zoning to change with streetcar***	*The model does allow for the consideration of changes in zoning, which is part of the core model structure. This is done using a highly specific matrix of assumed zoning by parcel, which requires a substantial level of input by users.*	X		X	

FIGURE 7.2: BILL LEE, COMMENTS AND RESPONSES

Bill Lee		Addressed in Model	Model Modified	Special Instructions	Out of Scope
Issue Raised	***Response***				
▪ ***Confusion over whether the model is meant to cover multiple corridor scenarios.***	*Scenario testing with the model does require multiple runs. The primary measure of net impact is the delta between predicted marginal development activity from alternative runs of the model. This is relatively simple to do for most changes in variables, but can be time intensive for some types of zoning/entitlement shifts.*	X		X	
▪ ***Different corridor candidates will have different market response depending on current connectivity to CBD or existing streetcar line.***	*The model has been modified to include consideration of the existing transit profile, as well as connectivity to a broader system. The model now uses the "Transit Score" metric as a baseline, and adjusts impacts based on the marginal anticipated shift in this metric. The assumed marginal impacts on variables are now assumed to be greater if the improvement is linked to a system.*		X		
▪ ***Demographics and perceptions of crime can make rail service a negative in some areas. Portland is a relatively homogenous area, and this impact is likely less locally.***	*This is a difficult issue to measure, although we agree that it may have a substantial impact. The model does not have a direct input variable that can address a negative impact on pricing or other variables associated with this potential effect, but it can incorporate assumptions of negative impacts on the key variables. While not directly included in the input sheet for the model, potential impacts can be incorporated through relatively simple model manipulation.*			X	
▪ ***The model needs to account for market momentum and path of growth inputs.***	*We have refined the model to incorporate assumptions with respect to the baseline market trajectory, expressed through real anticipated increase in achievable pricing. This is now included in the input sheet.*		X		
▪ ***Model should account for rehab and renovation.***	*The model has been refined and expanded to incorporate projections of rehab/renovation activity. This is based on an assumed average annual rate of investment activity as a percentage of market value, and extrapolated to reflect the shift in market value between alternative scenarios.*		X		
▪ ***Rehabilitation may make redevelopment less feasible.***	*We recognize this likely outcome, and would recommend users run scenarios in discrete time increments, which will allow for interim investment and development that may potentially preclude later development.*			X	
▪ ***Need to account for adjacent parcels where the overall synergy is greater than the sum of its parts.***	*This is an excellent point, and will require inspection and adjustment of interim results by the user. Additional manipulation in the parcel data may also be done by users to recognize multiple parcels acting as a single economic unit, such as condominium units or multiple parcels in a single use or ownership.*			X	
▪ ***Don't go too far with zero or low parking solutions.***	*We recognize that these development forms typically consume on-street capacity, and need to be limited in their utilization. While we can recognize that this is a potential concern, the model cannot necessarily address this if entitlements allow, and it may require some level of manual override of results if the output appears unreasonable.*			X	

FIGURE 7.3: ROBERT CERVERO, COMMENTS AND RESPONSES

Robert Cervero		Addressed in Model	Model Modified	Special Instructions	Out of Scope
Issue Raised	*Response*				
▪ *The methodology seems strong on market factors, but weak on accounting for other benefits of streetcar expansion.*	*As designed, the model is intended to measure marginal projected changes in real property development activity a highly specific corridor that can be attributed to streetcar related investments. The model is designed to be additive to the overall evaluation of this type of investment, and not inclusive of all relevant variables that should be considered.*				X
▪ *Relies on fairly subjective input assumptions and expert knowledge, which could be vulnerable to political exigencies.*	*This is true. Our intent with the model is to make these assumptions as transparent as possible, with the expectation that more reliable quantitative measure will be incorporated as research in the area matures.*			X	X
▪ *Overlooks cross-property, multiple parcel opportunities.*	*As noted in the response to similar concerns from Bill Lee, the issue of assembly is not directly addressed. Manual manipulation of the parcel data to account for multiple parcel development can be done if desired, and may be a useful exercise for a user to undertake.*			X	
▪ *Have you addressed infill and added density, alongside existing uses?*	*The model does not currently account for infill and added density, such as accessory dwelling units. It does incorporate renovation/rehab investments, which can include some of this impact.*	X	X		
▪ *Have you addressed build-to-suit office space?*	*The underlying economics of the decision criteria for build-to-suit office space is effectively similar to that of speculative office space. While these decisions can vary based on highly specific firm decisions, decisions factors not included in model are not considered to be reliably predictable.*	X			
▪ *Other measures of amenities need to be considered as part of a bundle*	*Our methodology has been careful to define streetcar improvements as a bundled investment, which includes associated amenities such as streetscape. This was done largely as a result of available research, which has largely not addressed the discrete impact of specific associated investments.*	X			
▪ *The methodology needs a longitudinal element. How will development occur? Will it begin before the line is completed?*	*The model is designed to predict development activity over a defined time period. As developers build towards market conditions anticipated at product introduction, we would expect that developers will consider anticipated market conditions when initiating a project, and as a result would be expected to factor in their expectations of streetcar related improvements for projects initiated prior to completion of the improvements.*				X
▪ *What is the territorial reach of station areas?*	*The model is defining the territorial impact as ¼ mile.*	X			
▪ *Absent hedonic modeling, still need to include estimated impact of accessibility improvements*	*The model is designed to allow incorporation of better measures of impact as additional research is available. The model has been refined to incorporate marginal shifts in metrics such as Transit Score.*		X		
▪ *It is important to bundle impacts and consider synergies of streetcar with other public and private improvements*	*We acknowledge the bundled nature of impacts, and the model incorporates some inputs that are designed to reflect this.*	X	X		

APPENDIX A: TECHNICAL APPENDIX (MODEL WALKTHROUGH)

This section provides a walk-through of the Model to demonstrate its appearance, function, and major areas of input.

The major categories of user input in the Model are as follows:

- **Transit Service, Connectivity & Accessibility** - These inputs are intended to help answer the following questions:
  - What is the quality of the current transit service connectivity and accessibility within the corridor?
  - Will the streetcar project improve transit service and connectivity?
  - How will it change transit service and connectivity in the corridor?
- **Pedestrian Environment** – The assessment of the pedestrian environment takes into account attributes such as sidewalks, street trees, availability of services, and other elements that impact the pedestrian experience. These inputs are intended to help answer the following questions:
  - What is the current pedestrian environment like within the corridor?
  - Does the streetcar project include any pedestrian improvements?
  - How will those improvements change the pedestrian environment?
- **Public Policy** - These inputs are intended to help answer the following questions:
  - Are there public policies and/or funding tools available within the corridor to support streetcar? This would include urban renewal or other improvement districts.
  - Will changes to public policy be made as part of the streetcar project?
  - How will those changes affect availability of public tools in the corridor?
- **Zoning** - An assessment of existing zoning is included because of its relevancy to future development in the corridors, as follows:
  - Is zoning in the corridor supportive of streetcar in terms of permitted uses and development/design standards?
  - Will any changes to current zoning be needed as part of streetcar development?

- **Market Indicators** – Inputs on market pricing levels, financing terms, cost and vacancy assumptions:
  - What is the current strength and attractiveness of the market for new development?
  - Will the streetcar make development more likely by improving market fundamentals?
- **Study Area Parcels** – Information on all study area parcels by identifier (address or parcel i.d.), size, zoning, and estimated market value.

A. Initial Input Screen

The Model begins with an Initial Input Screen (see Figure A.1) where multiple categories of relevant information are entered. The Model uses these inputs to create a profile of current conditions in the given corridor and project future conditions with the assumed package of streetcar improvements. This information is used to inform subsequent steps in the Model.

As specific inputs are entered into the red-shaded cells on the Initial Input Screen, the magnitude of change between the existing and anticipated conditions is registered. The current conditions, and the expected future conditions after the implementation of streetcar, affect pricing, cost and other factors which directly impact development feasibility.

The following are the specific inputs as requested on the Initial Input Screen (not including market indicator inputs), followed by an explanation of how these inputs are scored.

Transit Service, Connectivity and Accessibility

1. **Quality of transit service**:
   - All transit service types currently available along corridor (bus, light rail, water taxi, etc).
   - Frequency of transit service using headways (in minutes) and weekend versus weekday service differences (if any).
   - Number of bus lines serving the corridor.
   - Any nearby regional service such as light rail or bus rapid transit.
2. **Average distance between stops:** measured in miles

3. **Accessibility to city center/employment center:** a yes/no measurement to assesses whether or not the future streetcar will create a new physical connection to a city center or employment center where one does not currently exist (for example: a new bridge, underpass or street connection).

FIGURE A.1: INITIAL INPUT SCREEN, TOP PORTION (EXAMPLE)
PREDICTIVE ECONOMIC DEVELOPMENT MODEL

PUBLIC INFRASTRUCTURE

TRANSIT AND ACCESSIBILITY

How is the current transit service in the corridor? Will the streetcar improve transit service and connectivity?
Will the streetcar improve accessibility to the city core or other major town center or employment center?

		Existing Conditions	Projected Conditions w/Streetcar	Impact on Development	NEGATIVE				POSITIVE		
					High	Med	Low	Neutral	Low	Med	High
1	Quality of Transit Service (scale 1-5)	2	4	*Med +*						■	
2	Average Distance Between Stops (scale 1-5)	5	5	*Neutral*				■			
3	Will the new streetcar line provide new or vastly improved access to a "Major Destination" district (Central Business District/Town Center/Major Employment Center) that does not exist currently through the traditional street and transit network? (For instance, will the new streetcar line travel above or beneath a previous physical barrier such as a freeway or waterway, to provide a faster/more direct route to the Destination district, whereas the current street system is encumbered by that barrier?) (scale 1-5)		No	*Neutral*				■			
4	Transit Score (if not available, leave blank)	65	77	*Med +*						■	
5	Connection to Existing Streetcar Network (Yes/No)		Yes	*Med +*						■	

PEDESTRIAN ENVIRONMENT

What is the current pedestrian environment in the corridor? Does the streetcar project include improvements to sidewalks and streetscape?
Are there services, shopping and other destinations to walk to?

		Existing Conditions	Projected Conditions w/Streetcar	Impact on Development	NEGATIVE				POSITIVE		
					High	Med	Low	Neutral	Low	Med	High
6	Quality of Sidewalk Network (scale 1-5)	3	4	*Low +*					■		
7	Quality of Pedestrian Experience (scale 1-5)	3	4	*Low +*					■		
8	Availability of Services (Walkscore)	66		*Low +*					■		

PUBLIC POLICY

Will the streetcar corridor have zoning, financial tools, and other public policy advantages over other similarly zoned corridor in the city?
Are specific changes to zoning and public policy planned as part of streetcar implementation?

		Existing Conditions	Projected Conditions w/Streetcar	Impact on Development	NEGATIVE				POSITIVE		
					High	Med	Low	Neutral	Low	Med	High
9	Public Tools Available (scale 1-5)	3	4	*Low +*					■		

Source: Johnson Reid LLC, Angelo Planning Group

4. **Transit Score:** measured from the center of the corridor segment, a proprietary algorithm based on the number of transit options in a given area. Where available,

Transit Score can be found on walkscore.com. If not available, leave the input blank; the model is designed to function without it.

5. **Connection to existing streetcar:** a yes/no measurement indicating whether or not the corridor being studied will connect to an existing streetcar line.

Pedestrian Environment

6. **Quality of sidewalk network:**
   - Sidewalk widths, measured in feet and averaged throughout corridor.
   - Completeness of sidewalk network (for example, are there areas where no sidewalk exists?). Can be assessed via site visit, local sidewalk inventories (if available), or via satellite imagery.
   - Condition, smoothness of sidewalk.
   - Presence of curb cuts at intersections to reduce crossing distance, expressed as a general observation from site visits.
   - Frequency of marked and/or signalized pedestrian crossings, both at intersections and mid-block, along corridor. Can typically be assessed using satellite imagery.
7. **Quality of pedestrian experience**
   - Presence of street trees, measured as average number of trees per block.
   - Posted speed limit.
   - Number of vehicle travel lanes along corridor.
   - Building orientation and placement, measured qualitatively during site visits to assess whether or not buildings are built to and oriented toward the sidewalk with obvious pedestrian entrances.
   - Presence of a landscaped buffer between the street and sidewalk.
8. **Availability of services (Walk Score™)**: measured at the center of the corridor segment being studied, Walk Score is a proprietary algorithm that measures the "walkability" of a location or neighborhood using the proximity to businesses, green space, civic locations, and other attractions. Information and data can be found at http://www.walkscore.com.

Public Policy

9. **Public Tools Available**: assessment of public funding and other tools available that will support streetcar development in the corridor. Examples include urban renewal, local improvement districts and waivers to system development charges. Review of existing zoning designation to determine if transit-oriented development types would be allowed under current regulations (densities, building heights, allowed uses, parking requirements, etc.)

Scoring

The following table (Figure A.2) provides guidance on how to score these initial inputs. Inputs scored on a scale of 1 to 5 represent a spectrum of conditions. The table provides definitions for scores of 1, 3 and 5. Scores of 2 and 4 represent gradations between these descriptions, based on the user's knowledge and expertise of the local corridor being studied.

FIGURE A.2: INITIAL INPUT SCREEN, SCORING

Input		Scale	Score			Data Sources
			1	3	5	
1	Quality of Transit Service	1 - 5	• No local transit service on planned streetcar corridor; or • Service with frequency of less than one transit visit per hour. • No access to a regional system such as light rail or bus rapid transit within 0.5 miles of main corridor street.	• Bus or equivalent transit mode on planned streetcar corridor. • One to two separate bus lines. • Service frequency of 15 to 30 minutes. • Bonus: Access to a regional system such as light rail or bus rapid transit within 0.5 miles of main corridor street.	• Bus or equivalent transit mode on planned streetcar corridor. • At least two separate bus lines. • Service frequency of no more than 15 minutes during rush hours. • Access to a regional system such as light rail or bus rapid transit within 0.5 miles of main corridor street.	Information from local transit agencies or city regarding transit service, frequency, and stop location.
2	Average Distance Between Stops/Stations	1 - 5	• No transit stops, or stops located more than 0.5 miles apart from each other along at least 75% of the main corridor street.	• Transit stops within 0.5 miles of each other along at least 75% of the main corridor street.	• Transit stops within .25 miles of each other along at least 75% of the main corridor street.	Local mapping sources, transit agency information, site visits, Google Maps

FIGURE A.2 (CONTINUED): INITIAL INPUT SCREEN, SCORING

Input		Scale	Score			Data Sources
			1	3	5	
3	Will the new streetcar line provide a new or vastly improved access to a "Major Destination" district (Central Business District/Town Center/Major Employment Center) that does not exist currently through the traditional street and transit network? (For instance, will the new streetcar line travel above or beneath a previous physical barrier such as a freeway or waterway, to provide a faster/more direct route to the Destination district, whereas the current street system is encumbered by that barrier?)	Yes/No	NA	NA	NA	Staff knowledge
4	Transit Score (if not available, leave blank)	Transit Score	Note: Measured at centroid of corridor segment being studied.			walkscore.com
5	Connection to Existing Streetcar Network. Will the proposed streetcar line connect to a current functioning streetcar system as an extension?	Yes/No	NA	NA	NA	Staff knowledge

FIGURE A.2 (CONTINUED): INITIAL INPUT SCREEN, SCORING

Input		Scale	Score			Data Sources
			1	3	5	
6	Quality of Sidewalk Network	1 - 5	• The main corridor street, and adjoining blocks, feature major discontinuity of the sidewalk system, with multiple segments of sidewalk missing and forcing users to detour or walk on unpaved area or the street (does not include sidewalks closed for repair). • Sidewalks are narrow and do not allow walkers and/or cyclists to comfortably or easily pass each other. • At least half of the sidewalks are in poor condition, with some combination of serious cracks, gaps, uneven surfaces, root damage. • Sidewalks lack curb cuts at intersections. • There are no marked or designated crossings of the main corridor street; or, crossings are located at least 0.5 miles apart. • Crossings are generally un-signalized.	• The main corridor street, and adjoining blocks, feature no more than two or three instances of discontinuity of the sidewalk system, such as missing sidewalks. • Sidewalks are generally wide enough for users to comfortably pass each other; at least six feet wide on the main corridor street. • No more than 25% of main corridor street features sidewalks that are in poor condition, with some combination of serious cracks, gaps, uneven surfaces, root damage. • Sidewalks feature curb cuts on at least 75% of intersections on main corridor street. • There are marked and designated crossings of the main corridor street generally located no more than 0.25 miles apart. • Signalized crossings are generally located no more than 0.25 miles apart.	• The main corridor street, and adjoining block, feature a continuous, finished sidewalk grid. • Sidewalks are generally wide enough for users to comfortably pass each other; at least eight feet wide on the main corridor street. • No more than 10% of main corridor street features sidewalks that are in poor condition, with some combination of serious cracks, gaps, uneven surfaces, root damage. • Sidewalks feature curb cuts on at least 90% of intersections on main corridor street. • There are marked and designated crossings of the main corridor street located no more than 0.25 miles apart. • Signalized crossings are located no more than 0.25 miles apart. • Crossings are generally within 500 feet of transit stops.	Local agencies may have a sidewalk inventory or other information to inform this input. Sidewalk width and quality can be assessed with site visits as well as aerial and "street view" imagery of Google Maps. Pedestrian crossings can be located and measured using site visits and Google Maps

FIGURE A.2 (CONTINUED): INITIAL INPUT SCREEN, SCORING

Input		Scale	Score			Data Sources
			1	3	5	
7	Quality of Pedestrian Experience	1 - 5	• The main corridor street features a posted speed limit of 40 mph or more. • The main corridor street features six or more lanes (including central or turning lane) • Buildings on the street have an auto-based orientation, with parking lots located between the sidewalk and the building. • Few or no buildings have a sidewalk-adjacent "storefront" character. • There are no street trees on most blocks of the main corridor street, or an average of no more than one per block. • The street trees that are present are young and/or provide poor coverage. • There is little other landscaping in a sidewalk planting strip or on adjacent private properties which improves the walking experience.	• The main corridor street features a posted speed limit between 31 and 40 mph. • The main corridor street features five lanes (including central or turning lane) • Buildings on the street are a fairly even mix of those which have an auto-based orientation, with parking lots located between the sidewalk and the building, and those with a sidewalk-adjacent "storefront" character. • There is an average of 1.5 to 2 street trees per block, most of which are mature and provide good canopy coverage when foliated. • There is other landscaping in the sidewalk planting strip or on adjacent private properties which improves the walking experience.	• The main corridor street features a posted speed limit of no more than 30 mph. • The main corridor street features four or fewer lanes (including central or turning lane) • It is more common for buildings to be sidewalk-adjacent or nearly so, than to be located behind parking lots. Direct access from the main corridor sidewalk to a residential or commercial building is common, and new buildings tend to be built this way. • There is an average of 2 street trees per block, most of which are mature and provide good canopy coverage when foliated. • There is other landscaping in the sidewalk planting strip or on adjacent private properties which improves the walking experience.	Travel lanes and speed limits can be counted using aerial imagery, local agency data, and site visits. Street tree locations and landscape buffers can be identified using aerial imagery on Google Maps and site visits. Building orientation can be assessed using aerial imagery and site visits.

FIGURE A.2 (CONTINUED): INITIAL INPUT SCREEN, SCORING

Input		Scale	Score			Data Sources
			1	3	5	
8	Availability of Services (Walk Score)	Walk Score	Note: Measured at centroid of corridor segment being studied.			walkscore.com
9	Public Tools Available	1 - 5	• There are no special zoning, incentive or financing programs for development in the proposed streetcar corridor which are not available in other similarly-zoned corridors in the city.	• The corridor has been zoned to facilitate transit-oriented development (TOD), such as with unique TOD zones, or overlay. • Such zoning might allow or require increased density, vertical mixed uses, reduced parking, and TOD design features such as street-orientation, and bike parking. • Small financial incentives are in place for qualified projects such as fee and SDC waivers, expedited permitting or other processing. • City may participate in one or two modest-scale public/private projects or land assembly actions.	• The corridor has been zoned to facilitate transit-oriented development (TOD), such as with unique TOD zones, or overlay. • Such zoning might allow or require increased density, vertical mixed uses, reduced parking, and TOD design features such as street-orientation, and bike parking. • Some master planning or other planning process has taken place which addresses in the detail the goal of improving the transit-orientation of the main corridor street. • Significant financial programs are in place such as Urban Renewal, Local Improvement District, or other economic development funding to participate in redevelopment in the corridor. (Above and beyond the cost of the streetcar improvements themselves.) • City may participate in multiple larger public/private projects. City may control key development sites in the corridor to guide development	• Local zoning code • Local economic development program information • Urban Renewal information

B. Initial Input Screen (Continued)

The lower section of the Initial Input Screen (Figure A.3 and A.4) allows the user to enter data on market dynamics in the corridor study area. The user may need to rely on local real estate expertise, or recent market studies, to find the requested market data.

FIGURE A.3: INITIAL INPUT SCREEN, BOTTOM PORTION (EXAMPLE)
PREDICTIVE ECONOMIC DEVELOPMENT MODEL

MARKET DYNAMICS

CURRENT MARKET PRICING (MARGINAL, ASSUMING NEW PRODUCT)			
10	Rental Residential	$2.10	Per Square Foot Per Month
11	Ownership Residential	$210	Per Square Foot
12	Office Space	$18.00	NNN (Triple Net Lease)
13	Retail Space	$18.00	NNN (Triple Net Lease)
14	Parking - Rental Residential	$75.00	Per Covered Secured Space per Month
15	Parking Price - Ownership	$15,000	Per Covered Secured Space
16	Parking - Office Space	$65.00	Per Covered Secured Space per Month
17	Average Annual Pricing Growth Trend (Residential-Rental)	2.0%	AAGR/Inflation Adjusted
18	Average Annual Pricing Growth Trend (Residential-Owner)	2.0%	AAGR/Inflation Adjusted
19	Average Annual Pricing Growth Trend (Office)	0.0%	AAGR/Inflation Adjusted
20	Average Annual Pricing Growth Trend (Retail)	0.0%	AAGR/Inflation Adjusted
OPERATING CHARACTERISTICS			
Structural Vacancy			
21	Rental Residential	5.0%	
22	Office	10.0%	
23	Retail	10.0%	
Operating Expenses			
24	Rental Residential	35.0%	
25	Office	5.0%	
26	Retail	5.0%	
FINANCIAL CHARACTERISTICS			
27	Rental Residential Cap Rate	6.50%	
28	Office Cap Rate	7.50%	
29	Retail Cap Rate	7.50%	
30	Ownership Residential, Return on Cost	20.00%	

Source: Johnson Reid LLC, Angelo Planning Group

The categories of input information are discussed below.

Achievable Pricing

Questions 10 – 16: These questions ask the user to input estimated achievable pricing levels for different land use types in the corridor, or segment of corridor, being studied. If it is possible for property managers to charge additional fees for parking in the area, that is reflected here as well.

These pricing estimates should represent the achievable pricing for *new real estate* in the study area, not the average of all real estate pricing. This is because new development or substantial renovation will charge pricing near the top of the achievable market, while many older and obsolete properties will pull down the average in the area. However, the assumptions of achievable pricing should reflect a realistic view of the quality of likely new development.

Recent Pricing Trends

Questions 17 – 20: These questions ask the user to indicate if pricing for any of these real estate uses has been exceeding or trailing inflation in recent years, and is expected to over the next 5 to 10 years. If rents have been exceeding inflation, this will be reflected in subsequent steps of the Model. Recent market analysis, rent data, or professional opinion might inform these answers. If this information is not available, these inputs may be left at "0%".

Operating Characteristics

Questions 21 – 26: These questions ask the user for inputs on standard operations for the different real estate types. These represent the levels of vacancy and expenses which might be considered normal across the market. They should represent the realistic anticipated operations of healthy new real estate, rather than the conditions in existing space, particularly if it is distressed.

Financial Characteristics

Questions 27 – 30: Financial characteristics have to do with the expected return that a developer/investor would expect from a new development project. This means "Cap Rate" for rental properties, and expected return for for-sale properties. These numbers vary due to market conditions and location and therefore professional expertise will likely be needed to determine the current "going rate" for these indicators.

Cap Rate (Capitalization Rate) = A measure of rate of return on investment real estate and is usually defined as Net Annual Income divided by Total Property Value. The higher the cap rate the greater the rate of return. In general, investors and lenders are willing to accept a lower cap rate in markets perceived to be less risky, and demand a higher return to invest in markets perceived as risky.

FIGURE A.4: INITIAL INPUT SCREEN, BOTTOM PORTION (CONTINUED)
PREDICTIVE ECONOMIC DEVELOPMENT MODEL

TIME PERIOD (YEARS)	10

Development Probability	RMV/Residual Category				
Time Period (Years)	<.75	.75-1.25	1.25-2.0	2.0-4.0	>4.0
5	5%	4%	2%	0%	0%
10	10%	7%	3%	0%	0%
15	23%	13%	7%	3%	0%
20	35%	19%	12%	5%	0%
50	60%	30%	20%	10%	0%

Annual Rehab/Renovation Factor:	1.5%

SITE EFFICIENCY ADJUSTMENT	
Reduction Factor (% Realized Density):	75.0%
Minimum Efficient Site Size (sf):	8,000

Source: Johnson Reid LLC, Angelo Planning Group

The final section of the Initial Input Screen allows the user to set some assumptions for the study period and development levels in the study area.

Time Period: Set the time period of the study over which the user would like to test the impacts of streetcar. The Model assumes for the "Streetcar Scenario" that the streetcar improvements

are in place at the starting point, so the time period represents the development period after the introduction of streetcar.

Development Probability: In subsequent steps (described below), the Model determines the likelihood of development parcel by parcel. While some significant subset of the study area may be found to be "likely to (re)develop", in reality, not all of these parcels will develop in the study time period. Development in an area does not take place all at once, but in a procession of parcels.

To adjust for this reality, the Development Probability table allows for the adjustment of probabilities. The user can set the probabilities in the 10-year time frame, and the other time period adjust automatically based on the 10-year assumption.

As described below, the "RMV/Residual Category" is a measurement of the "redevelopability" of a site. Those with the lowest RMV/Residual Ratio are most likely to redevelop (the "<.75" category), while those with a higher ratio are less likely, or unlikely to redevelop. In general, an RMV/Residual Ratio of greater than 1.0 means that the property under its current use is as valuable or more valuable than under the proposed new use, and therefore unlikely to develop. (RMV/Residual Ratio is discussed in more detail below.)

The inputs to this table should be based on historic development patterns if possible. This means looking at the amount of land area in the study area which has developed over the prior 10 to 20 year period, to come up with a realistic estimate of development rate. Permitting data or GIS data can provide indicators of historical development activity. In the example above (Figure 7.3), if the study area has shown redevelopment of 7% of its land area in 10 years, the development probability in this table should reflect roughly an average of 7% across the three lowest RMV/Residual Ratio categories. Those in the lowest category have a development probability somewhat higher than the area-wide average.

The user must endeavor to set these levels at realistic real-world levels. In some cases, historical development in the study area may be very modest, with streetcar development expected to increase development activity. In that case, the user may set a somewhat higher rate of development probability over the study period, however this increased rate should be set conservatively.

Annual Rehab/Renovation Factor: This represents the amount of rehab of existing properties that takes place in the study area. This is important because not all investment in the streetcar corridor will take the place of new development. In a successful corridor, there will be reinvestment and reuse of existing properties.

This factor represents = value of annual rehab/renovation permits as a percentage of total Real Market Value. Permitting data can help determine the assumption used here. This factor may be based on activity in the study area itself, but a city-wide or representative sample area can be substituted as well.

Site Efficiency Adjustment: This adjustment helps to model the reality that smaller sites are more difficult to develop to the density level of larger sites. This is largely due to the needs for circulation/parking, setbacks, and common areas which consume proportionately more of a small site, than a larger site which has greater efficiency of scale. These inputs will rely on user judgment of the nature and zoning of smaller sites in the study area and what barriers they face to efficient use.

C. Development Adjustment Factors

The inputs into the Initial Input Screen shown above feed into subsequent steps in the model. The first set of inputs (Questions 1 -9) help to determine the marginal impact to rents, costs and return factors from streetcar improvements. These represent the changes to these factors in the subsequent pro-forma analysis between the Baseline and Streetcar Scenarios. For example in Figure A.5, Streetcar Improvements are expected to increase rent potential by 6%.

FIGURE A.5: LEVERS OF IMPACT FROM STREETCAR AND RELATED IMPROVEMENTS

	Office	*Retail*	*Residential*	*Mixed use*
Achievable Pricing/ Rents:	6%	6%	6%	
Construction Costs:	-3%	-3%	-3%	-3%
Operating Costs:	-2%	-2%	-2%	-2%
Cap Rates:	-6%	-6%	-6%	-6%

Source: Johnson Reid LLC

D. Prototype Development Pro Formas

Following the Initial Input Screen, is a set of pro forma screens, reflecting a range of development types. Each development type is a combination of land use (i.e. office) and building type (i.e. mid-rise). There are a total of 27 of these combinations.

The full list of development types in the standard Model is shown below. Individual users can add or modify different development programs as needed.

FIGURE A.6: PROTOTYPICAL DEVELOPMENT PRO FORMAS

Land Use Category/ Building Form	Parking Form
OFFICE	
office high rise	several floors of structured parking
office mid/struc	one basement parking level
office mid/podium	parking under podium
office mid surf + struc 2	integrated pkg struc
office mid surf + struc 1	struc pkg outside bldg footprint
office mid/surf	all surface parking
office low rise	all surface parking
RETAIL	
mid rise dept. store	struc pkg outside bldg footprint
retail low rise	all surface parking
MIXED USE RESID./COMM.	
MU res/ret high rise	integrated pkg struc
MU res/ret mid/struc 2	integrated pkg struc
MU res/ret mid/struc 1	separate pkg struc
MU res/ret mid/surf	surface parking
MU res/ret type v/podium	some under-podium parking
MU res/ret 3-story wood w/surf SM	surface parking
MU res/ret 3-story wood w/surf LG	surface parking
RENTAL RESIDENTIAL	
residential high rise	integrated pkg struc
residential mid/struc 2	integrated pkg struc
type v/podium	some under-podium parking
2-story wood w/surf	Surface Parking
3-story wood townhome	surface parking
3-story wood Zero Park	No Parking
OWNERSHIP RESIDENTIAL	
residential high rise	integrated pkg struc
residential mid/struc 2	integrated pkg struc
type v/podium	some under-podium parking
2-story wood w/surf	Surface Parking
3-story wood townhome	surface parking

Source: Johnson Reid LLC

Figure A.7 shows the Pro Forma worksheet for the Office types, as an example. Most of the information on this worksheet is designed to translate between corridors and locations. Needed inputs are highlighted in Red, and include average construction costs for different land use types in the market, and structured parking costs.

FIGURE A.7: OFFICE PRO FORMA SHEET (EXAMPLE)

PREDICTIVE ECONOMIC DEVELOPMENT MODEL

		office high rise	office mid/struc	office mid/podium	office mid surf + struc 2	office mid surf + struc 1	office mid/surf	office low rise
PROGRAM	**Property Assumptions**							
	Site Size (SF)	20,000	13,000	10,000	25,000	20,000	20,000	10,000
	Bldg Footprint	19,000	12,000	9,500	8,500	7,500	3,500	4,000
	Stories	8	5	2	4	3	3	1
	FAR	10.45	6.46	2.85	2.04	1.50	0.53	0.40
	Building Square Feet	152,000	60,000	19,000	34,000	22,500	10,500	4,000
	Efficiency	85%	85%	85%	85%	85%	85%	90%
	Leasable Area	129,200	51,000	16,150	28,900	19,125	8,925	3,600
	Parking Ratio/000 SF	1.0	1.0	2.0	2.0	3.0	3.0	3.0
	Parking Spaces	129	51	32	57	57	26	10
	Parking SF/Space - Surface	350	350	350	350	350	350	350
	Parking SF/Space - Structure	425	425	375	425	375	425	425
	Parking Spaces - Surface	-	-	-	14	29	26	10
	Parking Spaces - Structure	129	51	32	43	29	-	-
	Structured Parking %	100%	100%	100%	75%	50%	0%	0%
	Structured Parking Stories	3	2	1	2	1	0	0
	% of Struc Pkg in Bldg FP	100%	100%	100%	0%	0%	0%	0%
	Base Construction Cost/SF	$185	$175	$140	$140	$140	$140	$130
	Adjustment Factor	0%	0%	0%	0%	0%	0%	0%
	Construction Cost/SF	$185	$175	$140	$140	$140	$140	$130
	Base Parking Costs/Space	$35,000	$30,000	$18,000	$35,000	$30,000	$0	$0
	Adjustment Factor	0%	0%	0%	0%	0%	0%	0%
	Structured Parking Cost/Space	$35,000	$30,000	$18,000	$35,000	$30,000	$0	$0
OPERATING ASSUMPTIONS	**Income Assumptions**							
	Base Income/Sf/Yr.	$18.00	$18.00	$18.00	$18.00	$18.00	$18.00	$18.00
	Adjustment Factor	0%	0%	0%	0%	0%	0%	0%
	Achievable Pricing	$18.00	$18.00	$18.00	$18.00	$18.00	$18.00	$18.00
	Parking Charges/Space/Mo	$65	$65	$65	$65	$65	$65	$65
	Expense Assumptions							
	Vacancy/Collection Loss	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
	Base Operating Expenses	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Adjustment Factor	0%	0%	0%	0%	0%	0%	0%
	Operating Expenses	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
	Reserve & Replacement	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
	Valuation Assumptions							
	Base Capitalization Rate	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
	Adjustment Factor	0%	0%	0%	0%	0%	0%	0%
	Capitalization Rate	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%

Source: Johnson Reid LLC

FIGURE A.8: OFFICE PRO FORMA SHEET (EXAMPLE) (CONTINUED)

SUPPORTABLE PROPERTY VALUE								
Cost								
Cost/Construct w/o prkg.	$28,120,000	$10,500,000	$2,660,000	$4,760,000	$3,150,000	$1,470,000	$520,000
Total Parking Costs	$4,515,000	$1,530,000	$576,000	$1,496,250	$855,000	$0	$0
Estimated Project Cost	$32,635,000	$12,030,000	$3,236,000	$6,256,250	$4,005,000	$1,470,000	$520,000
Income							
Annual Base Income	$2,325,600	$918,000	$290,700	$520,200	$344,250	$160,650	$64,800
Annual Parking	$100,620	$39,780	$24,960	$33,345	$22,230	$0	$0
Gross Annual Income	$2,426,220	$957,780	$315,660	$553,545	$366,480	$160,650	$64,800
Less: Vacancy & CL	$242,622	$95,778	$31,566	$55,355	$36,648	$16,065	$6,480
Effective Gross Income	$2,183,598	$862,002	$284,094	$498,191	$329,832	$144,585	$58,320
Less Expenses:							
Operating Expenses	$109,180	$43,100	$14,205	$24,910	$16,492	$7,229	$2,916
Reserve & Replacement	$65,508	$25,860	$8,523	$14,946	$9,895	$4,338	$1,750
Annual NOI	$2,008,910	$793,042	$261,366	$458,335	$303,445	$133,018	$53,654
Property Valuation							
Return on Cost	6.16%	6.59%	8.08%	7.33%	7.58%	9.05%	10.32%
Threshold Return on Cost	8.63%	8.63%	8.63%	8.63%	8.63%	8.63%	8.63%
Residual Property Value	($9,343,288)	($2,835,312)	($205,664)	($942,218)	($486,792)	$72,240	$102,080
RPV/SF	**($467.16)**	**($218.10)**	**($20.57)**	**($37.69)**	**($24.34)**	**$3.61**	**$10.21**

Source: Johnson Reid LLC

Figure A.8 shows the bottom of the example Pro Forma worksheet. The worksheet ends in a calculation of "Residual Property Value" (RPV), and RPV/Square Foot. Under the approach used in this Model, the RPV is a key determinate of the developability of a given parcel, and therefore this is a calculation is central to the functioning of the model.

Residual Property Value (RPV) reflects the maximum supportable acquisition value of the property, under the assumed development program (i.e. what the developer is willing to pay given the economic performance of the proposed use). The permitted use that yields the highest Residual Property Value is considered the most attractive use in terms of financial return to the developer.

- In the example above the "low rise office" development program has the highest estimated RPV/SF, at $10.21. Among office uses, it is the most valuable use.
- The lowest RPV/SF is estimated for "high rise office" at -$467.16. This means that to make this use feasible to the developer, he/she would require a subsidy of at least $467 per square foot. In other words, in this location at this time, high rise construction is

widely expensive relative to the actual rent levels that the developer could hope to achieve.

- The current rent levels justify low-rise construction, or perhaps mid-rise construction with surface parking. Denser types of office uses currently represent a money-losing (infeasible) proposition.

Remaining Prototypical Development Programs

The Pro Forma worksheet for office programs is provided above as an example. An equivalent worksheet is provided for each of the remaining categories: Retail, Mixed Use, Rental Residential, and Ownership Residential.

E. Zoning Screen

Following the Pro Forma worksheets, is the Zoning Screen, in which the user describes the individual zones found in the corridor study area, and details which uses are permitted in each zone. Not every use is allowed in every zone. If the use with the highest RPV/SF ratio is not permitted, the "highest and best use" in that zone will be the use with the highest ratio that *is* permitted.

Figure A.9 on the following page shows a truncated example of the Zoning Screen worksheet. Zoning types are inputted by row in the left hand section. (The section in the middle updates automatically).

The section on the right shows the Office uses used in the previous example (Figures A.7 and A.8). The calculated RPV/SF is shown along the type, under each of the Office development types. The table below, bounded by a red line, is where the user indicates if a given development form is permitted or not permitted. This is indicated with a simple "1" for permitted, and "0" for not permitted.

Conditional Uses: The Model uses a simple permitted/not permitted standard for the zoning screen. Many of these building types may be allowed as a "conditional use", "limited use", or

other gradation of allowance. For the sake of this table, the knowledgeable local user should determine the impact of the Conditional Use provisions for a given development type. Does the Conditional Use represent a small impediment, or does it make the development type unlikely to actually occur in the real world. In general, Johnson Reid recommends erring on the site of listing uses which may occur as permitted, even if there are some conditions.

Figure A.9 is a truncated view of the Zoning Screen worksheet. In the Model, this worksheet extends to the right, where the other prototypical development types are found, and the zoning permissions are inputted for them in the same manner.

Based on what is permitted or not permitted in a given zone, the permitted use with the highest RPV/SF is identified and listed automatically in the central box. This is the identified highest and best use from an economic return perspective for parcels in that zone.

FIGURE A.9: ZONING SCREEN (TRUNCATED)

PREDICTIVE ECONOMIC DEVELOPMENT MODEL

				Office						
				($467.16)	($218.10)	($20.57)	($37.69)	($24.34)	$3.61	$10.21
CODE	Code Description	Residual	Use Description	office high rise	office mid/struc	office mid/podium	office mid surf + struc 2	office mid surf + struc 1	office mid/surf	office low rise
RH	High Density Residential	$136.26	residential mid/struc 2	0	0	0	0	0	0	0
R1	Residential 1,000	$71.49	3-story wood townhome	0	0	0	0	0	0	0
R2	Residential 2,000	$71.49	3-story wood townhome	0	0	0	0	0	0	0
R5	Residential 5,000	$0.00	N/A	0	0	0	0	0	0	0
CS	Storefront Commercial	$193.98	3-story wood Zero Park	0	0	0	0	1	1	1
CN1	Neighborhood Commercial 1	$71.49	3-story wood townhome	0	0	0	0	0	0	1
CX	Central Commercial	$103.55	MU res/ret mid/surf	1	1	1	1	1	1	1
CG	General Commercial	$103.55	MU res/ret mid/surf	0	0	0	1	1	1	1
OS	Open Space	$0.00	N/A	0	0	0	0	0	0	0
CO2	Office Commercial 2	$71.49	3-story wood townhome	0	0	0	0	0	1	1
CM	Mixed Commercial/Residential	$193.98	3-story wood Zero Park	0	0	0	1	1	1	1

Source: Johnson Reid LLC

F. Redevelopment Screen

Following the Zoning Screen, is the Redevelopment Screen (Figure A.11). This worksheet allows the user to enter data on individual parcels within the study area. The Real Market Value (RMV) per square foot of each parcel is compared to the Residual Property Value (RPV) per square foot of the highest and best economic use for the appropriate zoning code (from the Zoning Screen worksheet). The comparison of RMV to RPV is completed automatically, generating a RMV/Residual ratio.

The parcel data is inputted as a list of parcels in the four left-hand columns. (The parcel list in Figure A.11 is shortened for presentation; an actual study area will likely have parcels numbering in the thousands). The necessary fields of data for each parcel are:

- Tax lot or Parcel I.D.
- Zoning Code (must match the Codes included in the Zoning Screen sheet)
- Estimate of Real Market Value (RMV)
- Square Footage (SF)

It is the hope and intention that most cities of sufficient size to be considering undertaking a streetcar project will have access to this type of data through some combination of local and tax assessor database or GIS data.

After the parcel data is inputted in the left-hand columns, the remainder of the worksheet should calculate automatically. The box in the center of the worksheet (right side in the truncated example in Figure A.11) breaks the parcels into categories of RMV/Residual ratio, and tallies the number of parcels in each category. The categories are as follows:

FIGURE A.10: RMV/RESIDUAL CATEGORIES

RMV/Residual Category	Likelihood of Redevelopment
<.75	Most likely to redevelop
.75-1.25	Somewhat likely
1.25-2.0	May redevelop
2.0-4.0	Unlikely
>4.0	Highly Unlikely

The Residual Property Value represents the estimated value that a developer would pay for a parcel under the proposed use. Therefore, if the Real Market Value of the parcel is at or below the Residual level, it is a more likely target for redevelopment. If the RMV is higher than the Residual value, then the site is assumed to be more expensive than its value as a development site (i.e. the Residual), and therefore a less likely development opportunity.

FIGURE A.11: REDEVELOPMENT SCREEN (TRUNCATED)

PREDICTIVE ECONOMIC DEVELOPMENT MODEL

Parcel	Code	RMV	SF	RMV/SF	Residual	RMV/Residual	RMV/Residual Category				
							<.75	.75-1.25	1.25-2.0	2.0-4.0	>4.0
R140915820	R2	$255,990	1,810	$141	$71.49	1.98	0	0	1	0	0
R649782930	R2	$281,480	4,839	$58	$71.49	0.81	0	1	0	0	0
R669102900	R2	$763,290	15,201	$50	$71.49	0.70	1	0	0	0	0
R669102850	R2	$30,000	5,250	$6	$71.49	0.08	1	0	0	0	0
R669102800	R2	$538,570	5,250	$103	$71.49	1.43	0	0	1	0	0
R669102820	R2	$218,510	4,491	$49	$71.49	0.68	1	0	0	0	0
R669102830	R2	$287,830	4,691	$61	$71.49	0.86	0	1	0	0	0
R669102840	R2	$309,390	8,796	$35	$71.49	0.49	1	0	0	0	0
R825802300	R2	$249,100	3,527	$71	$71.49	0.99	0	1	0	0	0
R825802680	R2	$227,270	4,018	$57	$71.49	0.79	0	1	0	0	0
R825802700	R2	$302,650	3,524	$86	$71.49	1.20	0	1	0	0	0
R825802780	R2	$8,000	3,767	$2	$71.49	0.03	1	0	0	0	0
R825803080	R2	$8,000	4,510	$2	$71.49	0.02	1	0	0	0	0
R825804590	R2	$107,730	17,567	$6	$71.49	0.09	1	0	0	0	0
R991150330	R2	$13,000	4,536	$3	$71.49	0.04	1	0	0	0	0
R175800200	R2	$275,040	8,767	$31	$71.49	0.44	1	0	0	0	0
R175800150	R2	$254,710	2,972	$86	$71.49	1.20	0	1	0	0	0
R175800100	R2	$262,250	2,972	$88	$71.49	1.23	0	1	0	0	0
R175800050	R2	$277,340	3,990	$70	$71.49	0.97	0	1	0	0	0
R669103100	R2	$311,070	8,490	$37	$71.49	0.51	1	0	0	0	0
R669103070	R2	$446,420	12,736	$35	$71.49	0.49	1	0	0	0	0
R991150270	R5	$3,369,660	168,569	$20	$0.00	10.00	0	0	0	0	1
R991150600	R2	$15,860	7,035	$2	$71.49	0.03	1	0	0	0	0
R825804520	R2	$201,190	7,736	$26	$71.49	0.36	1	0	0	0	0
R825804510	R2	$3,000	1,559	$2	$71.49	0.03	1	0	0	0	0
R649865010	R2	$320,960	2,209	$145	$71.49	2.03	0	0	0	1	0
R649865020	R2	$320,960	2,312	$139	$71.49	1.94	0	0	1	0	0
R991150580	R2	$250,330	4,096	$61	$71.49	0.86	0	1	0	0	0
R991151210	R2	$529,000	8,075	$66	$71.49	0.92	0	1	0	0	0
TOTALS		$10,438,600	333,292				14	10	3	1	1

Source: Johnson Reid LLC

Below the box of RMV/Residual categories (Figure A.11), there are also tallies of the land in each category by number of sites, square footage, acreage, and real market value (see Figure A.12). Finally, a tally is produced of the RMV of sites which the model assumes will develop/redevelop in the study time frame. (This is based on the Development Probability entered on the Initial Input Screen.) These tallies are used on the following screen to produce the Model's outputted estimates of development activity.

FIGURE A.12: REDEVELOPMENT SCREEN (CONTINUED)
PREDICTIVE ECONOMIC DEVELOPMENT MODEL

	SITES					
	RMV/Residual Category					
ZONING	<.75	.75-1.25	1.25-2.0	2.0-4.0	>4.0	Total
RH	28	3	25	15	31	102
R1	19	27	30	36	235	347
R2	38	56	74	49	37	254
R5	0	0	0	0	15	15
CS	53	22	17	27	18	137
CN1	0	0	0	0	0	0
CX	36	5	2	1	17	61
CG	1	1	0	0	0	2
OS	0	0	0	0	0	0
CO2	0	0	1	0	0	1
CM	2	0	0	0	1	3
TOTAL	177	114	149	128	354	922

	SQUARE FEET OF LAND					
	RMV/Residual Category					
ZONING	<.75	.75-1.25	1.25-2.0	2.0-4.0	>4.0	Total
TOTAL	3,535,482	800,390	706,762	193,951	1,401,680	6,638,265

	ACREAGE					
	RMV/Residual Category					
ZONING	<.75	.75-1.25	1.25-2.0	2.0-4.0	>4.0	Total
TOTAL	81	18	16	4	32	152

	CURRENT RMV/$000s					
	RMV/Residual Category					
ZONING	<.75	.75-1.25	1.25-2.0	2.0-4.0	>4.0	Total
TOTAL	$147,498.3	$74,588.7	$90,140.3	$43,045.1	$296,743.6	$652,015.9

	CURRENT RMV ($000s)/Assumed Dev/Redev					
	RMV/Residual Category					
ZONING	<.75	.75-1.25	1.25-2.0	2.0-4.0	>4.0	Total
TOTAL	$14,749.8	$5,221.2	$2,704.2	$0.0	$0.0	$22,675.2

Source: Johnson Reid LLC

G. Development Activity Output

The following screen (Figure A.13) shows the estimate of development activity resulting from the example presented above. This is the Model's output, resulting from the information entered in the screens shown thus far. This screen updates automatically from previous screens and doesn't require further user input.

Figure A.13 shows the predicted development output for the "Baseline Scenario" of the hypothetical corridor which has been shown in the previous examples in this section.

- The table in the upper left shows the square footage of land area in each RMV/Residual ratio category (from the Redevelopment Screen).
- This total area is multiplied by the Development Probability (from the Initial Input Screen).
- This produces the table just below, which is the bulk estimate of developable lands in the corridor study area. In this example, the "< 0.75" category is multiplied by 10%. The categories where RMV/Residual is greater than 2.0 are determined to have low likelihood of redevelopment, so 0% of the land area in those categories pass through this screen.
- The determination of predicted development land area by zone is then compared to the highest and best economic use in those zones (from the Zoning Screen) to estimate the amount of **construction investment**, **housing units** and **commercial space** resulting from that development.
- Finally, the change in **Real Market Value** is calculated both from new development, and renovation/reinvestment in existing properties.

Figure A.13 shows the predicted development output for the "Baseline Scenario" of the hypothetical corridor which has been shown in the previous examples in this section. This example resulted in a Baseline Scenario forecast of:

- $72.2 million in new construction investment

- 621 new housing units
- 21,500 square feet of commercial space
- $217.3 million in new Real Market Value

(As discussed in the conclusions of this report, the outputs are inherently more precise then can realistically be forecasted. They are best viewed as an indicator of the potential overall magnitude of development activity, rather than a prediction that the corridor will achieve exactly 620 units, or $72 million in construction investment.)

This is an example of the Baseline Scenario outputs. The next steps in the model are to produce similar outputs for the Streetcar Scenario, then compare the two sets of results to judge what additional impact the streetcar improvements are predicted to have.

FIGURE A.13: PREDICTED DEVELOPMENT ACTIVITY (OUTPUT SCREEN)

PREDICTIVE ECONOMIC DEVELOPMENT MODEL

	SQUARE FEET OF LAND (Scale Adjusted)					
	RMV/Residual Category					
ZONING	<.75	.75-1.25	1.25-2.0	2.0-4.0	>4.0	Total
RH	221,627	14,218	22,048	7,000	82,844	347,738
R1	292,148	146,785	233,037	32,024	614,341	1,318,336
R2	639,309	220,637	175,027	61,129	111,340	1,207,443
R5	0	0	0	0	282,236	282,236
CS	736,484	76,757	9,211	10,364	33,985	866,801
CN1	0	0	0	0	0	0
CX	1,519,850	215,062	194,034	46,595	206,871	2,182,413
CG	12,514	39,842	0	0	0	52,357
OS	0	0	0	0	0	0
CO2	0	0	2,925	0	0	2,925
CM	21,679	0	0	0	5,262	26,941
TOTAL	3,443,612	713,303	636,282	157,112	1,336,879	6,287,189
Dev Probabili	10%	7%	3%	0%	0%	6%

	LAND DEVELOPED/REDEVELOPED (SF)							Predicted Development Yield			RMV/		Net
	RMV/Residual Category						Predicted Predominant	Construction	Residential	Commercial	Dev. or	Current	Change in
ZONING	<.75	.75-1.25	1.25-2.0	2.0-4.0	>4.0	Total	Development Form	Investment	Units	Space	Redev.	RMV	RMV
RH	22,163	995	661	0	0	23,819	residential mid/struc 2	$14,625,157	80	0	$20,551,520	$1,828,776	$18,722,744
R1	29,215	10,275	6,991	0	0	46,481	3-story wood townhome	$3,625,511	27	0	$7,990,451	$2,825,265	$5,165,186
R2	63,931	15,445	5,251	0	0	84,626	3-story wood townhome	$6,600,856	50	0	$14,547,967	$4,055,286	$10,492,681
R5	0	0	0	0	0	0	N/A	$0	0	0	$0	$0	$0
CS	73,648	5,373	276	0	0	79,298	3-story wood Zero Park	$21,102,527	229	0	$41,957,599	$5,862,776	$36,094,823
CN1	0	0	0	0	0	0	3-story wood townhome	$0	0	0	$0	$0	$0
CX	151,985	15,054	5,821	0	0	172,860	MU res/ret mid/surf	$25,068,217	224	21,054	$51,561,072	$7,604,201	$43,956,871
CG	1,251	2,789	0	0	0	4,040	MU res/ret mid/surf	$585,938	5	492	$1,205,175	$341,383	$863,792
OS	0	0	0	0	0	0	N/A	$0	0	0	$0	$0	$0
CO2	0	0	88	0	0	88	3-story wood townhome	$6,845	0	0	$15,086	$10,853	$4,233
CM	2,168	0	0	0	0	2,168	3-story wood Zero Park	$576,909	6	0	$1,147,054	$146,702	$1,000,352
TOTAL	344,361	49,931	19,088	0	0	413,381	**TOTAL**	**$72,191,961**	**621**	**21,547**	**$138,975,923**	**$22,675,241**	**$116,300,683**
							TOTAL/REHAB/RENOVATION						**$101,034,870**
							OVERALL TOTAL						**$217,335,553**

Source: Johnson Reid LLC

H. Streetcar Scenario

The Model is designed so that the inputs described in the previous steps automatically generates the Streetcar Scenario subsequently to the Baseline Scenario. The Streetcar Scenario essentially follows the same steps, however the inputs used in the pro forma analysis for such factors as rent levels and costs factors are changed, based on the estimated Development Adjustment Factors which were derived on the Initial Input Screen.

In other words, the Streetcar Scenario models the impact of increased rent potential and lower costs from things such as reduced parking requirements on the same building types included in the Baseline Model.

The adjusted development factors can generally have two impacts:

1) Increase the Residual levels (i.e. the amount developers can pay for land) and therefore increase the amount of land in the lower RMV/Residual ratio categories. More land in these lower ratio categories means more is deemed likely to develop.
2) In some cases, where the real estate market in the corridor is already on the margin between lower density development and supporting a more dense form of development, the adjusted development factors may be sufficient to "push" the feasible development type to a denser, taller development type. (For instance, the higher rent level may now support mid-rise development where only low-rise was possible before.) This will only happen where the market is already near this threshold.

In the average tested corridor, the first type of impact is likely to be responsible for the majority of the difference between the Baseline and Streetcar scenarios. (This is discussed further in the conclusions of this report.)

Potential Adjustments to Streetcar Scenario

While the Model is designed to hold most factors constant between the Baseline and Streetcar scenarios, in order to allow the most direct comparison, the user does have the potential to

make changes to the Prototype Development Pro Forma worksheets, or the Zoning Screen worksheet if the user desires.

The user may wish to change the Zoning Screen if it is anticipated that the proposed streetcar program will be accompanied by zoning amendments which will change was is permitted or not permitted in the area. In other words, the zoning entitlements will change between the Baseline and Streetcar scenarios.

It is less clear why a user would want to change the Prototype Development Pro Forma worksheets between the scenarios, but the flexibility is there to do so. Such changes should be well considered and limited to realistically anticipated changes that would occur between the two scenarios.

Streetcar Scenario Outputs

The Model produces a Development Activity Output screen for the Streetcar Scenario that matches that of the Baseline Scenario (see Figure A.13). The two scenarios are then compared to determine the net gain from streetcar improvements (see below).

I. Reconciliation Baseline and Streetcar Scenarios

The final step in the Model is to compare the outputs of the Baseline and Streetcar Scenarios. This is done automatically. Figure A.14 presents the comparison of results from the hypothetical corridor Modeled in the examples above. In this example, the streetcar improvements are judged to have a positive impact on all indicators, increasing investment, production of housing and commercial space, and resulting change in Real Market Value.

FIGURE A.14: RECONCILIATION OF BASELINE AND STREETCAR SCENARIOS
PREDICTIVE ECONOMIC DEVELOPMENT MODEL

BASELINE					
		Predicted Development Yield			Net
ZONING	Predicted Predominant Development Form	Construction Investment	Residential Units	Commercial Space	Change in RMV
RH	residential mid/struc 2	$14,625,157	80	0	$18,722,744
R1	3-story wood townhome	$3,625,511	27	0	$5,165,186
R2	3-story wood townhome	$6,600,856	50	0	$10,492,681
R5	N/A	$0	0	0	$0
CS	3-story wood Zero Park	$21,102,527	229	0	$36,094,823
CN1	3-story wood townhome	$0	0	0	$0
CX	MU res/ret high rise	$25,068,217	224	21,054	$43,956,871
CG	MU res/ret mid/surf	$585,938	5	492	$863,792
OS	N/A	$0	0	0	$0
CO2	3-story wood townhome	$6,845	0	0	$4,233
CM	3-story wood Zero Park	$576,909	6	0	$1,000,352
	TOTAL/NEW CONSTRUCTION	**$72,191,961**	**621**	**21,547**	**$116,300,683**
	TOTAL/REHAB/RENOVATION	**$101,034,870**			**$101,034,870**
	OVERALL TOTAL	**$173,226,831**			**$217,335,553**

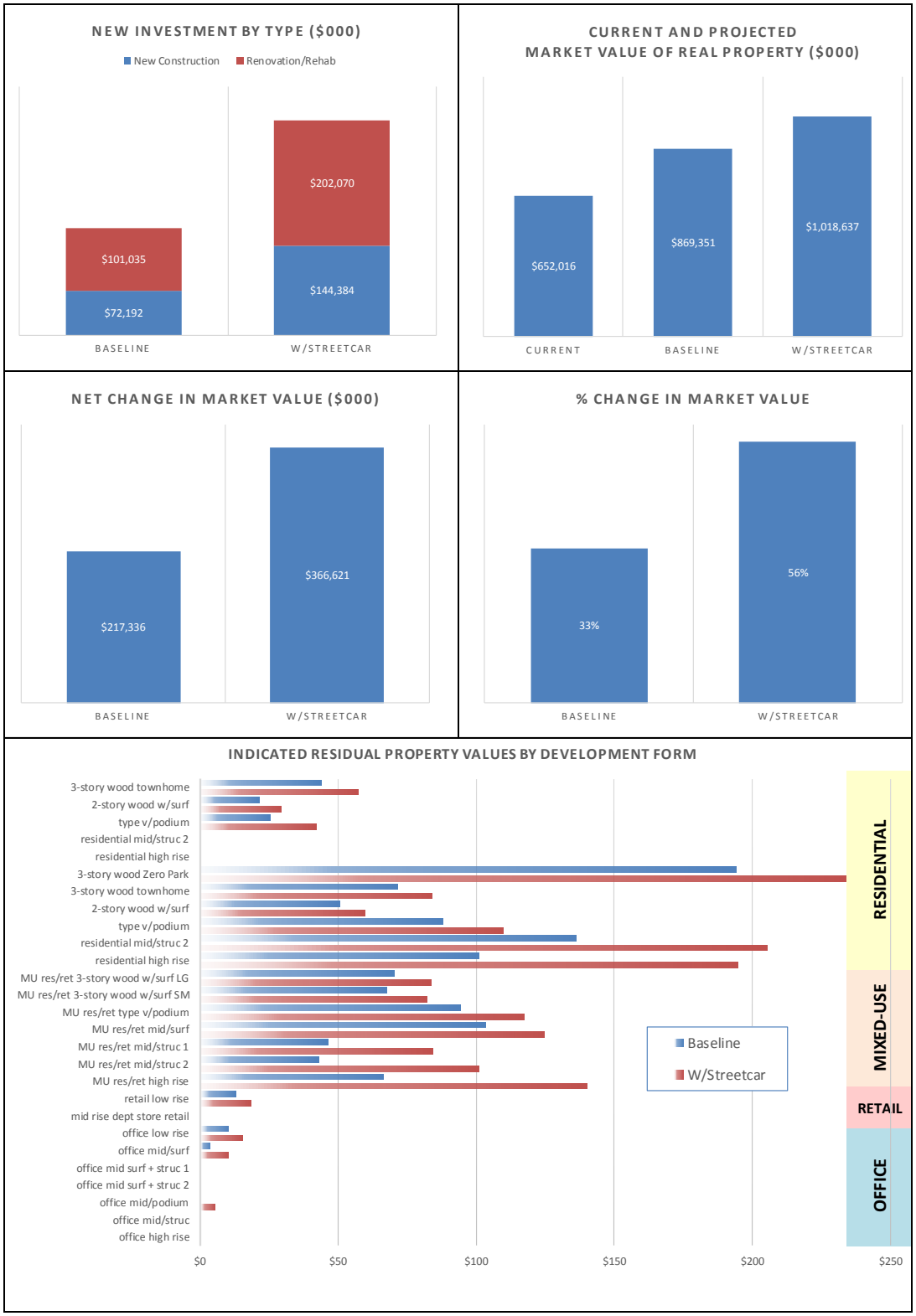
WITH STREETCAR IMPROVEMENTS					
		Predicted Development Yield			Net
ZONING	Predicted Predominant Development Form	Construction Investment	Residential Units	Commercial Space	Change in RMV
RH	residential mid/struc 2	$15,070,361	85	0	$22,537,186
R1	3-story wood townhome	$3,657,731	28	0	$6,378,431
R2	3-story wood townhome	$6,790,648	53	0	$12,784,372
R5	N/A	$0	0	0	$0
CS	3-story wood Zero Park	$20,756,753	232	0	$42,150,323
CN1	3-story wood townhome	$0	0	0	$0
CX	MU res/ret high rise	$126,847,814	725	34,027	$173,552,903
CG	MU res/ret mid/surf	$737,130	6	638	$1,218,106
OS	N/A	$0	0	0	$0
CO2	3-story wood townhome	$15,506	0	0	$14,622
CM	3-story wood Zero Park	$560,083	6	0	$1,157,020
	TOTAL/NEW CONSTRUCTION	**$174,436,027**	**1,135**	**34,665**	**$259,792,963**
	TOTAL/REHAB/RENOVATION	**$106,827,704**			**$106,827,704**
	OVERALL TOTAL	**$281,263,731**			**$366,620,667**

NET DIFFERENTIAL	$108,036,900	514	13,118	$149,285,114

Source: Johnson Reid LLC

The final worksheet in the Model presents the comparison of the scenarios in graphic form (Figure A.15).

FIGURE A.15: RECONCILIATION OF SCENARIOS (GRAPHICS)
PREDICTIVE ECONOMIC DEVELOPMENT MODEL



J. Truth Testing of Results

The Model produces various assumptions about the developability of various parcels. The results for both the Baseline and Streetcar Scenarios should be mapped (if possible), and "truth tested" by users knowledgeable about the test corridor. There is no substitute for local knowledge in assessing the accuracy of results.

The Model does not generate mapped results. To generate map, a user with technical expertise in GIS software will be required to copy the list of parcel records from the Redevelopment Screen, along with the "RMV/Residual ratio category" to which the parcels have been assigned, and import into the GIS software.

Because this Model assesses parcels in bulk, it is likely to produce erroneous or otherwise unexpected results for some parcels. Depending on the time/effort the user wants to expend, it will be less important to consider every small parcel in the study area, however larger parcels will have a greater impact on the results and should be reviewed. Local planning professionals should have an idea of the condition of important sites, and of any development plans already in process which should be reflected.

Some situations which might arise:

- A public park, school or other large site is identified as a development site.
- A large site with known development interest is not registering as a likely site.
- Local expertise otherwise concludes a site is likely to redevelop, despite relatively high real market value.
- Individual parcel records have flawed data (such as when the real market value of two adjacent sites under common ownership is applied to only one site, and other is shown to have a RMV of zero.)

For sites that are important or large enough to skew the overall magnitude of the development findings, the user can correct these flaws by finding the individual parcel in the Redevelopment Screen worksheet and making manual changes to ensure that it is indicating the proper level of developability.

APPENDIX B: RESEARCH BIBLIOGRAPHY

AECOM, 2011, "L.A. Streetcar Economic Analysis: Report and Technical Appendix." L.A. Streetcar, http://www.lastreetcar.org/wp-content/uploads/2011/02/Downtown.L.A.Streetcar_Economic.Impact.Report_Feb.8.2011.pdf

Al-Mosaind, M., Dueker K, and J, Strathman, 1993. "Light-rail transit stations and Property Values: A Hedonic Approach." Transportation Research Record 1400: 90-94.

Bartholomew, K. and R. Ewing, 2011. "Hedonic Price Effects of Pedestrian- and Transit-Oriented Development." Journal of Planning Literature 26,1: 18-34.

Becker S., S. Bernstein and L. Young, 2013. „The New Real Estate Mantra: Location Near Public Transportation." American Public Transportation Association. http://www.apta.com/resources/statistics/Documents/NewRealEstateMantra.pdf

Benjamin, J.D. and G.S. Sirmans, 1994. "Mass Transportation, Apartment Rent and Property Values." Journal of Real Estate Research.

Bollinger, C.R. and K.R. Ihlanfeldt, 1997. "The Impact of Rapid Rail Transit on Economic Development: The Case of Atlanta's MARTA." Journal of Urban Economics 42, 179-204.

Brookings Institution, HDR, Re-Connecting America and RCLCO. 2009. "Value Capture and Tax-Increment Financing Options for Streetcar Construction." DC Surface Transit.

Cervero, R. 1992. "Land Market Impacts on Urban Rail Transit and Joint Development: an Empirical Study of Rail Transit in Washington, D.C. and Atlanta." The University of California Transportation Center, Working Paper No. 135.

Cervero, R. 2003. "Effects of Light and Commuter Rail Transit on Land Prices: Experiences in Sand Diego County." University of California, Berkely.

Cervero, R. et al. 2004. "Transit Oriented Development in the United States: Experiences, Challenges, and Prospects." Transit Cooperative Research Program, Report 102.

Cervero, R. and M. Duncan, 2002: "Land Value Impacts of Rail Transit Services in San Diego County." Journal of Public Transportation. 5.1.

Clower, T.L., B. Weinstein, M. Seman, 2007. „Assessment of the Potential Fiscal Impacts of Existing and Proposed Transit-Oriented Development in the Dallas Area Rapid Transit Service Area." Center for Economic Development and Research, University of North Texas.

Crampton, G.R., 2003. "Economic Development Impacts of Urban Rail Transport." ERSA, Paper 295.

Chen, H., A. Rufolo, and Dueker, K., 1997. “Measuring the Impact of Light Rail Systems on Single Family Home Values: A Hedonic Approach with GIS Application.” Transportation Research Record. 1617: 38-43.

Debrezion, G., E. Pels and P. Rietveld, 2007. “The Impact of Railway Stations on Residential and Commercial Property Value: A Meta-analysis.” The Journal of Real Estate Finance and Economics, 35,2:161-180.

Dueker, K.J. and Bianco, M.J. , 1999. “Light Rail Transit Impacts in Portland: The First Ten Years.” Transportation Research Board, Paper No. 990929.

Fairfax County Department of Planning and Zoning, 2005. “Land Use and Development along the Rosslyn-Ballston Metro Corridor.” Fairfax County.

Fogarty, N., N. Eaton, D. Belzer and G. Ohland, 2008. “Capturing the Value of Transit.” United States Department of Transportation, Federal Transit Administration.

Garrett, T. 2004. “Light Rail Transit in America: Policy Issues and Prospects for Economic Development.” Federal Reserve Bank of St. Louis.

Gatzlaff, D.H. and M.T. Smith, 1993. “The Impact of the Miami Metrorail on the Value of Residences near Station Locations.” Land Economics. 69,1:54-66.

Goetz, E.G., K. Ko, A. Hagar, H. Ton and J. Matson, 2010. “The Hiawatha Line: Impacts on Land Use and Residential Housing Value.“ Center for Transportation Studies, Report 10-09.

Golem, R. and J. Smith-Heimer, 2010. “Relationships Between Streetcars and the Built Environment.” Transit Cooperative Research Program, Synthesis 86.

Hess, D.B. and T.M. Almeida, 2007. “Impacts of Proximity to Light Rail Rapid Transit on Station-area Property Values in Buffalo, New York.” Urban Studies 44,5/6:1041-1068.

Hovee, E. and T. Jordan, 2005. ”Portland Streetcar Development Impacts.” Portland Streetcar.

Hovee, E. and T. Jordan, 2008. ”Streetcar-Development Linkage: Portland Streetcar Loop.” City of Portland Office of Transportation.

Hovee, E. and T. Jordan, 2008. ”Streetcar-Development Linkage: Portland Streetcar Loop.” City of Portland Office of Transportation.

Hovee, E. and R. Gustavson, 2012. ”Streetcar-Development Linkage: Portland Streetcar Loop.” City of Portland Office of Transportation.

Ihlanfeldt, K.R., 2003. “Rail Transit and Neighborhood Crime: The Case of Atlanta, Georgia.” Southern Economic Journal, 70,2:273-294.

Kahn, M.E., 2007. “Gentrification Trends in New Transit-Oriented Communities: Evidence from 14 Cities That Expanded and Built Rail Transit Systems.” Real Estate Economics 35,2:155-182.

Landis, J., S. Guhathakurta and M. Zhang, 1994. "Capitalization Investments into Single-Family Home Prices: A Comparative Analysis of Five California Rail Transit Systems." University of California Transportation Center, Working Paper No. 246.

Levinson, D., 2008. "Density and Dispersion: the Co-Development of Land Use and Rail in London." Journal of Economic Geography 2008,8:55-77.

Lewis-Workman, S. and D. Brod, 1997. "Measuring the Neighborhood Benefits of Rail Transit Accessibility." Transportation Research Record 1576, Paper No. 971371.

Mayor, K., S. Lyons, D. Duffy and R.S.J. Tol, 2008. "A Hedonic Analysis of the Value of Rail Transport in the Greater Dublin Area." ESRI Working Paper No. 264, Dublin: ESRI.

McMillen, D.P. and J. McDonald, 2004. "Reaction of House Prices to a New Rapid Transit Line: Chicago's Midway Line, 1983-1999. Real Estate Economics 32,3:463-486.

Pivo G. and J.D. Fisher, 2008. "Investment Returns from Responsible Property Investments: Energy Efficient Transit-oriented and Urban Regeneration Office Properties in the U.S. from 1998-2007. Responsible Property Investing Center, Working Paper 08-2.

Weinberger, R.R., 2000. "Commercial Rents and Transportation Improvements: Case of Santa Clara County's Light Rail." Lincoln Institute of Land Policy, WP00RW2.

Weinstein, B. and T. Clower, 1999. "The Initial Economic Impacts of the DART LRT System." Center for Economic Development and Research, University of North Texas.

Weinstein, B. and T. Clower, 2002. "An Assessment of the DART LRT on Taxable Property Valuations and Transit Oriented Development." Center for Economic Development and Research, University of North Texas.

Yan, S., E. Delmelle and M. Duncan, 2011. "The Impact of a New Light Rail System on Single Family Property Values in charlotte, North Carolina." Environmental Systems Research Institute.

MPAC Worksheet

Agenda Item Title (include ordinance or resolution number and title if applicable): Land Conservation and Development Commission Strategic Plan

Presenter: Carrie MacLaren, Deputy Director

Contact for this worksheet/presentation: Carrie MacLaren, Deputy Director

Council Liaison Sponsor:

Purpose of this item (check no more than 2):

Information ___x__
Update _____
Discussion __x___
Action _____

MPAC Target Meeting Date: __8/13/14_____

Amount of time needed for:
Presentation _5____
Discussion __10___

Purpose/Objective (what do you expect to accomplish by having the item on *this meeting's* agenda):
(e.g. to discuss policy issues identified to date and provide direction to staff on these issues)

Action Requested/Outcome (What action do you want MPAC to take at *this meeting?* State the ***policy*** questions that need to be answered.)

Background and context:

What has changed since MPAC last considered this issue/item?

What packet material do you plan to include? (must be provided 8-days prior to the actual meeting for distribution)
Copy of DLCD's Strategic Plan document

What is the schedule for future consideration of item (include MTAC, TPAC, JPACT and Council as appropriate):

Oregon
John A. Kitzhaber, M.D., Governor

Department of Land Conservation and Development
635 Capitol Street NE, Suite 150
Salem, Oregon 97301-2540
Phone: (503) 373-0050
Fax: (503) 378-5518
www.oregon.gov/LCD

June 20, 2014

Dear Interested Party;

The draft 2014-22 Department of Land Conservation and Development (DLCD) Strategic Plan is now available for your review.

The plan meets several objectives that reach beyond past (and current) plans:

- It is more public-friendly, intending to inform the audiences who are participants in the land use program of the scope of the program, its many partners, and the benefits to urban and rural landscapes and development.

- It gives a clear sense of priority and direction for an eight-year period, rather than focusing predominantly on the current biennium.

- It will serve as the foundation for other department reports and documents, internal and external.

- It orients work being performed according to goals, objectives and priorities, rather than by bureaucratic work unit. The framework for the plan applies this logic, which will also extend down to the level of assigned work tasks and objectives for all department staff. While the statewide land use program identifies 19 statewide planning goals, this plan identifies five strategic goals under which current department work and future strategies are identified.

- The strategies identified in this plan build upon public comments received for the commission's 2013-15 Policy Agenda and staff strategic planning, and other comments during the past year. These are strategies that the department is clearly stating its intent to accomplish over the 8-year period. Some strategies are admittedly aspirational. Others have not yet begun, and may not be realized without additional funding. Still other strategies are already underway. Strategy descriptions are necessarily brief, but behind each strategy lies a clear sense of what is intended to be accomplished, and what resources are required to complete it.

We welcome your comments. Comments received by the department by July 3, 2014, will be compiled and provided to the Land Conservation and Development Commission (LCDC) prior to their July 24 meeting. Written and oral testimony are also welcome at the meeting itself. Comments should be sent to Amie Abbott, 635 Capitol St., Ste. 150, Salem, Oregon 97301 or via email to amie.abbott@state.or.us.

The department will seek commission approval of the 2014-22 DLCD Strategic Plan at the September LCDC meeting.

Sincerely,

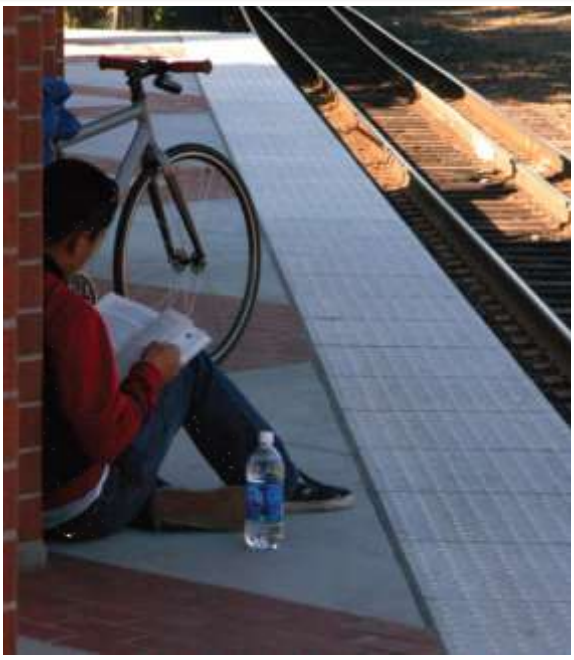
Carrie MacLaren
Deputy Director

Attachment

Oregon Department of Land Conservation and Development

Strategic Plan

2014-2022



Mission

As stewards of Oregon's visionary land use planning program, we foster sustainable, vibrant communities and protect our natural resources in a dynamic partnership with citizens and local governments. We help communities plan for, protect, and improve the cities, towns, and natural resources that provide a high quality of life.

Guiding Principles

- Ensure consistency with Governor's 10-year Plan(s);
- Provide a healthy environment;
- Sustain a prosperous economy;
- Ensure a desirable quality of life; and
- Provide fairness and equity to all Oregonians.

Strategic Goals to Guide Our Work

Who We Are

The Oregon Department of Land Conservation and Development (DLCD) is a small state agency. We work in partnership with local governments, and state and federal agencies. The Land Conservation and Development Commission (LCDC) provides the policy direction for the state land use planning program, and reviews certain major local land use decisions (other land use decisions are reviewed by a separate agency – the Land Use Board of Appeals). The department is organized into four divisions:

Ocean and Coastal Services – oversees Oregon's federally designated coastal program and, provides grants and delivers technical assistance to coastal communities at several regional offices.

Planning Services – provides technical expertise in transportation and growth management, natural hazards, climate change and property rights.

Community Services – reviews hundreds of local plan amendments each year for consistency with the statewide planning goals, provides grants to local governments, and delivers technical assistance from regional offices.

Administrative Services – the Director's Office and Administrative Services Division provide support for LCDC, policy development, and operations.

"The program's success is due to the working partnership between state and local governments and to citizen participation". – *Renew America (National Conservation Program)*

What We Do

We help carry out the vision and legacy of Senate Bill 100, which for 40 years has contributed to the quality and character of the natural and built environment of the entire state. Under the state land use planning program, every city and county, as well as Metro, is required to adopt and maintain a comprehensive plan and zoning code that is consistent with the statewide land use planning goals. Recognizing that each city and county has unique values and aspirations, our job is to provide planning guidance and technical assistance to help communities plan for their future.

The core functions of the program are management of urban growth, and conservation of farm, forest, coastal, and other natural resource lands, which are carried out through application of the 19 statewide planning goals in city and county comprehensive plans. Helping cities and counties address these functions in the context of a wide range of state and local interests requires that we be problem solvers. The department's mission reflects this active role for our department.

Local Governments

Oregon's land use program is designed to serve all Oregonians and support the work of the 242 cities, 36 counties, and one metropolitan service district (Metro) in the state. It does this by creating a framework that allows each city and county to engage its residents in planning for their future. The department's regional staff and program specialists provide technical and financial assistance to support local planning efforts. In addition, direct organizational links with cities and counties, such as the commission's Local Official's Advisory Committee, also support the state and local relationship.

Understanding this Document

This document is the strategic plan for the department for the period 2014-22. The focus of the plan is to identify new, targeted strategies that the department intends to implement over this eight-year period. Some strategies are admittedly aspirational. Others have not yet begun, and may not be realized without additional resources. Still other strategies are already underway.

The core (i.e., required and ongoing) work of the agency is referenced in this document, but not extensively described. That work is substantial, important, and implemented statewide. It reflects the core program elements that were initiated either with the creation of the department, the commission, and the 19 statewide planning goals, or through later additions and changes to the program. A better understanding of this core programmatic work can be found on the department website.

Strategies in this document are placed under one of the department's five strategic goals to make the link between the particular strategy and its purpose. Thus, for example, the strategies listed under Strategic Goal 3 show how we will go about engaging and informing people in the land use planning program. Some individual strategies, however, are not so easily categorized and in fact advance multiple strategic goals. In addition, there are some common themes that cross over several strategic goals. These include:

- Improve public communication and education capacity.
- Improve capacity to gather, analyze, and distribute data and information to local jurisdictions and other stakeholders, and to guide policy development.
- Increase community and economic development assistance to rural communities, in collaboration with the state's Regional Solutions Teams.
- Support state and local planning to respond to climate change, address natural hazards, and create resilient communities.
- Streamline urban growth boundary (UGB) processes, and increase the capacity at both the state and local level to focus on creating livable communities within UGBs.

Goal 1: Conserve Oregon's Natural Resources – Productive Farm and Forest Lands and Coastal, Scenic, Unique, and Other Natural Resource Lands are Planned and Managed to Provide a Healthy Environment, and Sustain Oregon's Communities and Economy

The protection of natural resources lies at the heart of Oregon's innovative land use planning program. Oregon's agricultural lands, forest lands, rangelands, beaches, waters and other natural resources are important economic, environmental and social assets for local communities and for the state. The quality of life made possible by a healthy environment, open spaces, and access to recreation continues to attract new people and business to Oregon. Core department work and strategies identified in this first strategic goal apply primarily to rural areas outside urban growth boundaries.

Conserve productive farm and forest lands

Core work: The department's planning specialists and regional staff provide planning and technical assistance to help communities address Statewide Land Use Planning Goals 3 (Agricultural Lands) and 4 (Forest Lands). Retaining parcels of sufficient size to support commercial farm and forest production is key, as is limiting uses that conflict with or otherwise impair farm and forest operations.

New Strategies

- Explore alternative (non-regulatory) methods that complement the existing land use program to ensure a sustainable land supply for Oregon's agricultural and forest industries.
- Improve the department's ability, in cooperation with the Oregon Department of Agriculture and the Oregon Department of Forestry, to evaluate and communicate the scale, nature, and location of farm and forest land conversion throughout the state.
- Analyze the impacts of ancillary and non-farm uses on agricultural uses to inform policy choices that seek to prevent or limit conflicting uses on those lands.

Protect and conserve coastal and marine resources

Core work: Provide policy, planning, technical, and grant assistance to local governments and state agencies to ensure compliance with statewide planning goals, including coastal goals, when coastal resources are involved in land use decisions. Administer Oregon's federally approved Coastal Zone Management Program, including federal grant administration, federal consistency review of federal permits and activities affecting the

coastal zone, and serving as the coastal and marine data coordinator, facilitator, and repository.

New Strategies

- Administer and amend the Territorial Sea Plan and coordinate the state-federal task force for marine renewable energy development, within the federal waters of the outer continental shelf.
- Update Oregon's estuary planning program.

Protect and conserve wildlife habitat, wetlands and riparian areas for their ecosystem values. Protect scenic, historic, cultural, and recreational values on rural lands

Core work: Provide planning and technical assistance to local governments concerning the implementation of Statewide Planning Goal 5 (Natural Resources). Technical assistance related to Statewide Planning Goal 6 (Air, Water and Land Resources Quality) assists in the prevention of ground water pollution. Additional technical assistance is provided to cities and counties to avoid or minimize the adverse effects of urban sprawl on rural resource lands.

New Strategies

- Guide development to less sensitive areas through better application of statewide planning goals relating to natural resources (Statewide Planning Goal 5) and natural hazards (Statewide Planning Goal 7) in local planning updates.
- Develop a "non-resource lands" policy that is integrated with resource lands protections strategies. [Note: "nonresource lands are those rural lands that are not suitable for farm or forest uses due to the physical properties of the land, e.g., poor quality soils.]

Goal 2: Promote Sustainable, Vibrant Communities

How communities are built and developed touches nearly every aspect of our lives: how we get to work or school; and where we live, work, and play. Planning for the full range of what makes a community livable – providing transportation and housing choices, strengthening economies, preserving open spaces and parkland, investing in improvements to public infrastructure, and protecting the environment – improves our quality of life.

Oregon continues to be successful in absorbing population growth while consuming less land than other states. This success reduces costs for public facilities, transportation and infrastructure, and protects productive farm and forest lands that contribute to rural economies. Community resilience, enabling communities to reduce exposure to natural hazards and respond to climate change, is receiving increased attention within the department. More recently, the Governor's 10-year plans for Jobs and Innovation, Healthy People and Healthy Environment, are influencing the department's priorities and communications with the public.

Urban and rural communities have complete and efficient comprehensive plans that include a sufficient supply of land, services, and infrastructure to meet a variety of economic opportunities

Core work: Provide planning, technical assistance, and grant funding to help local governments to keep local comprehensive plans, including planning for employment lands, up-to-date. Examples of core work include assistance with Transportation System Plans, inventories of buildable lands, and identification of housing needs. Department staff also review city and county comprehensive plan amendments to ensure compliance with statewide planning goals, statutes, and rules.

New Strategies

- Improve procedures and requirements for urban reserve planning outside the Metro region to improve utility and effectiveness (particularly for industrial lands), reduce adverse impacts on farm land, and increase public safety by avoiding areas subject to natural hazards.
- Work with local and state government partners to identify lands and redevelopment opportunities within existing UGBs that are closer to workforce housing or in existing industrial areas.
- Clarify administrative rules governing planning for employment lands in the Portland metropolitan area.
- Establish a new, simplified process to evaluate UGB capacity, guide amendments to UGBs, and increase efficiency in redevelopment and infill.

Land use and transportation planning are linked to provide for the development of well-functioning, well designed, and healthy communities

Core work: Provide planning and technical assistance to local governments to support community efforts to expand transportation choices for people. In partnership with the Department of Transportation, administer the Transportation and Growth Management Program, which works with local governments to link land use and transportation planning to create vibrant, livable places in which people can walk, bike, take transit or drive where they want to go. Housing affordability and housing choices are an important component of the link between transportation and land use planning.

New Strategies

- Complete scenario planning to meet greenhouse gas reduction targets adopted by the commission.
- Increase access and availability to well-connected transit, bicycle, and pedestrian networks.
- Develop more effective housing affordability and housing choices strategies.
- Together with the Department of Transportation, re-evaluate the Transportation and Growth Management Program as a funding tool to achieve integration on local projects.

Community development activities will be enhanced to support local efforts to revitalize communities, seek public infrastructure solutions, and build community participation

Core work: Planning and technical assistance for community development is currently provided on a limited basis, and upon request by local communities. Increasing capacity in this area is anticipated through participation in the Regional Solutions Teams.

New Strategies

- Improve the ability of communities to carry out plans to develop well-functioning, well-designed, healthy communities.
- Help revitalize rural communities through integrated planning for transportation, land use, housing, workforce development, and infrastructure, in coordination with Regional Solutions Teams.
- In coordination with Regional Solutions Teams, align land use, transportation, and other infrastructure planning so that investment of state resources reflects state and local priorities and assures the value of those investments over time.

Urban and rural communities will plan for and develop resilience to natural hazards, including those exacerbated by climate change

Core work: Provide planning and technical assistance to help communities plan for and address flooding and other hazard events with mapping and data, particularly in coastal areas.

New Strategies

- Support local government planning for resilience, specifically targeting natural hazard and climate change mitigation.
- Create a joint natural hazard resilience program and public interface with the Office of Emergency Management and the Department of Geology and Mineral Industries.
- Assume responsibility for regular updates to the Oregon Natural Hazard Mitigation Plan.

Goal 3: Engage the Public and Stakeholders in Oregon's Land Use Planning Program

As shown in periodic statewide surveys, Oregonians greatly value the contribution land use makes to what they value about living in Oregon. On average, two-thirds of Oregonians feel strongly about protecting existing farmland and forests from development and urban sprawl, and believe that development should be directed to cities and towns; a majority of Oregonians support more investment in public transit; a large majority of Oregonians value the state's natural beauty, outdoor recreation opportunities, and relatively clean air and water. In contrast, respondents also believe that the department should help the public more clearly understand how those outcomes are achieved, and more robustly engage the public in a better understanding of the land use planning program.

In addition, given the department's lack of a dedicated communications officer, communications and information to the public tends to be reactive, in response to inquiries and often following high-profile, controversial projects. To address this, an ongoing information and education program should be established.

Recognizing the importance of the department's existing collaborative relationships, the plan also calls for strengthening these relationships with other state agencies, local and tribal governments, colleges and universities, and individuals, organizations, and private businesses by improving coordination and planning for land use, housing, infrastructure, and transportation.

Therefore, this strategic goal contains two related, but distinct aspects: (1) communicating to and informing the public; and (2) engaging and collaborating with other entities throughout the state.

Develop strong collaborative partnerships with citizens and communities in all regions of the state through citizen involvement, outreach, and collaboration

Core work: The department addresses this objective in an ongoing manner through support for the Citizens Involvement Advisory Committee, the Local Official Advisory Committee and staff involvement with communities – planning staff, residents, and elected officials – on a daily basis.

New Strategies

- Increase participation of a wider range of stakeholders in local and state decision-making across the state.

- Obtain improved public engagement tools for use by the department and local jurisdictions.

Improve communication and education with citizens and stakeholders in all regions of the state

Core work: The department engages and informs the public and stakeholders through maintenance of its website, publications and public speaking.

New Strategies

- Develop a communications program that raises awareness and understanding of the operation, benefits, and tradeoffs of the statewide land use planning program, and assists the department in the development of policies and programs.
- Improve the department's website for clarity, utility, and increased public use.

Goal 4: Provide Timely and Dynamic Leadership to Support Local and Regional Problem Solving

The department is a small agency with a big mission. The mission includes stewardship of the state's land use planning program and the 19 statewide planning goals that encompass it, as well as support for the 279 local jurisdictions that implement the program on the ground. Many land use issues emerge that cut across state agencies, differently impact regions of the state, or implicate conflicting state and local policies. Therefore, as used here, the term "leadership" means selectively and strategically choosing a set of these cross-cutting issues for which the department will invest significant time and energy.

Ensure short-and long-range policy development for the commission and department

Core work: The director's office supports and informs policy development connected with the legislature, the Governor's office, and the Land Conservation and Development Commission.

New Strategies

- Improve the department's review and report of progress toward meeting policy objectives and requirements of the land use program.

Improve capacity of local governments to carry out their land use responsibilities

Core work: Planning, technical assistance, and limited grant assistance are provided to local governments.

New Strategies

- In coordination with the Governor's office and state agencies, help local governments assess, plan, and build needed public infrastructure, including public facilities and school siting.
- Provide local governments with data and information to help complete comprehensive planning.
- Develop new processes and resources for keeping local plans up-to-date.
- Seek an increase in grant funding for local governments.

Develop and coordinate strategic initiatives with other state agencies, tribal and local governments

Core work: Big-picture initiatives are developed and supported with key stakeholders, including state agencies, local and tribal governments, and a wide range of advocacy

organizations such as those oriented to environmental protection, housing and community development, commercial natural resource interests, energy development, and parks and recreational interests.

New Strategies

- Engage state agencies, in coordination with the Governor's office to implement provisions of the 2010 Climate Change Adaption Framework.
- Update state agency working relationships, rules, and state agency agreements.
- Ensure that the policies and values of the statewide land use program are reflected in the process and outcomes of Regional Solutions Teams.

Seek solutions that address immediate and long range challenges, in collaboration with key stakeholders and others

Core work: The department cooperates with organizations such as colleges, universities and research institutions to provide research and analysis for identified projects.

New Strategies

- Provide coordinated population forecasting for all cities and counties through Portland State University's Population Research Center.
- Continue development of a land use portal in collaboration with Oregon State University's Institute for Natural Resources.

Manage and improve information services within the department and for use by a wide array of stakeholders

Core work: The department's capacity to generate mapping, GIS, and scientific information for use in local decision making is incrementally improving. This capacity is increasingly important for jurisdictions where planning resources have been greatly reduced in recent years.

New Strategies

- Improve the department's ability to collect, store and analyze geo-spatial and scientific data and information.
- Improve the distribution and availability of geo-spatial data and scientific information to local governments and the public, emphasizing web-based methods.

Goal 5: Deliver Services that are Efficient, Outcome-Based, and Professional

The department works to continually deliver pertinent, timely information to our partners, and to provide staff with the tools and training they need to provide excellent customer service. Both external and internal processes are monitored and adjusted to meet this goal. This goal is primarily a function of administrative and human services within the department.

Operate a professional organization that is efficient, operates according to best practices, and seeks to continually improve operations

Core work: Provide budget development and execution; personnel management, development, and evaluation; and grant and contract administration.

New Strategies

- Increase opportunities, awareness, and utility of those opportunities for professional staff development and training.
- Improve institutional memory and efficiency through better succession training.

Manage and provide services to local governments to support department and local objectives

Core work: Deliver technical assistance and administer grant funding to local governments in a timely and professional manner.

Materials following this page were distributed at the meeting.

600 NE Grand Ave.
Portland, OR 97232-2736
www.oregonmetro.gov

Metro | *Making a great place*

2014 MPAC Tentative Agendas

As of 8/7/2014

Items in italics are tentative; ***bold*** *denotes required items*

MPAC Meeting Wednesday, August 13, 2014 • Land Conservation and Development Commission strategic plan – Information / Discussion (30-45 Min, Carrie MacLaren, DLCD) • Streetcar Predictive Model: Provide information on an FTA funded research project focused on developing a tool to better understand economic impacts of streetcar investments – ACTION: Information/Discussion (30-45 min, Elissa Gertler / Jamie Snook, Metro, & Eric Engstrom)	**MPAC Meeting** Wednesday, Sept. 10, 2014 • *Climate Smart Communities Scenarios Project: Discuss draft approach evaluation results, estimate costs and draft implementation recommendations – Information / Discussion (45-60 min, Kim Ellis)* • *Growth Management Decision: Results of regional Residential Preference Survey – Information / Discussion (30 Minutes, Ted Reid)* • *Solid Waste Community Enhancement Program Changes – Information / Discussion (30 Minutes) (Primary Staff: Roy Brower)* **FYI: A comment period is planned from Sept. 15 to Oct. 30, 2014 on the Climate Smart Communities draft approach and draft implementation recommendations.** **FYI: 2014 Rail~Volution, Minneapolis, MN, September 21 – 24**
MPAC Meeting Wednesday, Oct. 8, 2014 • *Growth Management Decision: Discuss recommendation to Metro Council on whether Council should accept 2014 Urban Growth Report as basis for subsequent growth management decision – discussion and begin drafting recommendations (Ted Reid)* • *2015 legislative session and possible shared regional agenda – Discussion*	**MPAC Meeting** Wednesday, Oct. 22, 2014 • *Climate Smart Communities Scenarios: Continue discussion on draft approach and implementation recommendations – Information/discussion leading to joint meeting on Nov. 7th and recommendation on Dec. 10th (30 min, Kim Ellis)* *Growth Management Decision: Continued discussion and finalization of recommendation to Metro Council – Discussion – leading to recommendation on Nov. 12th (Ted Reid)*

Joint MPAC/JPACT Meeting Friday, November 7, 2014 (HOLD 8 a.m. to noon) • *Climate Smart Communities Scenarios Project: Discuss public comments and potential refinements to draft approach and implementation recommendations*	**MPAC Meeting** Wednesday, Nov. 12, 2014 • *Growth Management Decision: Recommendation to Metro Council on whether Council should accept 2014 Urban Growth Report as basis for subsequent growth management decision – Recommendation to Metro Council (Ted Reid)* • *Climate Smart Communities Scenarios: Continued discussion of public comments, potential refinements and recommendation to Metro Council – Discussion leading to Dec. 10th recommendation (30 min, Kim Ellis)* • FYI: National League of Cities Congress of Cities and Exposition, Austin, TX, November 18 - 22
MPAC Meeting Wednesday, Dec. 10, 2014 • Climate Smart Communities Scenarios Project: Adoption of the preferred approach – Recommendation to the Metro Council requested (Kim Ellis)	

Parking Lot:

- Presentation on health & land use featuring local projects from around the region
- Affordable Housing opportunities, tools and strategies
- Greater Portland, Inc. Presentation on the Metropolitan Export Initiative
- MPAC composition
- "Unsettling Profiles" presentation by Coalition of Communities of Color
- Tour of the City of Wilsonville's Villebois community

600 NE Grand Ave.
Portland, OR 97232-2736
www.oregonmetro.gov

Metro | *Making a great place*

JOINT MPAC/JPACT MEETING
Meeting Minutes
May 30, 2014
World Forestry Center, Cheatham Hall

JPACT MEMBERS PRESENT	AFFILIATION
Jack Burkman	City of Vancouver
Carlotta Collette	Metro Council
Shirley Craddick, Vice Chair	Metro Council
Craig Dirksen, Chair	Metro Council
Nina DeConcini	Oregon Department of Environmental Quality
Denny Doyle	City of Beaverton, representing Cities of Washington County
Donna Jordan	City of Lake Oswego, representing Cities of Clackamas Co.
Neil McFarlane	TriMet
Diane McKeel	Multnomah County
Steve Novick	City of Portland
Paul Savas	Clackamas County

JPACT MEMBERS EXCUSED	AFFILIATION
Shane Bemis	City of Gresham, representing Cities of Multnomah Co.
Heath Henderson	Clark County
Roy Rogers	Washington County
Jason Tell	Oregon Department of Transportation
Don Wagner	Washington State Department of Transportation
Bill Wyatt	Port of Portland

JPACT ALTERNATES PRESENT	AFFILIATION
David Collier	Oregon Department of Environmental Quality
Jef Dalin	City of Cornelius, representing Cities of Washington County
Andy Duyck	Washington County
Tim Knapp	City of Wilsonville
Matt Ransom	City of Vancouver
Rian Windsheimer	Oregon Department of Transportation

MPAC MEMBERS PRESENT	AFFILIATION
Ruth Adkins	PPS, Governing Body of School Districts
Jody Carson, Chair	City of West Linn, Clackamas Co. Other Cities
Sam Chase	Metro Council

Tim Clark	City of Wood Village, representing Multnomah Co. other cities
Denny Doyle	City of Beaverton, representing Cities of Washington County
Andy Duyck	Washington County
Lise Glancy	Port of Portland
Jerry Hinton	City of Gresham
Dick Jones	Oak Lodge Water District
Anne McEnerny-Ogle	City of Vancouver
Marilyn McWilliams	Tualatin Valley Water District, Washington Co. Special Districts
Doug Neely	City of Oregon City, Clackamas Co. 2nd Largest City
Wilda Parks	Citizen, Clackamas Co. Citizen
Craig Prosser	TriMet
Martha Schrader	Clackamas County
Loretta Smith	Multnomah County
Bob Stacey	Metro Council
Jerry Willey	City of Hillsboro, Washington Co. Largest City

MPAC MEMBERS EXCUSED	AFFILIATION
Maxine Fitzpatrick	Multnomah Co. Citizen
Kathryn Harrington	Metro Council
Keith Mays	Sherwood Chamber of Commerce
Charlynn Newton	City of North Plains
Jim Rue	Oregon Dept. of Land Conservation and Development
Steve Stuart	Clark County
Kent Studebaker	City of Lake Oswego
Peter Truax	City of Forest Grove, Washington Co. Other Cities

MPAC ALTERNATES PRESENT	AFFILIATION
Jim Bernard	Clackamas County
Gretchen Buehner	City of Tigard
Jennifer Donnely	Oregon Dept. of Land Conservation and Development
Terry Gibson	Oak Lodge Water District
Jeff Gudman	City of Lake Oswego

STAFF: Taylor Allen, John Williams, Troy Rayburn, Jessica Rojas, Jill Schmidt, Andy Cotugno, Kim Ellis, Tom Kloster, Grace Cho, Randy Tucker, Beth Cohen, Ramona Perrault, Nick Christensen, Martha Bennett, Caleb Winter, Dan Kaempff, Valerie Cuevas, Lake McTighe, Peggy Morell, Patty Unfred, C.J. Doxsee, Lake McTighe, John Mermin and Chris Myers.

FACILITATOR: Sam Imperati, Oregon Consensus.

The joint policy advisory committee meeting on the Climate Smart Communities Scenarios Project convened at 8:00 a.m.

1. WELCOME AND AGENDA REVIEW

Meeting Facilitator, Sam Imperati of Oregon Consensus welcomed the members and alternates of the Metro Policy Advisory Committee (MPAC) and Joint Policy Advisory Committee on Transportation (JPACT) as well as staff and interested parties.

Mr. Imperati gave an overview of the joint committee meeting agenda and goals of the meeting:

1. Review meeting outcomes and today's action
2. Consider public input, cost, climate benefit and the six desired outcomes
3. Take a poll and committee action on a draft approach to determine the basis for the Recommendation to the Metro Council

Mr. Imperati highlighted that from the six desired policy outcomes, transit has been split into two areas, capital expenditures and infrastructure to provide for a more refined recommendation. He explained that committee members would take action to make a recommendation on a draft approach. He directed committee members to the materials provided in the meeting packet and provided an overview of the voting process for the formal poll. Among the materials provided were color-coded voting cards (green, yellow and red) determining three levels of support to recommend a level of investment to test.

2. CALL TO ORDER AND INTRODUCTIONS

MPAC Chair Carson and JPACT Chair Dirksen began by declaring a quorum for both Committees. JPACT Chair and Metro Councilor Craig Dirksen acknowledged the presence of Jerry Lidz, a commissioner with the Land Conservation and Development Commission and liaison to the Climate Smart Communities Scenario Project.

CONSIDERATION OF THE MINUTES FROM THE JOINT JPACT/MPAC APRIL 11 MEETING

JPACT

MOTION: Donna Jordan moved, Jack Burkman seconded to approve the minutes from the Joint JPACT/MPAC April 11th meeting with the following amendments:

- Jack Burkman of the city of Vancouver was present at the April 11th Joint JPACT/MPAC meeting.

ACTION: With all in favor, the motion passed.

MPAC

MOTION: Ruth Adkins moved, Tim Clark seconded to approve the minutes from the Joint JPACT/MPAC April 11th meeting with the following amendments:

- Jack Burkman of the city of Vancouver was present at the April 11th Joint JPACT/MPAC meeting.

ACTION: With all in favor, the motion passed.

Chair Carson explained that the two committees would consider the information received on the six policy areas as well as the recommendations received from Metro Technical Advisory Committee (MTAC) and Transportation Policy Advisory Committee (TPAC). The meeting is anticipated to result in JPACT and TPAC recommending a draft approach to the Metro Council to test during the summer of 2014. She stated that this work develops the basis for developing the draft approach to reduce greenhouse gas emissions while creating great communities through adopted local and regional plans. In depth discussion will be initiated regarding the six policy areas with new information relating to cost, public input and committee recommendations. She emphasized that members bring forward perspective and priorities of the individuals they represent to the discussion.

Chair Dirksen reviewed the next steps in the process of shaping the draft approach. Councilor Dirksen provided historical context in relation to the work members are engaged in as a part of the 2040 Growth Concept. He emphasized that the potential action taken today is not a decision on the scenario. He identified one key purpose of the meeting as identifying the level of investment needed to reach the state mandated target by 2035 that provide Metro staff with sufficient direction to move forward with testing the draft approach, which will be subject to further discussion and potential refinement during the fall of 2014.

Chair Dirksen introduced Metro Deputy Director of Planning John Williams.

3. SETTING THE STAGE FOR SHAPING A DRAFT APPROACH TO TEST

Mr. John Williams, Metro Deputy Planning Director, presented an overview of the straw poll results, local examples, cost information, community input and MTAC and TPAC recommendations for each policy area. Mr. Williams directs committee members to [SHAPING THE PREFERRED APPROACH: A DISCUSSION GUIDE FOR POLICY MAKERS] referenced by page number in the PowerPoint presentation.

- Regional context and what we learned so far (pp.7–15)
- Policy questions for 2014 (pp. 18 –19)
- Overview of policy areas (pp. 21– 48)
- Supplemental information (pp. 53 – 60)

MTAC & TPAC recommendations can be found in [MEMO: CLIMATE SMART COMMUNITIES SCENARIOS PROJECT DRAFT APPROACH TO TEST].

- Recommendation 1 (pp. 5)
- Recommendation 2 (pp.5)
- Recommendation 3 (pp.5)
- Recommendations 4-7 (pp. 8-1)

Members Comments Included:

- Members expressed concerns regarding parking management.
- Members encouraged that the draft approach reflect the distribution of dollars and funds unique to the individual needs and aspirations of the citizens and communities that make up each part of the Metropolitan region.

- Neil McFarlane of TriMet highlighted operation costs as well as maintenance and preservations costs for streets and highways across the three scenarios.
- Members emphasized the significant change in federal transportation funding for long term capital projects.
- Members asked clarifying questions regarding household costs and benefits across the three scenarios. Ms. Kim Ellis of Metro explained that the numbers reported for household savings only account for vehicle capital costs and during the summer of 2014 the evaluation will bring forward more information regarding transit and cost benefits.
- Members expressed interest in a cost benefit analysis of the price on carbon for people within the metropolitan region across the three scenarios.
- Metro Councilor Bob Stacey recognized the ways in which everyone benefits from transit and highlighted having a transportation funding strategy that addresses all needs and all benefits of a transportation system. He encouraged the region to explore funding strategies for transportation modes excluded from the Federal Highway Trust Fund budget.
- Mayor Charlie Hales emphasized the need to rely on state and local resources for transportation funding.
- Members emphasized the benefits from greenhouse gas emissions reduction within local communities such as access, mobility and jobs.

4. BREAK

5. SHAPING A DRAFT APPROACH TO TEST DISCUSSION

Mr. Imperati facilitated a discussion reviewing each of the six policy areas for members to consider input received and new information presented to recommend a level of investment to test:

- Transit: Capital & Operations (pp. 5 of memo)
- Technology (pp.6 of memo)
- Travel Information (pp.7 of memo)
- Active Transportation (pp. 7)
- Streets and highways (pp. 7)
- Parking (pp.8)

Members Comments Included:

Transit: Capital & Operations

- Members asked clarifying questions about the Columbia River Crossing LRT extension and how it impacts the 2.2 billion dollar estimated investment in the next twenty years. Ms. Ellis explained that the analysis for the draft approach will take into account the assumptions included in the draft Regional Transportation Plan.
- Neil McFarlane of TriMet expressed concern in regards to capital rehabilitation expenses.
- Members expressed interest in resources needed to meet transit service growth targets.
- Members expressed interest in the service enhancement plans and the impact on employment access across the three scenarios.
- Members asked about how the increased maintenance, improvements and construction costs on sidewalks and street ramps regarding accessibility and mobility standards has been accounted for within the scenario assumptions. Ms. Ellis explained the cost

assumptions used within the analysis were created by local governments, TriMet and the Oregon Department of Transportation (ODOT) for project cost estimates. The engineer developed a cost estimation methodology that may account for some of those standards.
- Chair Dirksen asked about the cost required to purchase and maintain more buses. Mr. McFarlane confirmed the bus maintenance cost as capital.
- Members asked clarifying questions about the ultimate objective in terms of high capacity transit and light rail in the Metropolitan region. Mr. Williams of Metro directed members to the Regional HCT Transit Plan developed by Metro which details the HCT vision of the region.
- Members highlighted that transit service enhancements require equal street accessibility and mobility enhancements.
- Members asked clarifying questions about transit affordability in Scenario C and the cost implications.

Technology

- Metro Councilor Carlotta Collette recognized the returned investment on technology in terms of project funding for Scenario C.
- Members expressed interest in selecting a level of investment greater than Scenario C.

Travel Information Incentives
- Members emphasized the small investment in travel information incentives relative to project results and localized outcomes.

Active Transportation

- Mr. McFarlane reinforced the connection between active transportation and transit strategy in terms of safety and comfort.
- Chair Dirksen highlighted the Regional Opinion Poll which confirmed that people support active transportation projects that are safe and provide access to transit.
- Members asked clarifying questions about the way in which the investments would be spent for active transportation. Mr. Williams explained that the money would be used for implementing the active transportation systems and priorities identified by local counties and cities throughout the metropolitan region.

Streets and Highways
- There were none

Parking

- Members expressed interest in increased parking in areas where transit service is less complete and accessible.
- Members asked about whether the funding for “park and rides” is incorporated as transit or parking investments. Mr. Eric Hesse of TriMet explained that “park and rides” are identified in transit capital investments. Ms. Ellis also explained that “park and rides” are included in the range of approaches within the scenarios.
- Chair Dirksen emphasized the ways in which parking reduces greenhouse gas emissions in each community differently providing localized context.

Final Comments

- Nina DeConcini from the Oregon Department of Environmental Quality (DEQ) explained that DEQ as an agency is interested in the outcomes and objectives for air quality, public health and greenhouse gas emission reduction in the final deliberations of the preferred approach and she decided to abstain from the formal vote.

6. POLL AND BREAK

7. JOINT RECOMMENDATION TO METRO COUNCIL ON A DRAFT APPROACH TO TEST- ACTION REQUESTED

Mr. Imperati presented the poll results and facilitated a group discussion on the results. Detailed graphs of the poll results can be accessed in the PowerPoint presentation entitled [CLIMATE SMART COMMUNITIES SCENARIOS PROJECT SHAPING THE DRAFT APPROACH FOR TESTING, SLIDES 32-33] as a part of the electronic record.

MPAC

MOTION: Dick Jones moved, Marilyn McWilliams seconded to forward today's poll results to the Metro Council as the recommended draft approach for staff testing during Summer of 2014.

ACTION: With all in favor, the motion passed.

JPACT

MOTION: Neil McFarlane moved, Donna Jordan seconded to forward today's poll results to the Metro Council as the recommended draft approach for staff testing during Summer of 2014.

ACTION: With all in favor and Nina DeConcini abstaining, the motion passed.

8. GETTING TO A FINAL RECOMMENDATION IN DECEMBER- WHAT'S NEXT

Mr. Imperati emphasized that the recommendation does not serve as an endorsement but instead, it will be utilized by Metro staff over the summer as a model to further test and analyze. Chair Carson and Chair Dirksen thanked both committees for the effort and time put forth in developing a joint recommendation.

June 2014 – Council action on draft approach to test

June–August – Metro staff works with TPAC and MTAC to evaluate draft approach & develop implementation recommendations.

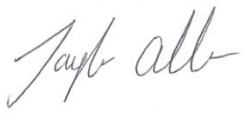
September – Report results

September-December – Public review of draft preferred approach, identify refinements & final adoption

9. ADJOURN

Chair Dirksen and Chair Carson adjourned the meeting at 12:00 p.m.

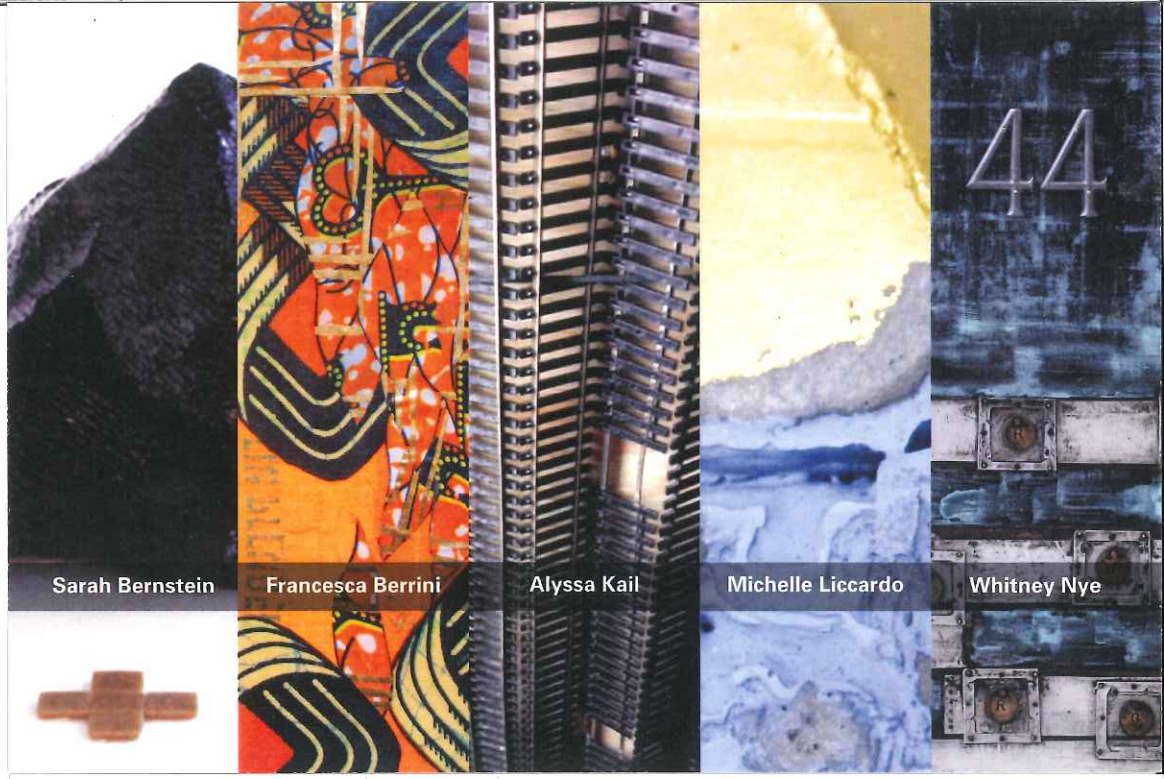
Respectfully submitted,



Taylor Allen, Council Policy Assistant

ATTACHMENTS TO THE PUBLIC RECORD FOR THE MEETING OF MAY. 30, 2014

DOCUMENT TYPE	DOC DATE	DOCUMENT DESCRIPTION	DOCUMENT NO.
Handout	05/30/2014	JPACT/MPAC Meeting Agenda	53014-01
Handout	05/30/2014	Joint MPAC/JPACT April 11 Draft Meeting Minutes	53014-02
Memo	05/23/2014	Climate Smart Communities Scenarios Project: Draft Approach to Test	53014-03
Presentation	05/23/2014	Straw Poll Results from April 11 Joint JPACT/MPAC Meeting	53014-04
Handout	N/A	Guide to Key Takeaways from Stakeholder and Public Input in Six Policy Areas	53014-05
Discussion Guide	April 2014	Shaping the Preferred Approach: A Discussion Guide for Policymakers	53014-06
Presentation	05/30/2014	Shaping the Draft Approach for Testing	53014-07
Handout	05/30/2014	Poll: Shaping the Preferred Approach	53014-08
Letter	05/27/2014	Letter from City of Portland Bureau of Planning and Sustainability	53014-09
Handout	05/30/2014	Metro Comment Form	53014-10



GLEAN

Sarah Bernstein, Francesca Berrini, Alyssa Kail, Michelle Liccardo and Whitney Nye
August 8 – 31, 2014

Opening Reception: Friday, August 8, 2014, 6 pm – 9 pm
Location: Disjecta – 8371 N. Interstate Ave., Portland, OR – 503.286.9449
Gallery Hours: 12 – 6 pm, Friday, Saturday and Sunday

Residents and businesses in the Portland metropolitan area generate about 2.1 million tons of waste each year – the majority of which is sent to a landfill 150 miles away. Five artists were chosen to help educate the public about excessive waste generation by creating art from discarded materials otherwise destined for the landfill. The exhibition is the public's first opportunity to see the results of the artists' gleanings and creative material adaptation. Please join us to see how waste can be creatively transformed into unique pieces of art.

GLEAN, a collaboration between Recology, Metro and crackedpots, seeks to educate the public about recycling and resource conservation while supporting the local art community and diverting material from landfills.

For more information, contact
Amy Wilson at 503.278.0725

Recology
WASTE ZERO

crackedpots

Metro | *Making a great place*

Printed on 100% recycled paper

Trash can tell many stories: about our habits, our history and our future.

The challenge: Create a short film to bring one of these stories to life.

Enter to win.

Top prize: $500

Entries due 9 p.m. Sunday, Oct. 12, 2014

LET'S TALK TRASH FILM CONTEST

NORTHWEST FILMMAKERS' FESTIVAL

Finalist entries will be shown at the Let's Talk Trash Film Gala, a featured event of the Northwest Film Center's 41st Annual Northwest Filmmakers' Festival. Audience members will vote to choose the winning film.

Let's Talk Trash Film Gala
7 p.m. Monday, Nov. 10, 2014
Whitsell Auditorium, Portland Art Museum
1219 SW Park Ave.

Contest rules and more information
oregonmetro.gov/filmcontest

LET'S TALK TRASH

Metro

Metro's Let's Talk Trash events are designed to engage the public in discussions about how the greater Portland region can best manage its garbage in the future. More information about Let's Talk Trash can be found at oregonmetro.gov/letstalktrash.

13999 | Printed on recycled-content paper

Rank	Priority	Number of Votes
1	S. Pass a comprehensive transportation funding and policy package.	66
2	H. Improve the fairness of how new and improved property is added to the tax roll.	52
3	L. Clarify and enhance medical marijuana dispensary regulations.	47
4	R. Oppose legislation preempting the ability of cities to manage and receive compensation for the use of a public ROW.	44
5	U. Support efforts and program funding to address Oregon's long term water supply needs including recapitalization of the Water Conservation, Reuse and Storage Grant Program and implementation of a place-based pilot program for local water resources planning.	39
6	M. Enhance mental health services.	38
7	K. Allow for price comparison when procuring architects and engineers.	34
8	C. Prioritize grants providing assistance for natural disaster planning and updating comprehensive plans to address likely natural disasters in a community, and increase the grant funds available to cities through the DLCD's general grant funds to $2 million.	29
9	B. Support capitalization of the industrial site readiness loan program at $10 million and the industrial site readiness assessment program at $200,000.	20
10	I. Improve clarity and certainty around transient lodging tax statute.	19
10	T. Continued or enhanced funding for ConnectOregon.	19
10	V. Support efforts to establish a program that would provide low-interest loan opportunities to address failing residential onsite septic systems. The new loan program would support repair and replacement of failing systems or conversion to a municipal wastewater system, if the conversion is at the request of the impacted municipality.	19
13	Q. Support the reintroduction of legislation that repeals ORS 221.515.	17
14	A. Provide tools for brownfield remediation including $10 million in recapitalization of the redevelopment fund, new incentives such as tax credits, or regulatory modifications.	14
14	D. Reform the Post Acknowledgment Plan Amendment process to require appellants to raise issues before the local government before raising the issue on appeal.	14
14	J. Reform Oregon's recall procedures to encourage a greater participation of the electorate and ensure that it is used for reasons involving misconduct.	14
17	F. Support efforts to eliminate the sunset on the Low Carbon Fuel Standard program.	5
18	E. Modify the existing "1.5% green energy technology for public buildings" requirement to allow for offsite solar investments.	4
19	G. Phase out the 3% discount for the early payment of property taxes.	3
20	N. Ensure that arbitrator awards are in compliance with state, as well as local policies.	2
20	O. Ensure that collective bargaining agreements trump state mandates on police investigations.	2
22	P. Require earlier submission of last best offer.	1

Streetcar Corridor Economic Impact Predictive Model

MPAC

August 13, 2014

What is the streetcar predictive model?

An analytical tool to predict real estate development that would be stimulated by streetcar and related investments.

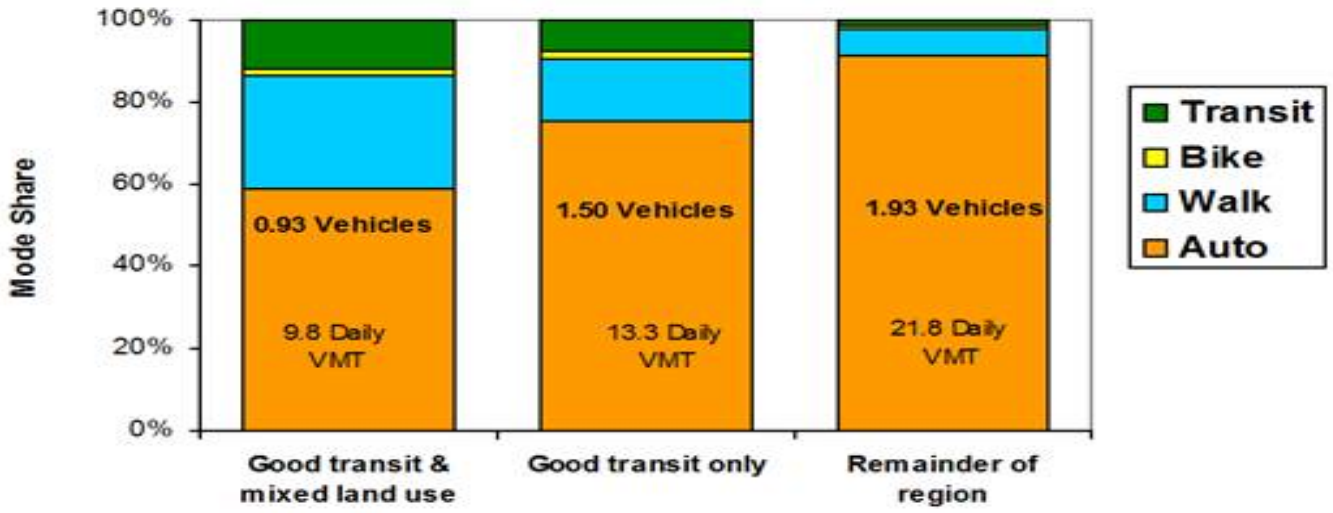
Why do we need the model?

- Existing research/analysis is limited
- Inform decision making processes

Land use influences travel behavior

People take transit, walk and bike more when land uses offer:

- Good design
- Higher density
- Continuity
- Smaller block size
- Mixed uses



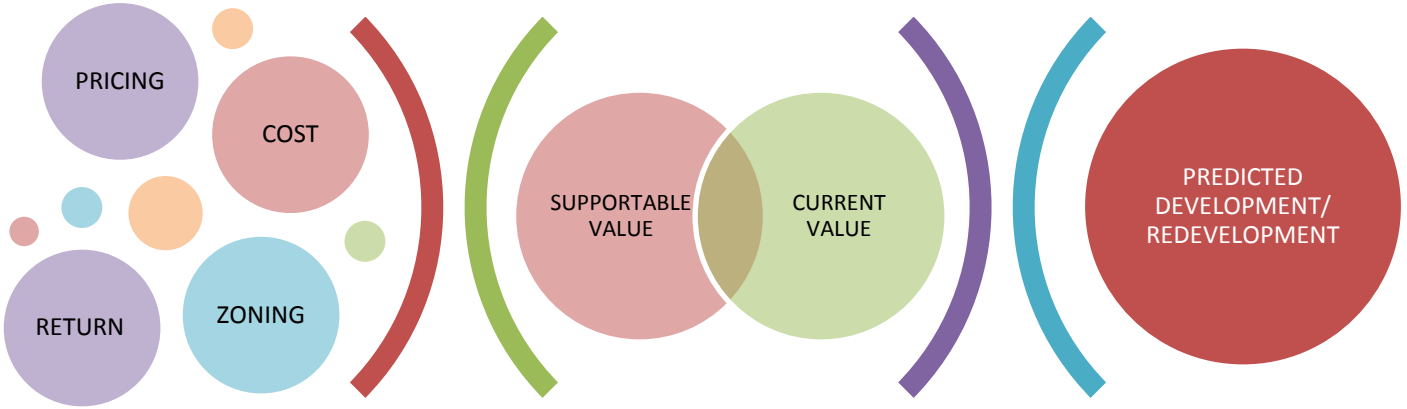
Case studies illustrate success

Research on cause and effect is limited

How the model works…

- Calculates development feasibility
- Compares with and without streetcar improvements

How the model works…



RESIDUAL PROPERTY VALUE MODULE

LIKELIHOOD OF DEVELOPMENT MODULE

PREDICTED MAGNITUDE AND FORM OF DEVELPOMENT

User inputs…

PREDICTIVE ECONOMIC DEVELOPMENT MODEL

PUBLIC INFRASTRUCTURE

TRANSIT AND ACCESSIBILITY

How is the current transit service in the corridor? Will the streetcar improve transit service and connectivity? Will the streetcar improve accessibility to the city core or other major town center or employment center?

		Existing Conditions	Projected Conditions w/Streetcar	Impact on Development	NEGATIVE High	NEGATIVE Med	NEGATIVE Low	Neutral	POSITIVE Low	POSITIVE Med	POSITIVE High
1	Quality of Transit Service (scale 1-5)	2	3	*Low +*							
2	Average Distance Between Stops (scale 1-5)	5	5	*Neutral*							
3	Will the new streetcar line provide new or vastly improved access to a "Major Destination" district (Central Business District/Town Center/Major Employment Center) that does not exist currently through the traditional street and transit network? (For instance, will the new streetcar line travel above or beneath a previous physical barrier such as a freeway or waterway, to provide a faster/more direct route to the Destination district, whereas the current street system is encumbered by that barrier?) (scale 1-5)		No	*Neutral*							
4	Transit Score (if not available, leave blank)	65	71	*Low +*							
5	Connection to Existing Streetcar Network (Yes/No)		Yes	*Med +*							

PEDESTRIAN ENVIRONMENT

What is the current pedestrian environment in the corridor? Does the streetcar project include improvements to sidewalks and streetscape? Are there services, shopping and other destinations to walk to?

		Existing Conditions	Projected Conditions w/Streetcar	Impact on Development	NEGATIVE High	NEGATIVE Med	NEGATIVE Low	Neutral	POSITIVE Low	POSITIVE Med	POSITIVE High
6	Quality of Sidewalk Network (scale 1-5)	3	4	*Low +*							
7	Quality of Pedestrian Experience (scale 1-5)	3	4	*Low +*							
8	Availability of Services (Walkscore)	66		*Low +*							

PUBLIC POLICY

Will the streetcar corridor have zoning, financial tools, and other public policy advantages over other similarly zoned corridor in the city? Are specific changes to zoning and public policy planned as part of streetcar implementation?

		Existing Conditions	Projected Conditions w/Streetcar	Impact on Development	NEGATIVE High	NEGATIVE Med	NEGATIVE Low	Neutral	POSITIVE Low	POSITIVE Med	POSITIVE High
9	Public Tools Available (scale 1-5)	3	4	*Low +*							

Source: Johnson Reid LLC, Angelo Planning Group

Peer review

Keith Bartholomew, JD

Associate Dean , College of Architecture and Planning

University of Utah

Robert Cervero, PhD

Friesen Chair of urban Studies

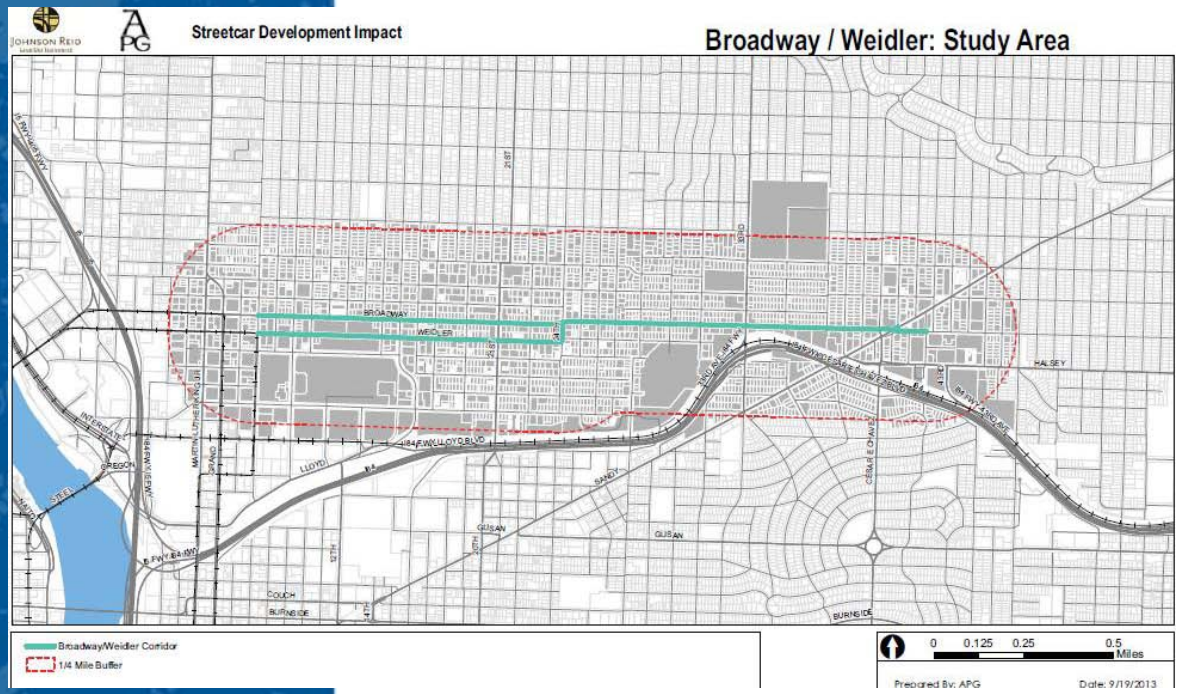
University of California Berkeley

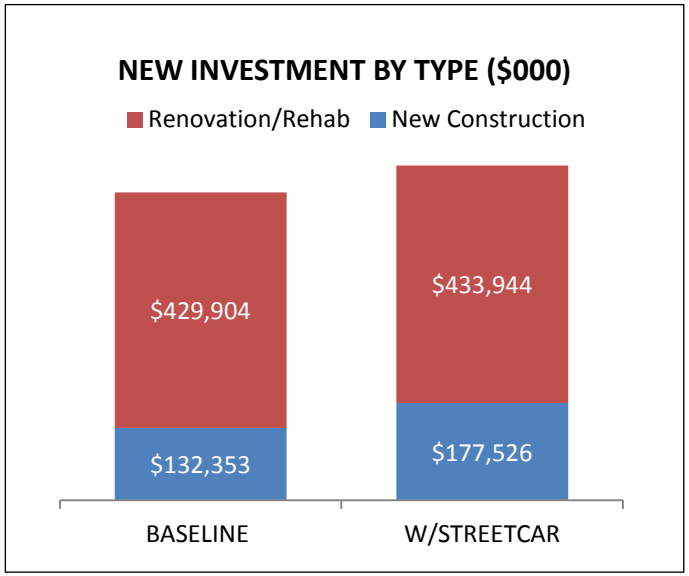
William Lee

Bill Lee Land Econ Consultants

NE Broadway Corridor

The model predicts:
30% increase in housing units
45% increase in commercial space





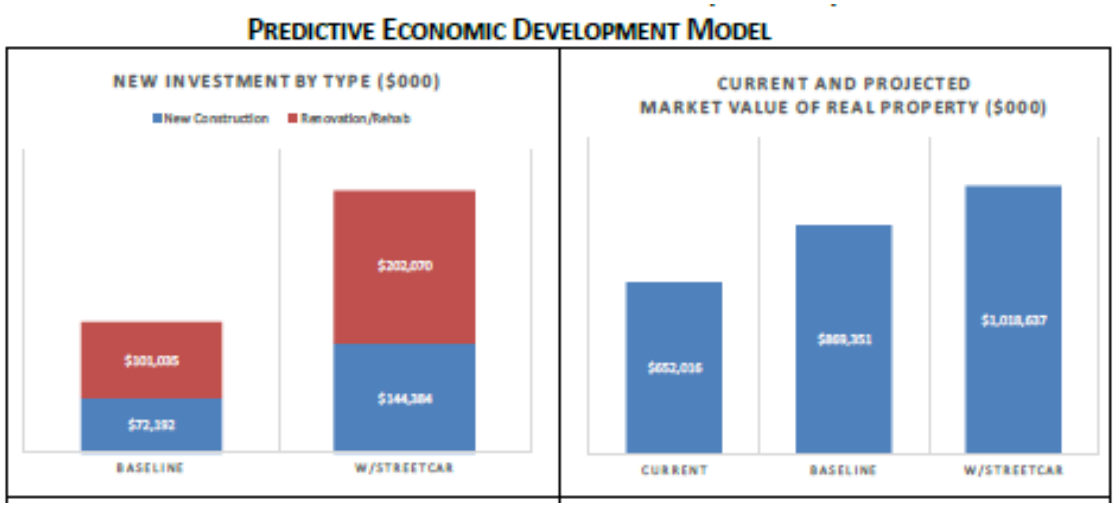
What does it take to run the model?

MARKET DYNAMICS

CURRENT MARKET PRICING (MARGINAL, ASSUMING NEW PRODUCT)			
10	Rental Residential	$2.10	Per Square Foot Per Month
11	Ownership Residential	$210	Per Square Foot
12	Office Space	$18.00	NNN (Triple Net Lease)
13	Retail Space	$18.00	NNN (Triple Net Lease)
14	Parking - Rental Residential	$75.00	Per Covered Secured Space per Month
15	Parking Price - Ownership	$15,000	Per Covered Secured Space
16	Parking - Office Space	$65.00	Per Covered Secured Space per Month
17	Average Annual Pricing Growth Trend (Residential-Rental)	2.0%	AAGR/Inflation Adjusted
18	Average Annual Pricing Growth Trend (Residential-Owner)	2.0%	AAGR/Inflation Adjusted
19	Average Annual Pricing Growth Trend (Office)	0.0%	AAGR/Inflation Adjusted
20	Average Annual Pricing Growth Trend (Retail)	0.0%	AAGR/Inflation Adjusted
OPERATING CHARACTERISTICS			
Structural Vacancy			
24	Rental Residential	5.0%	
25	Office	10.0%	
26	Retail	10.0%	
Operating Expenses			
27	Rental Residential	35.0%	
28	Office	5.0%	
29	Retail	5.0%	
FINANCIAL CHARACTERISTICS			
30	Rental Residential Cap Rate	6.50%	
31	Office Cap Rate	7.50%	
32	Retail Cap Rate	7.50%	
33	Ownership Residential, Return on Cost	20.00%	

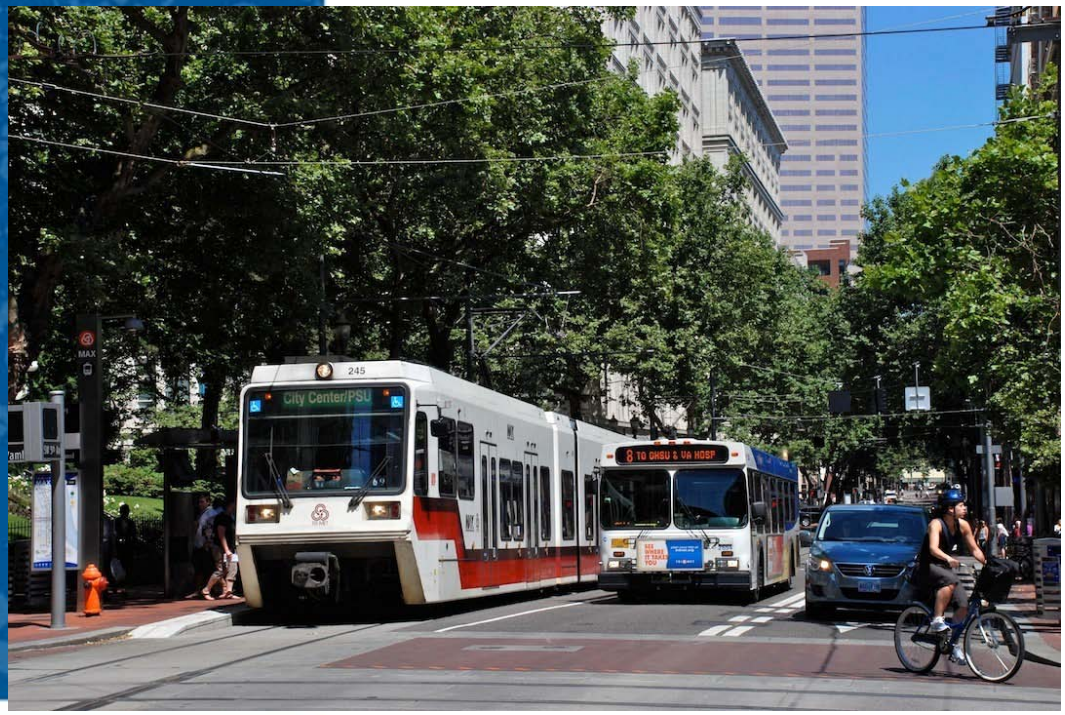
What the model tells us…

1. Magnitude of new development stimulated by public investment
2. How local regulations affect development feasibility
3. Estimated fiscal and economic benefits of development



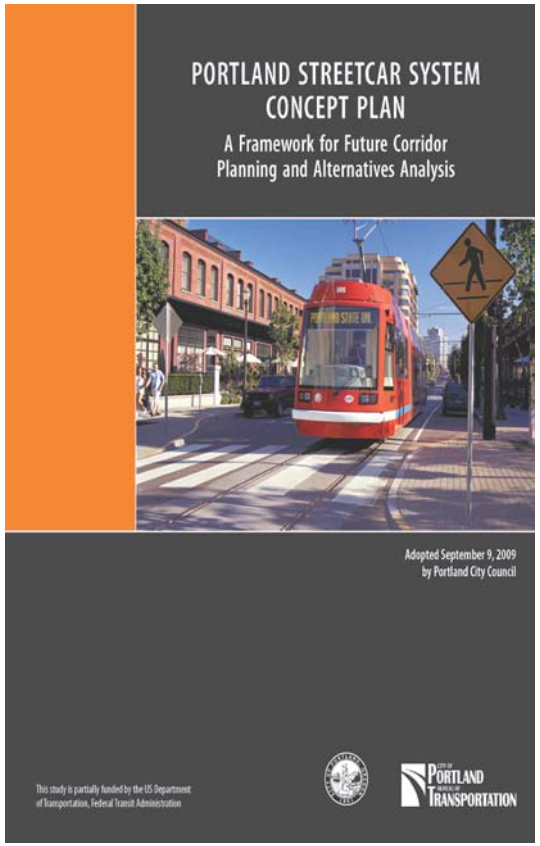
How the model might be applied

- Policy (HCT Plan Update)
- Transit Projects (locally & nationally)



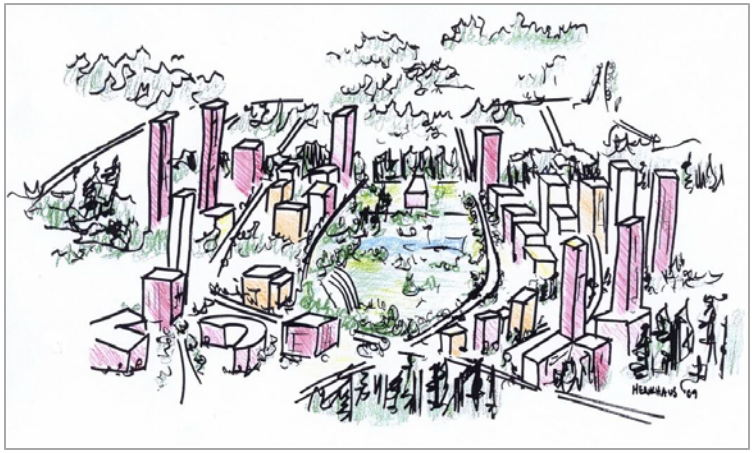
Local Policy application

- The City of Portland is using the model to analyze several corridors identified as potential streetcar routes in the 2009 *Streetcar System Concept Plan*
- The results will feed into the project evaluation process underway as part of the Transportation System Plan update



Local Project application

AmberGlen Redevelopment Plan in Hillsboro



What comes next…

- Policies
- Projects
- Places beyond Portland
- Other ideas?

Questions?

Thank you!

DLCD Strategic Plan

Metro Policy
Advisory Committee

August 13, 2014

Purpose

1. Provide a clear sense of priority and direction, rather than focusing on the current biennium.
2. Align with the Governor's 10-year plan
3. Provide a more public-friendly document
4. Serve as the foundation for other department reports and documents, both external and internal.
5. Reflect orientation of work being performed according to functions, goals and priorities.

Genesis

- Internal: Long-term needs were not adequately captured in the development of LCDC Policy Agendas.
- External: Stakeholders could not see the detail, direction, or priority they felt was needed to understand the department's work.
- Management: Desire to increase the utility of the document

Status

- Draft circulated for public notice in June
- Comments received by July 25th commission meeting have been compiled.
- Staff is in the process of review and evaluation; draft plan will be revised based on comments received.
- Revised draft will be released in early September
- Seeking approval at the September meeting

Organizational Overview

- 2014-2022
- Primary focus is on new and/or targeted strategies
- Core work of the department is referenced, but not extensively described
- Strategies are portrayed under specific goals and objectives, but there is cross over

5 Strategic Goals

1. Conserve Oregon's Natural Resources
2. Promote Sustainable, Vibrant Communities
3. Engage and Inform the Public and Stakeholders
4. Provide Timely and Dynamic Leadership that Supports Capacity-Building
5. Deliver Services that are Efficient, Outcome-Based, and Professional

Common Themes

- Improve public communication and education capacity.
- Improve capacity to gather, analyze, and distribute data.
- Increase community and economic development assistance to rural communities, in collaboration with the state's Regional Solutions Teams.
- Support state and local planning to respond to climate change, address natural hazards, and create resilient communities.
- Streamline urban growth boundary (UGB) processes, and increase the capacity at both the state and local level to focus on creating livable communities within UGBs.