



600 NE Grand Ave.  
Portland, OR 97232-2736

## Council work session agenda

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Tuesday, April 25, 2017

2:00 PM

Metro Regional Center, Council Chamber

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AGENDA REVISED 04/19/17

**2:00 Call to Order and Roll Call**

**2:05 Chief Operating Officer Communication**

**Work Session Topics:**

2:10 Technical Elements of the Metro Land Use Analytic Toolkit [17-4800](#)

Presenter(s): Jeff Frkonja, Metro  
Dennis Yee, Metro  
Maribeth Todd, Metro

Attachments: [Work Session Worksheet](#)

3:00 Legislative Update [17-4797](#)

Presenter(s): Andy Shaw, Metro

**3:45 Councilor Communication**

**4:00 Adjourn**

**EXECUTIVE SESSION ORS 192.660(2)(e), TO CONDUCT DELIBERATIONS WITH PERSONS DESIGNATED BY THE GOVERNING BODY TO NEGOTIATE REAL PROPERTY TRANSACTIONS AND 192.660(2)(f), TO CONSIDER INFORMATION OR RECORDS THAT ARE EXEMPT BY LAW FROM PUBLIC INSPECTION.**

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ការគោរពសិទ្ធិពលរដ្ឋរបស់ ។ សំរាប់ព័ត៌មានអំពីកម្មវិធីសិទ្ធិពលរដ្ឋរបស់ Metro ឬដើម្បីទទួលបានកម្រិតបណ្តឹងរើសអើងសូមចូលទស្សនាគេហទំព័រ [www.oregonmetro.gov/civilrights](http://www.oregonmetro.gov/civilrights)។ បើលោកអ្នកត្រូវការអ្នកបកប្រែភាសានៅពេលអង្គប្រជុំសាធារណៈ សូមទូរស័ព្ទមកលេខ 503-797-1700 (ម៉ោង 8 ព្រឹកដល់ម៉ោង 5 ល្ងាច ថ្ងៃធ្វើការ) ប្រាំពីរថ្ងៃ មុនថ្ងៃប្រជុំដើម្បីអាចឲ្យគេសម្រួលតាមសំណើរបស់លោកអ្នក។

### إشعار بعدم التمييز من Metro

تحتزم Metro الحقوق المدنية. للمزيد من المعلومات حول برنامج Metro للحقوق المدنية أو لإيداع شكوى ضد التمييز، يُرجى زيارة الموقع الإلكتروني [www.oregonmetro.gov/civilrights](http://www.oregonmetro.gov/civilrights). إن كنت بحاجة إلى مساعدة في اللغة، يجب عليك الاتصال مقدماً برقم الهاتف 503-797-1700 (من الساعة 8 صباحاً حتى الساعة 5 مساءً، أيام الاثنين إلى الجمعة) قبل خمسة (5) أيام عمل من موعد الاجتماع.

### Paunawa ng Metro sa kawalan ng diskriminasyon

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ឬដើម្បីទទួលបានកម្មប្រណឹងលើសេវាសម្របសម្រួលសម្រាប់ការមិនរើស  
[www.oregonmetro.gov/civilrights](http://www.oregonmetro.gov/civilrights) ។  
បើលោកអ្នកត្រូវការអ្នកបកប្រែភាសានៅពេលអង្គ  
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**TECHNICAL ELEMENTS OF THE METRO LAND USE  
ANALYTIC TOOLKIT**

Metro Council Work Session  
Tuesday, April 25, 2017  
Metro Regional Center, Council Chamber

# METRO COUNCIL

## Work Session Worksheet

**PRESENTATION DATE:** April 25, 2017

**LENGTH:** 45 minutes

**PRESENTATION TITLE:** Technical Elements of the Metro Land Use Analytic Toolkit

**DEPARTMENT:** Research Center

**PRESENTER(S):** Jeff Frkonja, [jeff.frkonja@oregonmetro.gov](mailto:jeff.frkonja@oregonmetro.gov) x1897  
Dennis Yee  
Maribeth Todd

### WORK SESSION PURPOSE & DESIRED OUTCOMES

#### Purpose:

Provide Council an overview of key technical elements of the Metro land use analytic tools and their use in Metro planning processes including the 2018 Urban Growth Management (UGM) work plan.

#### Outcome:

Make Council aware of in-progress technical enhancements and the types of forecast information Council would see as part of planning efforts.

### TOPIC BACKGROUND & FRAMING THE WORK SESSION DISCUSSION

#### Previous Conversations and Conclusions

Metro conducts land use and transportation planning to work toward regional goals, to fulfill state land use planning requirements, to meet federal transportation planning requirements, and to program transportation expenditures. Specific examples include updating the Regional Transportation Plan (RTP), conducting the Urban Growth Management (UGM) process, and maintaining the Metropolitan Transportation Improvement Program (MTIP). Those examples in return require analytic support in the form of data that illustrates how transportation systems and land markets have performed plus forecast information that illustrates how those systems would perform in the future in response to policy or investment decisions Council and other bodies might make.

The Planning and Development department (P&D) manages these processes for Metro with analytic support from the Research Center (RC). The two departments coordinate to develop process-specific work plans, for example the 2018 UGM work plan Council reviewed at its February 28<sup>th</sup> work session. In addition the RC has ongoing work plans to sustain and enhance the analytic tools--in the form of both data and forecast models--so that the information provided by those tools is objective, defensible, and useful. RC's ongoing work on its land use forecast tools is producing enhancements that will inform future planning efforts including the 2018 UGM effort.

#### Technical Items in the Briefing

There are several aspects of the RC's ongoing technical work that the Council should be aware of. RC staff will bring to the work session a presentation that covers the following topics.

First, the RC will reiterate the guiding analytic principles and values that it applies to all its work.

Second, RC staff will brief Council on the enhancements and quality assurance tasks that are in-progress for the land use forecast toolkit.

Third, the RC has dedicated resources to conducting specific future technical outreach tasks regarding the land use forecasting toolkit. RC will give the Council an overview of these outreach activities and venues.

Finally, Council will see a preview of how information from the land use forecast toolkit may be presented to support Council's work on the 2018 UGM process.

**QUESTIONS FOR COUNCIL CONSIDERATION**

- Does the Council have any questions for staff?
- Does Council have any observations to offer on the general technical work plan?
- Does Council have any observations regarding the proposed forecast information for use in the 2018 UGM cycle?

**PACKET MATERIALS**

- Would legislation be required for Council action     Yes    **X No**
- If yes, is draft legislation attached?                     Yes    **X No**
- What other materials are you presenting today?
  - None

**LEGISLATIVE UPDATE**

Metro Council Work Session  
Tuesday, April 25, 2017  
Metro Regional Center, Council Chamber



Materials following this page were distributed at the meeting.

## **FAQ**

### **What have we learned about Sung-Surin?**

Preliminary test results suggest Sung-Surin (nicknamed Shine), our 34-year-old female Asian elephant, tested positive for tuberculosis.

### **When will you know for sure?**

2-3 weeks when we receive additional test results.

### **What is Shine's health status?**

Shine is otherwise in good health. She is exhibiting no symptoms. Our only indication is a preliminary positive result from routine testing.

### **How was she exposed?**

We don't know. We may be able to determine that when we receive confirmation of the strain of bacteria in her system.

### **What's being done to treat her?**

Shine has been separated from the rest of the herd. We have ordered medications and will begin treatment when they arrive. We've started behavioral training to allow drug administrations.

### **Is she isolated from the herd?**

Yes, she has been separated from the rest of the herd for now while we prepare treatment.

### **When can she rejoin the herd?**

We are hopeful that she can rejoin the herd in 6-8 weeks. Once we start administering the drugs, we'll conduct weekly trunk washes. We expect test results will indicate the presence of bacteria waning after a few weeks. Once she is no longer shedding bacteria, she can rejoin the herd while she continues her treatment.

### **Have the other elephants been tested?**

They are routinely tested every three months. None of the other elephants had any positive indications. We are increasing the frequency of the tests to once a month.

### **Does she have the same strain of TB as Packy?**

We won't know for several weeks, but we are treating her now as if it is.

### **Does this mean she will be euthanized like Packy?**

Even if she has that same strain, we are optimistic that we can treat it with isoniazid, which Packy did not tolerate. Isoniazid is a preferred frontline drug for treating TB in both humans and elephants.

### **Can other elephants get it?**

If they are exposed they can, but we are preventing further exposure by separating her from the herd while treatment commences.

**Were zoo visitors ever exposed?**

Extremely doubtful. No cases have been reported, and the deputy health officer for Multnomah County has said that without close or prolonged contact there is “essentially zero risk” of transmission.

**Have staff been exposed?**

Information on employees is protected by HIPAA privacy law. However, transmission to several close contacts has been widely reported in the news media. These transmissions date to the time of Rama’s initial diagnosis (2013) prior to the adoption of new TB safety protocols.

**How are the zoo staff members who tested positive? Are they still working with the elephants?**

Information on employees is restricted by HIPAA privacy law.

**How is TB spread?**

Among humans, TB bacteria are spread through the air from one person to another when an infected person coughs, sneezes or speaks. People nearby who breathe in the air may become infected. More information can be found on the US Centers for Disease Control (CDC) website: [www.cdc.gov/tb](http://www.cdc.gov/tb).

**Can an elephant transmit TB to humans?**

Yes, but only in instances that involve periods of close or prolonged contact.

**What happens if any zoo personnel test positive?**

A positive skin test indicates a person has been exposed to TB bacteria at some point — but very few who test positive ever develop active TB. People who test positive for TB can take antibiotic treatment to lower their chances of ever becoming sick. In its latent form, TB is not transmittable to others.

**How is it possible that an elephant could test positive for the human form of TB?**

Elephants have been known to test positive for the human strain of TB in other zoos and in Asian range countries.

**How was TB discovered in Shine?**

The zoo routinely tests all its elephants for TB by taking a trunk-wash sample (collecting fluid from the animal's trunk and sending it to a certified laboratory for testing). Following Shine’s diagnosis, the zoo has increased the frequency of testing, allowing us to identify any indications of the disease earlier.

**What is the treatment regimen for elephants?**

Veterinarians use the same medicines doctors recommend to fight TB in humans. Working with federal, state and county experts, our veterinary team has developed a comprehensive regimen.

**Some groups have called for our elephants to be sent to a sanctuary. Are we considering this?**

No, our elephants receive excellent care at the Oregon Zoo — we believe there is no better place for them than here at Elephant Lands.

## Metro Council Briefing | April 25, 2017

With Shine's recent TB diagnosis, we wanted to make sure Metro Councilors are prepared to answer constituent questions. Here are three quick facts to have at the ready:

- The zoo has briefed Metro Council on Shine's status and will continue to keep us informed as information becomes available.
- The zoo is working closely with health officials to ensure the safety of visitors, staff and elephants.
- The zoo is considered a national leader in advancing understanding of TB, which is increasingly affecting elephants in Asian range countries.

More detail is included below, and the attached FAQ sheet contains additional info. If you have further questions, please let me know.

Based on Shine's diagnosis, we have reconvened the working group we established for Packy, and agreed on the following four priorities:

1. Protect human health and safety
2. Prevent TB transmission to other animals
3. Provide best possible care and welfare for Shine
4. Maintain community trust and provide accurate information in a timely manner

Here's what we've done so far:

- After being notified of Shine's test results we quickly alerted the proper health authorities.
  - Dr. Jennifer Vines, deputy Multnomah Co. health officer, and Dr. Emilio DeBess, Oregon Health Authority veterinarian, visited the zoo on Friday
  - They are convening a working group to assess the situation, and will provide direction
  - In the meantime, they have told us it is safe to keep Forest Hall and Elephant Lands open with the rest of the herd on view
  - They recommend the following new protocols, which we have already put into practice:
    - Increased frequency of testing: Shine 3X week, rest of herd monthly
    - Stricter personal protection practices (Tyvek suit usage, safety zones)
    - Waste will not be composted; all elephant waste will go to landfill
- We have separated Shine from the other elephants and plan to begin treatment as soon as possible
  - Until we learn otherwise, we must assume her TB strain is drug-resistant, so we will not treat with rifampin or fluoroquinolones
  - Her regimen will include isoniazid, preferred front-line medication for people and elephants (INH, PZA, ETH & RIF)
  - Isoniazid was effective in treating Rama and Tusko's TB, but Packy did not tolerate it
  - Medications have been ordered, and keepers have begun training Shine to accept the meds
  - Shine is in a different area from where Packy was kept, while we work on remediation of that space (disinfecting soil, walls, etc.)
- The big question is how did Shine become infected, and the answer is we don't yet know.
  - There is a remote chance she was exposed long ago and is only now testing positive.
  - More likely, though, is that this is a new case, which could mean:
    - She was infected by Rama, Tusko or Packy before the strain became drug-resistant
    - She was infected by Packy after the strain became resistant
    - She was infected with a completely different strain (from unknown source)

Financial implications are as yet unknown, but unanticipated costs for remediation, treatment, etc., will need to be taken into account moving forward.

# Metro's Land Use Forecasting Toolkit

Metro Council Work Session 4/25/17

Research Center *Land Use Analytics Team*

- Jeff Frkonja, Metro Research Center Director
- Dennis Yee, Metro Economist
- Maribeth Todd, Senior Modeler
- Jim Cser, Associate Modeler



# Today's Agenda

- Underlying analytic principles
- What's new in the toolkit
- Technical outreach
- What Council might see in the 2018 UGM

# Analytic Principles



# RC's analytic integrity derives from Metro Values

*Decision-makers* judge value to stakeholders and decide accordingly

*Planning Staff* shepherd the process and ensure stakeholder involvement

*RC Analysts* support process with “Good Science”

- Reproducible:
  - Based on data accessible to everyone
  - Transparent methods
- Defensible:
  - Methods consistent with best practices
  - Methods transparently validated
- Unbiased:
  - Provide information & factual interpretations of that information



# What's new in the land use analytic toolkit?

Toolkit overview



# Where Analysis Informs Process



## Step 1

### Range Forecast

How many more household and jobs will we have in the 7 county area and what share of these will be in the UGB?

## Step 2

### Urban Growth Report

How much of the region's growth can we meet in the current UGB and what is the additional need, if any?

## Step 3

### Efficiency Measures

What actions can increase the capacity to meet anticipated growth in the UGB, if needed?

## Step 4

### UGB Amendment (if needed)

If a UGB expansion is needed, which areas are most suitable to include to meet the region's forecast need for jobs and housing?

## Step 5

### Regional forecast distribution to cities and counties

Where will the forecast growth locate within the region?

## Step 6

### Research and model updates

What policy questions do we anticipate for the next UGB review cycle and what analysis can support the decisions?

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# RC LU Toolkit Overview

Regional Economic Model→

- Range Forecast

Buildable Lands Inventory→

- Develop-able capacity (potential supply)

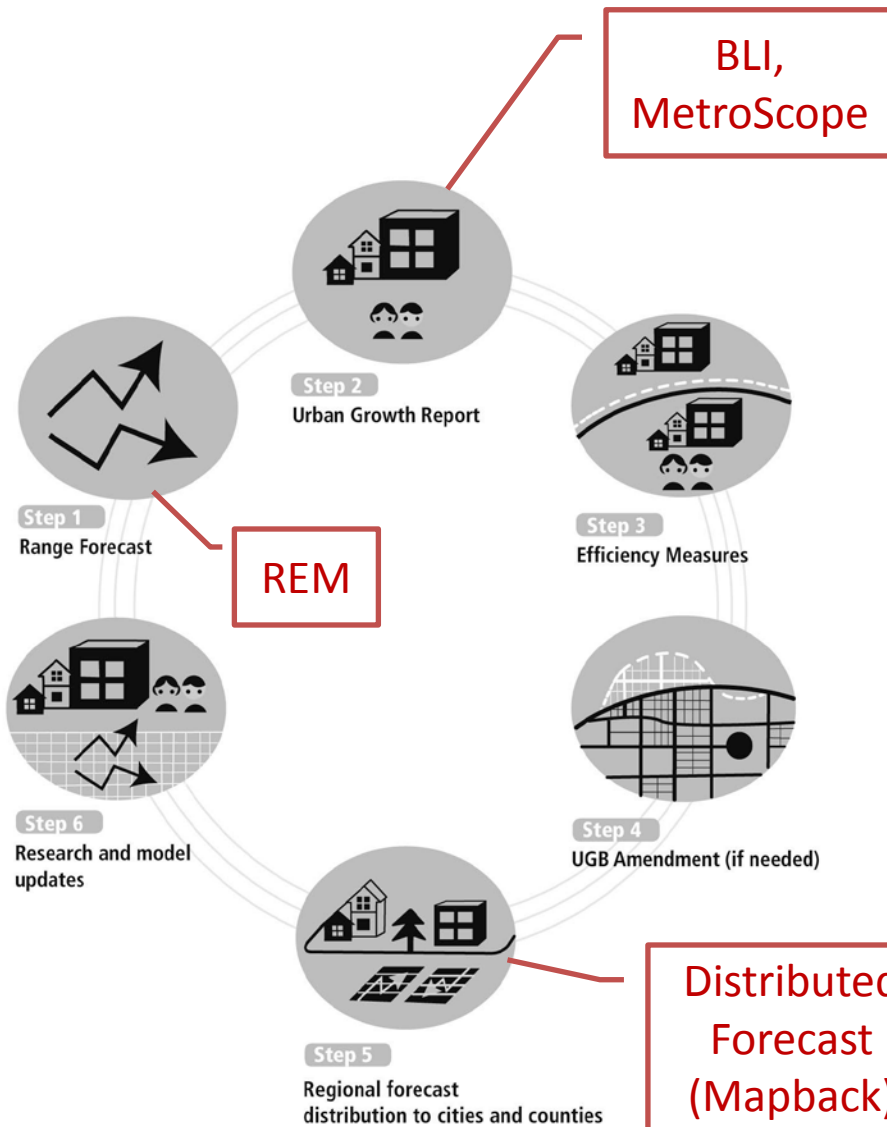
MetroScope→

- Simulates supply/demand interaction
- Forecasts details for planning processes

Distributed Forecast (aka MapBack)→

- Estimates local-scale forecast details
- Helps completes Metro/local coordination

# Where Analysis Tools Help Process



## Step 1

### Range Forecast

How many more household and jobs will we have in the 7 county area and what share of these will be in the UGB?

## Step 2

### Urban Growth Report

How much of the region's growth can we meet in the current UGB and what is the additional need, if any?

## Step 3

### Efficiency Measures

What actions can increase the capacity to meet anticipated growth in the UGB, if needed?

## Step 4

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If a UGB expansion is needed, which areas are most suitable to include to meet the region's forecast need for jobs and housing?

## Step 5

### Regional forecast distribution to cities and counties

Where will the forecast growth locate within the region?

## Step 6

### Research and model updates

What policy questions do we anticipate for the next UGB review cycle and what analysis can support the decisions?

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# What's new in the land use analytic toolkit?



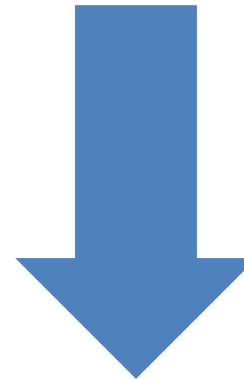
Step 6

Research and model updates

Enhanced Buildable Lands Inventory (BLI)



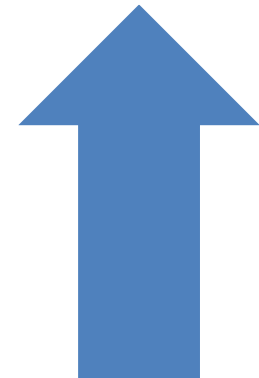
# BLI: Will it redevelop in next 20 years?



Market value of  
land and  
improvements



What a  
developer may  
be willing to pay

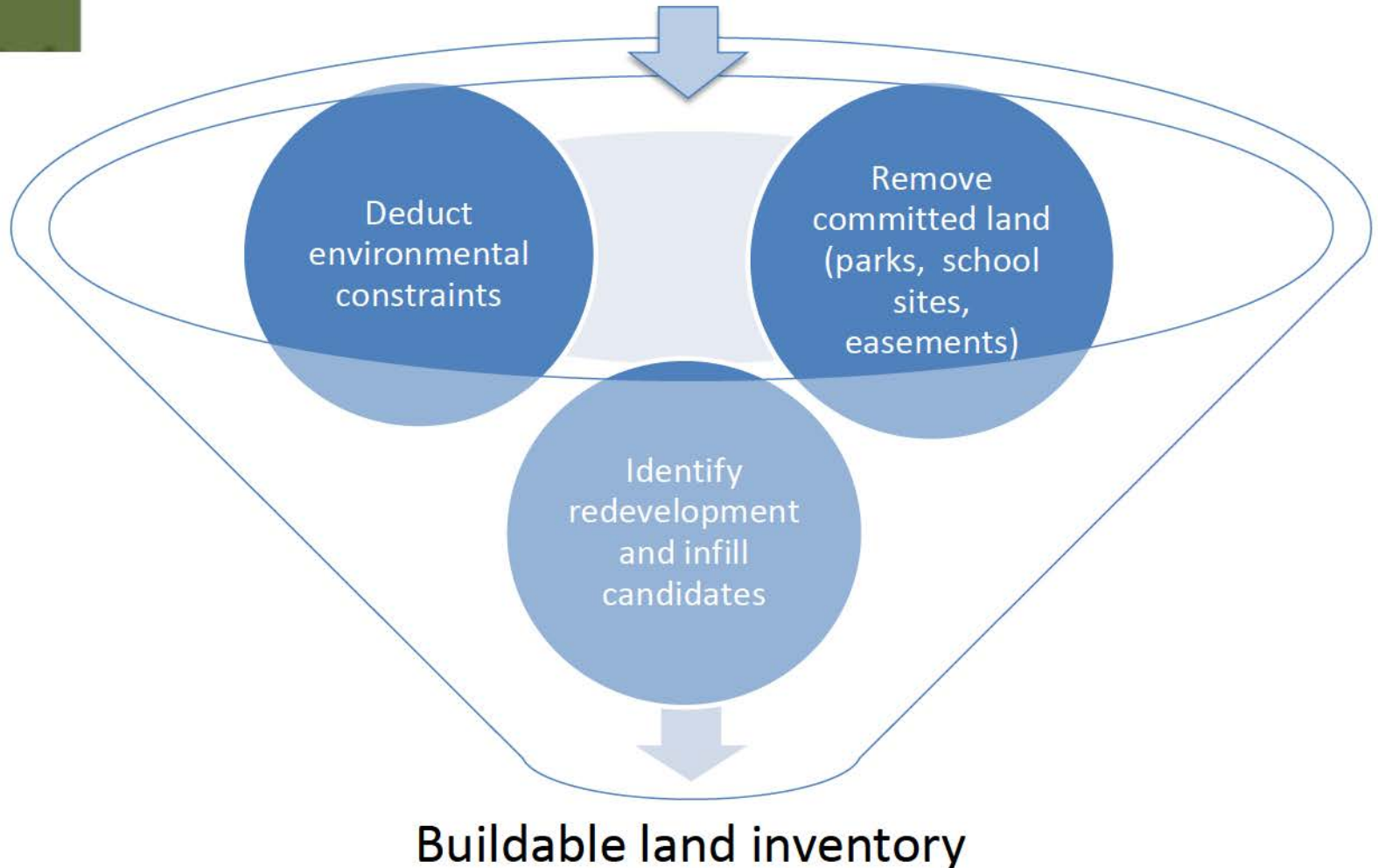


# BLI: If it redevelops, at what intensity?



# Old BLI Method Overview

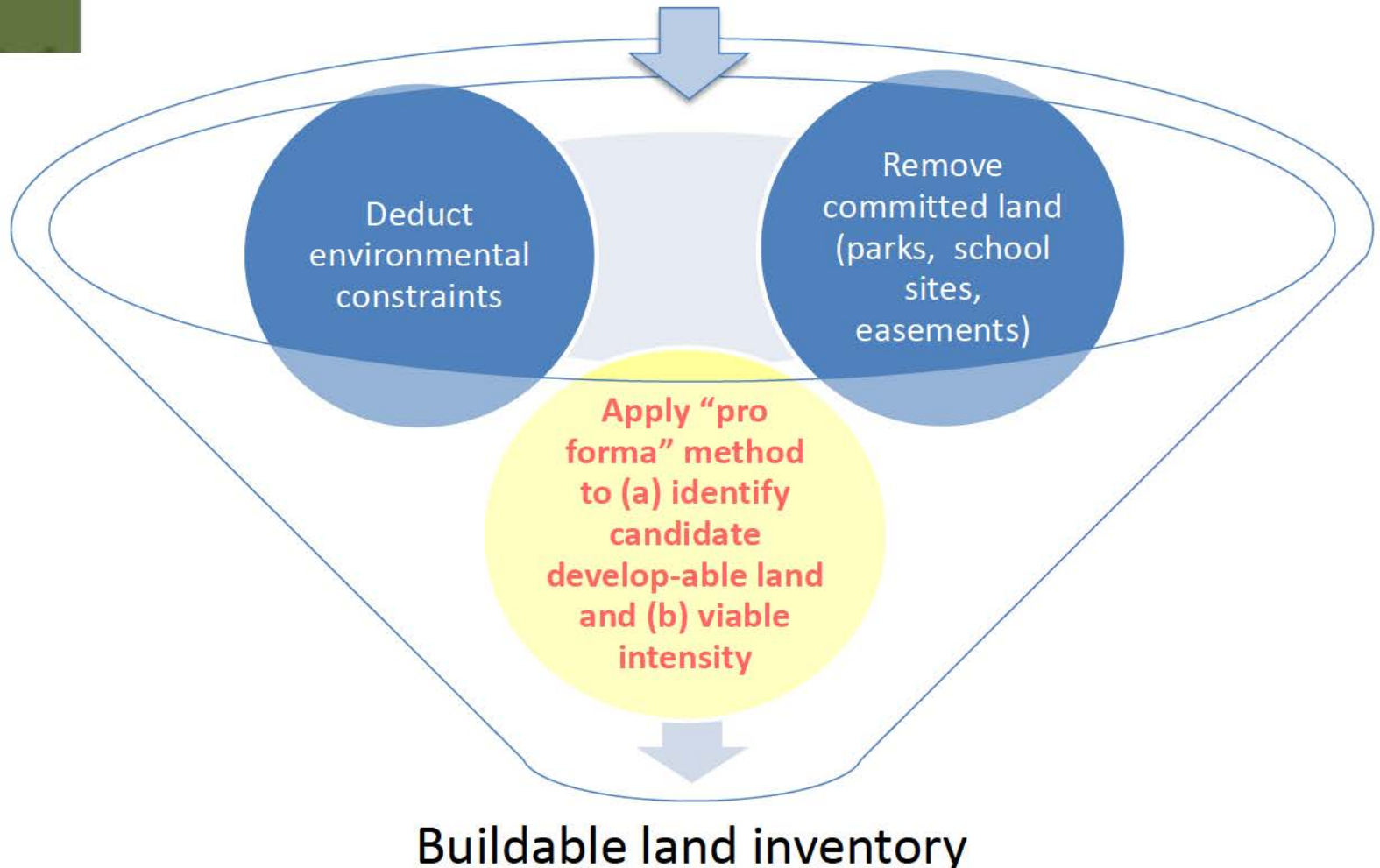
Aerial photos of land inside UGB, current zoning





# Enhanced BLI Method Overview

Aerial photos of land inside UGB, current zoning



# Why “pro forma” in BLI?

- Housing production depends increasingly upon multi-family (MF)
- Quantitative estimate of potential MF intensity
- Enhances toolkit market simulation
- Based on methods Metro TOD staff use
- How actual developers think

# What's new in the land use analytic toolkit?



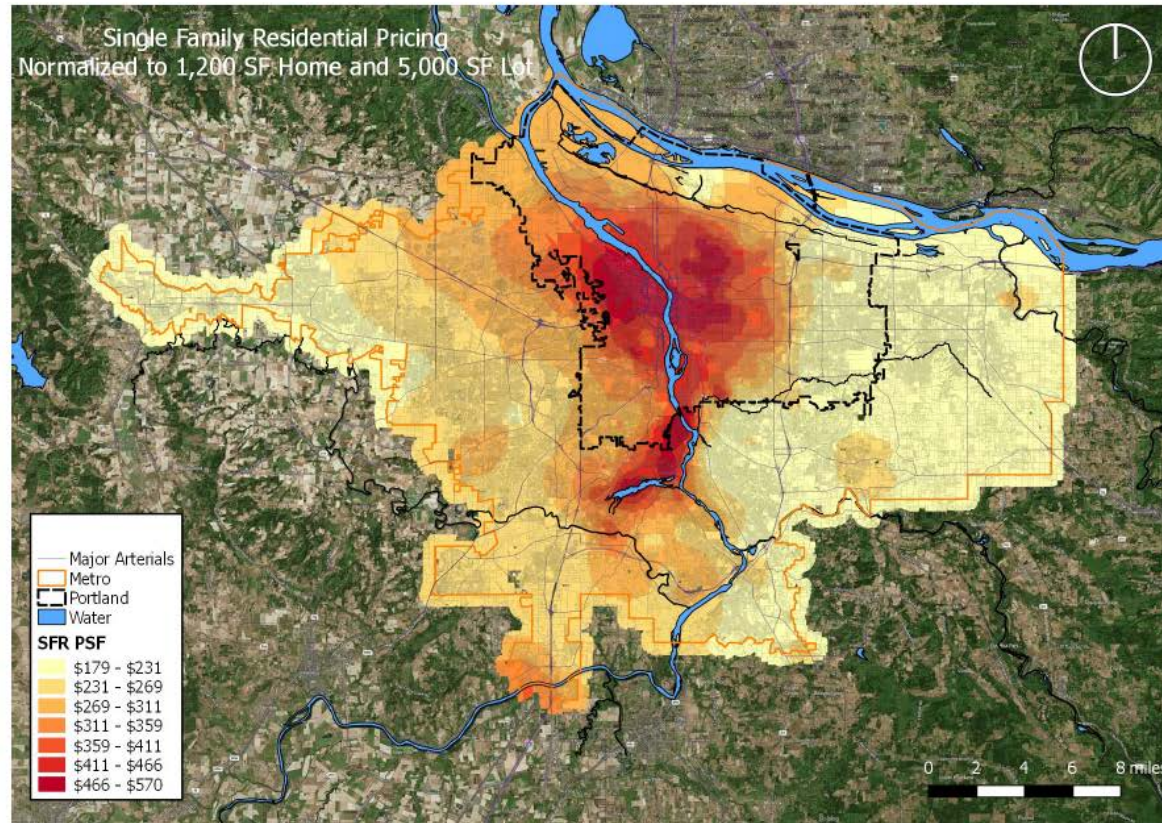
Step 6  
Research and model updates

Re-validating MetroScope



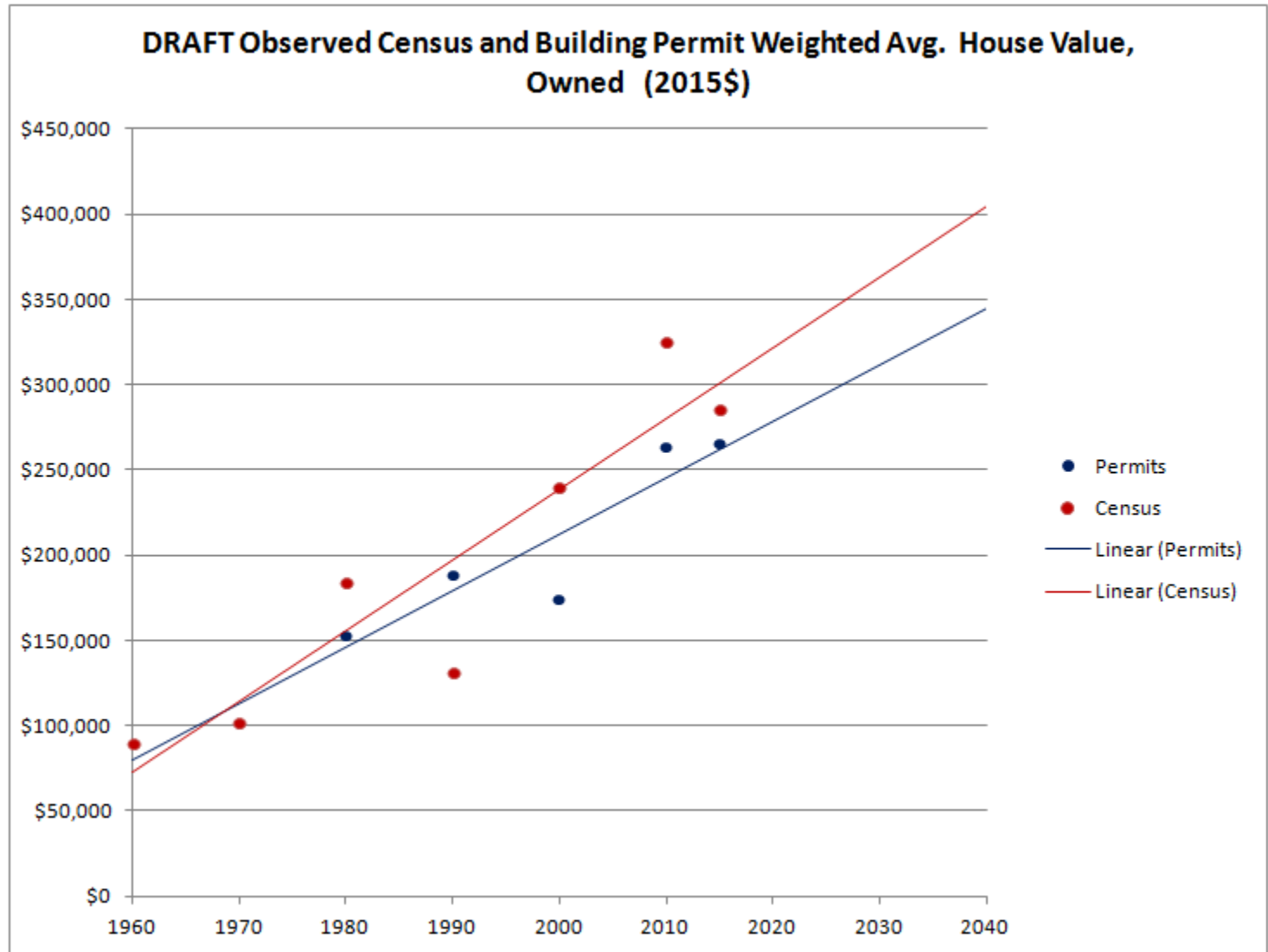
# Key variable: price

## PRICING GRADIENT, OWNERSHIP RESIDENTIAL



Source: Johnson Economics, DRAFT 2015 observed owned housing “surface”

# Key criterion: observed prices



Source: Census, RLIS, Metro Research Center--DRAFT observed owned house values



# Expert review for validity

- Local and west-coast experts will review the BLI enhancements
- National/international experts will review the MetroScope model
- National and Oregon experts will review the Range Forecast

# Ongoing stakeholder engagement for 2018 UGM

## Land Use Technical Advisory Group

- Local agency technical staff
- Data exchange
- Advise Metro on input assumptions and local conditions
- Communicate to agencies technical info
- Report to MTAC via RC Director



# What forecast information is likely to appear in the 2018 UGR?



# Inputs & assumptions

Proposed reserves additions and their characteristics (as discrete *alternatives*)

Market assumptions (e.g. capitalization rates, construction costs, etc.)

Policies (e.g. zoning, fees, subsidies)

# Suggested Definitions

*Scenario* = A specifically-defined set of assumptions and inputs that define a possible future for analysis by the forecast tools

*Alternative* = A scenario chosen for analysis by the decision-makers

*All Alternatives are Scenarios but not all Scenarios are Alternatives*

# “Old” Forecast Info

## Single-family dwelling units

	Buildable land inventory	Market-adjusted supply	Market-adjusted demand	Surplus/need
Low growth forecast	113,200	75,900	64,000	+11,900
<b>Middle (baseline) growth forecast</b>		<b>85,200</b>	<b>74,900</b>	<b>+10,300</b>
High growth forecast		97,000	90,800	+6,200

**Table 2** Metro UGB single-family residential market analysis of existing plans and policies (2015-2035)<sup>3</sup>

## Multifamily dwelling units

	Buildable land inventory	Market-adjusted supply	Market-adjusted demand	Surplus/need
Low growth forecast	273,300	118,400	89,300	+29,100
<b>Middle (baseline) growth forecast</b>		<b>130,900</b>	<b>120,500</b>	<b>+10,400</b>
High growth forecast		165,100	145,900	+19,200

**Table 3** Metro UGB multifamily residential market analysis of existing plans and policies (2015-2035)<sup>3</sup>

## General industrial employment (acres)

	Buildable land inventory	Market-adjusted supply	Demand	Surplus/need
Low growth forecast	6,790	6,000	1,200	+4,800
<b>Middle (baseline) growth forecast</b>		<b>4,690</b>	<b>3,700</b>	<b>+990</b>
High growth forecast		5,200	6,500	-1,300

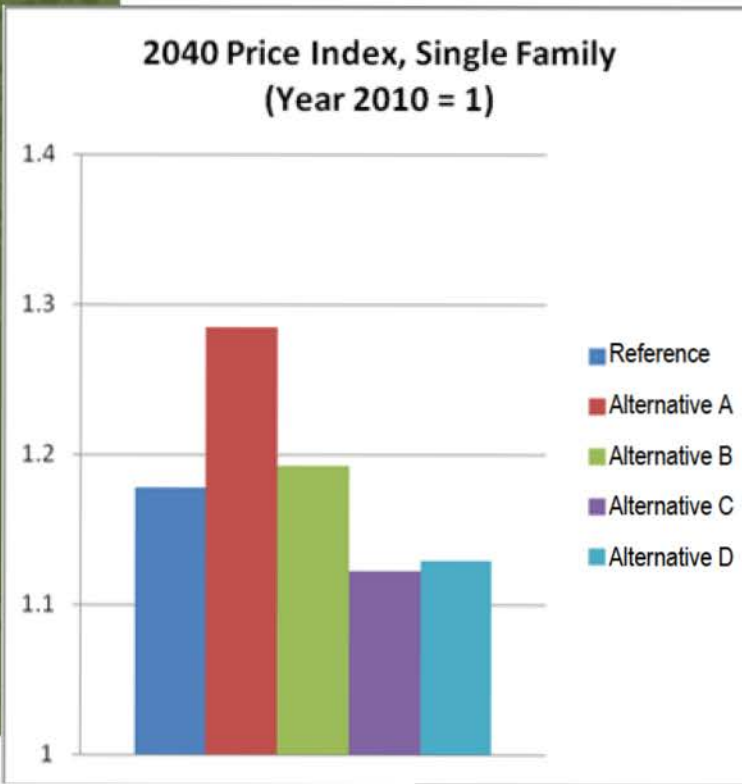
**Table 4** Metro UGB general industrial acreage needs 2015 to 2035<sup>4</sup>

*Note: reflecting real market dynamics where commercial uses locate in industrial zones, the market adjustment shifts some of the region’s industrial redevelopment supply into the commercial land supply. The amount varies by demand forecast.*

Source: 2014  
Urban Growth  
Report. Metro.

# “New” Possible Info: Forecast info mockups

Side-by-side alternative comparison





# “New” Possible Info: Alternative evaluation criteria

By scenario...

- Forecast price indices relative to base year
- Forecast housing units & commercial space (as change from base year)
- Forecast residential and employment capture rates by scenario
- Forecast SF/MF split by scenario
- Forecast residential tenure rates (own/rent)
- Refill rates (how much construction has been re-development)

# Questions/Discussion

...about toolkit?

...about enhancements?

...about technical outreach?

...about information for the UGR?



# Extra Slides Follow





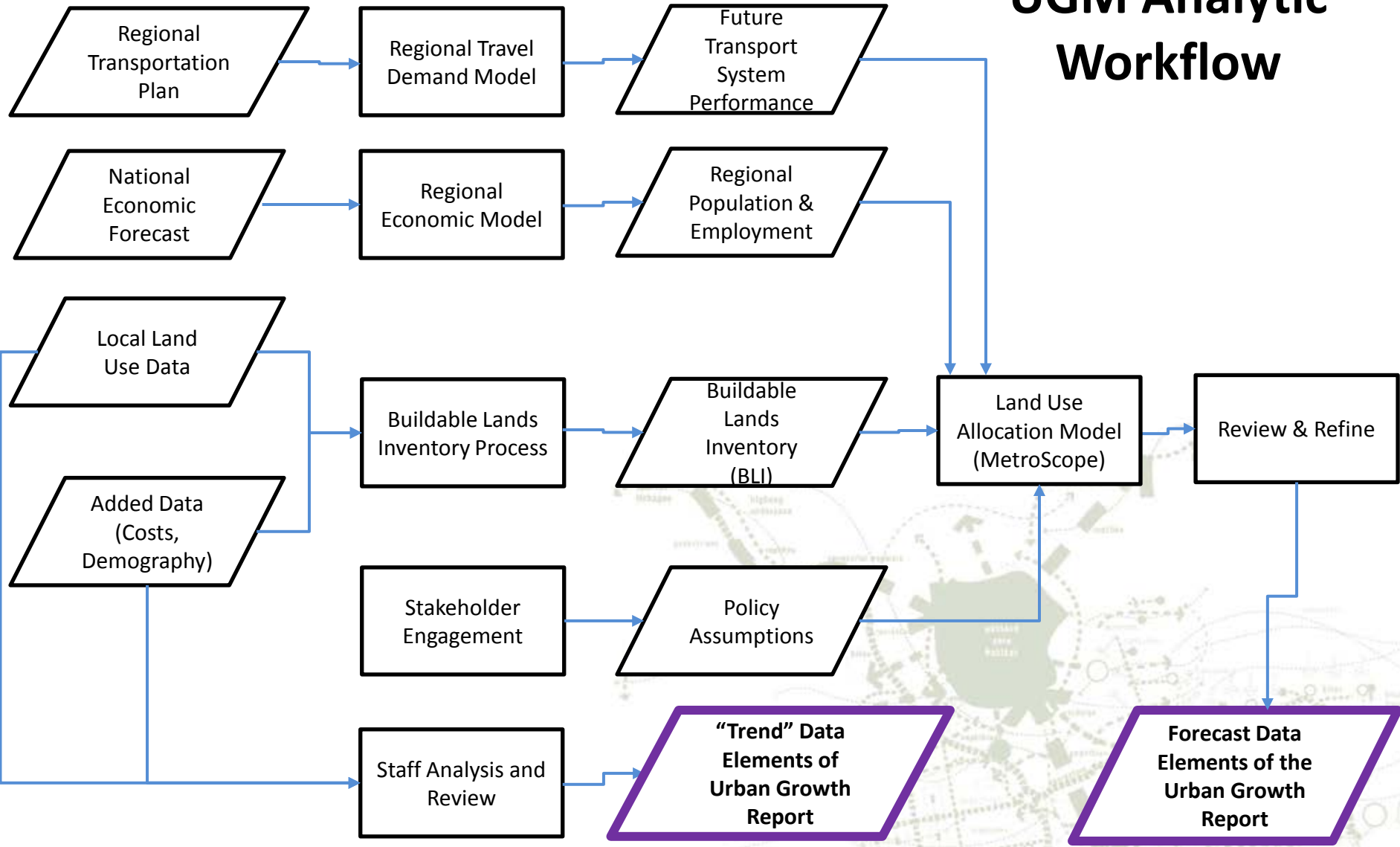
# Planning Area

## Legend

-  UGB
-  4 Counties
-  MSA
-  TAZ 2162



# UGM Analytic Workflow



**ODOT Administered Funds**  
State and Federal Fund allocations

ODOT Project Lists: -- Allocation process led by Region 1 ACT / OTC

Projects located in MPO area are recommended for incorporation into MTIP, and MTIP gets incorporated without change into the STIP.

**Regional Flexible Fund Allocations**  
Federal Fund allocation

RFFA Project List -- Allocation process led by JPACT / Metro Council, projects recommended for inclusion in MTIP.

**\*\*NEW -- Proposed in Transportation Package\*\***

**Congestion Improvement District**  
Regional Surcharge allocations (gas tax / VRF)

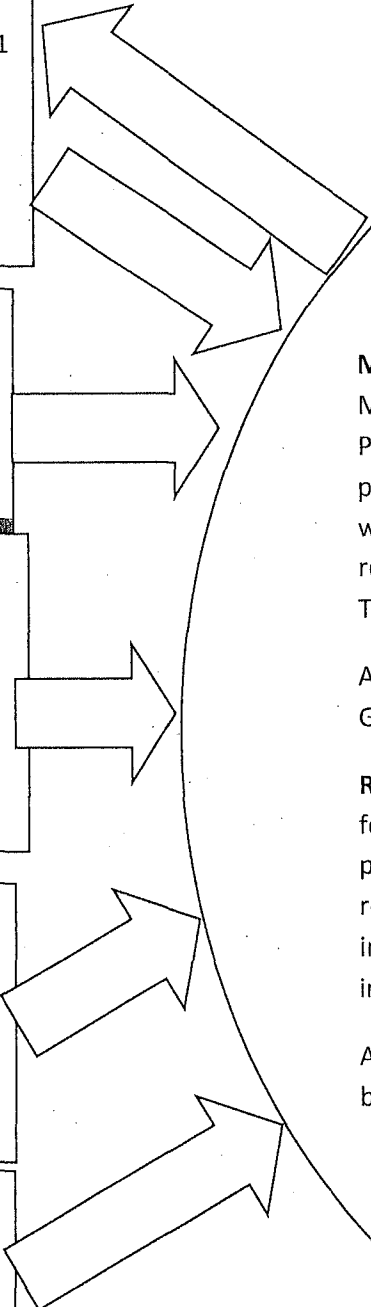
Congestion Improvement Plan -- allocated by  
Version 1: JPACT  
Version 2: JPACT / Metro Council

**Transit Projects**  
Federal, State and Local Fund allocations

RTP project lists -- adopted by MPO  
Programming of Project lists -- adopted by MPO  
CIP project lists -- allocated by transit agency

**City / County Projects**  
Local Fund allocations

TSP project lists -- adopted by city / county  
CIP project lists -- allocated by city / county



**Metropolitan Planning Organization (MPO)**

**Metropolitan Transportation Improvement Program (MTIP) --** MPO required under federal law to develop and update. Projects within the Metro region with federal funding or providing new travel capacity must be analyzed for compliance with state and federal regulations, consistency with the regional transportation plan, and then included in the MTIP. This includes ODOT, RFFA, Transit, and local projects.

Adopted and updated by JPACT / Metro Council, approval by Governor.

**Regional Transportation Plan (RTP) --** MPO required under federal and state laws to plan for future transportation projects within "financially constrained" forecast of available resources. All ODOT, RFFA, Transit and local projects that include federal funding or provide new travel capacity must be in the RTP.

Adopted and updated by JPACT / Metro Council, concurrence by LCDC, approval by USDOT.

Resources:

State Transportation Improvement Program

Metropolitan Transportation Improvement Program

Regional Flexible Funds