REGIONAL CONNECTORS STUDY

Meeting Minutes

Date: April 11, 2019

Location: Webinar

Subject: Scenario Planning Updates #4: Models – Place Types, Suitability Factors, and Linkages between Location Factors and Economic Factors

Attendees:

- RCS Project Coordinator – Camelia Ravanbakht
- HRTPO/HRPDC – Keith Cannady, Greg Grootendorst, Theresa Brooks, Leonardo Pineda, Dale Stith, Sharon Lawrence, Keith Nichols
- City of Newport News – Bryan Stilley
- City of Norfolk – Brian Fowler
- City of Virginia Beach – Mark Shea
- James City County – Tammy Rosario, Thomas Leininger
- VDOT – Robin Grier, Angel Biney, Jenny Salyers
- VDRPT – Tiffany Dubinsky
- Consultant Team – Craig Eddy, Lorna Parkins, Nick Britton, Bill Thomas, Vlad Gavrilovic, Jason Espie, Will Cockrell, Naomi Stein, Scott Middleton

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Lorna Parkins, Michael Baker International, presented the draft schedule of the working group webinars.

Greater Growth Place Types

Vlad Gavrilovich, EPR, discussed the development of place types for 2015 and 2045 and the development of the place types of growth beyond the control totals (greater growth place types). He showed examples of visualizations that represent the different place types and how these can be allocated for the greater growth scenarios.

Brian Fowler, Norfolk:	We've been talking about economic drivers so much that we have not spent time on housing. Please bring this into the conversation; "lifestyle" decisions are going to be a big driver and that's a decision that must be considered before allocation.
Vlad:	Vlad and Naomi Stein described how the Scenario narratives or "storylines" will encompass both economic and housing/locational drivers. Each narrative will include

1

within it a set of interrelated factors that guide growth in both types of jobs and types of housing and locational decisions.

| Lorna: | We have not gotten to the specific land use and demographic drivers yet, but we will be explicitly discussing those drivers later. I like "lifestyle" as a descriptor. |
| Brian: | Recognize that these are not independent of each other (lifestyle and employment location). |

Suitability Factors

Vlad explained the "why" we're doing the model in this study and what the different models are (Land Use, TDM, and TREDIS) that will be used.

Brian:	Where is the "box" for "lifestyle"? Is there some exercise that looks at, for example, how much of the population wants the lifestyle and not the location? It does not work the same with industry (certain employment is located in certain places with few exceptions).
Vlad:	Two points were made. One: There shouldn't just be economic determinants. We agree. What drives people to more urban centers are those lifestyle choices as well as the employment opportunities – it's a combination. Two: The suitability factors we build into the model will address desirability of growth from both a lifestyle and employment basis.
Lorna:	The "SCENARIOS" (yellow) box on left is a bundle of drivers, not necessarily just economic. We need to acknowledge that in scenario planning we're going to make explicit assumptions about location so we can test the scenarios.
Vlad:	One thing to remember is that these are not predictive scenarios. These scenarios are intended to describe what *could* happen and need to have discrete enough storylines so that their results will vary.
Brian:	Is there a step in here where you determine the different *types* of uses (e.g., single- and multi-family housing) before you allocate?
Vlad:	There is flexibility in the model to set control totals that must be hit during allocation for levels of use types or industry types. But if you micromanage what you want in each scenario at that level, you may not get much variation in the final results. Our general approach here is that we're going to craft storylines for each scenario and then let them "run" and see where they come out rather than manage all the details of the input.
Brian:	I have a concern about the schedule: If we do this without looking at these details and the results are questionable, are we going to look at the schedule and say, We don't have enough time?
Vlad:	Once we get the basic models built, we can make micro adjustments to things like suitability factors and rerun the model in fairly short order. we won't have to start from scratch if the model outputs don't seem to fit our scenario narratives.

Jason Espie, EPR, demonstrated an example of the application of suitability factors analysis to part of the study area.

Vlad went over what actions are in development for the EPR team.

Linkages Between Location Factors & Economic Drivers

Naomi Stein, EDR, reviewed economic elements of the scenario narratives and how the EDR team has refined those scenarios.

Mark Shea, V.B.:	What about federal/military and tourism/arts – why are they only with the first scenario?
Naomi:	Some of these clusters are strong, legacy clusters. Some of these are baked into the 2045 baseline growth. The first has additional growth in those clusters, but you still have those clusters in the baseline; they don't disappear in the other scenarios.

Naomi reviewed what the EDR team is current developing.

Lorna closed out the presentation portion of the meeting with an additional look at the schedule.

Camelia Ravanbakht, RCS Project Coordinator, closed the meeting.

The webinar slides are attached and the webinar recording can be accessed [here](#).

WORKING GROUP WEBINAR #4

April 11, 2019
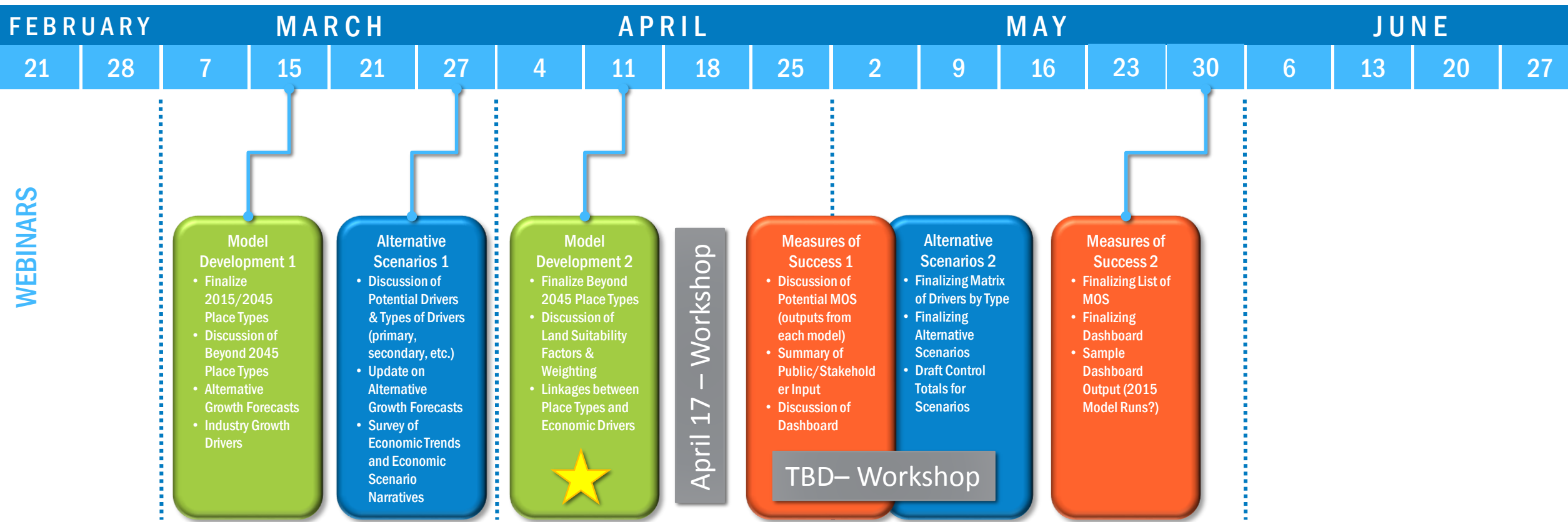
REGIONAL CONNECTORS STUDY

- GREATER GROWTH PLACE TYPES

- SUITABILITY FACTORS

- LINKAGES BETWEEN PLACE TYPES AND ECONOMIC DRIVERS

April 11, 2019

GREATER GROWTH PLACE TYPES

PLACE TYPE DEVELOPMENT

PART 1:
2015 (EXISTING) AND 2045 (FUTURE) PLACE TYPES

PART 2:
GREATER GROWTH PLACE TYPES

Develop 2015 & 2045 Place Types

Determine "Typical" Place Type Densities

Assign Place Types on the Regional Map

Calibrate population/employment to TAZ Control Totals

Run the Land Use Model for 2015 & 2045

Where we are today

Develop Draft Greater Growth Place Types

Correlate Place Types to Greater Growth Scenarios

Allocate Place Types according to Scenarios

Run the Land Use Model for Greater Growth Scenarios

Output data to Travel Demand Model

The DRAFT Place Types

Code and Name[2]		Examples
RR	Rural Residential	
RLD	Low Density Residential	
RMD	Medium Density Residential	
RHD	High Density Residential	
CN	Neighborhood Commercial	
CL	Local Commercial	
CR	Regional Commercial	
IL	Light Industrial	
IH	Heavy Industrial	
IPA	Port/Aviation Industrial	
MCR	Mixed Use Comm/Res	
MCI	Mixed Use Comm/Ind	
MM	Military	
IU	Utilities	
IP	Public/Semi-Public	
IT	Transportation Network	
AA	Agriculture	
V	Vacant	
NP	Parks and Recreation	
NC	Resource Conservation	
NH	Historic/Cultural	

PART 1:
2015 (EXISTING) AND
2045 (FUTURE) PLACE TYPES
(from the HRTPO Regional Land Use mapping)

PART 2:
GREATER GROWTH PLACE TYPES
(developed to explore future potential growth)

Code and Name		Examples
RC	Rural Cluster	
CN	Compact Neighborhood	
BR	Boulevard Residential	
BC	Boulevard Commercial	
STC	Suburban Town Center	
UTC	Urban Town Center	
TOC	Transit Oriented Center	
RIC	Regional Industrial Center	
PI	Port Industrial	

The DRAFT Place Types

GREATER GROWTH PLACE TYPES

- Develop Visualizations
- Correlate to Industry types
- Correlate to Draft Scenarios

Code and Name		Examples
RC	Rural Cluster	
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Greater Growth Place Types:

- Developed quantitative summaries of density/intensity & examples of each Place Type (Draft)

Code and Name		Examples	Size[6]	DU/Acre	FAR	People / Acre	Jobs / Acre	Description	Code and Name		Location	Aerial
RC	Rural Cluster		25 ac.	.1-.5	-	.3-1.3	0-.1	Small cluster housing development surrounded by undeveloped rural lands	RC	Rural Cluster	Belmont Drive, Toano	
CN	Compact Neighborhood		16 ac.	3-5	.1-.3	8-13	0-.3	Mixed housing neighborhood with small lot singles and attached housing around community amenities	CN	Compact Neighborhood	East Beach, Norfolk	
BR	Boulevard Residential		9 ac.	15-30	.3-1.0	40-80	5-20	High density multifamily developments along major arterials designed to front on walkable streetscapes	BR	Boulevard Residential	Jefferson Estates, Jefferson Ave. Newport News	
BC	Boulevard Commercial		9 ac.	-	.3-2.0	-	14-90	Mixed retail, office and mixed use along major arterials designed to front on walkable streetscapes	BC	Boulevard Commercial	Columbus St.& Constitution Dr. Virginia Beach	
STC	Suburban Town Center		49 ac.	15-30	.3-2.0	40-80	14-90	High density walkable mixed-use center in a suburban context	STC	Suburban Town Center	Oyster Point City Center, Newport News	
UTC	Urban Town Center		49 ac.	20+	.4+	30+	50+	Very high density walkable mixed-use center in an urban context	UTC	Urban Town Center	Virginia Beach Town Center	
TOC	Transit Oriented Center		25 ac.	40+	1.0+	100+	100+	High density mixed use urban center with walkable access to premium transit station	TOC	Transit Oriented Center	Downtown Norfolk	
RIC	Regional Industrial Center		100 ac.	-	.1-.4	-	5+	Large site industrial center with regional market	RIC	Regional Industrial Center	Newport News Shipbuilding	
PI	Port Industrial		100 ac.	-	.1-.3	-	5+	Port related industrial development	PI	Port Industrial	Port of Virginia, Norfolk	

Visualizations of Greater Growth Place Types

- Created a 3-dimensional model of a hypothetical future place to visualize Greater Growth Place Types "in context"

Sketch Up model of "Greater Growth Town"

Visualizations of Greater Growth Place Types:

- Developing visualizations of each Greater Growth Place Type on the 3-D model
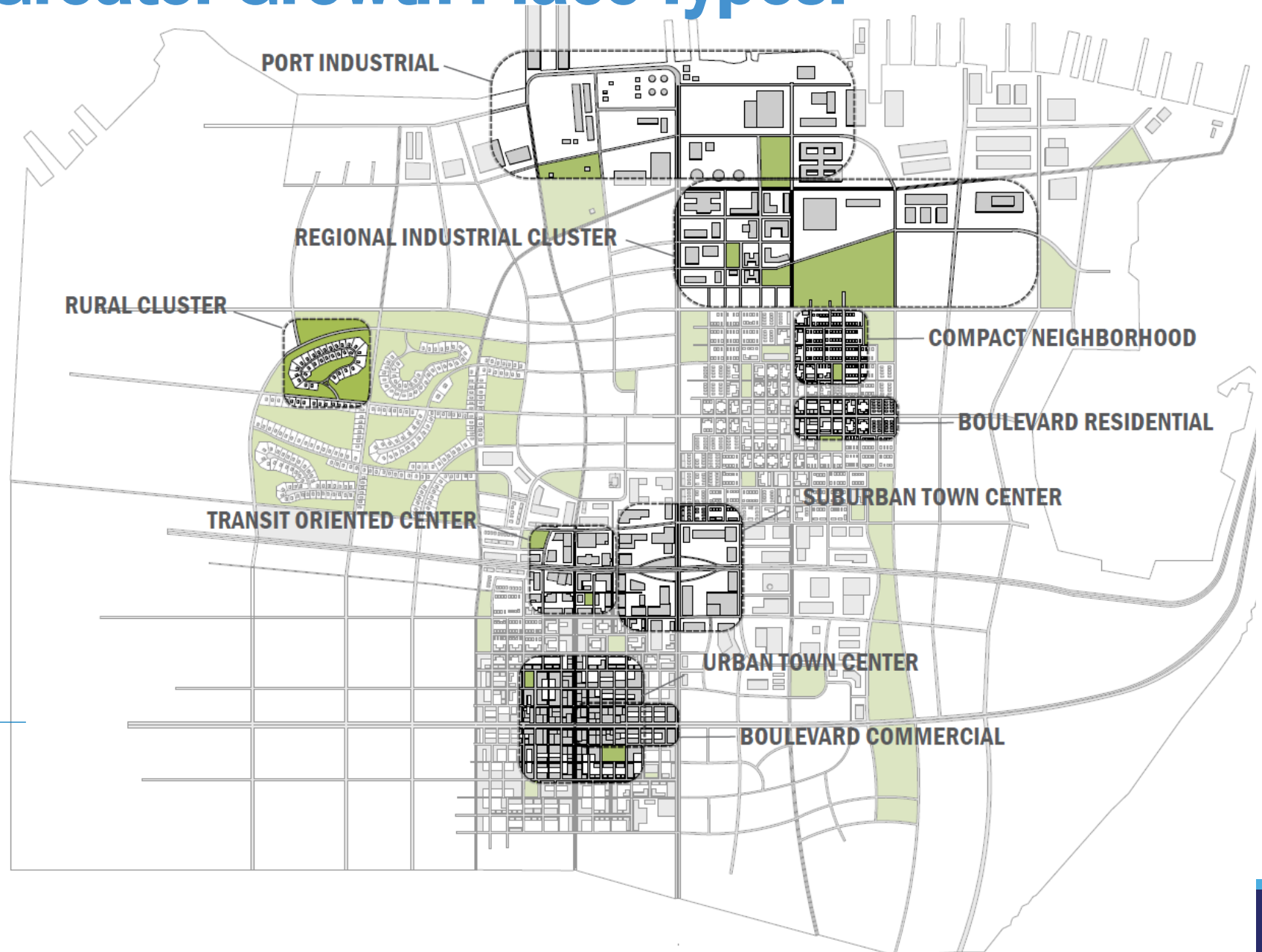
Each of the Greater Growth Place Types shown "in context"

PORT INDUSTRIAL

REGIONAL INDUSTRIAL CLUSTER

RURAL CLUSTER

COMPACT NEIGHBORHOOD

BOULEVARD RESIDENTIAL

SUBURBAN TOWN CENTER

TRANSIT ORIENTED CENTER

URBAN TOWN CENTER

BOULEVARD COMMERCIAL

Visualizations of Greater Growth Place Types:

- ## Developing narratives and additional examples of each Greater Growth Place Type (in process)

Rural Cluster

Rural cluster development aims to allow for residential developments while protecting the surrounding natural landscape. In rural cluster development, small groups of houses are clustered near each other on a portion of a parcel, while the rest of the parcel is preserved as open space. The design strategies for rural clusters strive to maintain the ecological integrity of the surrounding area. The priority given to the environment in rural cluster design distinguishes it from traditional suburban developments, where the principal organizing strategy is the subdivision of the parcel into a plat. For example, a parcel with several stands of trees may be developed in the rural cluster fashion by building clusters of homes in the spaces between the stands, instead of deforesting the parcel to evenly subdivide the it into larger lots. In order to preserve open space, the lot sizes in rural clusters are typically smaller than those in traditional subdivision developments. The open space is usually used as a shared space, often with recreational amenities. The smaller lot sizes and the presence of shared open space create a stronger sense of community in rural clusters than in traditional subdivisions.[1,2,3]

Compact Neighborhood

Compact neighborhoods are moderately dense developments that offer single and attached housing, and ample shared spaces. The density of compact neighborhoods is achieved by placing detached houses on smaller lots and by including attached houses. Typically, the attached housing is located around community amenities, such as parks, institutional uses or commercial areas that abut the neighborhoods. Locating the higher density housing around shared spaces creates a sense of enclosure around those spaces and preserves the sense of privacy for residents living in detached houses. The use of small lots and attached houses creates highly walkable neighborhoods without losing the residential character of the communities. In addition to allowing for walkability, the density of compact neighborhoods allows them to be developed in environmentally sensitive ways, which creates the opportunity to preserve of open space for the communities.[1,2]

RURAL CLUSTER

Examples
Woodland Edge, Little Rock, AR   Pinebrook Circle, Downington, PA

Compact Neighborhood

Examples
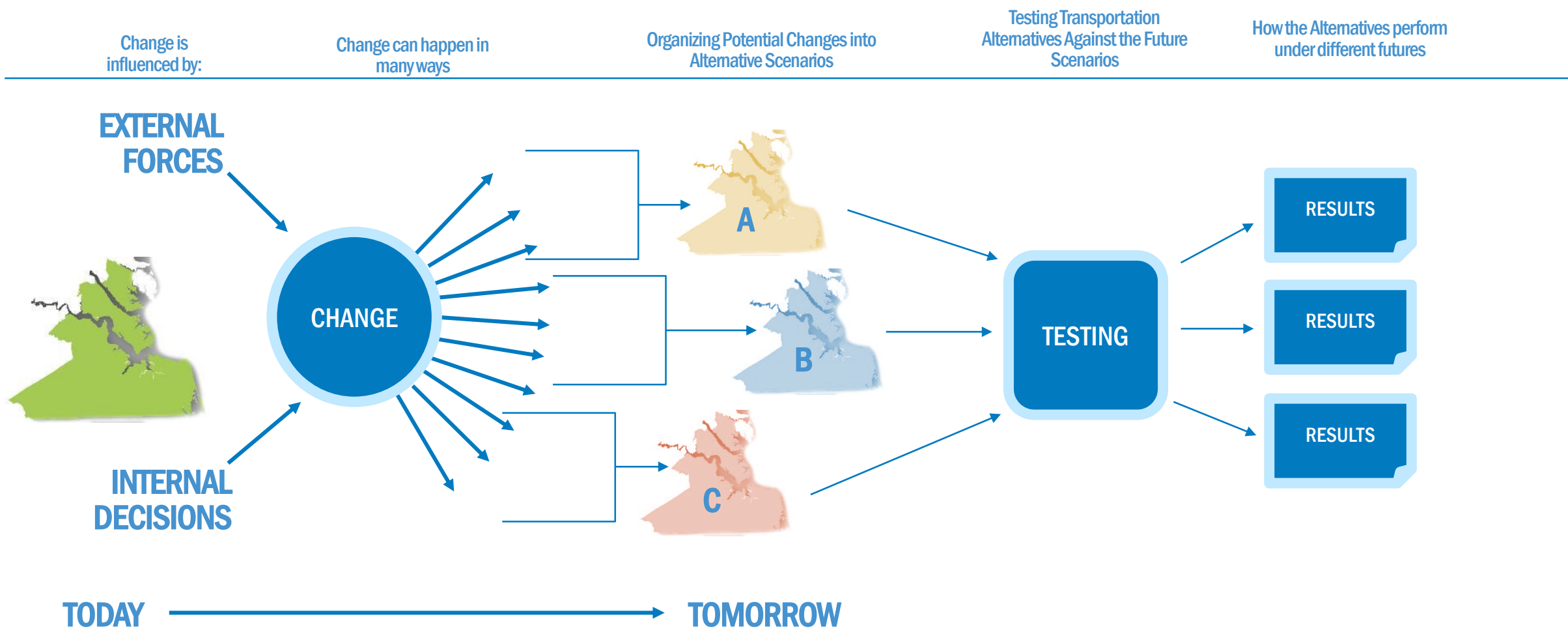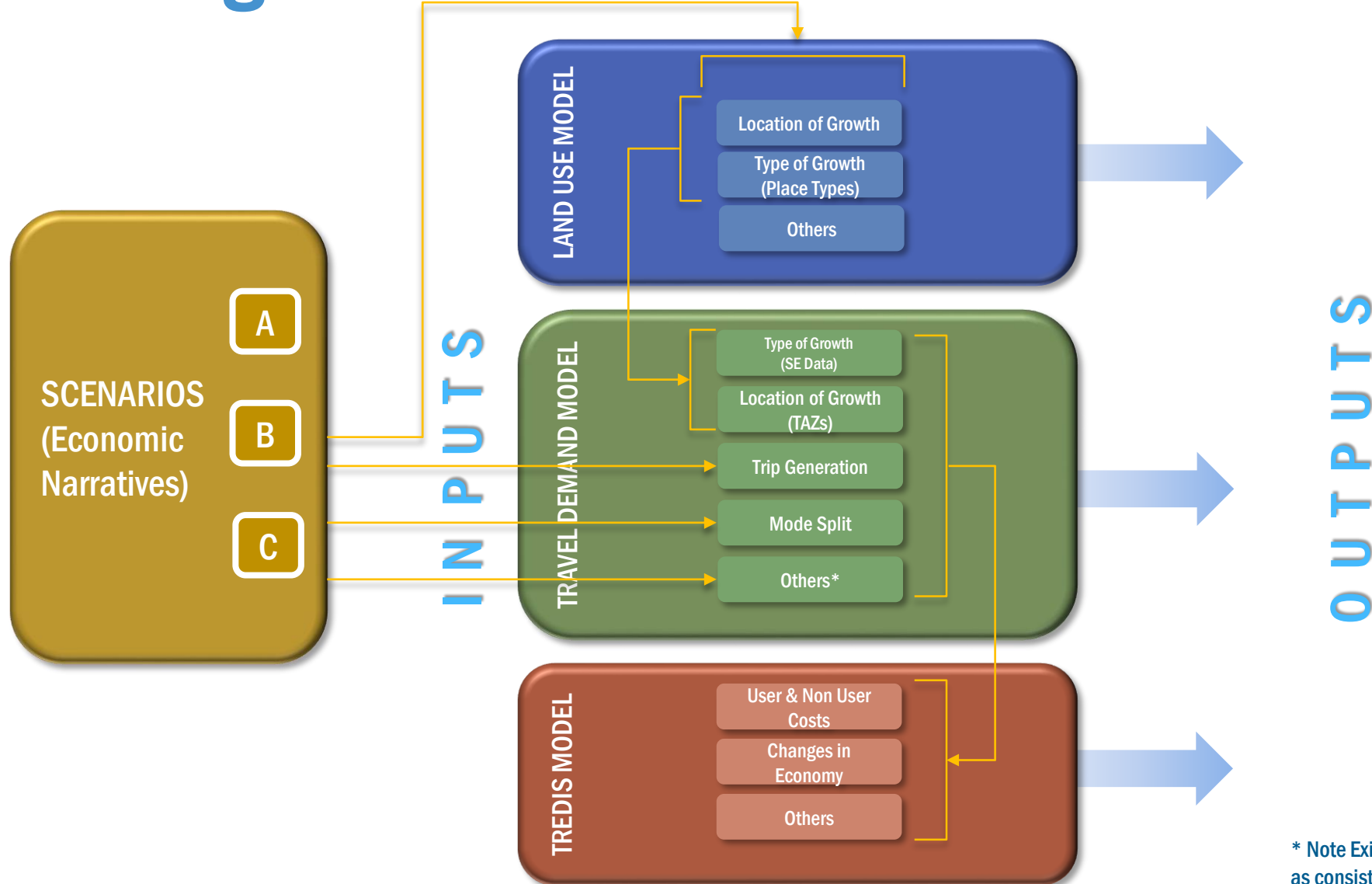Queen Anne, Seattle, WA   Highland Park, Pittsburg, PA

SUITABILITY FACTORS

Scenario Testing in this Study:

Modeling the Scenarios

* Note Existing + Committed Transportation Network assumed as consistent input in Greater Growth scenarios
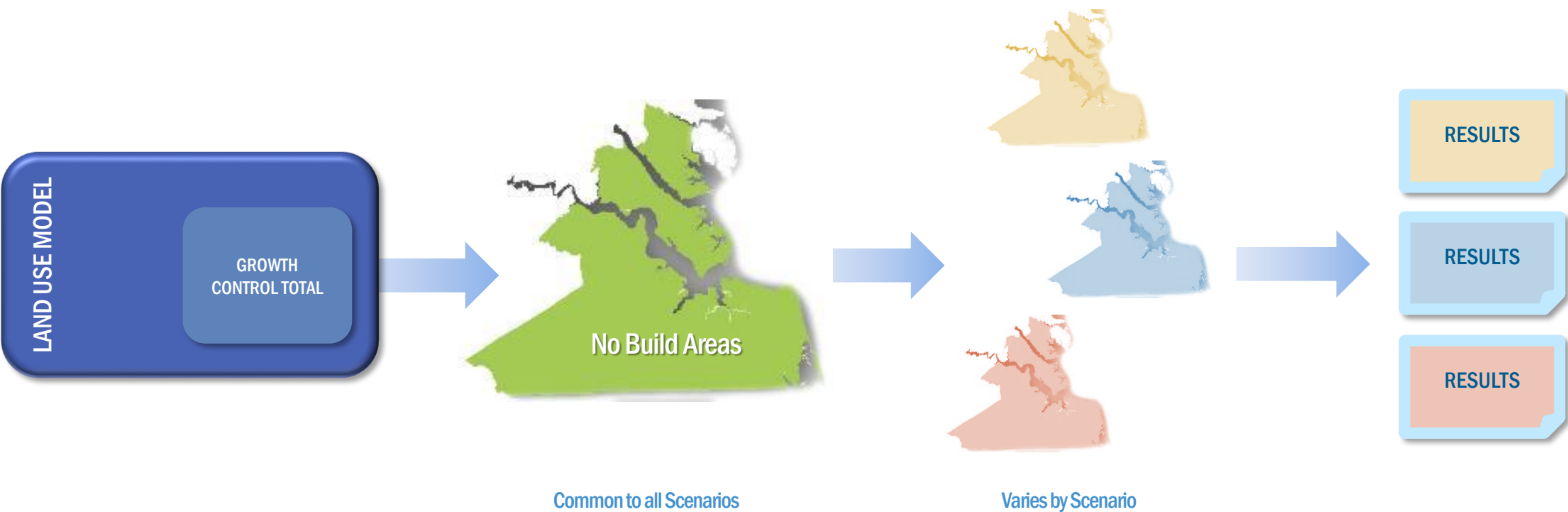
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The Land Use Model

The Model will allocate growth up to the control total

Growth will avoid the No Build areas

Growth is allocated according to Suitability

Outputs will vary because growth follows Suitability Factors

LAND USE MODEL

GROWTH CONTROL TOTAL

No Build Areas

Common to all Scenarios

Varies by Scenario

RESULTS

RESULTS

RESULTS

Suitability

- Suitability determines how growth will be allocated in the Greater Growth Scenarios
- Suitability is a series of factors that are desirable to growth across a region

EXISTING CONDITIONS

CAPACITY:
How much growth can be accommodated

GROWTH ALLOCATION PROCESS

SUITABILITY:
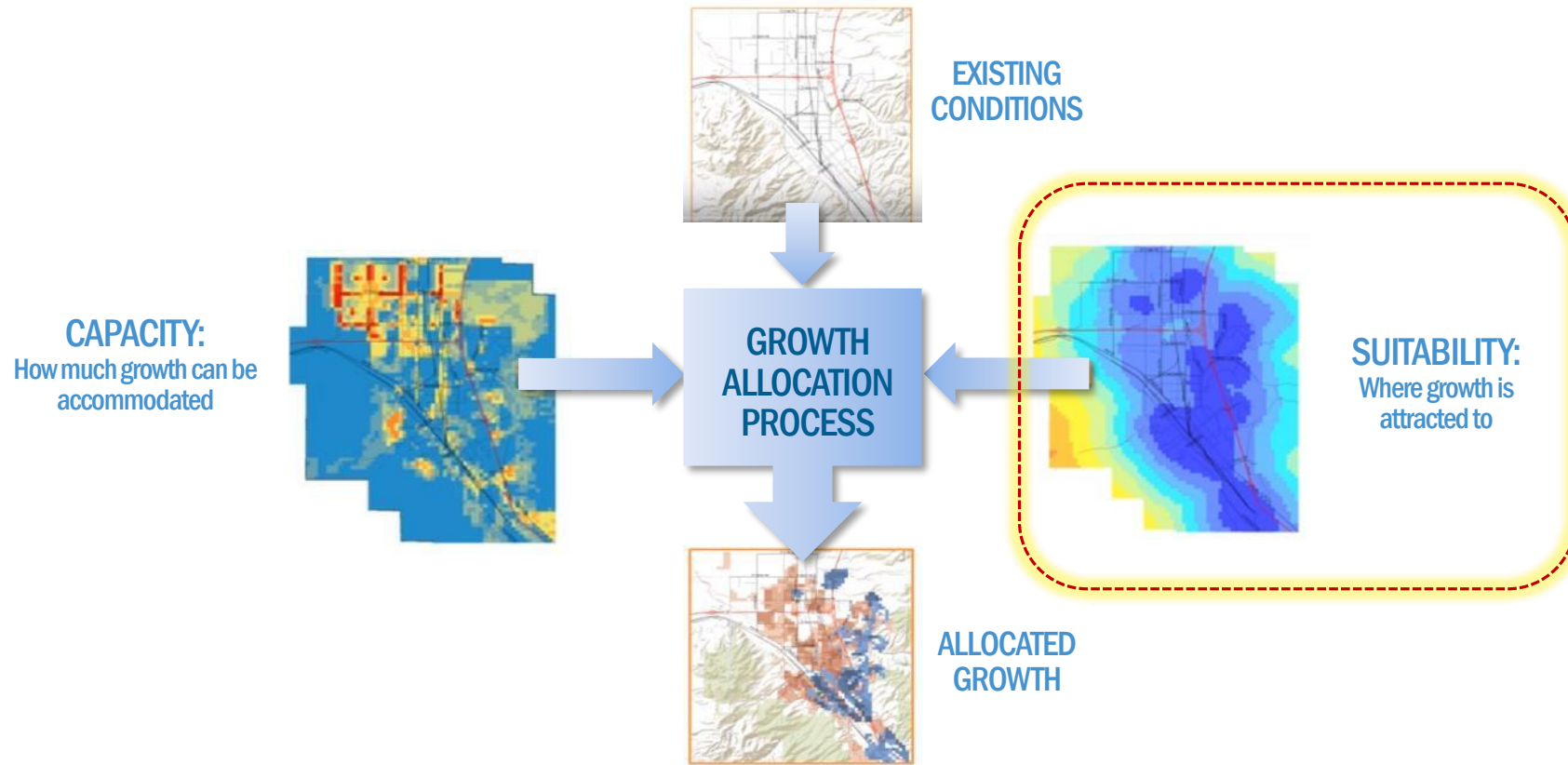Where growth is attracted to

ALLOCATED GROWTH

Image credits: Placeways

Suitability

- Growth is allocated up to the Control Total for the Scenarios
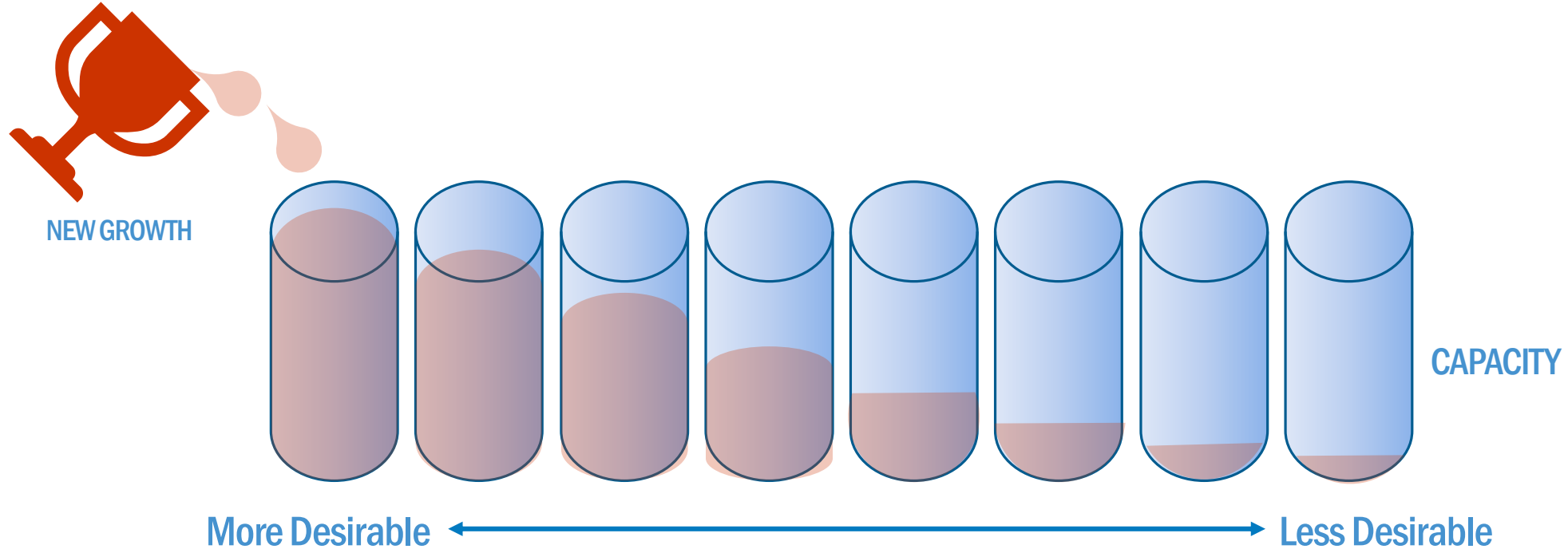- Growth is allocated proportionately according to how desirable it is in the Model

NEW GROWTH

CAPACITY

More Desirable ←————————————————————→ Less Desirable

Image credits: Placeways

Suitability

- Suitability layers are built by mapping features in the Region and assigning a "desirability score" to each
- Desirability can be defined by the presence of a feature or a "distance to" a desirable feature

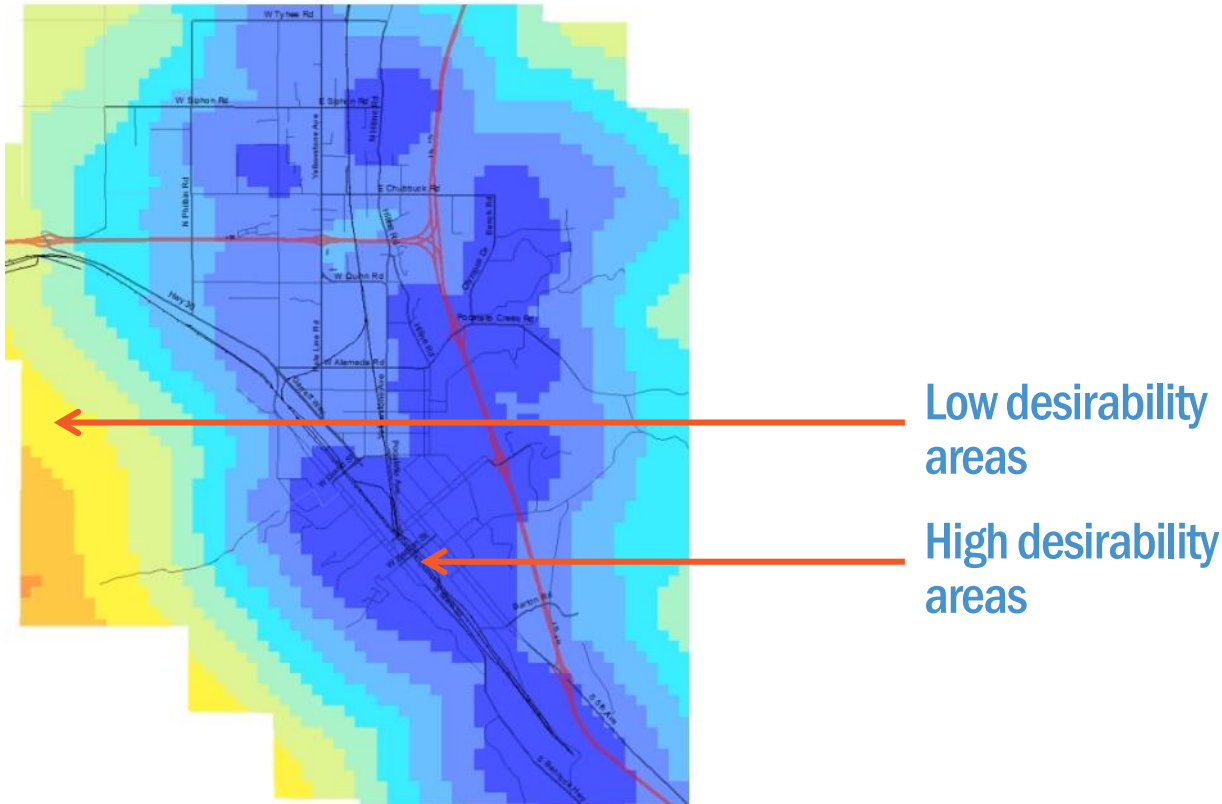Low desirability areas

High desirability areas

Image credits: Placeways

Examples

- Desirability can be to compatible Land Uses
- Or to features such as infrastructure
- Or to vacant land
- Or to land with a high redevelopment potential

Where is the type of growth desirable?

BOULEVARD COMMERCIAL

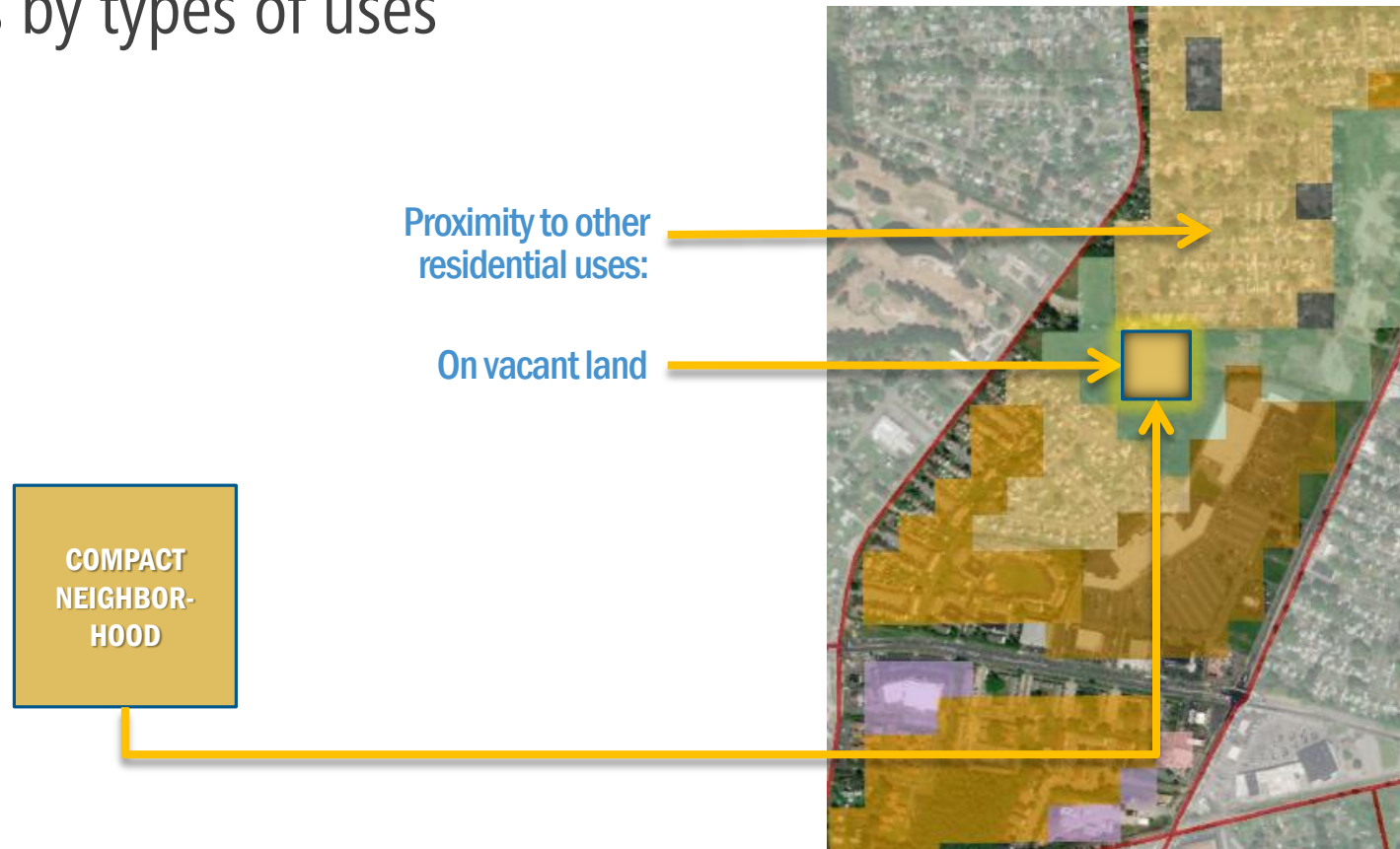Proximity to other commercial uses:

Proximity to major roads:

Land with a low improvement to land value ratio (high redevelopment potential)

Examples

- Certain types of land use will more typically develop on vacant land
- Suitability varies by types of uses

Proximity to other residential uses:

On vacant land

COMPACT NEIGHBOR-HOOD

# Types of Suitability Relationships

Relating Place Types to Suitability Factors helps us locate growth

Suitability Factors

Place Types

Locates where Place Types are allocated
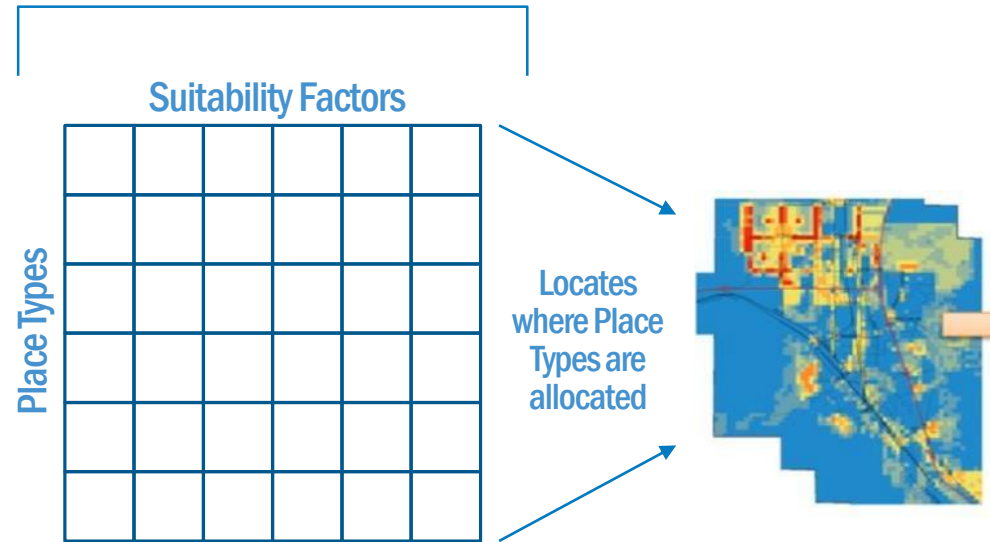
Relating Scenario Narratives to Suitability Factors also helps us allocate the amount of growth

Suitability Factors

Scenarios

Directs the amount of growth allocated to each Place Type
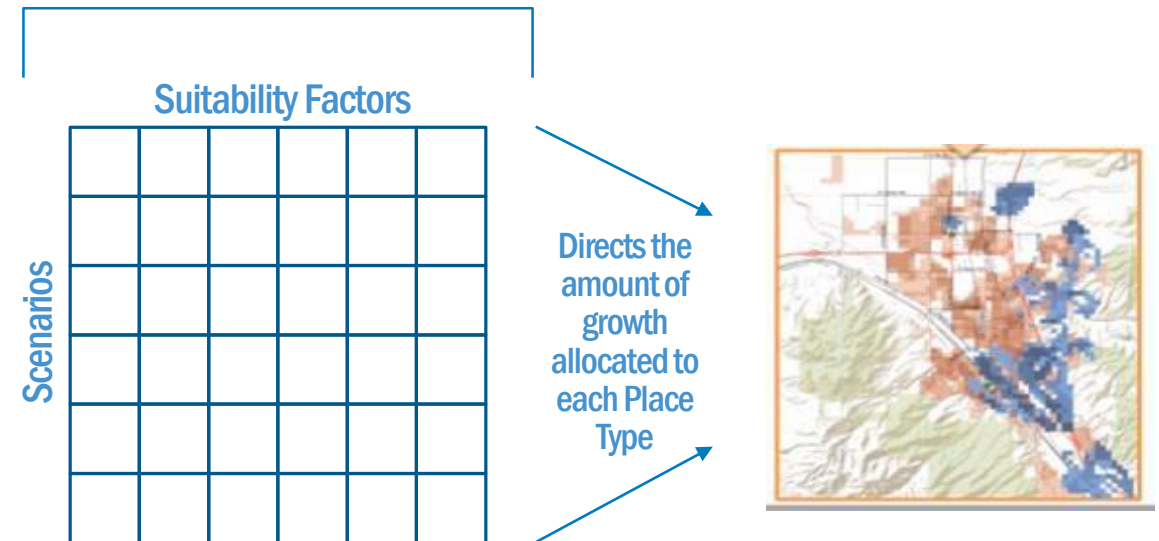
Capacity versus Suitability

Place Types are allocated across a region and each Place Type has a certain Capacity

Each Place Types gets allocated a certain amount of growth according to its Suitability
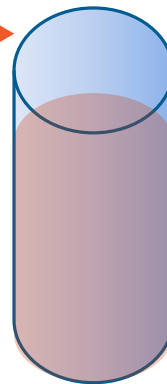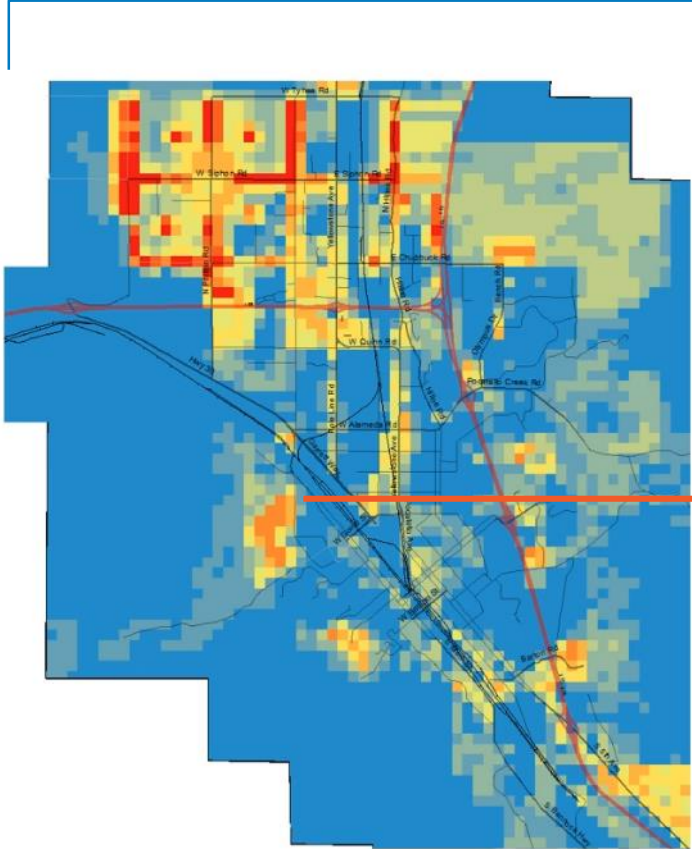
Total Capacity for a Place Type (e.g. FAR of 1.0 for regional Commercial)

The amount of growth allocated to that place type according to Suitability
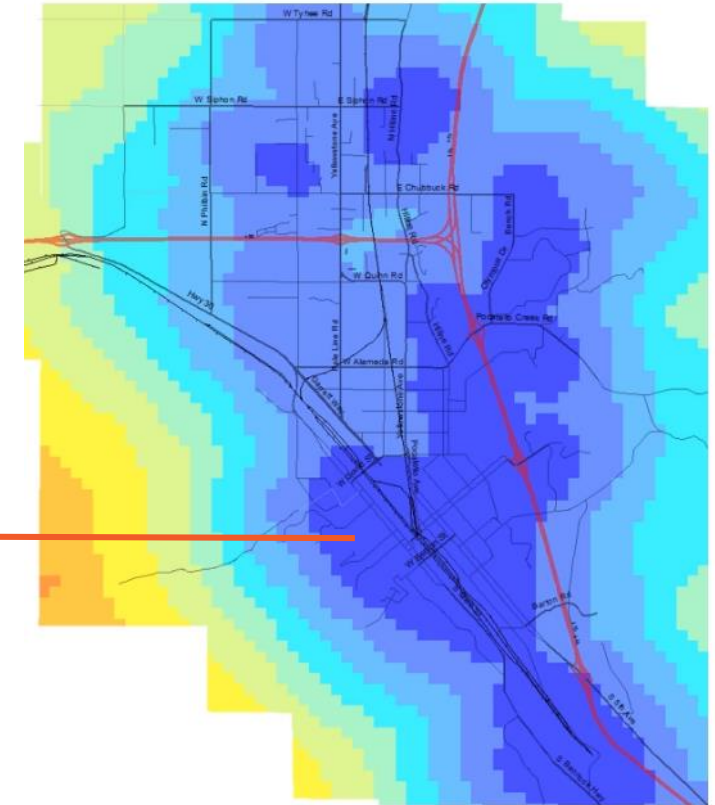
REGIONAL CONNECTORS STUDY

EXAMPLE

Sample Modeling of Suitability Factors

Base Map with "Target Area"

Vacant Land

Target Areas
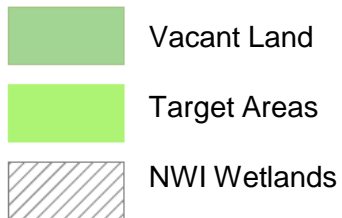
NWI Wetlands

Sample Modeling of Suitability Factors

Suitability Factors overlaid on Base Map
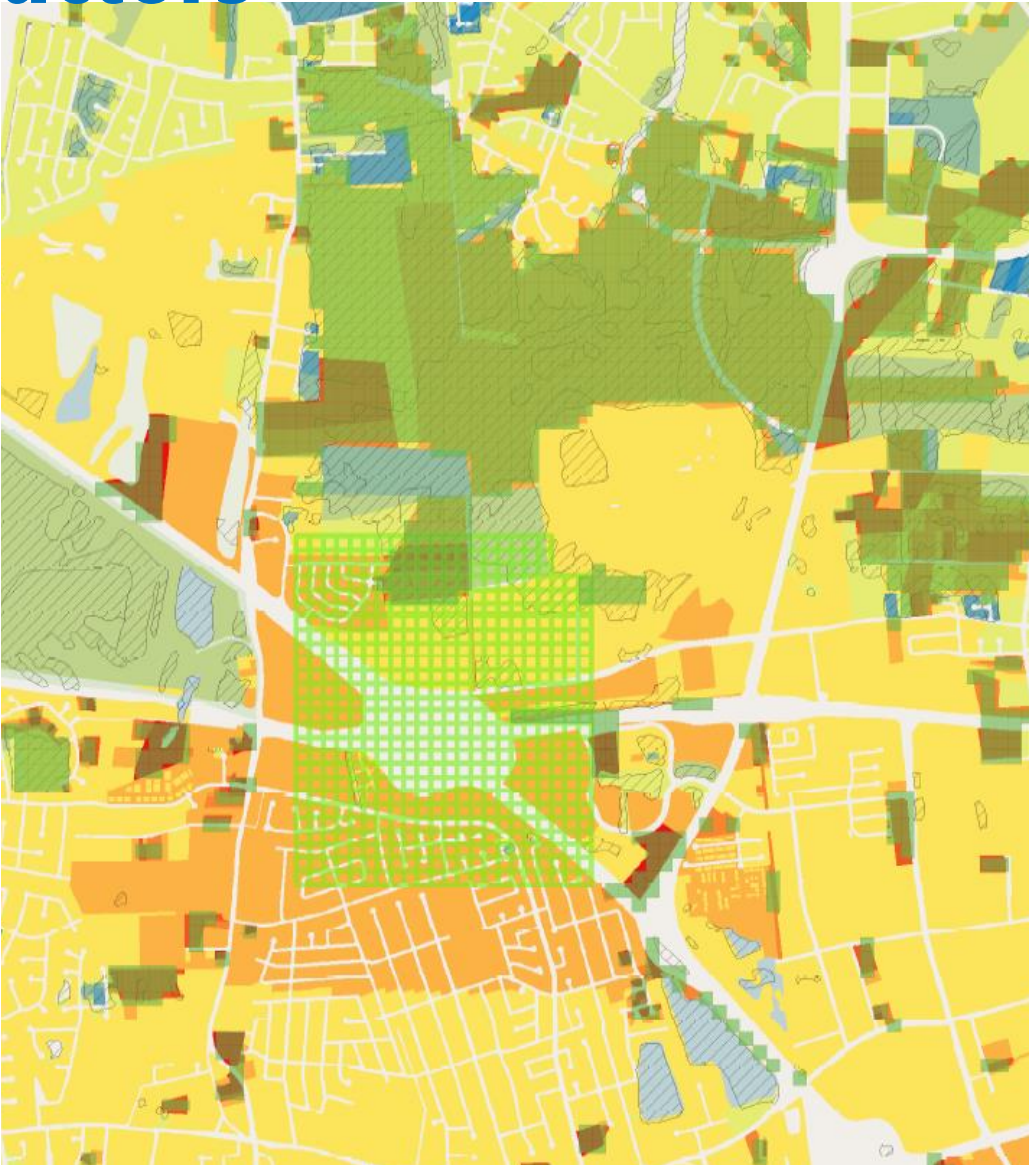
Sample Modeling of Suitability Factors
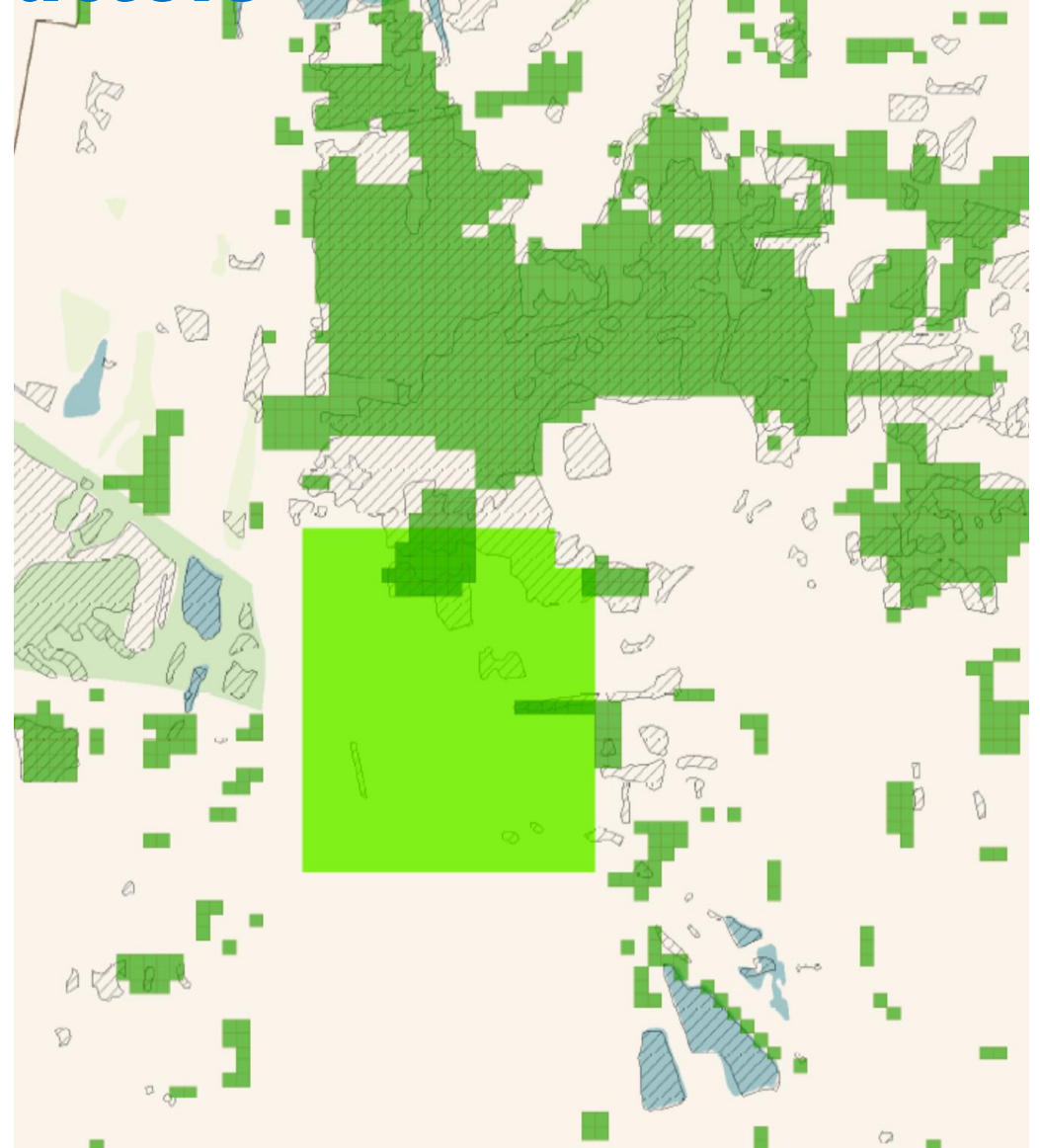
Suitability Factors only
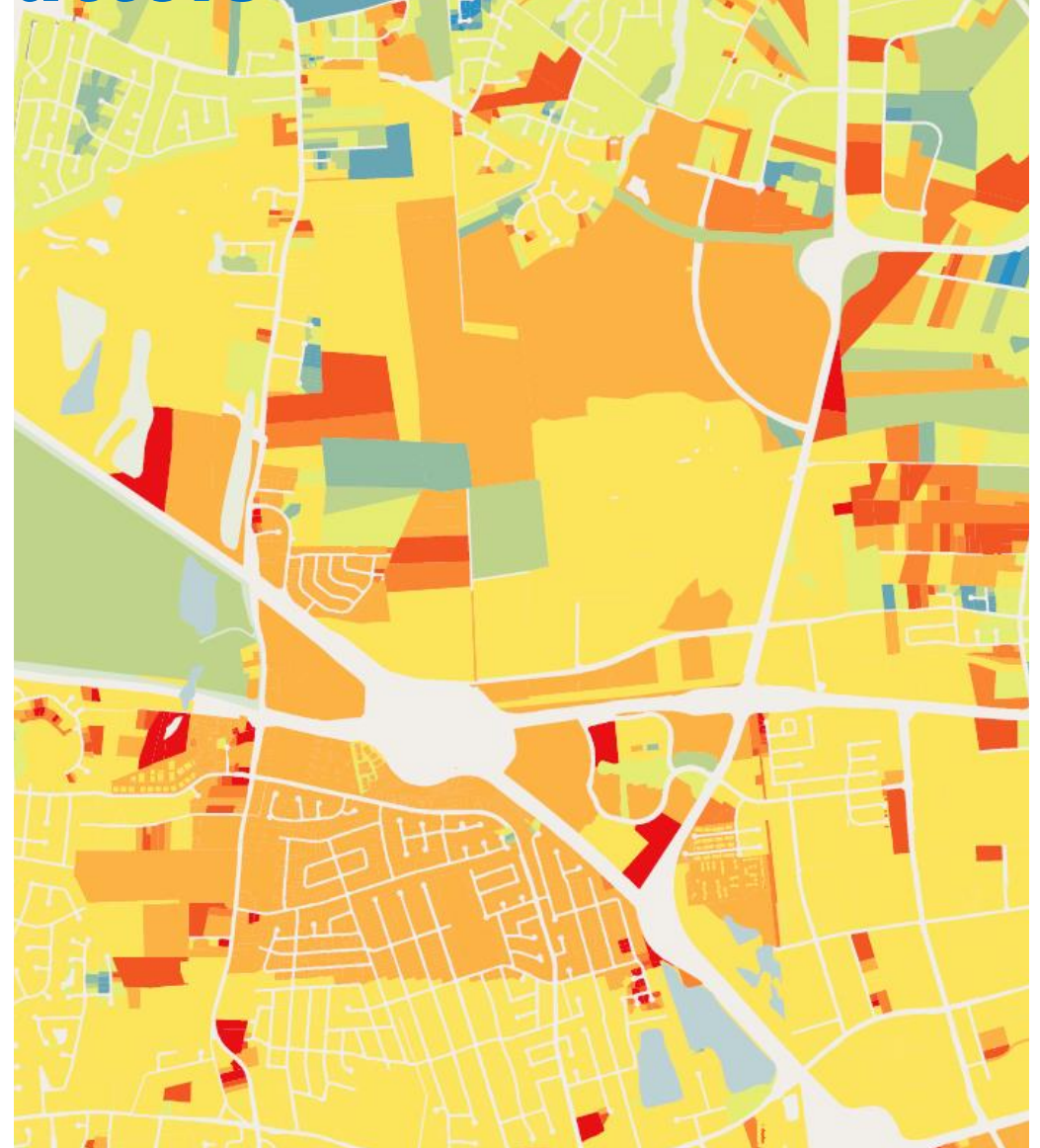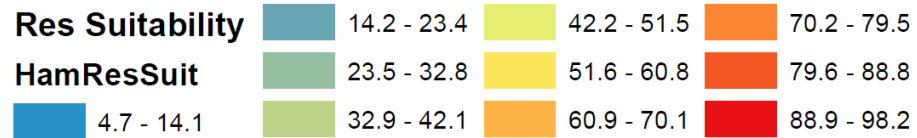
Sample Modeling of Suitability Factors

Suitability Factors with "wetlands" weight set to 10
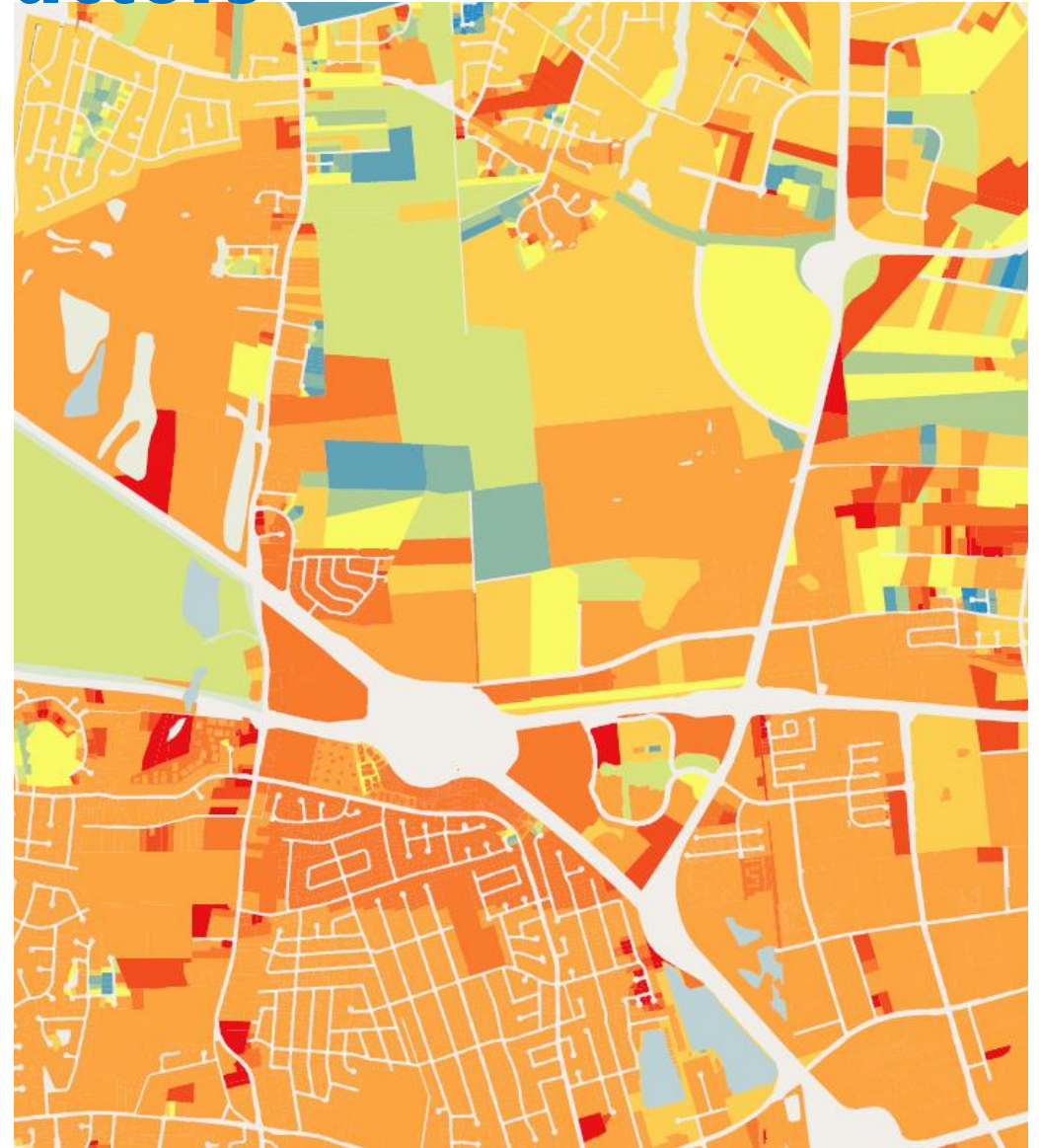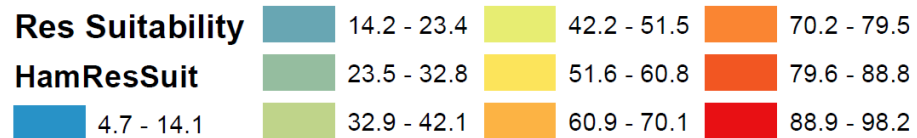
In Development

- Filling in some locality data gaps from 2015 and 2045 Land use datasets

- Affirming Greater Growth Scenario assumptions to be able to develop Control Totals for population & employment

- Develop full range of Suitability relationships

- Develop mapping of No Build areas

- Develop mapping of Suitability for region

- Complete Greater Growth Place Type visualizations

LINKAGES BETWEEN LOCATION FACTORS & ECONOMIC DRIVERS

Scenario Narratives

Recap of working group direction:

- Exact industry composition is not as important as defining scenarios that will meaningfully differ in terms of spatial patterns of growth and travel behavior/trip-generation

- Build from regional industry targets (synthesized into 9 clusters)

Scenario Narratives

Greater Growth on the Water	Greater Growth in Urban Centers	Greater Suburban/Greenfield Growth
Growth in water-oriented activity. Port of Virginia becomes even more competitive.	Significant economic diversification. Space requirements per FTE are low and new professionals prefer to live/work in urban settings. Large role for "digital port."	Growth is suburban/exurban. Port of Virginia becomes even more competitive. "Digital port" brings additional jobs.

Scenario Industry Clusters

Greater Growth on the Water	Greater Growth in Urban Centers	Greater Suburban/Greenfield Growth
Federal/Military	Shared Services	Distribution
Tourism/Arts & Culture	Software Development and IT	Marine/Transportation Technology
Port Growth	"Digital Port"-Oriented Development	Port Growth
Marine/Transportation Technology	Water Technologies	Advanced Manufacturing
Water Technologies		"Digital Port"-Oriented Development
Distribution		

Economic Scenario Refinement

To guide investigation of spatial implications and economic outcomes, we are further refining the potential industry composition of the clusters, e.g.:

Tourism/Arts & Culture

- Performing Arts, Spectator Sports, & Related
- Museums, Historical Sites, and Similar
- Amusement, Gambling, and Recreation Industries
- Accommodations
- Food Service and Drinking Places

Advanced Manufacturing

- Food
- Beverage
- Chemical
- Plastics/Rubber Products
- Nonmetallic Mineral Product
- Machinery
- Computer & Electronic
- Electrical Equipment/Appliance

Linking Economic & Location Factors

Scenario

Industry Clusters

Place Type Preferences

Attractors/ Detractors
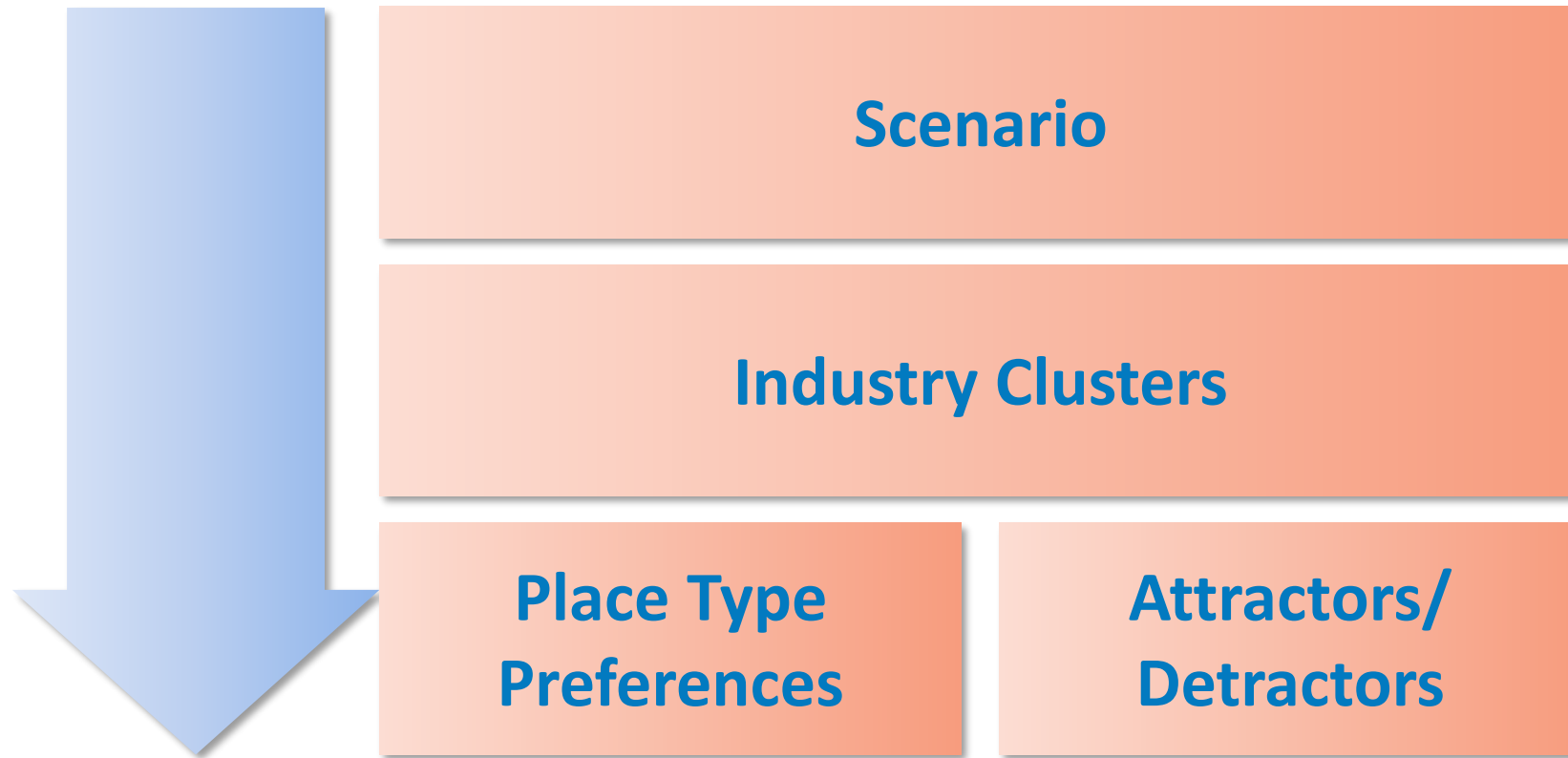
Example: Economic Narrative - Place Types

Example #1

Example #2

```
Greater Growth in
Urban Centers
        ↓
Software and IT
        ↓
```

Mixed Use Com/Res	Boulevard Commercial	Urban Town Center

```
Greater Suburban/
Greenfield Growth
        ↓
Advanced
Manufacturing
        ↓
```

Reg. Industrial Center	Light Industrial	Heavy Industrial

Space requirements per FTE are low and new professionals prefer to live/work in urban settings.

Growth is suburban/exurban.

Example: Economic Narrative – Attractor/Detractor

Example #1
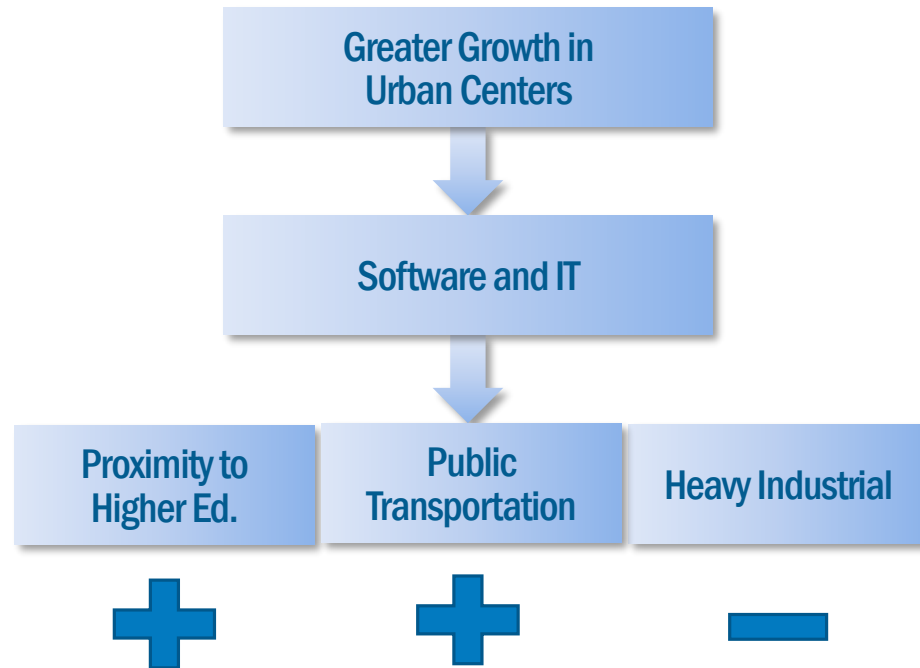
Greater Growth in
Urban Centers

↓

Software and IT

↓

Proximity to Higher Ed.	Public Transportation	Heavy Industrial
+	**+**	**–**

Space requirements per FTE are low and new professionals prefer to live/work in urban settings.

Example #2

Greater Suburban/
Greenfield Growth

↓

Advanced
Manufacturing

↓

Major Roads	Large Development Sites	High Land Value
+	**+**	**–**
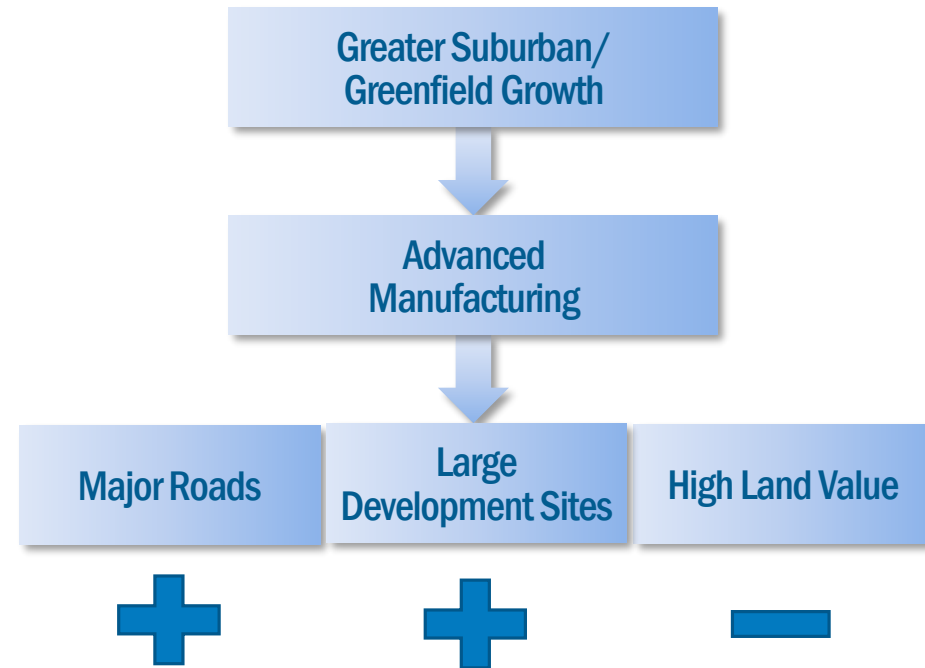
Growth is suburban/exurban.

Image credits: Placeways

In Development

- Affirming Greater Growth Scenario assumptions to be able to develop Control Totals for population & employment

- Refine scenario – industry – location factor linkages

- Develop port growth assumptions for scenarios

REGIONAL CONNECTORS STUDY – INITIAL **DRAFT** SCHEDULE OF WORKING GROUP WEBINARS

FEBRUARY		MARCH				APRIL				MAY					JUNE			
21	28	7	15	21	27	4	11	18	25	2	9	16	23	30	6	13	20	27

WEBINARS

Model Development 1
- Finalize 2015/2045 Place Types
- Discussion of Beyond 2045 Place Types
- Alternative Growth Forecasts
- Industry Growth Drivers

Alternative Scenarios 1
- Discussion of Potential Drivers & Types of Drivers (primary, secondary, etc.)
- Update on Alternative Growth Forecasts
- Survey of Economic Trends and Economic Scenario Narratives
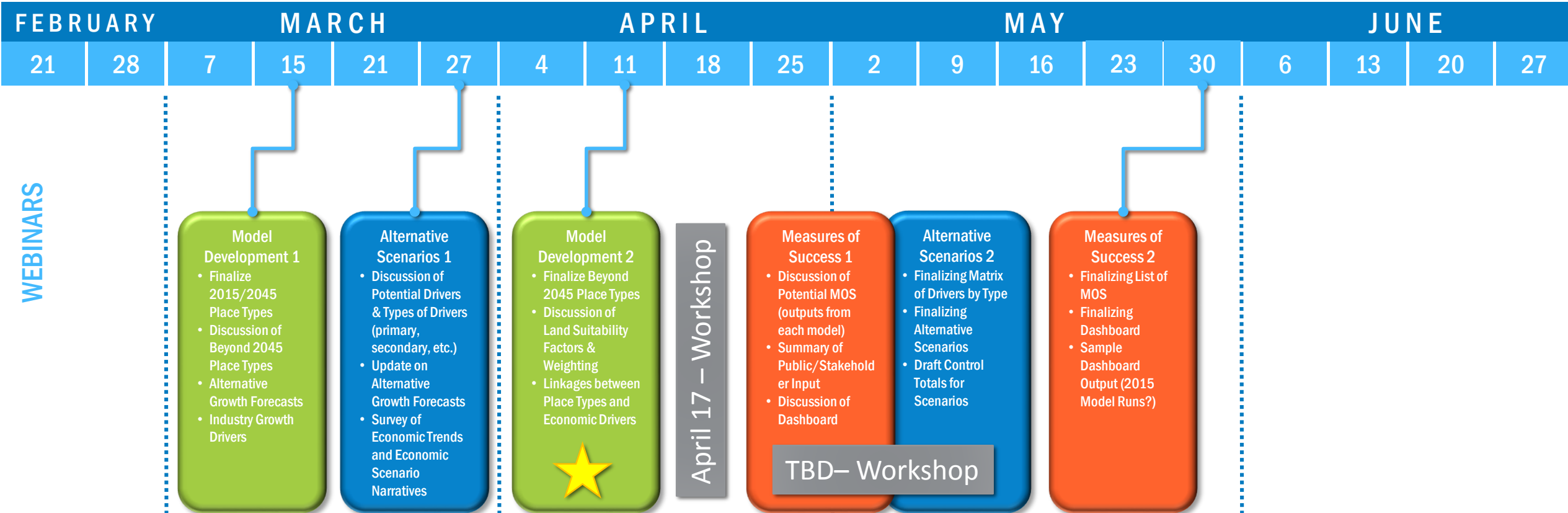
Model Development 2
- Finalize Beyond 2045 Place Types
- Discussion of Land Suitability Factors & Weighting
- Linkages between Place Types and Economic Drivers

⭐

April 17 – Workshop

Measures of Success 1
- Discussion of Potential MOS (outputs from each model)
- Summary of Public/Stakeholder Input
- Discussion of Dashboard

Alternative Scenarios 2
- Finalizing Matrix of Drivers by Type
- Finalizing Alternative Scenarios
- Draft Control Totals for Scenarios

TBD– Workshop

Measures of Success 2
- Finalizing List of MOS
- Finalizing Dashboard
- Sample Dashboard Output (2015 Model Runs?)

DATES AND TOPICS ARE SUBJECT TO CHANGE