NCSG
National Center for Smart Growth Research & Education

Scenario Structures and Tools

TRB Conference

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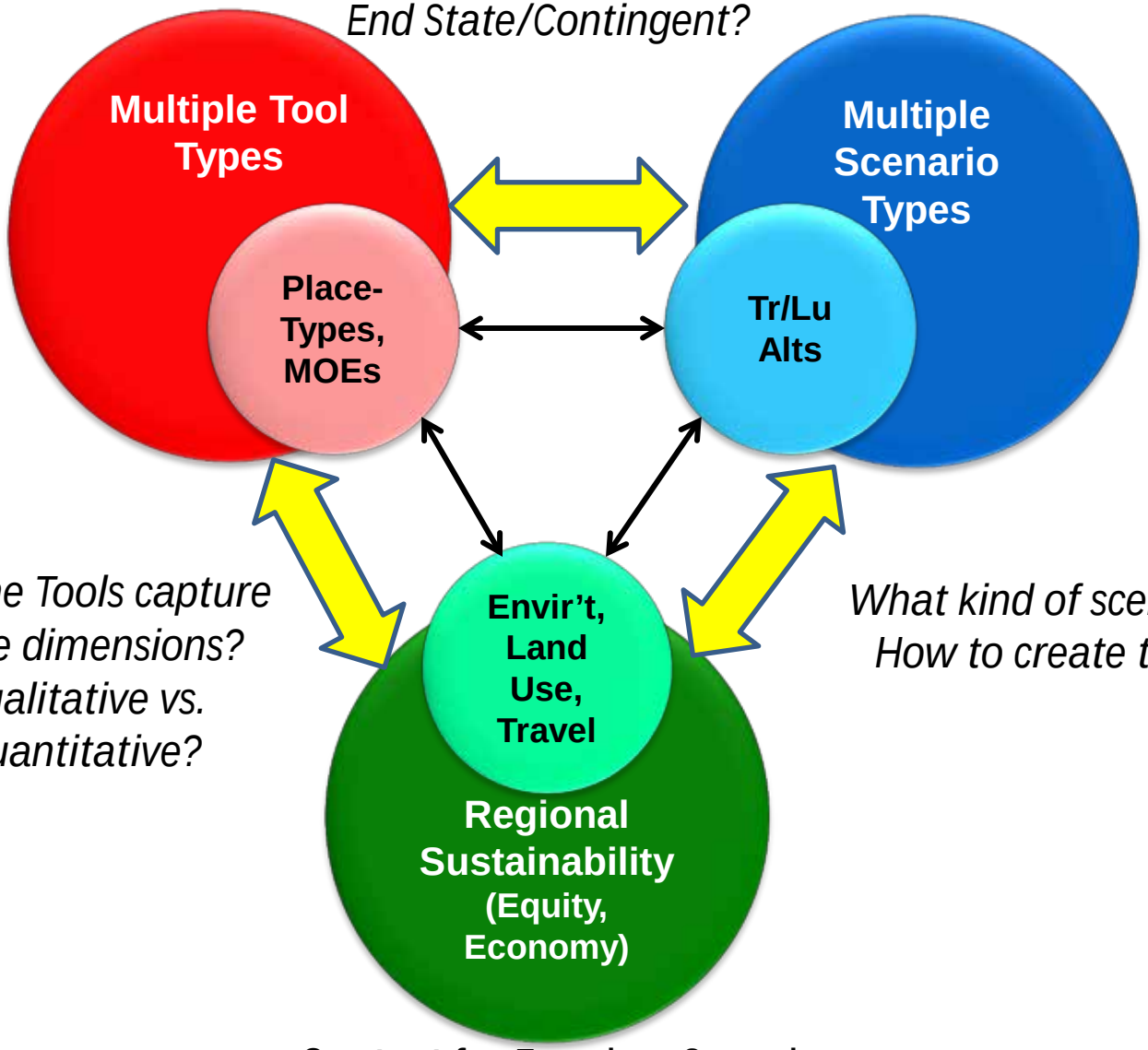
State of the Art

Expert/Public?
Education/Decision?
End State/Contingent?

Tools for Planning, Acting

Scenarios for Forecasting, Visioning



Can the Tools capture these dimensions? Qualitative vs. Quantitative?

What kind of scenarios? How to create them?

Context for Framing, Scanning

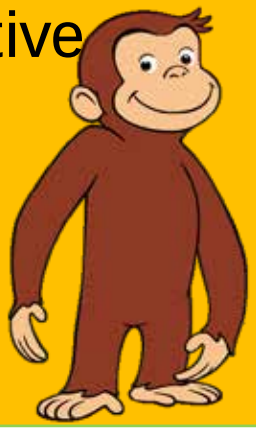
Approaches to Scenario Planning

Scenario Planning

Predictive

Trendline, Expected, Probable or Baseline

Normative

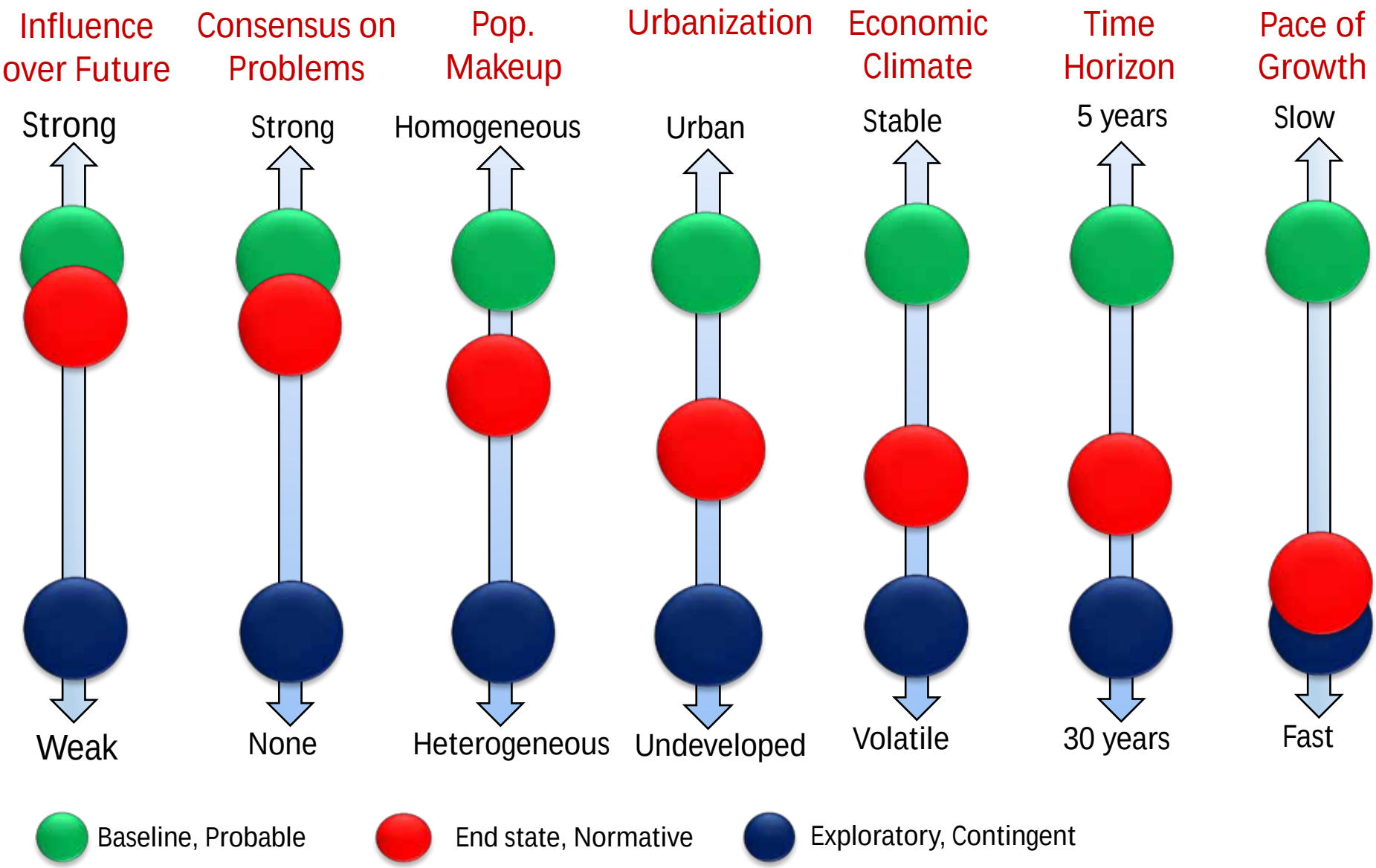


End-State, Preferred, Outbound, Desirable or Prescriptive

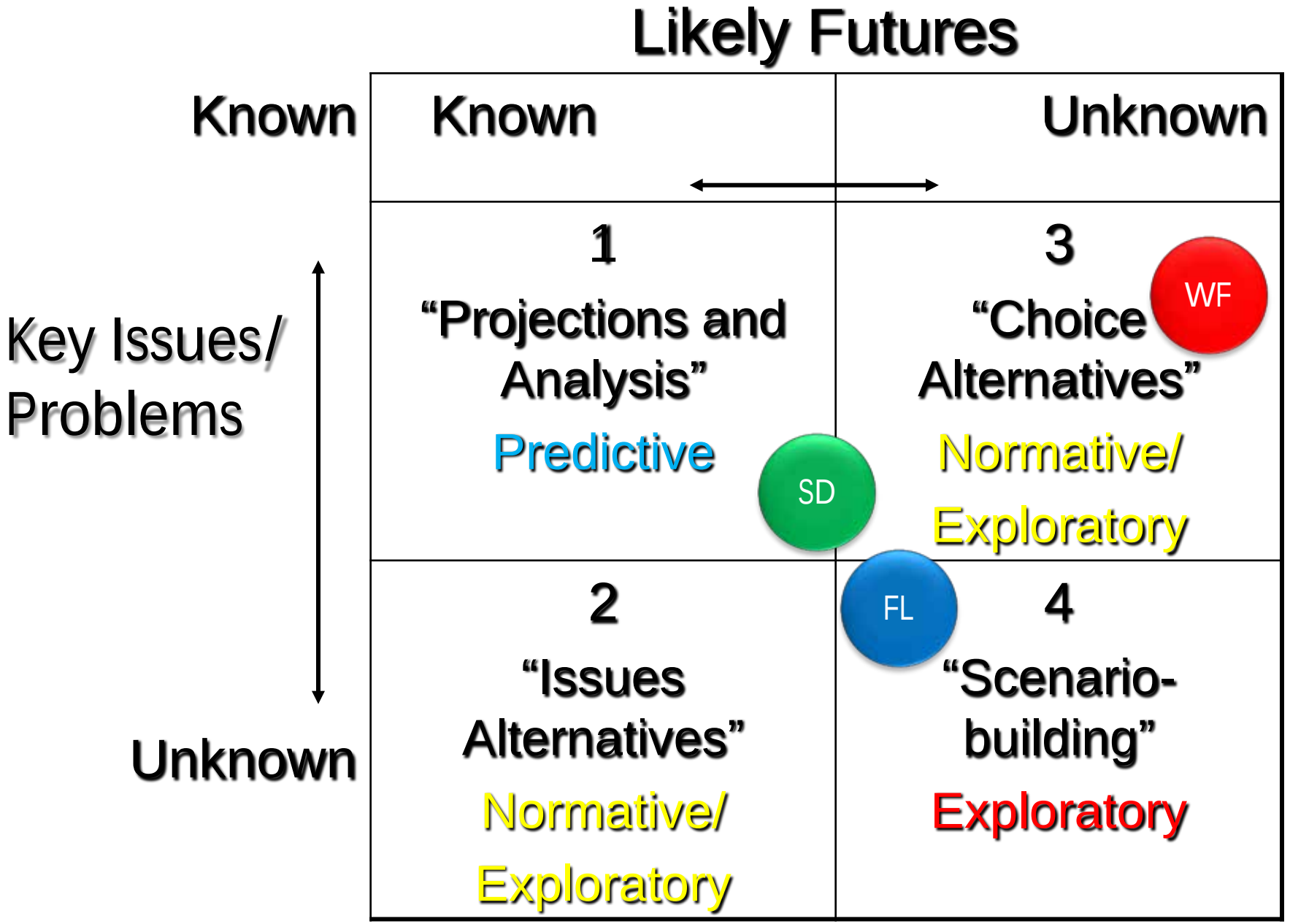
Exploratory

Uncertain, Contingent, Inbound or Plausible

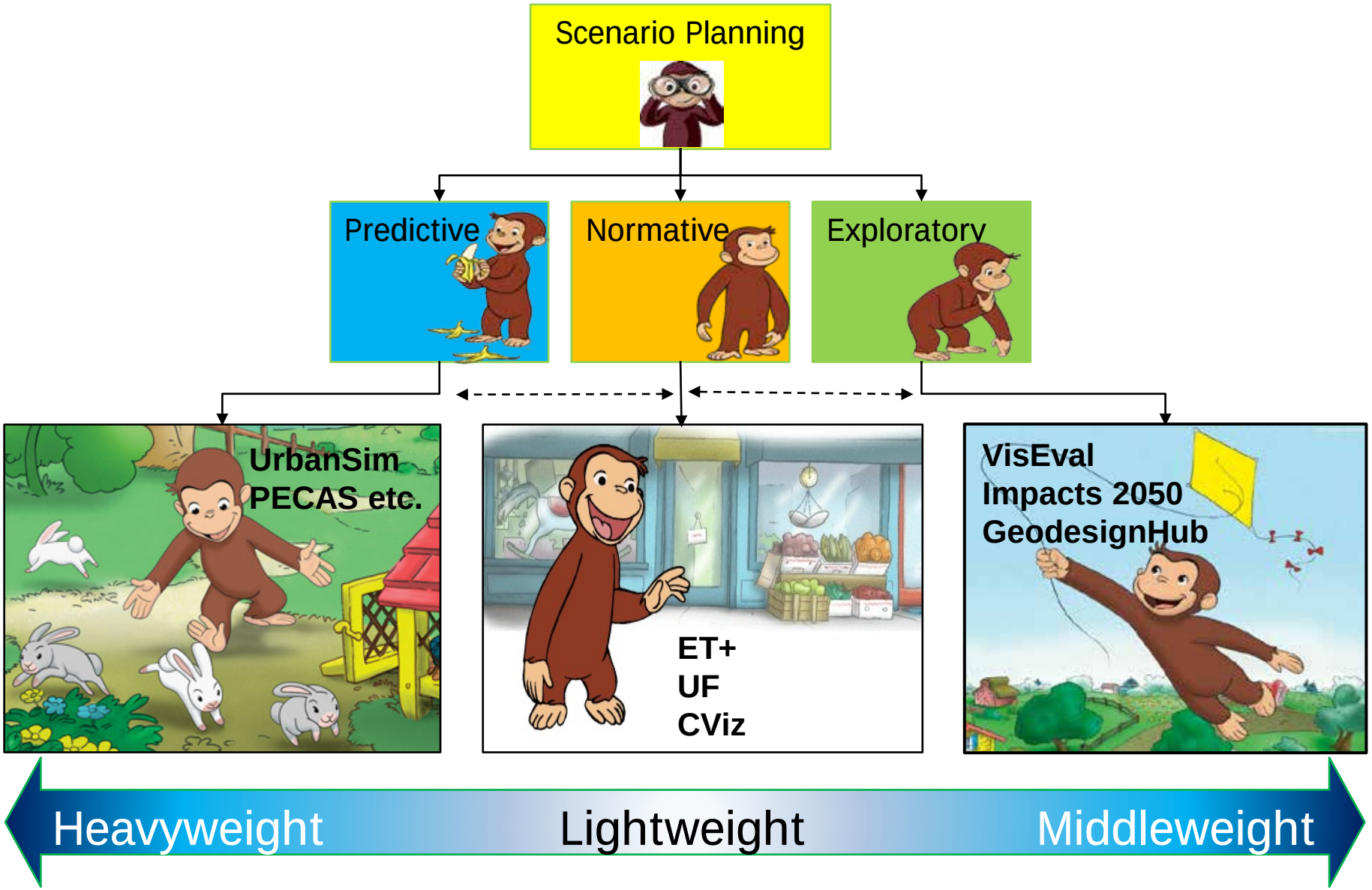
Key Drivers in Choosing a Scenario Approach



A Conceptual Framework for Futures Planning

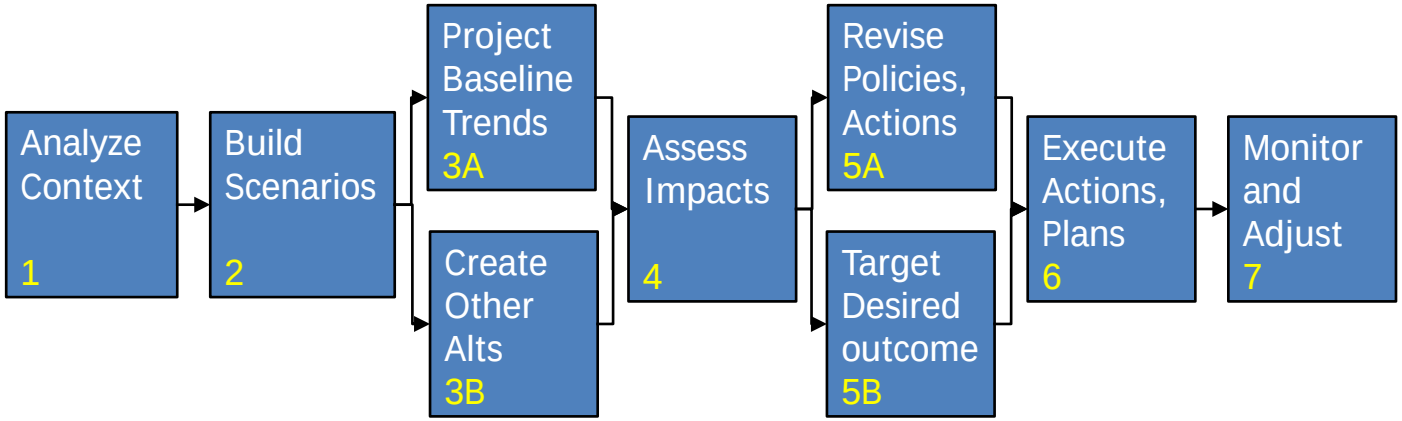


Relating Scenario Planning to Tools

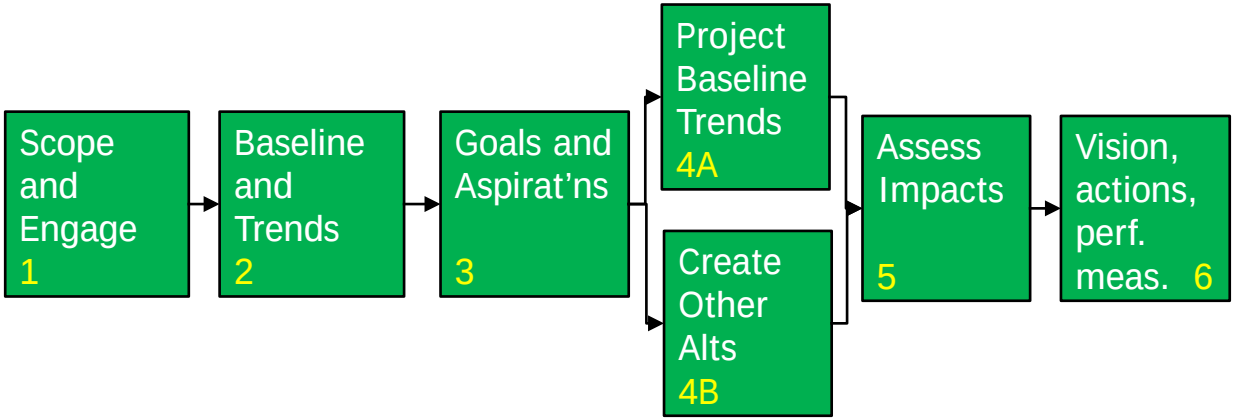


Updating the Scenario Process Steps

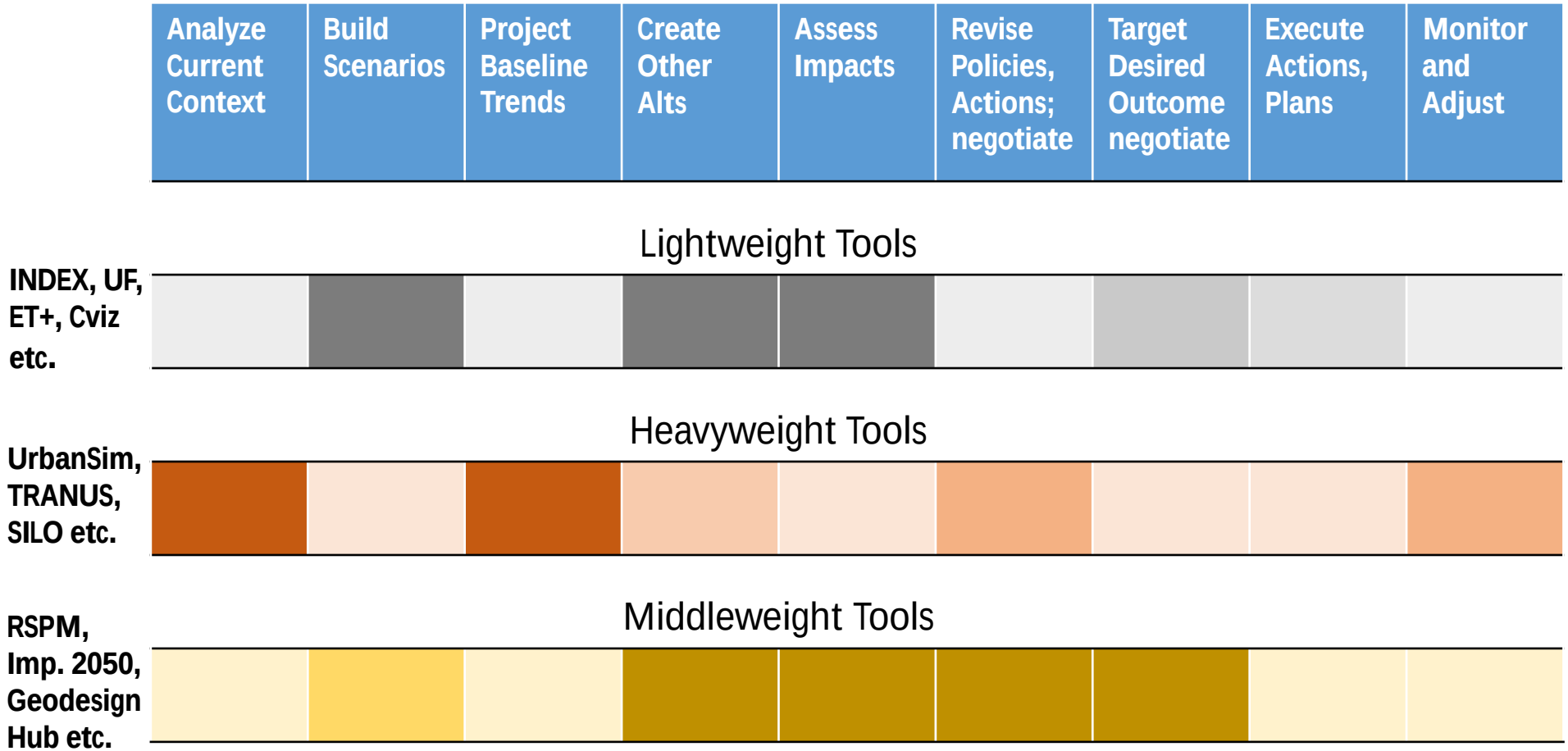
Scenario Sketch Planning Tools for Regional Sustainability - Process Steps (NCHRP Project 8-36, Task 117, 2016)



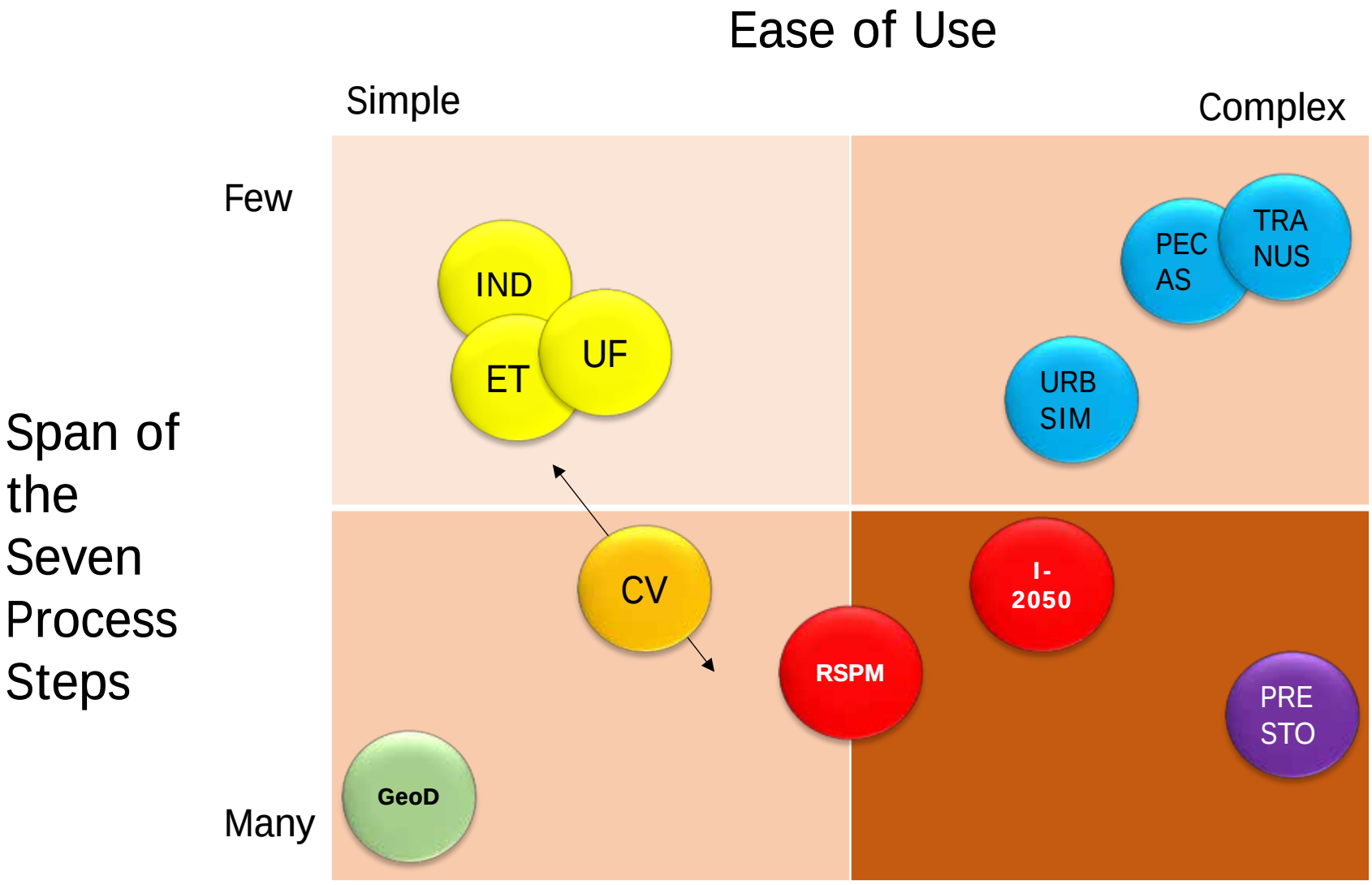
FHWA Scenario Planning Guidebook – Six Phase Framework, 2011



Tools Vary Considerably in Primary Focus



Tools trade off Complexity with Process Support



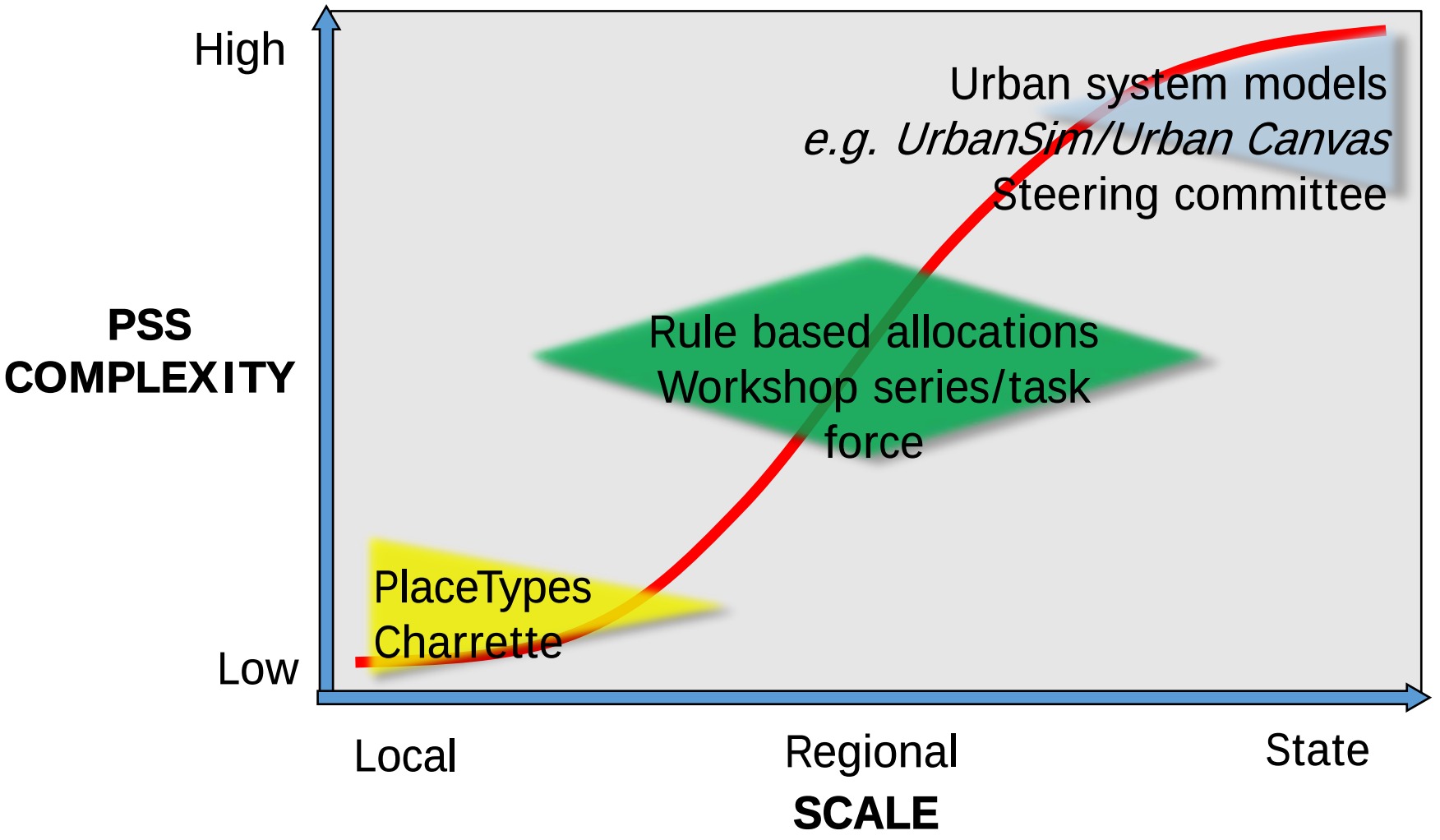
Assessment in NCHRP Report Scenario/Sketch Tools for Regional Sustainability (NCHRP 08-36, task 117, 2016)

Table 4.1 Summary Assessment Matrix of Tools (continued)

Legend: Poor, Fair, Good, Very Good, Excellent

Category/Subcategory	ET+	CV	UF	Comments
Implementation Attributes (continued)				
Prerequisites				
Hardware	Very Good	Very Good	Very Good	One needs a lot of hardware and software to serve UF but very little if using Software as a Service (SaaS) as a client, whereas one needs no server software for ET+ and CV.
Software, including any open-source stack components	Very Good	Very Good	Good	Again, if an agency was trying it implement UF themselves there is a very large software stack it is built-on. However SaaS would be virtually none for the client.
Staff Expertise required	Good	Good	Fair	ET+ and CV require skilled ArcGIS user to set up analyses. CV is scalable and supports simple to complex applications. UF requires data and GIS experience, along with IT support to set up servers.
Costs				
Hardware	Good	Good	Good	For ET+ and CV minimal if already own desktop/laptop; for UF minimal if already own servers, otherwise possibly significant
Software – Initial and Ongoing/updates	Excellent	Fair	Excellent	
Amount of support (e.g., consultants) needed	Very Good	Very Good	Fair	For ET+ and CV, consultant support helpful, but not required; For UF, consultant support currently required
Training	Good	Very Good	Fair	For ET+ and CV, training by vendor or authorized consultants: available; for UF training by tool developer currently required
Performance/Robustness				
Speed	Good	Fair	Excellent	For UF, the server/client setup is that the server processing could be done in the cloud and be very fast.
Stability	Very Good	Very Good	Poor	
Methods and assumptions clearly documented	Very Good	Excellent	Fair	
Quality of graphic output	Good	Very Good	Excellent	CV has far more reporting tools than the others, various web reports, output to AGOL (ArcGIS On Line), Google Earth.

Scale Determines Tool Complexity



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Also see July, 2016 NCHRP Report on Scenario Sketch Tools:

http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=3522