Geodesign Dynamics

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Keynote Lecture at the 17th International Conference on Information Technologies in Landscape Architecture in Istanbul June 1-3, 2016.

Geodesign Dynamics: Concepts which relate changes in Geodesign to their changing systems-contexts (and which require technical support)

Geodesign is Systems Thinking

We are designing change in many systems which are interacting in space and time

Geodesign is Serious

There are important problems and – frequently – little time for decision and action

People/Groups have different interests… And may disagree on priorities

Each seeks/needs **legitimacy** in/via design

Geodesign methods do not scale and do not exactly-repeat

They should fit the context… the Redlands hypothesis

They are likely to be **collaborative**

Geodesign does **not** normally produce a *final* **product**

It is likely to most useful at the beginning of thinking about deciding on

the **STRATEGY** of what to do….

Geodesign is complex

There are **uncertainties**:

Multible geographic scopes: political boundaries, watersheds, etc.

Complex content :Systems which vary by size, location, threat, etc.

Change requirements are many

Therefore Geodesign support must be **flexible, iterative, transparent and rapid**

Journal of Digital Landscape Architecture, 1-2016, pp. 356-368. © Wichmann Verlag, VDE VERLAG GMBH · Berlin · Offenbach. ISBN 978-3-87907-612-3, ISSN 2367-4253, e-ISSN 2511-624X, doi:10.14627/537612040.

Geodesign is Dynamic

Change in a design is ***relational synthesis*** in **space** and **time** of **sets** of systems changes.

There are many ways to change a system… And the **sequence matters**

Design(s) should be assessed and iteratively improves, knowing that any change changes all the systems

Therefore, a primary aim of Geodesign is to **rapidly** move from infinite possible combinations of policies and projects towards a technically, financially and politically **feasible decision**

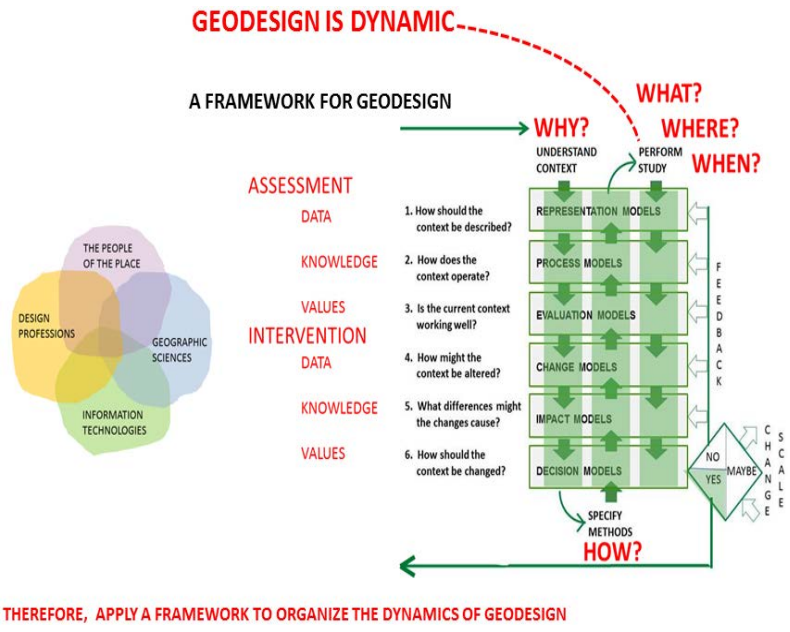
The Geodesign endgame must support **informed negotiation**

Geodesign is Communication

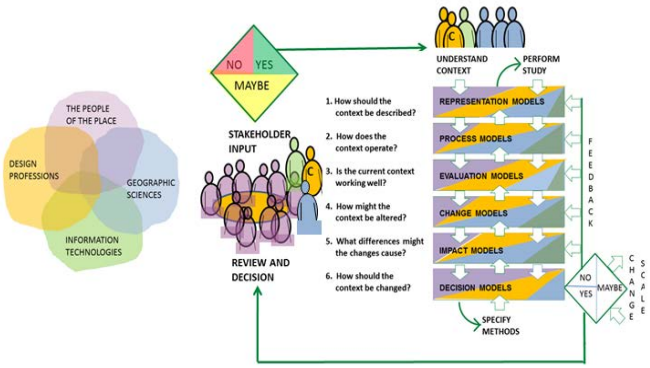
Therefore, all aspects of Geodesign support must be easily learned, easily used, easily communicated

And most importantly: The "language" of Geodesign must be easily **understood** by all involved

Geodesign is a dynamic, collaborative, social-political process of design



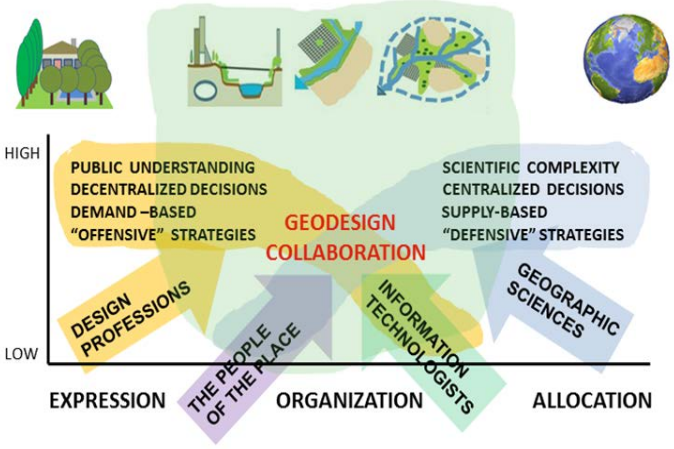
THE DYNAMICS OF PEOPLE AND VALUES
GEODESIGN IS A COLLABORATION



THEREFORE, RECOGNIZE THAT PEOPLE HAVE DIFFERING PRIORITIES, BUT SHOULD ULTIMATELY AGREE
ENABLE VARIED DECISION MODELS TO DEFINE CHANGE-ALTERNATIVES AND ENABLE INFORMED NEGOTIATION
APPLY IN VARIED CULTURES AND AMONG PEOPLE WITH VARIED LOCAL AND TECHNICAL EXPERTISE
ASSURE THAT EVERY ASPECT OF GEODESIGN SUPPORT IS EASY TO LEARN, USE AND UNDERSTAND

THE DYNAMICS OF CONTENT, SIZE AND SCALE

This is where I think collaboration in geodesign can be most significant.



THEREFORE, GEODESIGN MUST BE ADAPTABLE
TO VARIED CONTENT IN STUDIES AND PROJECTS

Steinitz, C., A Framework for Geodesign, Redlands California, Esri Press, 2012
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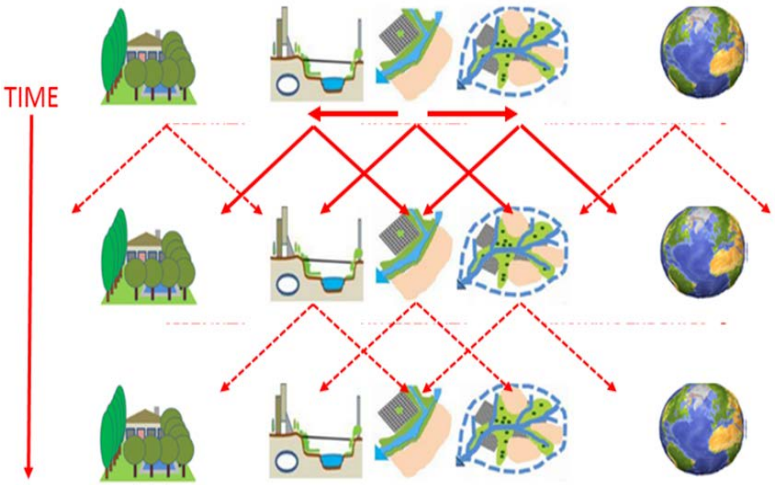
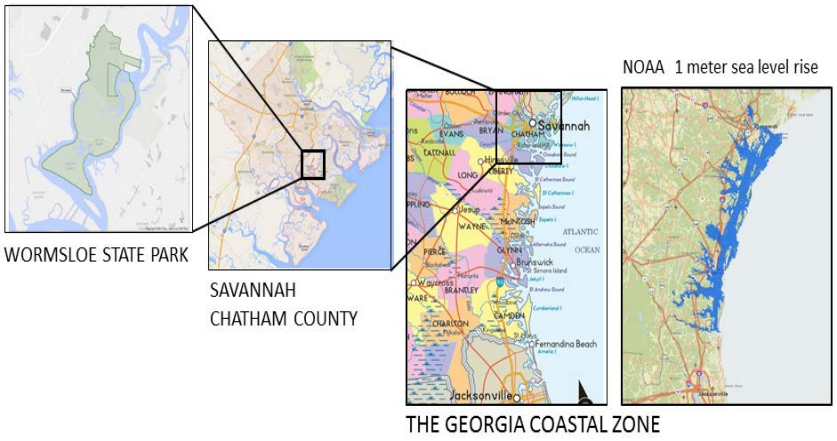
THE DYNAMICS OF CONTENT, SIZE AND SCALE



THEREFORE, ENABLE SIMULTANEOUS AND SEQUENTIALLY LINKED DESIGN AT MORE THAN ONE SIZE/SCALE/AREA

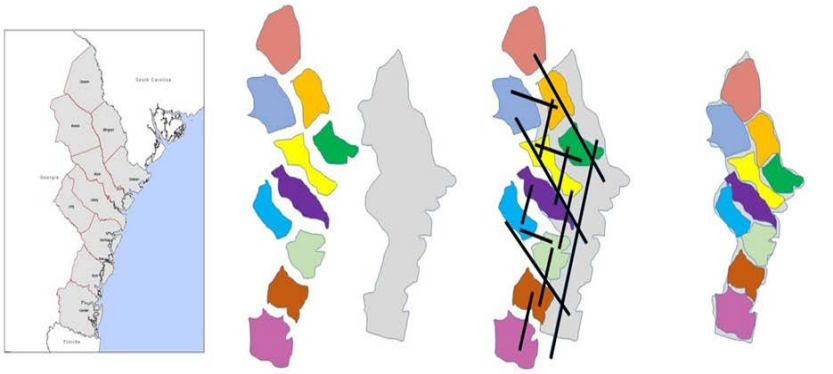
THE DYNAMICS OF CONTENT, SIZE AND SCALE



THEREFORE, PROVIDE ZOOMING AND SIMULTANEOUS LINKED DESIGN AT MORE THAN ONE SIZE/SCALE/AREA

Georgia Coastal Commission and University of Georgia, USA, April 2016

THE DYNAMICS OF MULTIPLE JURISDICTIONS



THEREFORE, RECOGNIZE VARIED POLITICAL RESPONSIBILITIES FOR POLICIES AND PROJECTS IN VARIED CHANGE VERSIONS
PROVIDE FOR CROSS-BORDER LINKING OF GEODESIGN ELEMENTS AND JURISDICTION-BASED REPORTING

Georgia Coastal Commission and University of Georgia, USA, April 2016

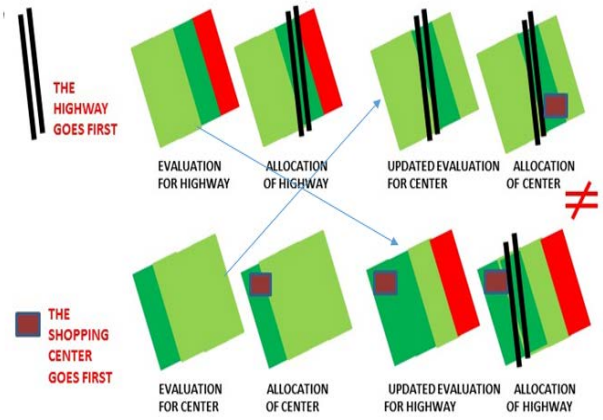
THE DYNAMICS OF TIMING AND SEQUENCE

SEQUENCE MATTERS: EVERY MOVE CHANGES EVERYTHING

THEREFORE, ENABLE UPDATING OF ALL SYSTEMS EVALUATION MAPS AS THE DESIGN DEVELOPS

THE DYNAMICS OF TIMING AND SEQUENCE

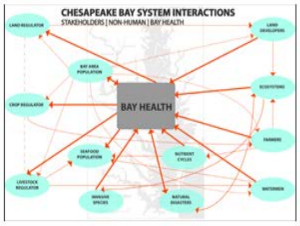
SEQUENCE MATTERS: EVERY MOVE CHANGES EVERYTHING
THE CHICKEN AND THE EGG...or...**THE HIGHWAY AND THE SHOPPING CENTER**...OR...

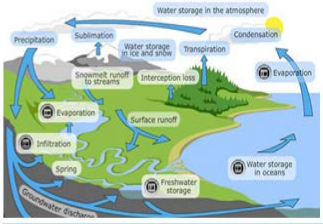


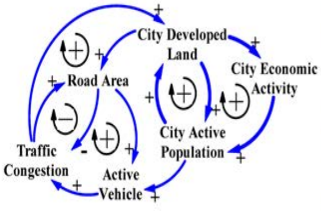
THEREFORE, ENABLE UPDATING OF ALL SYSTEMS EVALUATION MAPS AS THE DESIGN DEVELOPS
LINK THE ELEMENTS OF A CHANGE-DESIGN WITH THE TIME-LINES FOR THEIR IMPLEMENTATION

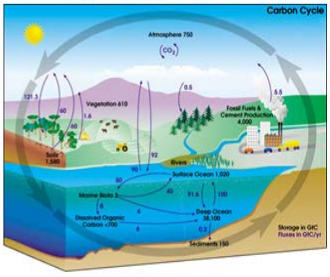
THE DYNAMICS OF SYSTEMS INTERACTION

ANY COMPONENT PROJECT IN A DESIGN CHANGES ALL SYSTEMS





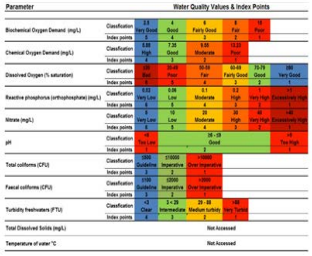


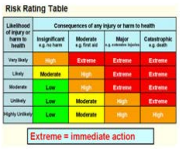


THEREFORE, ENABLE SYSTEM IMPACT ASSESSMENT AND CROSS-SYSTEMS IMPACTS ASSESSMENT
ENABLE UPDATING OF IMPACTS ASSESSMENTS AS A DESIGN IS BEING MADE

"It is better to be vaguely right than exactly wrong".
Carveth Read, *Logic, deductive and inductive* (1898), p. 351

THE DYNAMICS OF SYSTEMS: COMPLEXITY

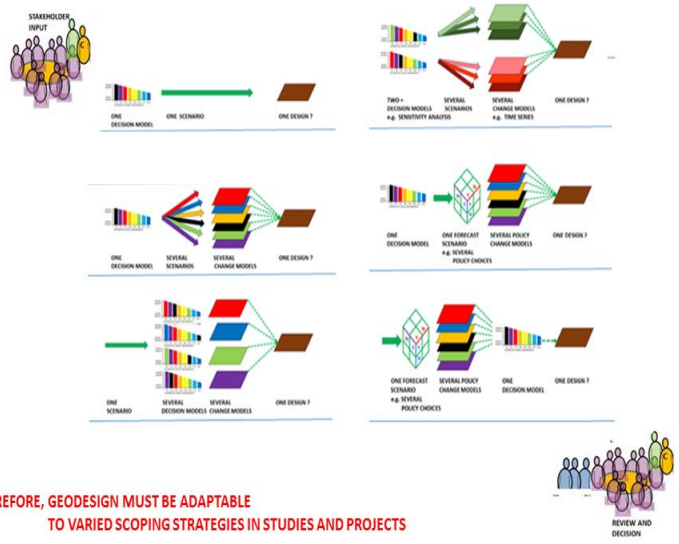




THEREFORE, PROVIDE FOR SYSTEM EVALUATION AND IMPACT ASSESSMENT, AND CROSS-SYSTEMS IMPACTS ASSESSMENT BUT KEEP WITHIN 5 LEVELS IN AN ORDINAL SCALE

Leslie Valiant, *Probably Approximately Correct,* Basic Books, 2013

THE DYNAMICS OF SCOPING STRATEGY



THEREFORE, GEODESIGN MUST BE ADAPTABLE TO VARIED SCOPING STRATEGIES IN STUDIES AND PROJECTS

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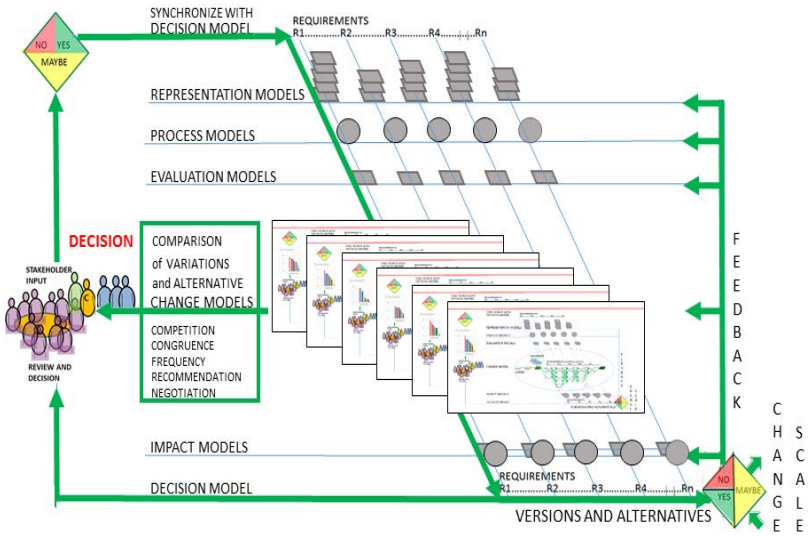
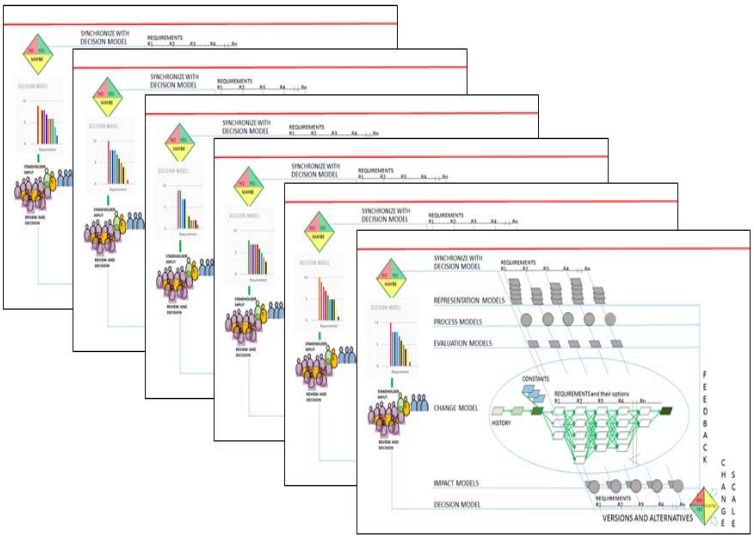
THE DYNAMICS OF SYNTHESIS: WORKFLOW

All ALTERNATIVES can be COMPARED in several ways.

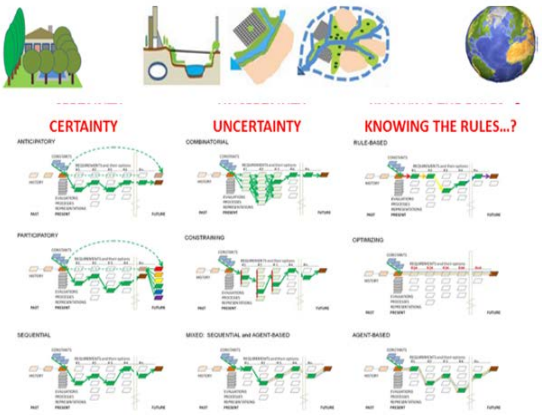


THE DYNAMICS OF SYNTHESIS: WORKFLOW

DECISION MODELS vary by interest group and therefore require parallel geodesign studies.



THE DYNAMICS OF SYNTHESIS: CHANGE MODELS

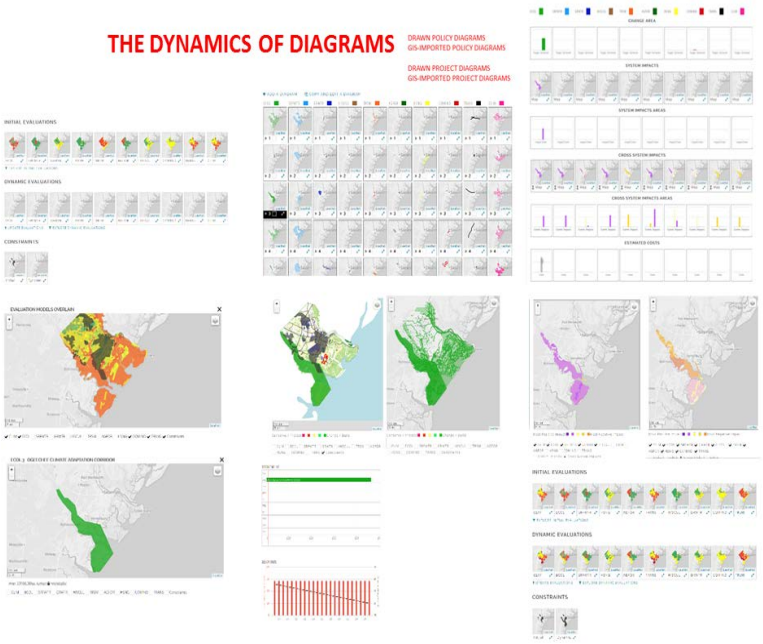


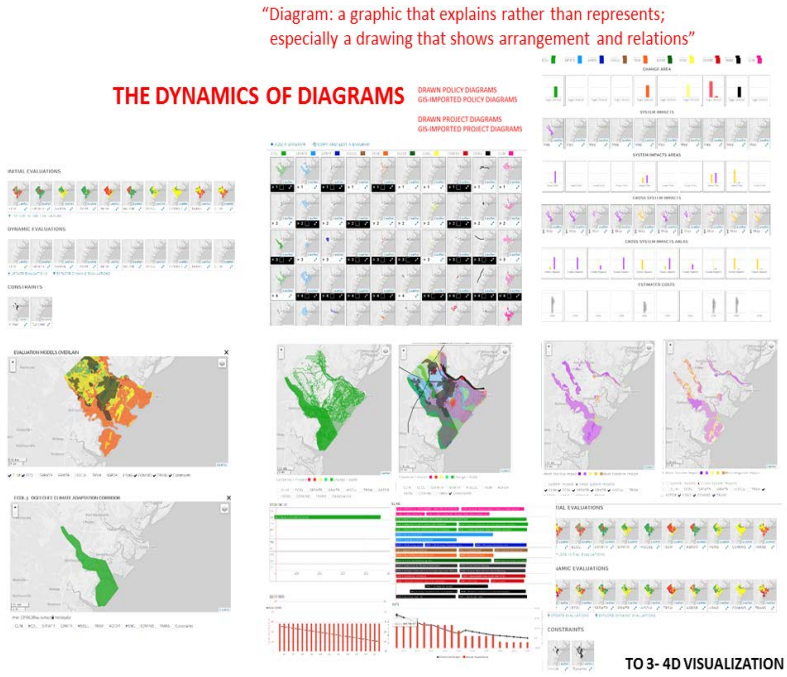
2014 Steinitz, C "Which Way of Designing?", in Lee, Danbi, Dias, Eduardo, Scholten Henk, (Eds.), Geodesign by Integrating Design and Geospatial Sciences, Springer, pp 11 - 43

http://video.esri.com/watch/4162/experiments-in-geodesign-synthesis

"Diagram: a graphic that explains rather than represents; especially a drawing that shows arrangement and relations"

THE DYNAMICS OF DIAGRAMS




"Diagram: a graphic that explains rather than represents;
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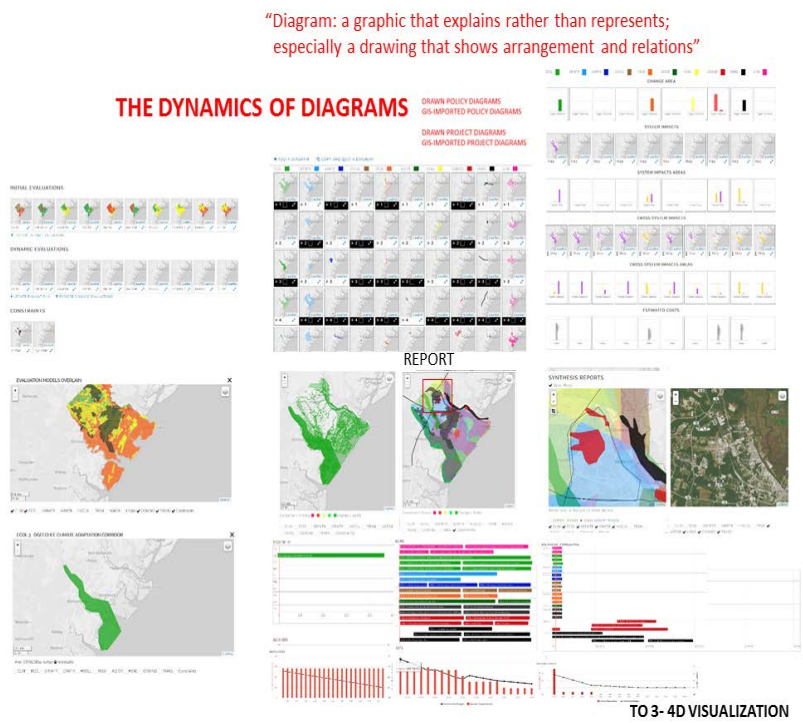
THE DYNAMICS OF DIAGRAMS
DRAWN POLICY DIAGRAMS
GIS-IMPORTED POLICY DIAGRAMS
DRAWN PROJECT DIAGRAMS
GIS-IMPORTED PROJECT DIAGRAMS
TO 3- 4D VISUALIZATION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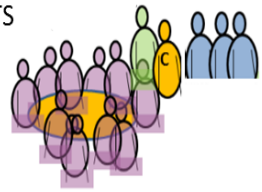
DRAWN PROJECT DIAGRAMS
GIS-IMPORTED PROJECT DIAGRAMS
REPORT
TO 3- 4D VISUALIZATION

THE DYNAMICS OF SYNTHESIS: COMPARISON AND DECISION

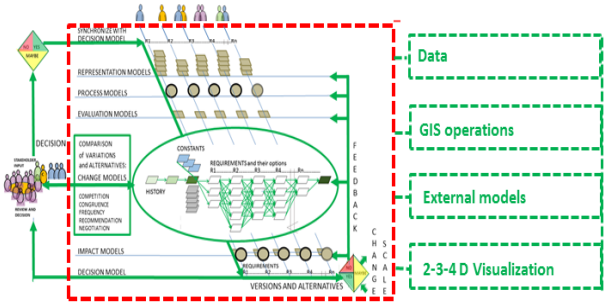
DECISION PRIORITIES
THE DESIGN
TIMING
COST
SYSTEM IMPACTS
CROSS-SYSTEMS IMPACTS
WHICH, WHERE AND WHOSE IMPACTS
CERTAINTY/UNCERTAINTY
FREQUENCY OF SELECTION
NEGOTIATION TO AGREEMENT



THEREFORE, ADOPT/ADAPT A WORKFLOW WHICH ENBLES VARIOUS WAYS OF COMPARING ALTERNATIVES
WHEN DECIDING WHAT TO PROPOSE FOR IMPLEMENTATION,
AND ESPECIALLY INFORMED NEGOTIATION

THE DYNAMICS OF GEODESIGN SUPPORT TECHNOLOGY

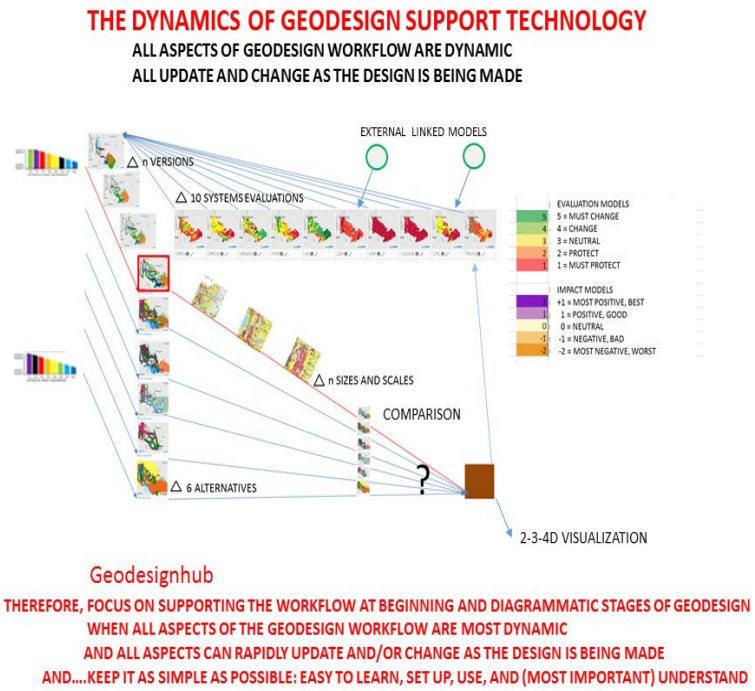
ALL ASPECTS OF GEODESIGN WORKFLOW ARE DYNAMIC
ALL UPDATE AND CHANGE AS THE DESIGN IS BEING MADE



INTERNAL Geodesignhub WORKFLOW EXTERNAL LINKS

Geodesignhub

THEREFORE, FOCUS ON SUPPORTING THE WORKFLOW AT BEGINNING AND DIAGRAMMATIC STAGES OF GEODESIGN
WHEN ALL ASPECTS OF THE GEODESIGN WORKFLOW ARE MOST DYNAMIC
AND ALL ASPECTS CAN RAPIDLY UPDATE AND/OR CHANGE AS THE DESIGN IS BEING MADE
AND....KEEP IT AS SIMPLE AS POSSIBLE: EASY TO LEARN, SET UP, USE, AND (MOST IMPORTANT) UNDERSTAND



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