

Collaboration Technology for Stakeholder Engagement in Urban Planning



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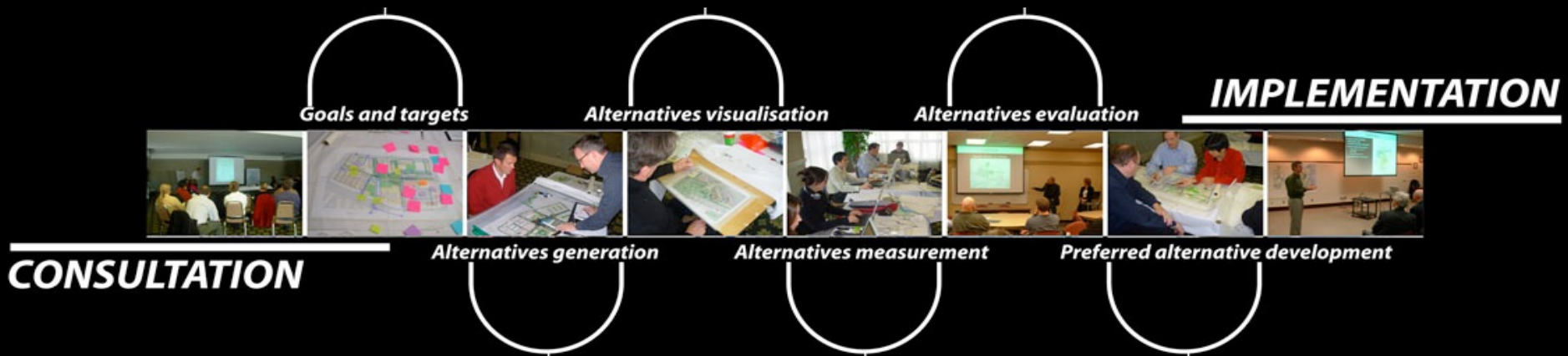
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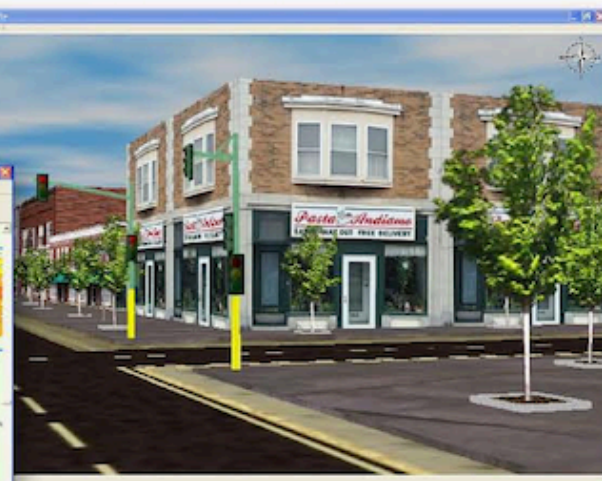
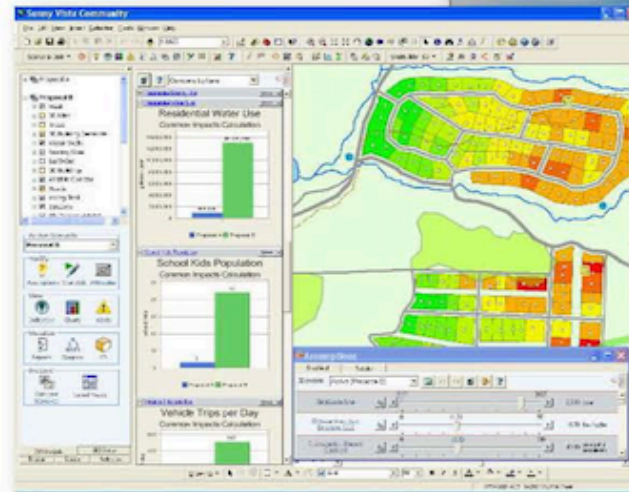
there are gaps in the supporting tools . . .

especially here

design workshops



. . . **early** in the process where
influential (and difficult to reverse)
directions are considered with
relatively little information



There are 3 different options for creating 3D scenes of your plans, including SiteBuilder 3D, used to create this example.

CommunityViz creates a powerful, user-friendly decision-making tool by adding analysis and visualization capabilities to ArcGIS.





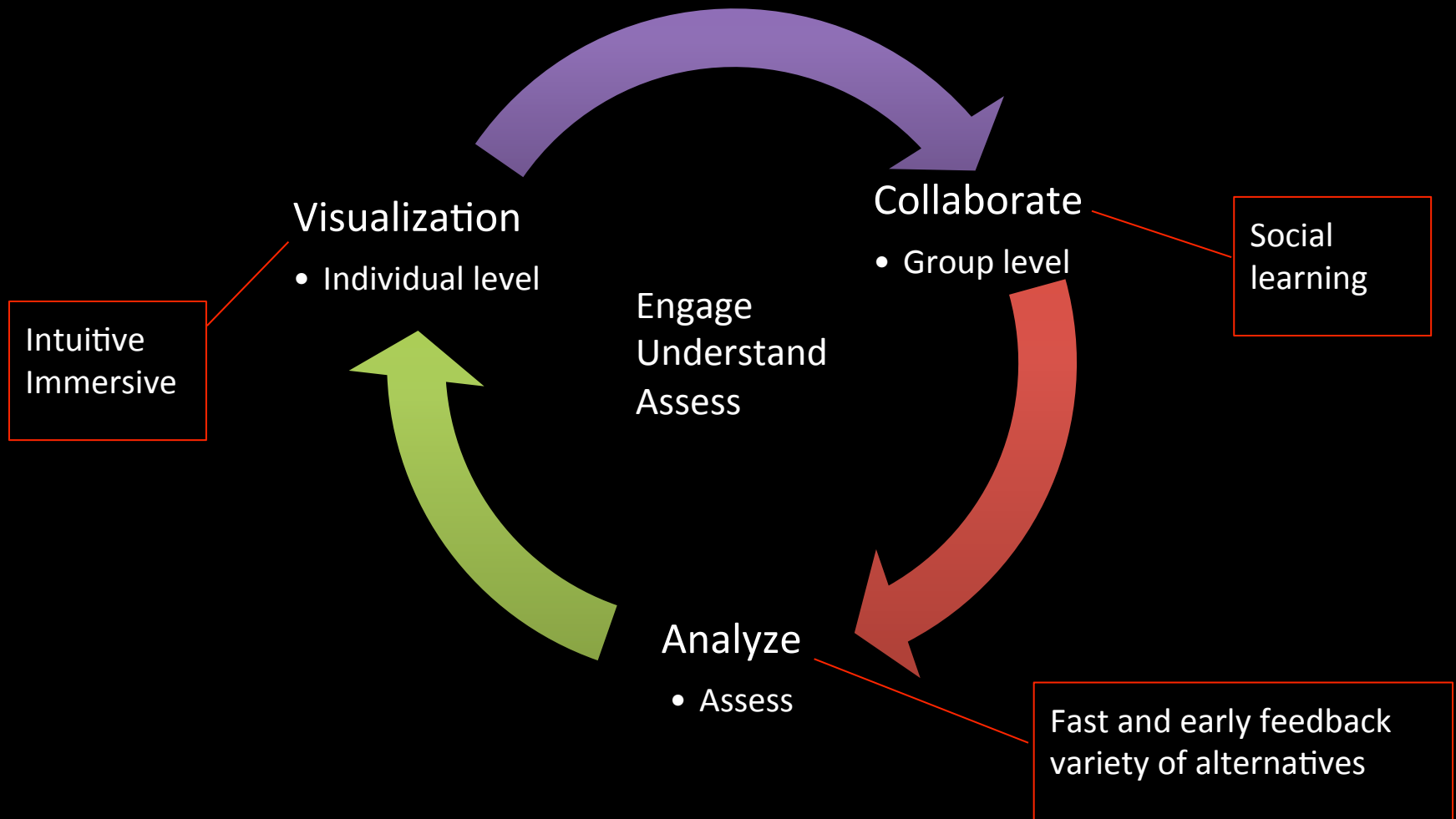
Domain problem

public engagement in urban design during **design workshops**

Tool Requirements:

- Accessible to diverse users
- Intuitive
- Connect and communicate
- Increase iteration
- Decrease time and cost
- Enable measurement

Our solution



Adoption phase

Utilized in community design workshops

Workshop 1 with **public**

Workshop 2 with **professionals**

Workshop 1

Audience: public

44 participants

2012



Background You have committed to participate in the **My Revelstoke 2030 Workshops**, an interactive experience using the newest touch-screen computer technology, and conducted by faculty and students at the University of British Columbia.

Objectives

This research intends to explore how different participatory design methods contribute to peoples' understanding of the link between the physical design of a city, and environmental impacts such as energy demand and emissions. We are also asking whether this understanding changes peoples' community design preferences. The research team hopes that the results of this work will lead to improved communication and improved decision making in urban design.

Workshop

Revelstoke's recently developed Unified Development Bylaw intends to maintain the unique heritage of the city while intensifying development in key neighbourhood centres. In this workshop you will be able to use visualization tools to test a range of possible futures for two neighbourhood centres in Revelstoke. This research will help improve the use of these tools and possibly contribute to better designs for future neighborhoods.

Results

- **22/37** fun, easy to learn and see the impacts
- Impact of choices
- Understand city planning & its complexity
- Learned from others



Please take this time to look at the emerging strategies that we feel address Marpole's long-term needs.



[3][1][1]



@marpoleplan



marpoleplan@vancouver.ca



vancouver.ca/marpole

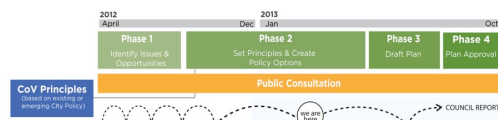
A Community Plan is a framework that guides positive change and growth over 30 years. It integrates policy on land use, housing, transportation, parks and open space, arts and culture, the environment and more.

As Vancouver, and Marpole continue to grow, a community plan will guide growth in a way that meets the needs of the neighbourhood, Vancouver as a whole, and the region.

We all do! Throughout the planning program, staff seek to engage the broadest range of people in Marpole, including those of different cultural backgrounds, ages, incomes, renters and owners.

The Marpole Community Plan program will take place over 18 months:

- Spring/Summer 2012 (Phase 1) - We asked the Marpole Community about their priorities, concerns, and vision for the future. We also had a questionnaire that asked for your input on key themes such as housing, parks, transportation, community facilities and more!
- Fall 2012 (Phase 2) - Based on this input and City-wide goals and objectives, we developed foundation principles to help guide the plan with Marpole community members.
- **Winter/Spring 2013 (Phase 2 continued)** - Today, we're here to **share emerging strategies that will become part of the Marpole Community Plan. Take a look, and tell us what you think.**
- Summer/Fall 2013 (Phase 3) - The draft plan will be shared with the community to get feedback before finalizing the plan and bringing it to Council for their consideration.



Take the time to review the emerging strategies and provide your feedback. We are about half-way through the development of the Marpole Community Plan, and there are still many opportunities to get involved. As we move into developing directions and draft policies that will be considered in the Plan, we'll be holding several topic specific workshops (see below). This is one of the last key times to get involved, so come on out!

To get more information on locations and time, and/or to register for an event, visit our website.

February 28: Housing and Land Use Workshop
March 2: Open House
March 4: Open House
March 6: Transportation and Land Use Workshop
March 13: Parks and Open Space Workshop

Audience: professionals
16 participants
2013

Results

- # and variety of alternatives
- Visualization linked to metrics
- Fast and early feedback



Future Directions

- **Connecting hand-held devices** to allow personal exploration/manipulation
- **History** to record the design exploration's process
 - Bookmark
 - Merge designs
- **Capturing reasoning process**
 - Ability to annotate, sketch, and take notes, to integrate collaborative histories and reasoning
- **Automatic suggestions** based on target values

What is next in research direction

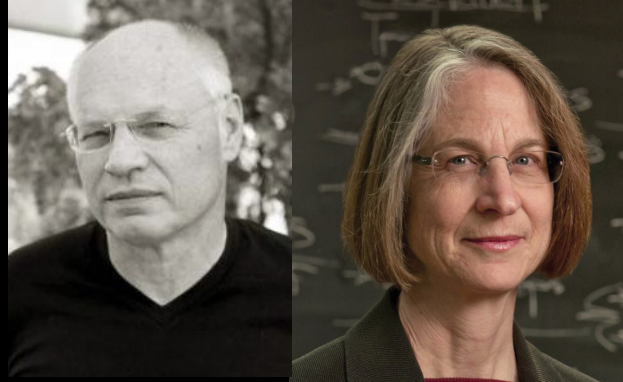
- The need for structured evaluation framework

Supplementary materials

Conclusion

- **Intuitive** and easy to use → inform, engage
- **Accessible**: low cost of learning, set up, etc
- **Low cost** (time, money)
- Linking visuals to numeric info simultaneously → **fast and early feedback**
- **Connect and communicate**

Interdisciplinary team



Computer Science

Architecture

Planning

Problem




- Using visualization techniques for enhancing public participation in planning and design.

Al-Kodmany, 1999

- key challenges: gain a better understanding of tool design for public engagement.

Marthur et al., 2007

Analysis & Metrics

- # and variety of alternatives 
- Acceptance 
- Confidence 
- Real time feedback & measured Vis
- Engage, Inform, Involve, Collaborate

Qualitative feedback: Revelstoke

- “Tools were helpful in understanding some impacts of choices”.
- “I learned a lot from Jason and Fraser about how developers and planners think”.
- “There are a lot of details to consider when doing urban planning!”
- “Understanding city planning and its ramifications.”
- “Informative: interesting to see everyone’s views”

	Paper	Physical	Community Viz	URP	Our tool
neighbourhood specific	✓	✓	✓	✓	✓
accessible to diverse users	✓	✓	✗	✓	✓
intuitive interface	✓	✓	≈	✓	✓
enable dialogue	✓	✓	✓	✓	✓
increase iteration	≈	✗	≈	≈	✓
decrease time and cost	✗	✗	✗	✗	✓
enable measurement	✗	✗	✓	✗	≈
open architecture	NA	NA	✗	✓	✓

Quantitative measure

- Total population density
- Total jobs
- Total energy consumption
- Transit density
- Land use diversity
- Pedestrian connectivity

how much engagement ?





real time 3-D images



projected displays

calculation widgets

seeing and measuring
alternatives dynamically
... in real time



multi-touch workspace

