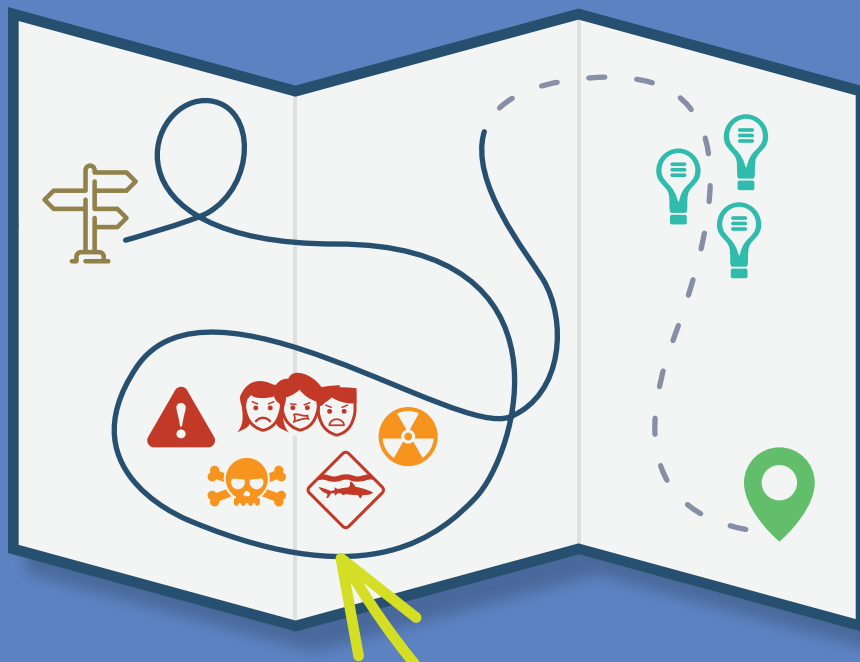


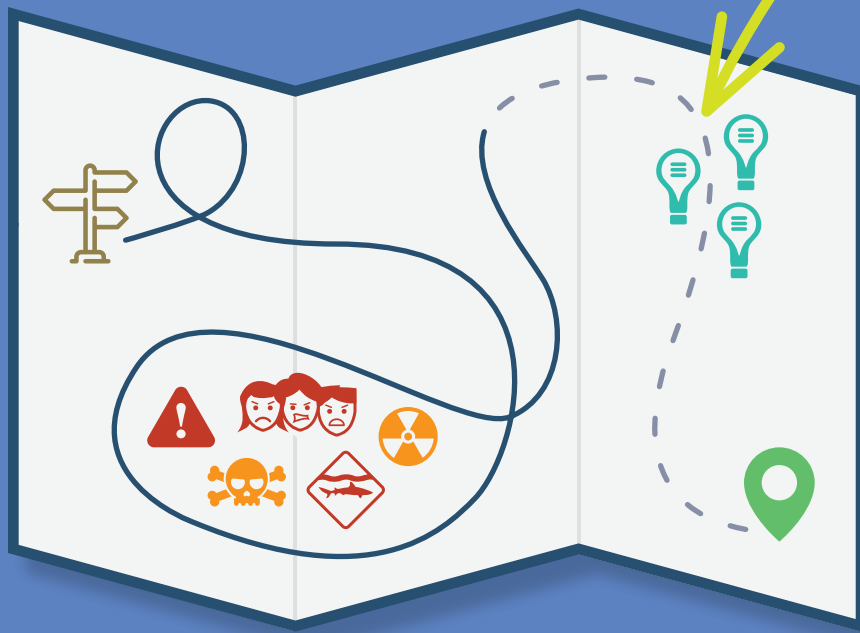
The idea for the GREEN LOOP comes at an important moment for Portland: intense growth inspired by a unique culture has created an atmosphere of dynamic possibility.

Portland is poised at a point where evolution is not just an aspiration, but a necessity.



Nevertheless, change always courts controversy.

Perceived conflicts of interest, fear of the unknown, and scarcity of resources create resistance, confusion and disillusionment.

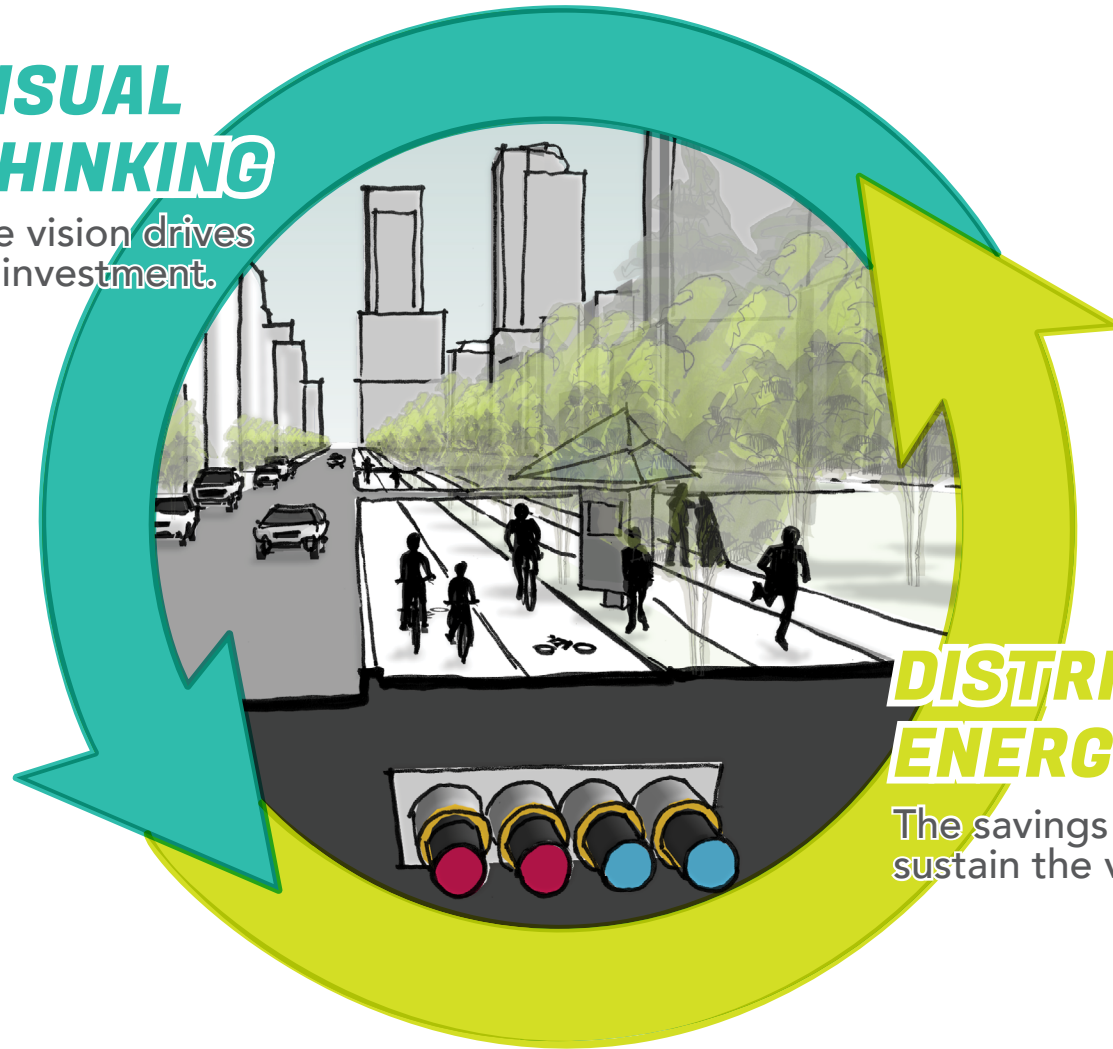


What strategies are needed to overcome these obstacles?

LOOP SYNERGY

VISUAL THINKING

The vision drives
an investment.



DISTRICT ENERGY

The savings
sustain the vision.

This proposal is for **two strategies** that work together to help communicate the opportunities of the Green Loop:

#1 VISUAL THINKING: A graphics centered process helps stakeholders collaborate to solve complex problems, *and*

#2 DISTRICT ENERGY: Shared energy infrastructure creates savings large enough to pay for streetscape improvements.

Funding and implementation go hand-in-hand not just because pavement and plants and labor cost money. There is a critical synergy between the creative energy that can be marshaled in the short-term and the belief that a project is feasible and culturally supported in the long-term.

If a long-term funding model supports a strong cultural vision, then the question shifts from **whether** the Green Loop should

be built to **how** it should be built. And if an elegant, integrated implementation process is accessible to designers and stakeholders alike, cultural momentum can build quickly to support the rationale of the funding model. Thus the two strategies work together to inspire the present and seed the future.

The vision drives an investment. The savings sustain the vision.



RENEWING A
TRADITION



CITY OF THE
FUTURE



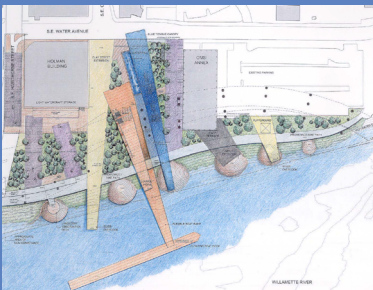
SOCIAL
DIALOGUE



DESIGN TO
IMPLEMENT



Paint the parking lot red (1980): After many years of floundering planning efforts and failed community negotiations, this brilliant guerilla marketing technique galvanized public support for building Pioneer Courthouse Square. This is an excellent example of the kind of vision and bold tactics that are required to realize major civic projects. (Photos ©Viewfinders)



Crescent Park (2003): Not every dream comes true in Portland. Martha Schwartz's design for a park along the Eastbank Esplanade was never realized due to lack of funding.

Portland is rightly celebrated for its vibrant public spaces, but we often forget how contentious and protracted the processes for creating them can be. Planning for what was to become Pioneer Courthouse Square, for example, started in 1961. It didn't open until 1984 after a generation of conflict and indecision.

At the pace of growth that it is currently experiencing, **Portland simply cannot afford to wait decades for the Green Loop to be built.**



[Better Block PDX](#) recently organized highly-successful demonstration projects on Naito Ave (top L&R) and SW 3rd Ave (bottom).



[City Repair](#)'s intersection piazza project has spread all over Portland (SE 33rd & Yamhill shown here).

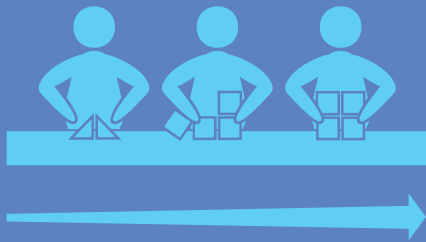
Portland is also known for its culture of community involvement and grassroots placemaking. Organizations such as **Better Block PDX** and **City Repair** have shown how coalition building and a DIY spirit can transform public right-of-way into vibrant, multi-use places.

Portland is full of creativity, energy and community spirit just waiting to be harnessed.

COMPLICATED VS. COMPLEX

Systems theory distinguishes between "complicated" and "complex" systems.

Complicated systems are characterized by technical expertise and specialized knowledge where outcomes can be repeated. Engineering systems are complicated.



Complex systems are defined by unique patterns of interaction and cultural dynamics. Behavioral systems are complex.



Implementation of the Green Loop is a complex challenge. It demands a comprehensive, adaptive, multi-scale approach that builds relationships, inspires collaboration and focuses on aspirational goals.



A project of this scope will require a high level of collaboration, coordination and community desire to be realized. A coalition of diverse stakeholders will have to be built around a common vision for the future of the central city. That vision must be infused with all the qualities that make Portland great: **productive engagement, environmental ambition, and creative innovation.**



It is clear that the planning tools of the past are not enough to address the scope and urgency of the Green Loop.

The Portland of the Future needs a Process of the Future—Visual Thinking—that will inspire stakeholders, reduce friction and improve communication.



STRATEGY #1: VISUAL THINKING

A set of tactics and interactive tools that empower stakeholders and lead to coherent, efficient design outcomes.

A. DESIGN GUIDE

Presents key background info and coherent design vision in a single, easy-to-understand reference.

B. 3D RESOURCE MODEL

An accurate and comprehensive resource to track implementation progress and rapidly visualize new ideas.

C. LIVE DESIGN

Real-time manipulation of 3d models allows everyone to understand physical context and proposed ideas from multiple perspectives.

Visual Thinking is second-nature for designers, so it might seem too simple and obvious as a strategy. *But affecting change is all about earning trust and telling a compelling story, so a Visual Thinking strategy makes perfect sense.*

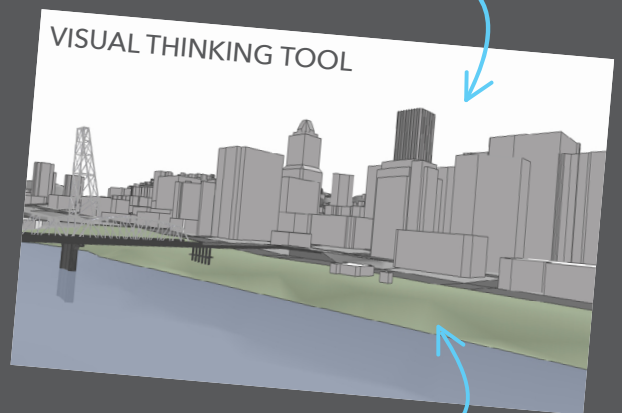
People in non-design fields often confuse "Visual Thinking tools" with "pretty pictures." So what's the difference?

*fixed, persuasive,
one possibility*



informs audience

*collaborative, transparent,
many possibilities*



empowers audience

VISUAL THINKING TACTIC

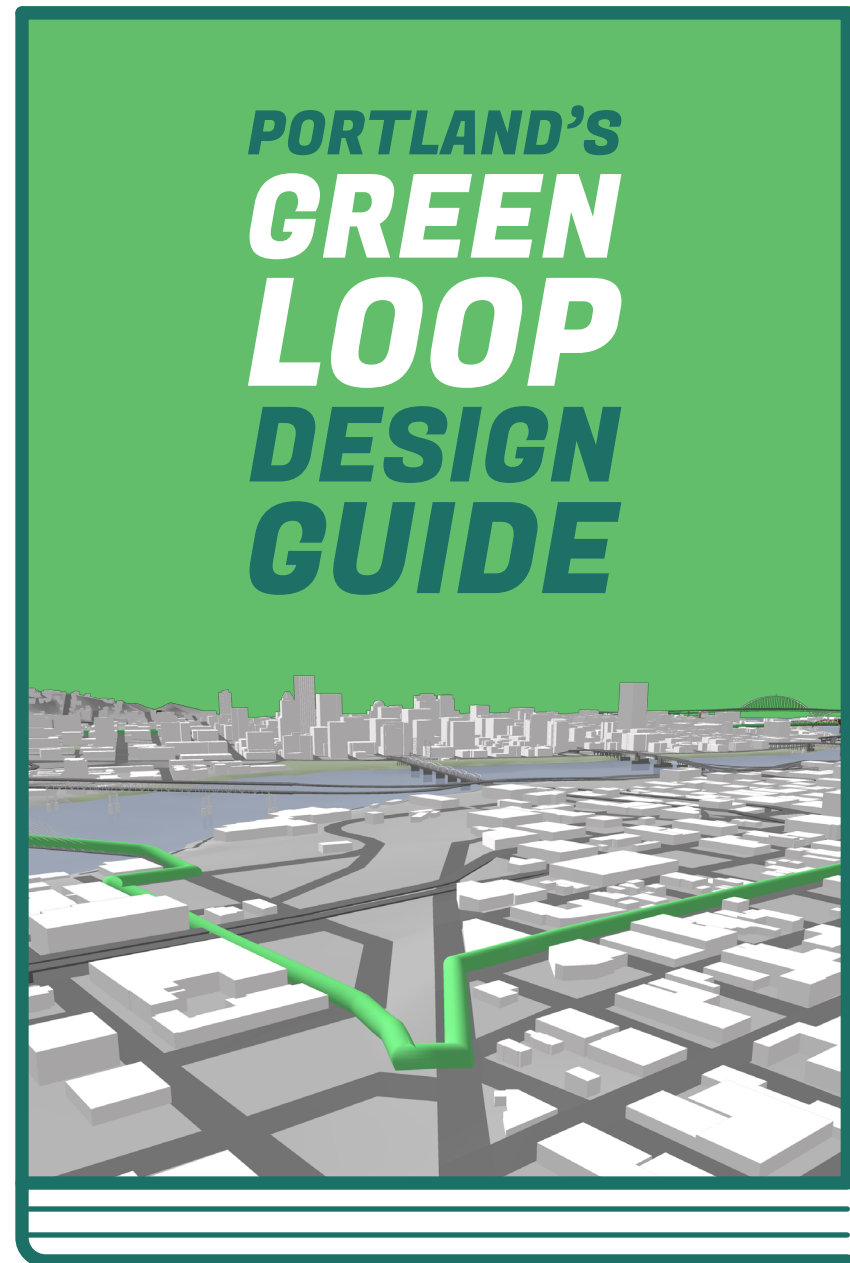
Green Loop Design Guide



A professionally produced handbook that establishes design vision, use cases and implementation tools. Printed in large quantities and available online. Richly illustrated, concise, *not wonky!*

Includes:

- **design principles and standards**
- **physical requirements** [*sample street sections*]
- **physical elements** [*consistent furnishings, bike parking, kiosks, landscape elements, integrated wayfinding, etc.*]
- **experiential “patterns”**: public art [*permanent, temporary, static, participatory, etc.*]; performance spaces [*programmed, impromptu*]; seasonal markets; seasonal amenities [*water features; shelter*]; “easter eggs” [*acoustic phenomena, curated views, photo ops, coded messages, etc.*]
- **resources and tips for how to hold demonstration projects** [*Better Block, City Repair, etc.*]
- **interactive features** [*comments, Q&A, project event calendar, etc.*]





LOOP ELEMENT: INFO HUB KIOSK



WATER FOUNTAIN

ICONIC SHELTER/LIGHT ELEMENT

INTEGRATED WAYFINDING

TRANSIT/BIKESHARE/
CARSHARE INFO

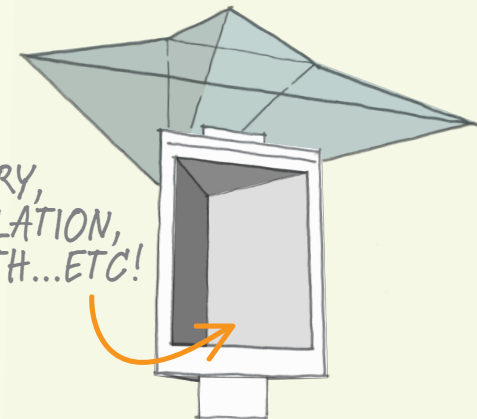
#greenloop FEED FOR EVENTS,
DISCOUNTS, FLASH MOBS, DEEP
THOUGHTS, SAGE ADVICE, ETC.

LOOP MAP

DESIGN STANDARDS

- Placement every 4-8 blocks
- Make sure vegetation doesn't block visibility
- Graphic skins unique to each district

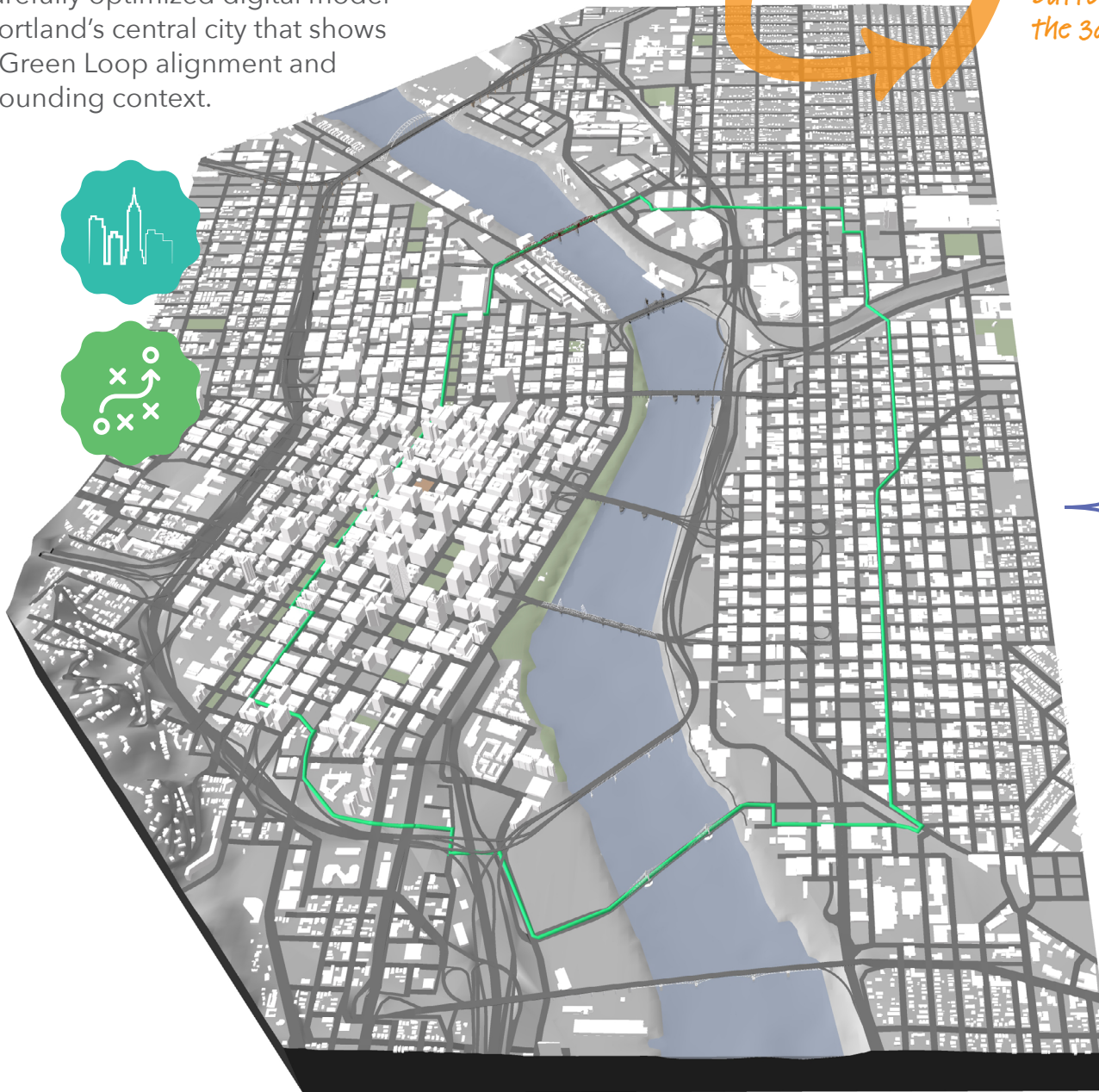
FREE LIBRARY,
ART INSTALLATION,
PHOTOBOOTH...ETC!



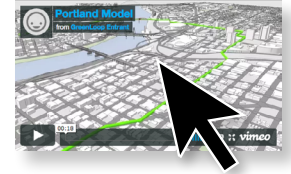
VISUAL THINKING TACTIC

3d Resource Model

A carefully optimized digital model of Portland's central city that shows the Green Loop alignment and surrounding context.



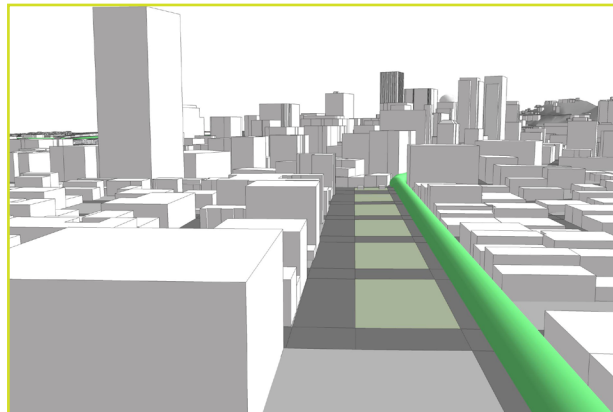
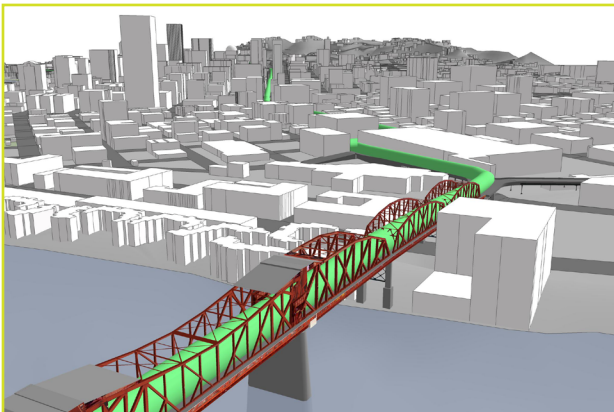
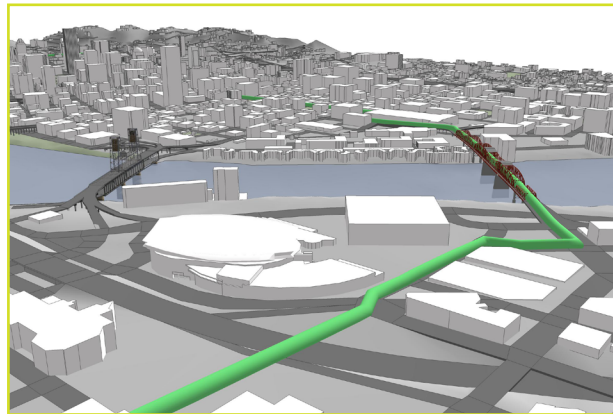
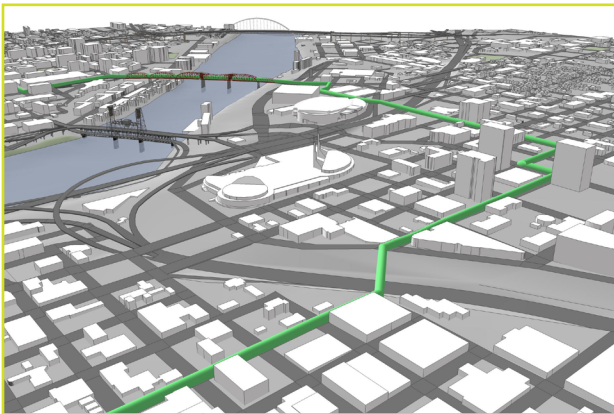
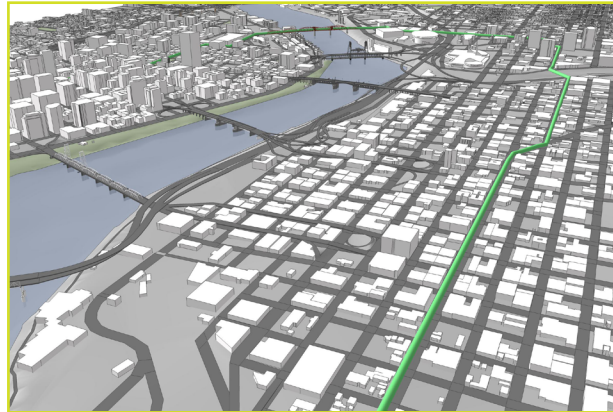
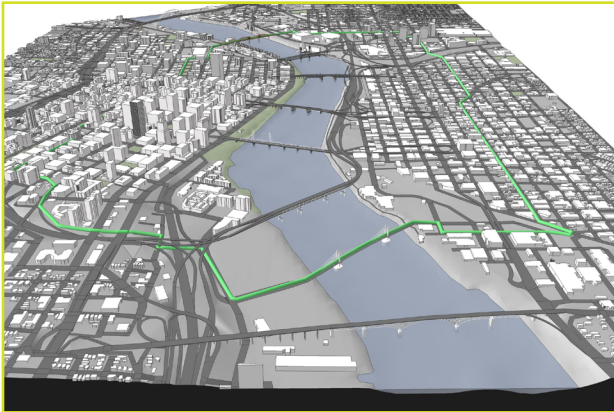
*This model moves!
Click on the video
button for a tour of
the 3d Resource Model.*



- * Centralized resource for designers, stakeholders, planners, policy makers.
- * Used to create site-specific visualizations at a variety of scales.
- * Allows non-designers to study sites, understand conditions, and test ideas.
- * Tracks implementation progress.
- * Generates consistent communication graphics.

VISUAL THINKING TACTIC

3d Resource Model



* Easily manipulated to view downtown Portland at any scale and perspective.

* Basic building forms yield lightweight model.

* Surface demarcation between tax lots and public right-of-way.

* Simplified terrain makes model accurate and easy to work with.

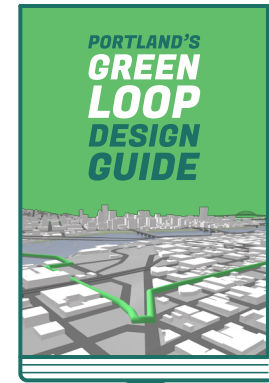
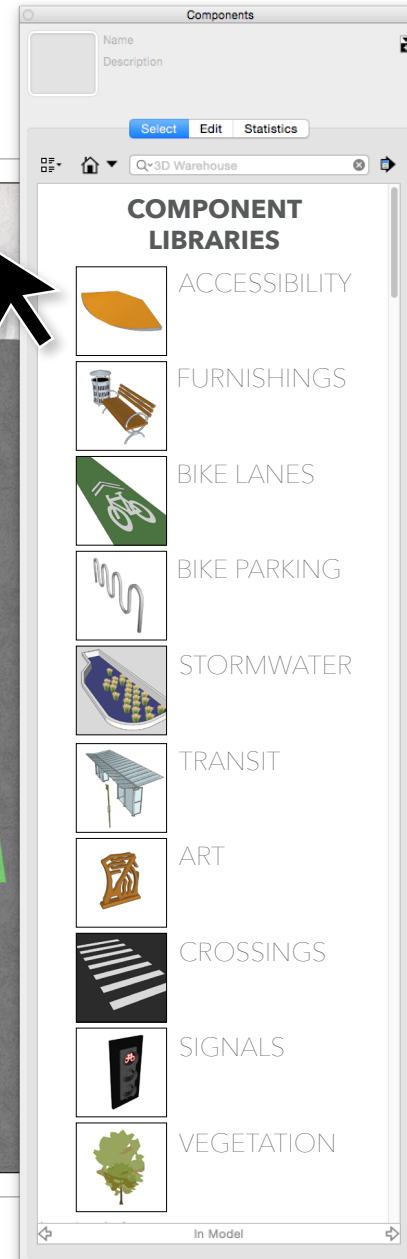
* Runs on free software.

VISUAL THINKING TACTIC

3d Resource Model: Components



Design standards and elements defined in the **Green Loop Design Guide** can be included in component libraries in the Resource Model.



"Sage on the stage"



Outdated planning tools that rely on top-down management, backroom negotiations and ineffective "outreach" efforts won't work.

VS.

"Courageous conversation"



Meaningful stakeholder engagement addresses equity concerns: it creates buy-in, generates excitement and reduces political obstacles.

VISUAL THINKING TACTIC

Live Design



Agency staff typically bring jargon-heavy documents and complicated drawings to community meetings. Stakeholders try and fail to fully understand these documents they have not been trained to read. This "expertise gap" creates an immediate and unnecessary antagonism.

A LIVE DESIGN session presents project issues and options in a clear, readily understood manner, thus drastically reducing the expertise gap, and neutralizing conflict.

Once technocratic barriers are removed and power is shared, stakeholders can confidently express their concerns and the project team can readily address them. People feel heard.

VISUAL THINKING TACTIC

Live Design

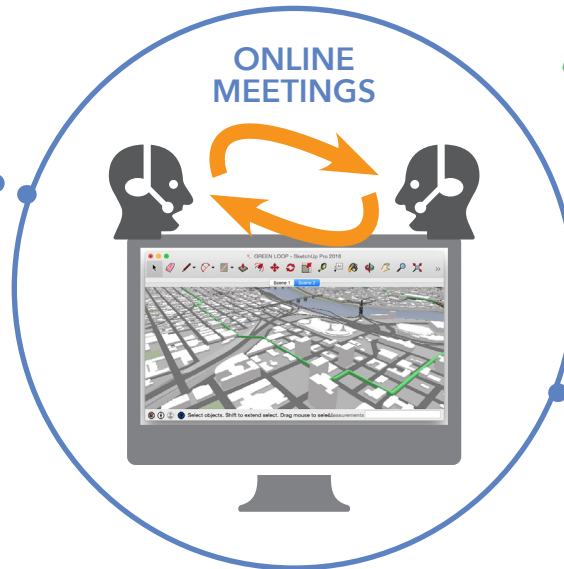


Real-time visualizations are a versatile, powerful and accurate way to facilitate collaboration, validate proposals, earn buy-in and generate excitement.



PUBLIC OUTREACH

** Reduces expertise gap and language barriers.*



ONLINE MEETINGS

** Communicates project ideas quickly, accurately, compellingly.*



IN THE FIELD

** Meeting outcomes can be quickly documented with clear, accurate images.*

** Addresses many concerns definitively.*



STRATEGY #2: DISTRICT ENERGY

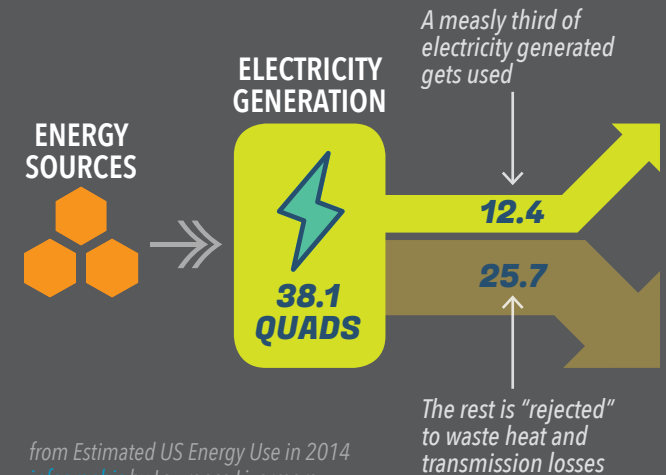
Local, efficient power production results in dramatic savings that fund street improvements.

Most buildings today are encumbered with a boiler, chiller, and other mechanical equipment for indoor climate control. Fueling and maintaining these machines is the most significant expense of operating a building.

District energy systems use economy of scale to achieve better reliability and major cost savings. An efficient central plant produces steam, hot water, and/or chilled water which is then piped to individual buildings for space heating and cooling needs.

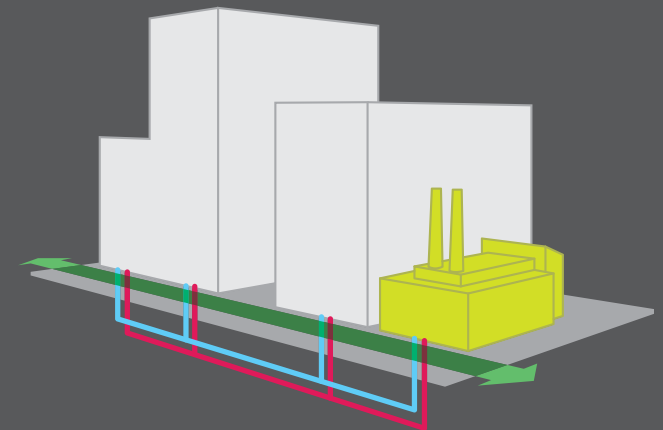
Many college campuses (including Portland State University) have district energy systems. In places like Reykjavík and Copenhagen, this approach is used citywide.

Standard power distribution is amazingly inefficient.

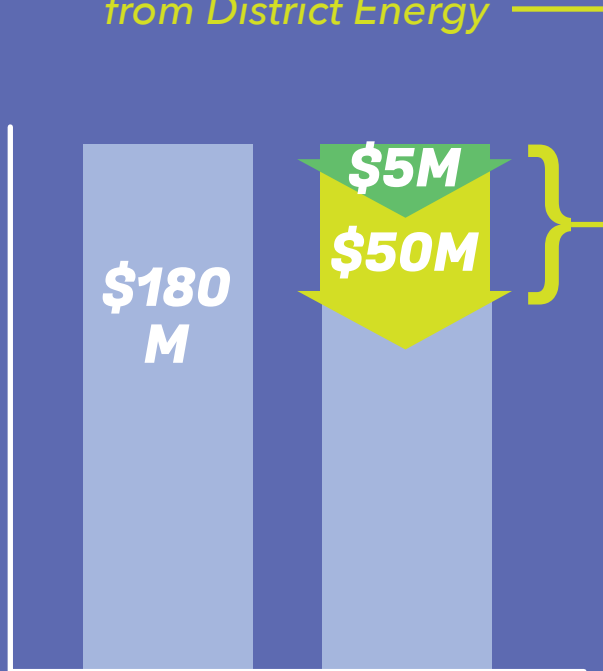


from Estimated US Energy Use in 2014
[infographic](#) by Lawrence Livermore
National Laboratory (LLNL).

Co-generation plants capture heat for local use, resulting in dramatic savings.



Estimated Annual Savings from District Energy



**ESTIMATED ANNUAL ENERGY
COSTS OF BUILDINGS IN
PORTLAND'S CENTRAL CITY** ^[1]

[1] Order-of-magnitude study based on City of Portland building data (via CivicApps) and US Dept of Energy Buildings Energy Data Book.

DISTRICT ENERGY

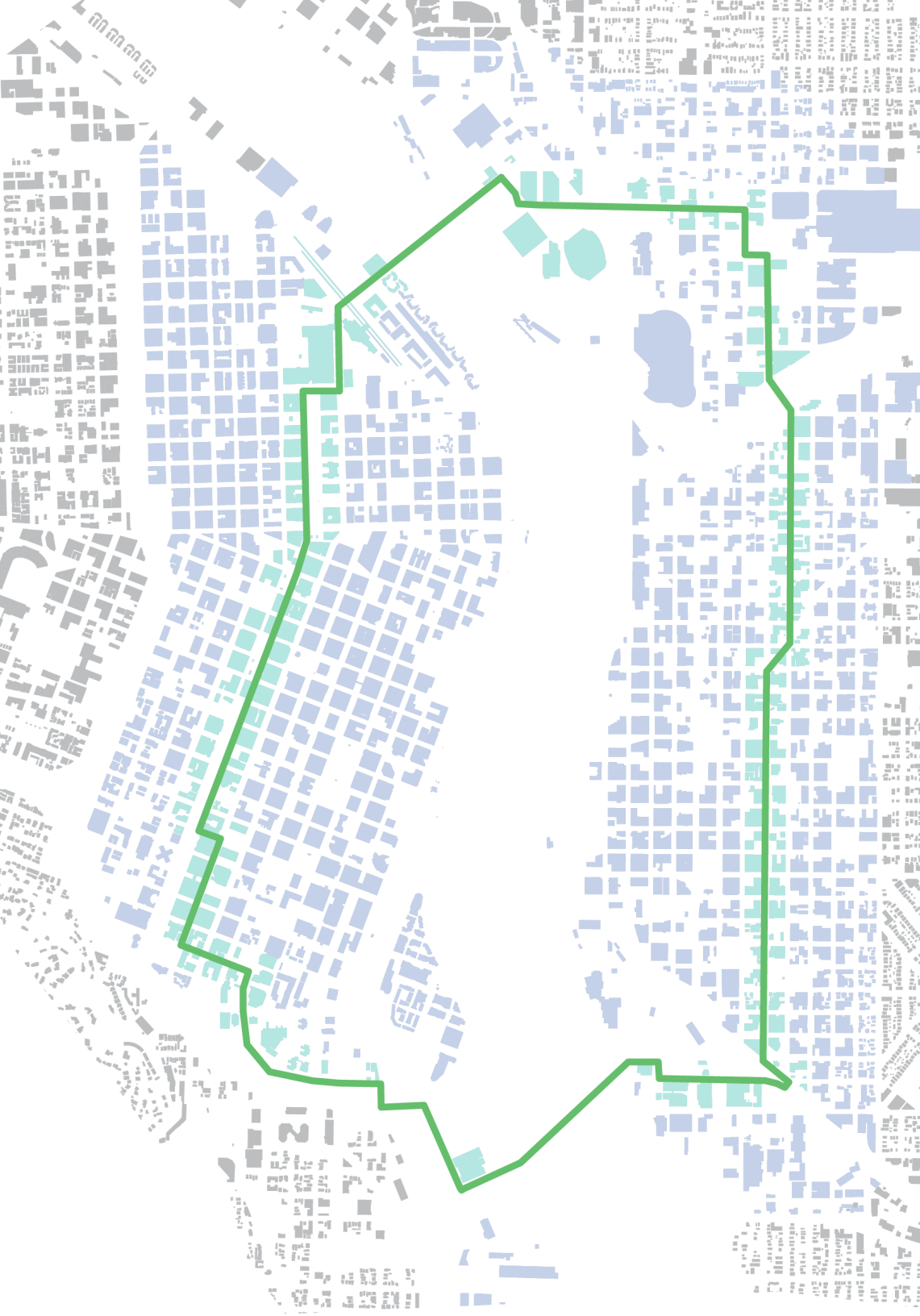
Potential for the Central City



Nearly all of the 2000+ buildings in Portland's central business district lie within a half-mile of the Green Loop alignment. Collectively these building owners spend roughly \$180M^[1] on energy every year. A district energy system results in much lower energy costs over time.

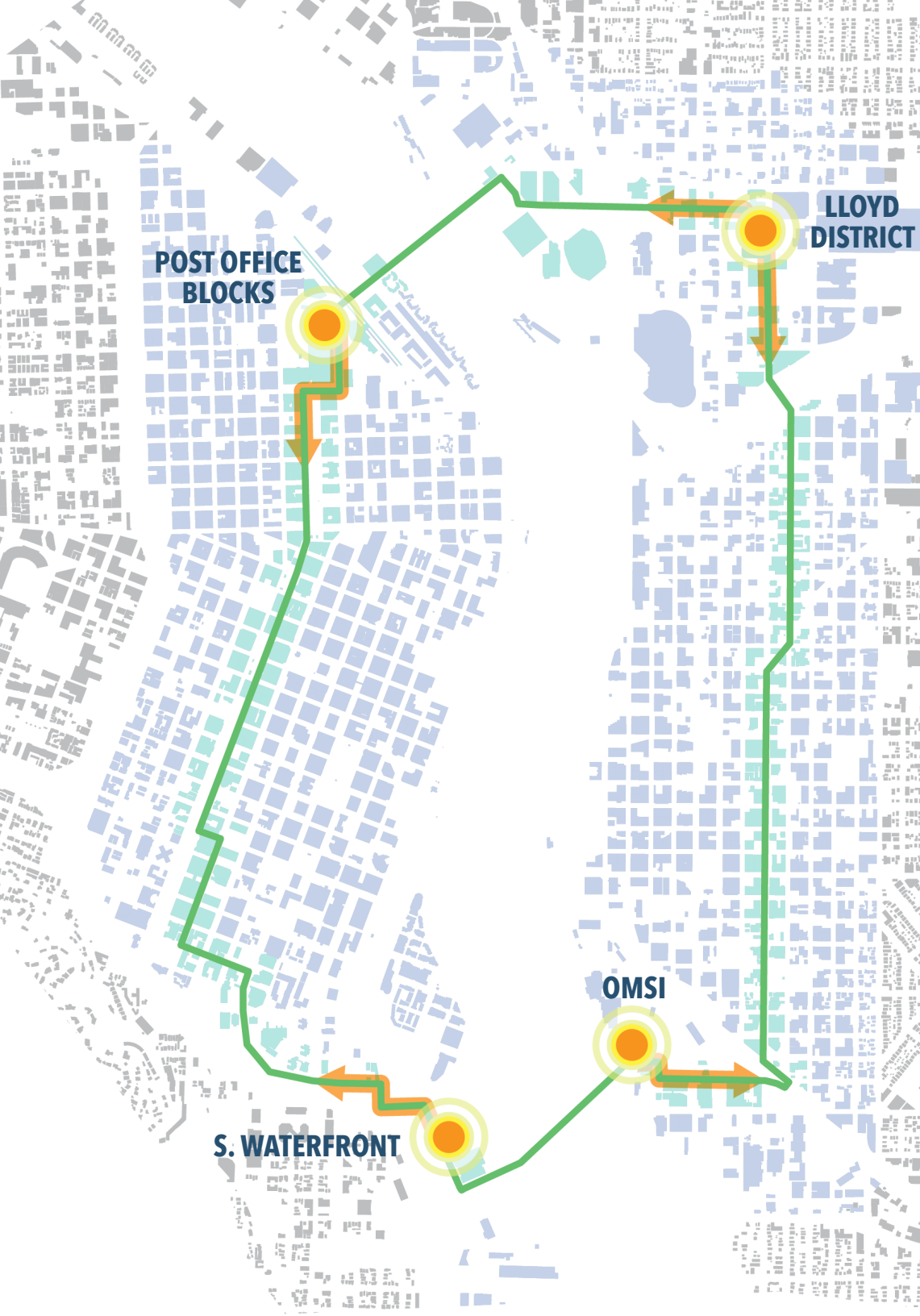
The prospect of these savings represents a tremendous opportunity to finance district energy investments, some of which would need to be spent on physical street work (to install distribution pipes).

Aligning these underground investments with streetscape and active transportation goals turns a District Energy plan into an engine to fund the Green Loop.



Portland already has some small-scale district energy systems, and has studied larger scale systems for the Lloyd District, Rose Quarter, and North Pearl Blocks. However, there are significant financial and regulatory hurdles for implementing systems that include multiple property owners and infrastructure in the public right-of-way.

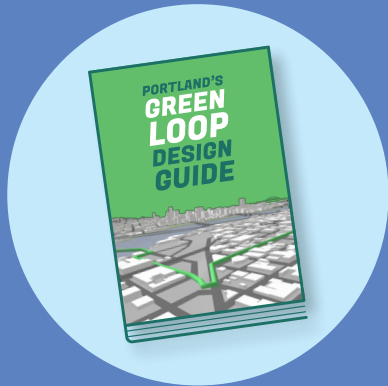
The Green Loop concept provides the framework and inspiration to drive the planning and policy changes needed to implement District Energy.



Catalyst sites

Several locations along the Green Loop are slated for the kind of large-scale re-development that justifies investment in district energy systems. Extending distribution lines from these catalyst sites will lower the barrier to entry for signing up nearby building owners who wish to participate.

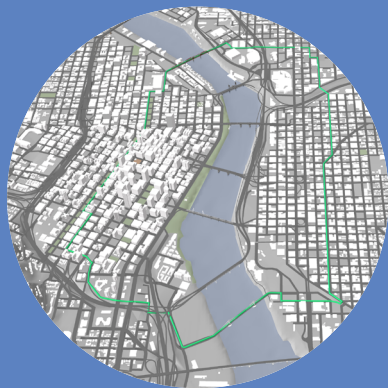
NEXT STEPS



#1
Develop
Green Loop
Design
Guide.



#3
Convene
stakeholders for
District Energy
catalyst nodes.



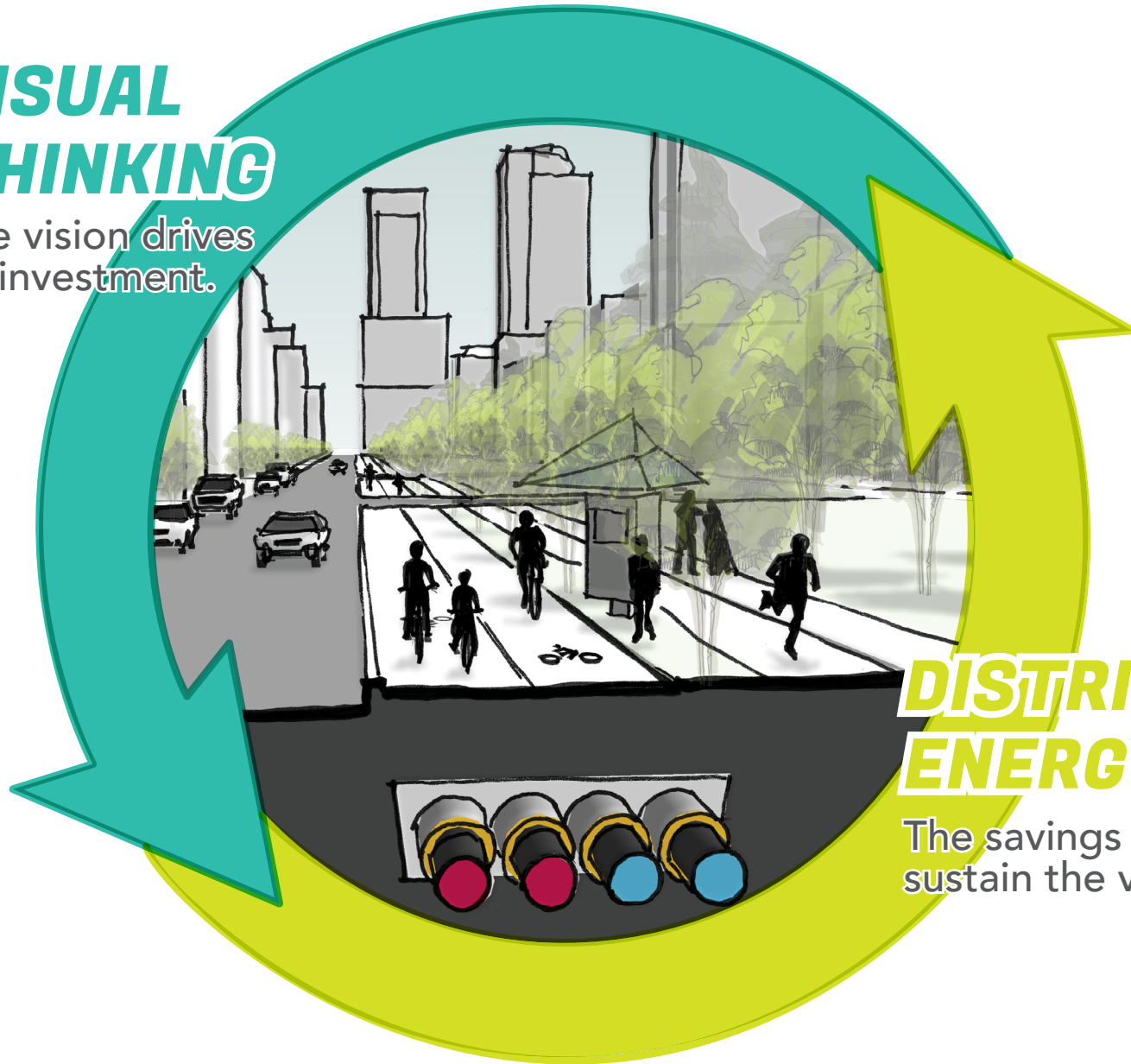
#2
Complete
Resource
Model.



#4
Schedule
annual summit
to collaborate,
plan, and share
progress.

VISUAL THINKING

The vision drives
an investment.



DISTRICT ENERGY

The savings
sustain the vision.