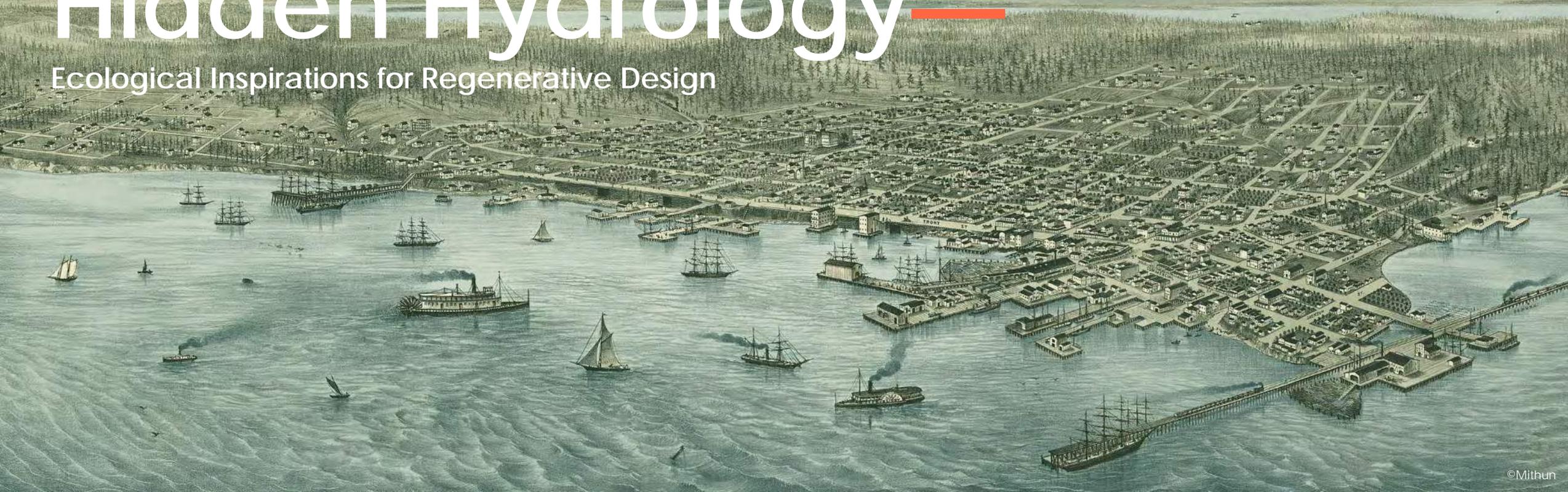




MITHŪN

# Hidden Hydrology

Ecological Inspirations for Regenerative Design





# Learning Objectives—

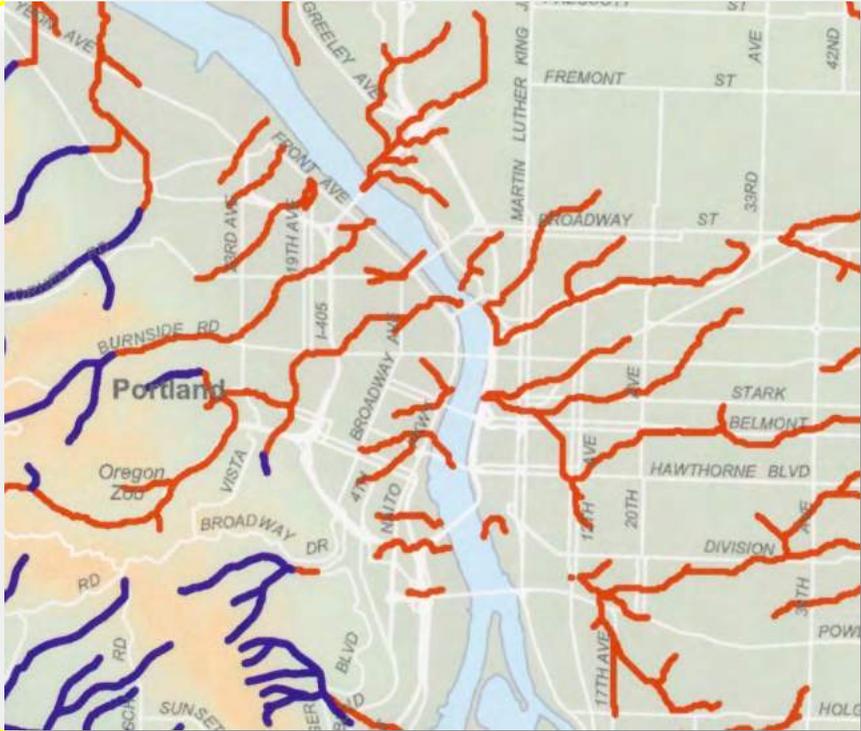
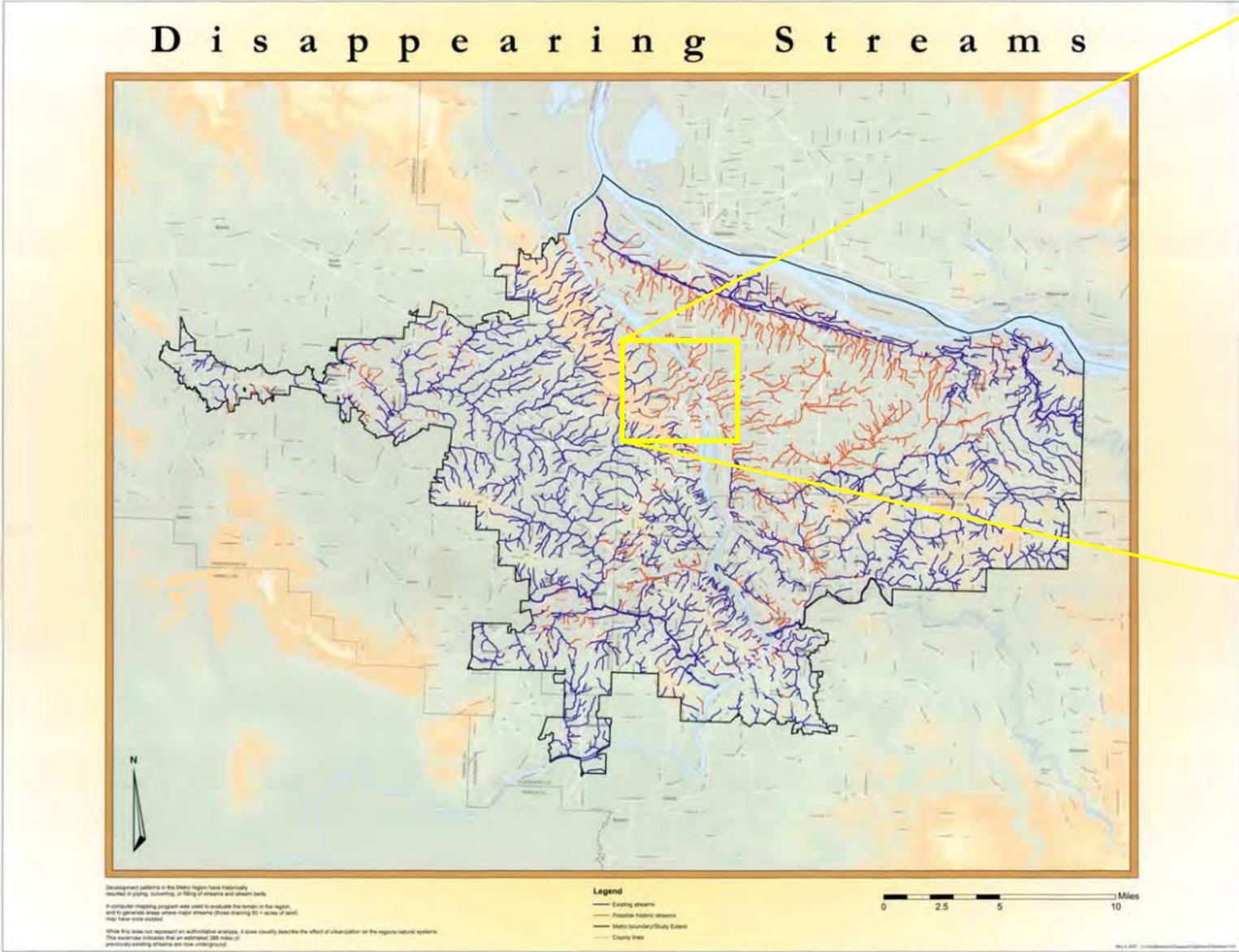
- Gain an understanding of resources and tools for designers and planners in researching and mapping historical ecology and hydrology in urban areas
- Understand the connections between historical and predevelopment hydrology and ecology and how these influence design and planning opportunities and constraints
- Develop a thorough knowledge of design typologies along a continuum from artistic and design interventions through daylighting & ecological restoration
- Apply design and planning principles that integrate urban nature and maximize potential for resilience and integrated green infrastructure solutions



# Origin Stories

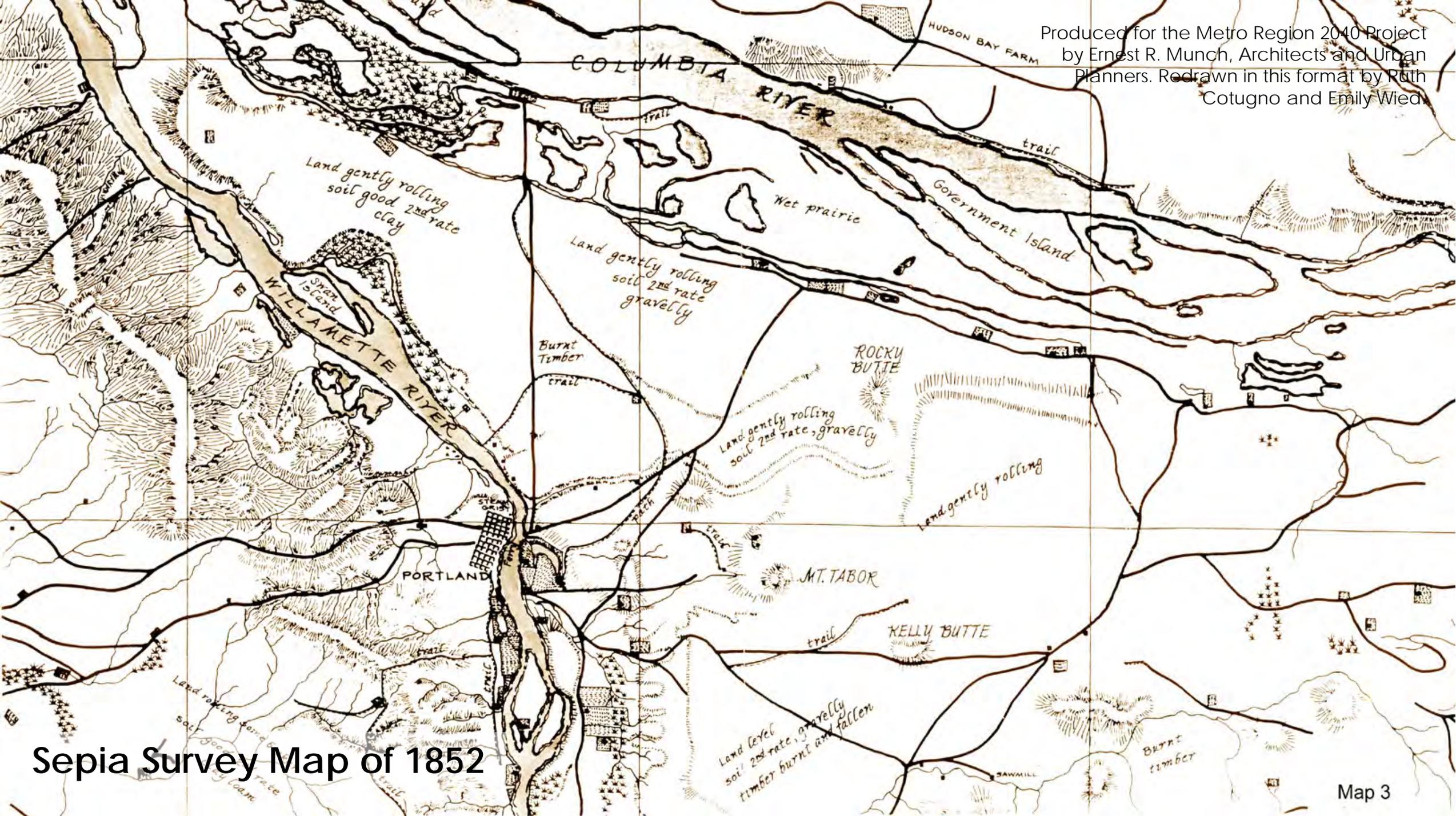


# Disappearing Streams Map



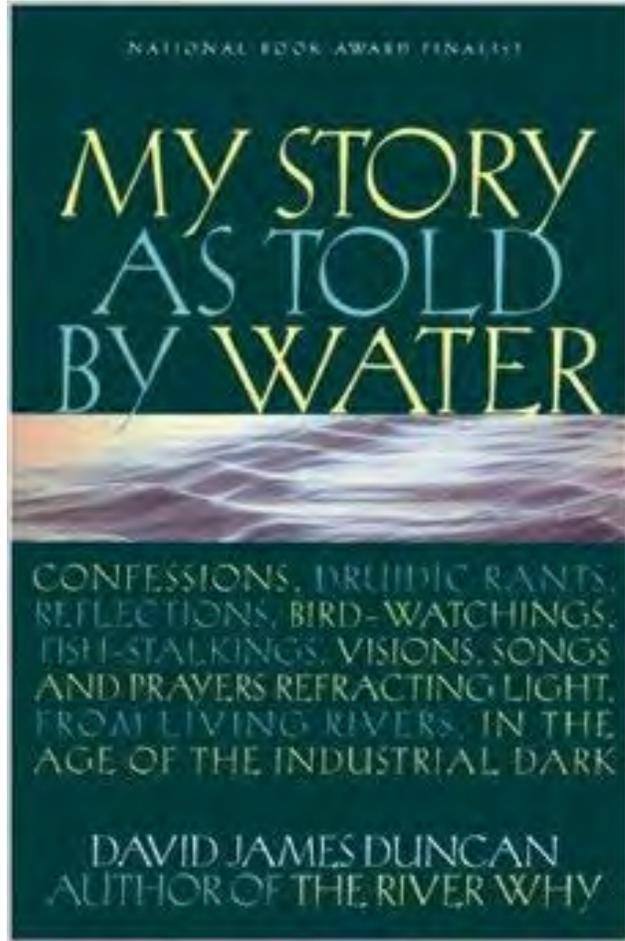
“A computer mapping program was used to evaluate the terrain in the region, and to generate areas where major streams (those draining 50+ acres of land) *may have once existed.*” (Metro 2007)

Produced for the Metro Region 2040 Project  
by Ernest R. Munch, Architects and Urban  
Planners. Redrawn in this format by Ruth  
Cotugno and Emily Wied.



Sepia Survey Map of 1852

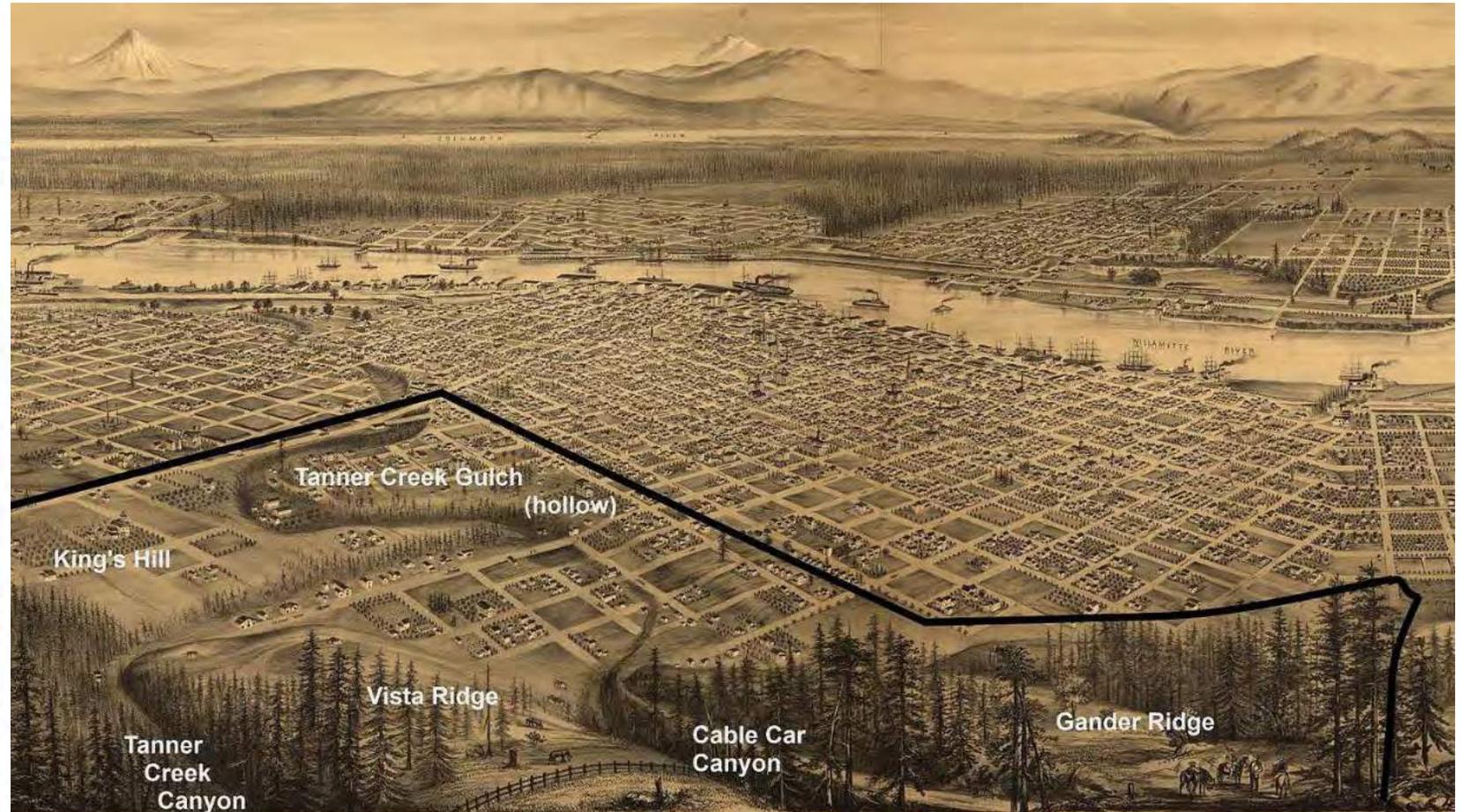
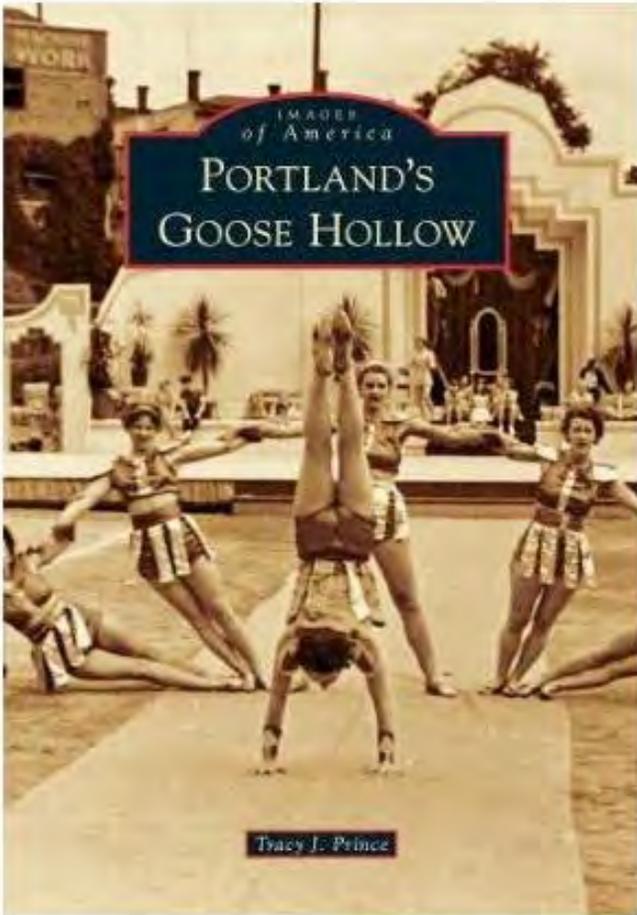
## Essay/Oral History References



“At six-thirty or so on a rainy April morning, I crept up to a favorite hole, threaded a worm on a hook, prepared to case – then noticed something impossible: there was no water in the creek. ...I began hiking, stunned, downstream. The aquatic insects were gone, barbershop crawdads gone, catfish, carp, perch, crappie, bass, countless sacrificial cutthroats, not just dying, but completely vanished. Feeling sick, I headed the opposite way, hiked the emptied creekbed all the way to the source, and there found the eminently rational cause of the countless killings. Development needs roads and drainfields. Roads and drainfields need gravel. Up in the gravel pits at the Glisan Street headwaters, the creek’s entire flow had been diverted for months in order to fill two gigantic new settling ponds. My favorite teacher was dead.”

*David James Duncan –  
My Story As Told by  
Water (p.22)*

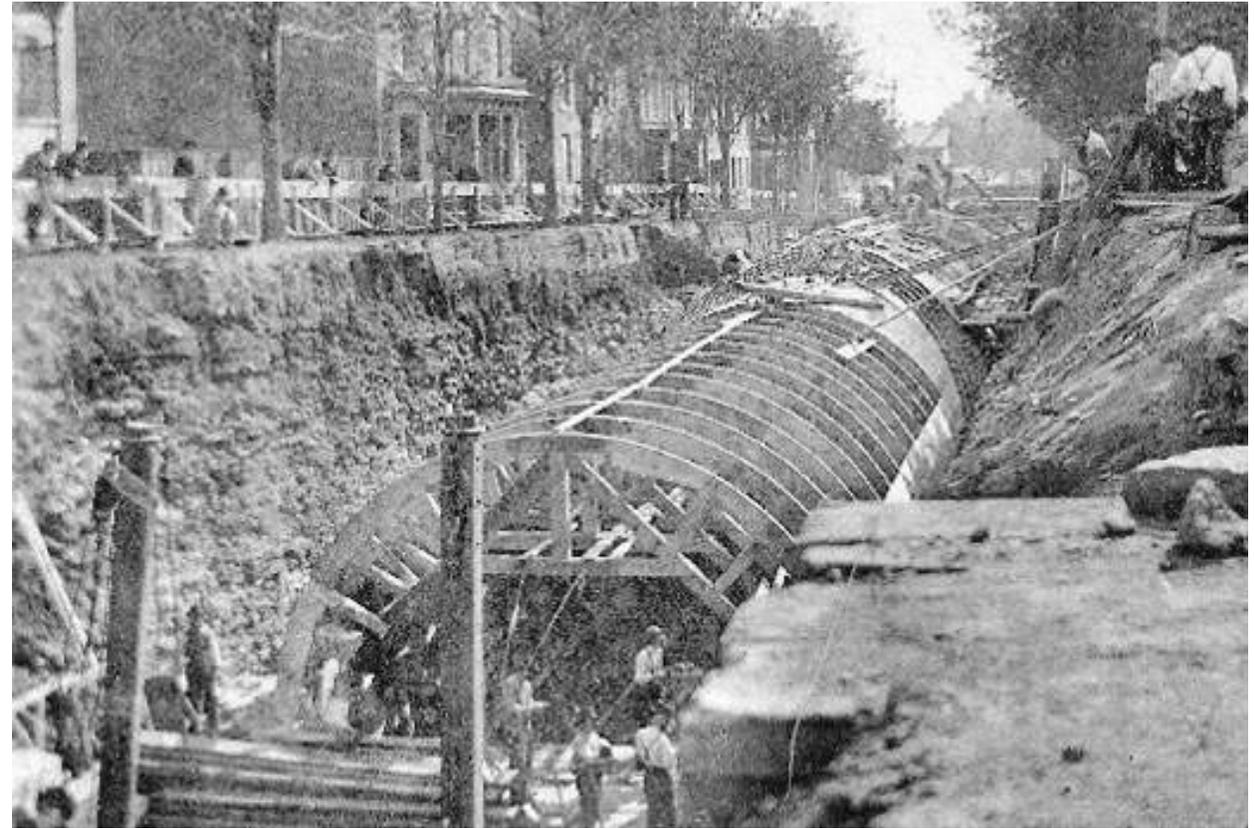
# Historic Sources



*“Diverted underground from the 1870s to the early 1900s, with extensive use of Chinese and Irish Laborers, Tanner Creek still drains the surrounding hills via storm drains, though it runs to the Willamette as a shadow of its former self in a deeply buried culvert. Even on a dry summer day, the creek can be heard rushing by under manhole covers near its historic course. One of the best spots to hear the creek is at a manhole cover on the west end of the Goose Holly MAX Station.”*

*Tracy J. Prince – Portland’s Goose Hollow (2011, p.9)*

## Historic Photos



Tanner Creek Sewer Construction (early 1900-20s)



Skidmore Fountain (Flood of 1896)



Flooding at Multnomah Athletic Club Field  
(now Providence Park) - 1909

Hawthorne Springs (1860s)

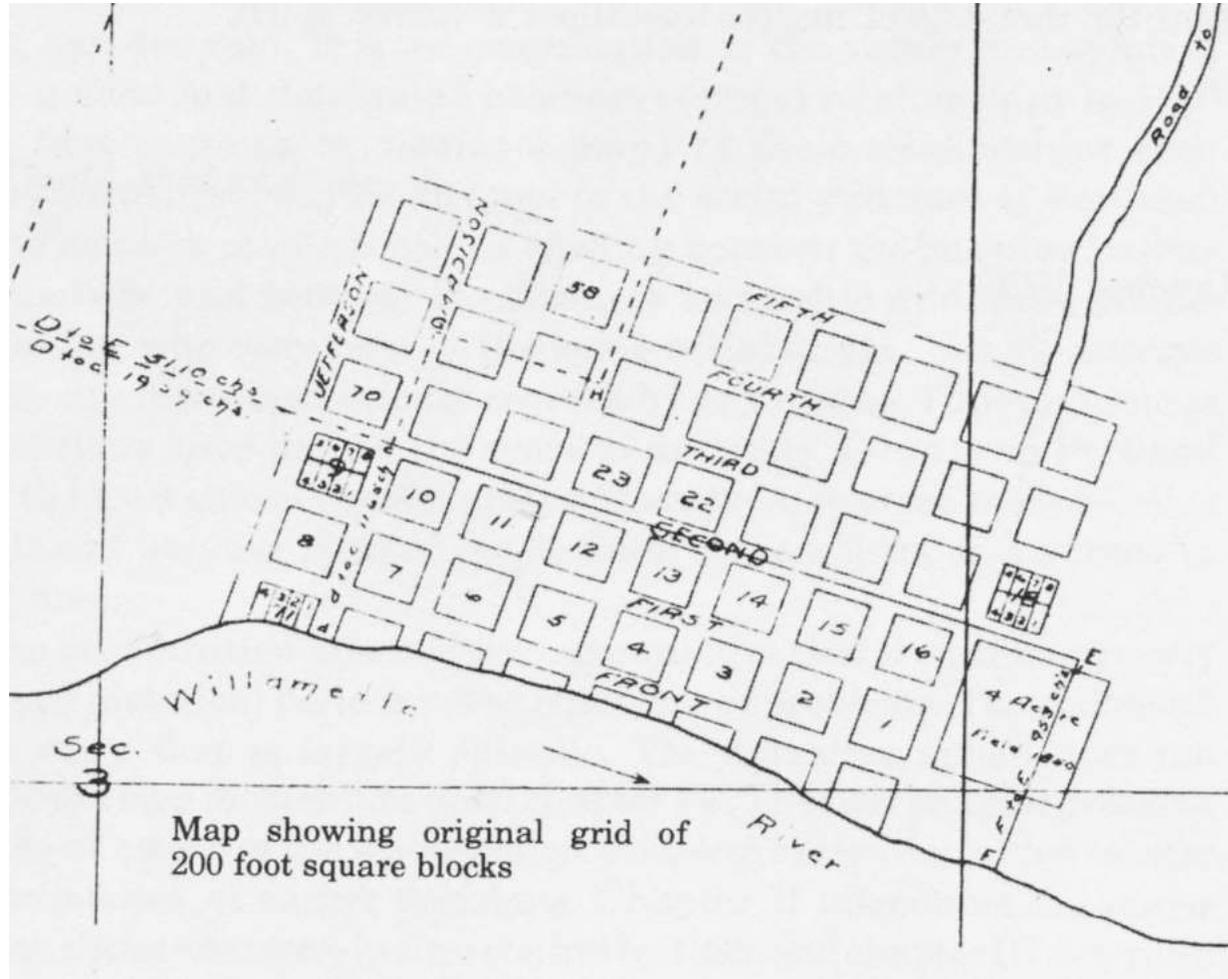


# Lownsdale Map (1845)

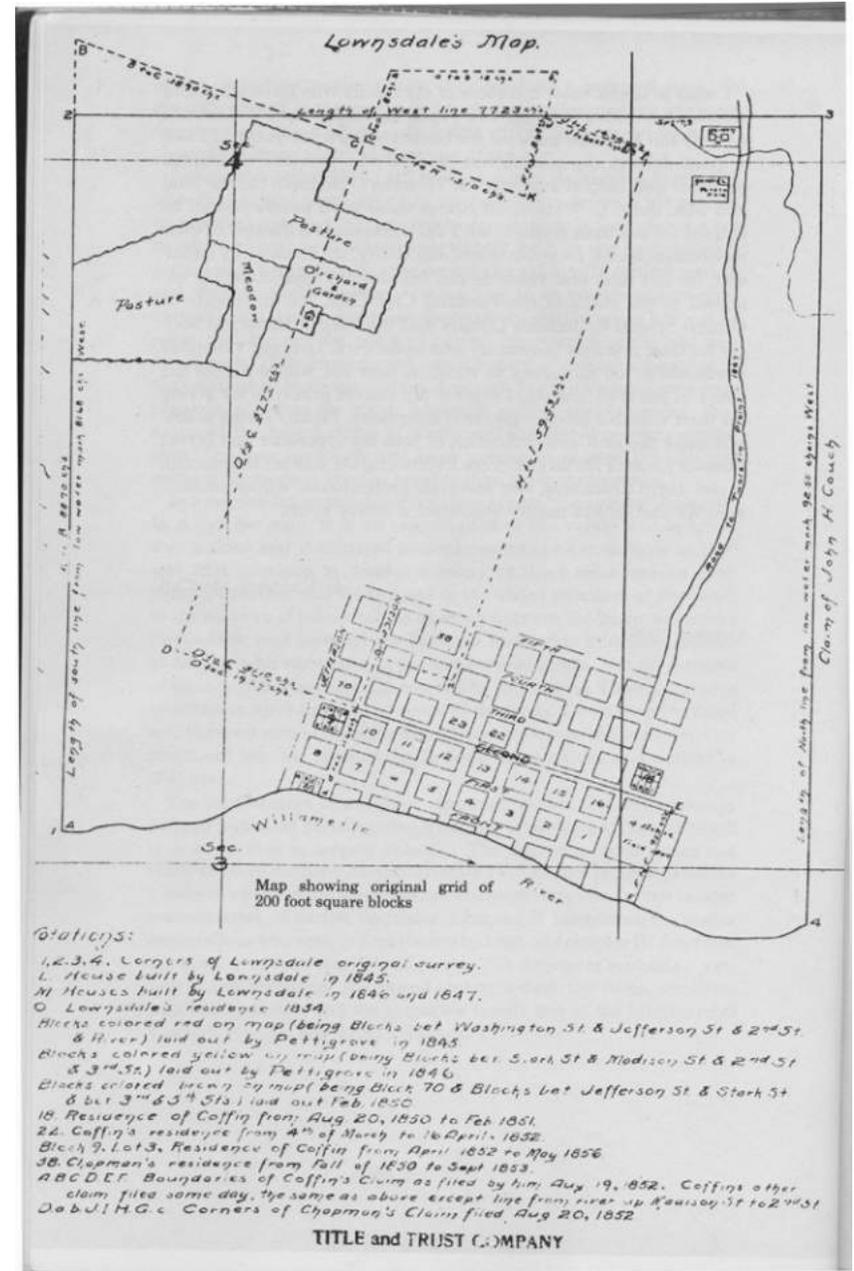
Maps from:

- 1845
- 1852
- 1854
- 1860
- 1866
- 1885
- 1894
- 1897
- 1906
- 1917
- 1923
- 1928
- 1932
- 1943

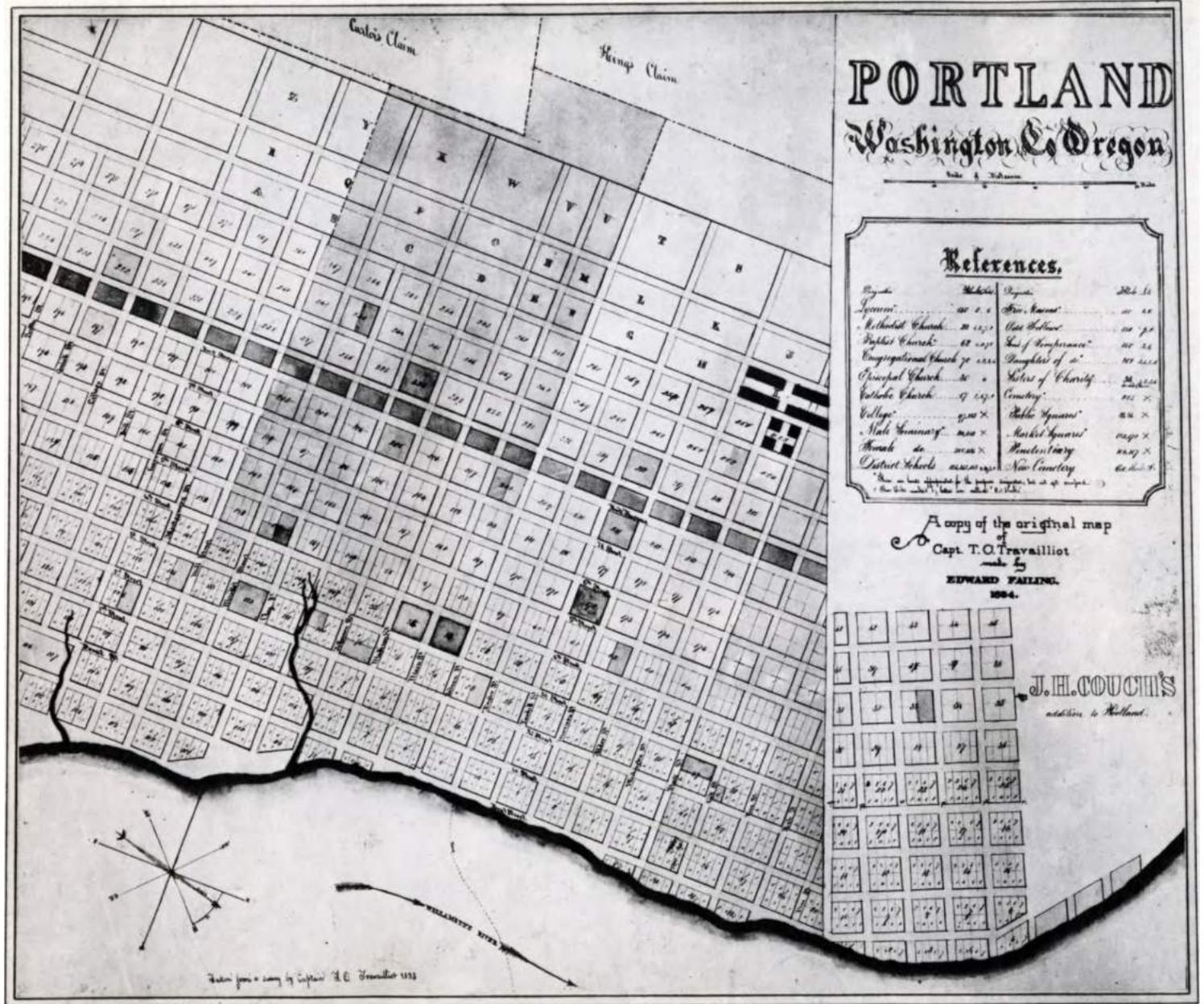
...



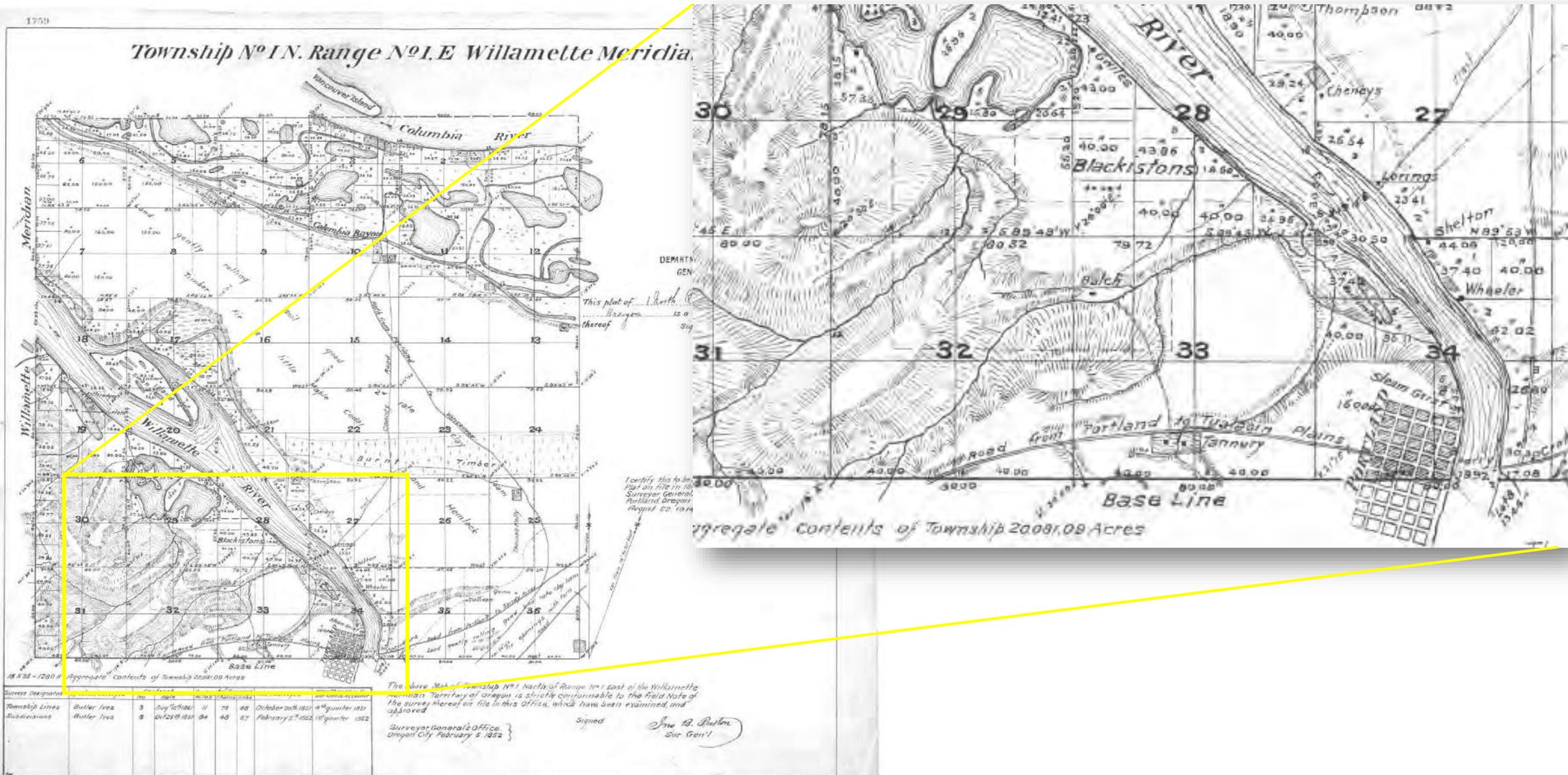
Map showing original grid of 200 foot square blocks



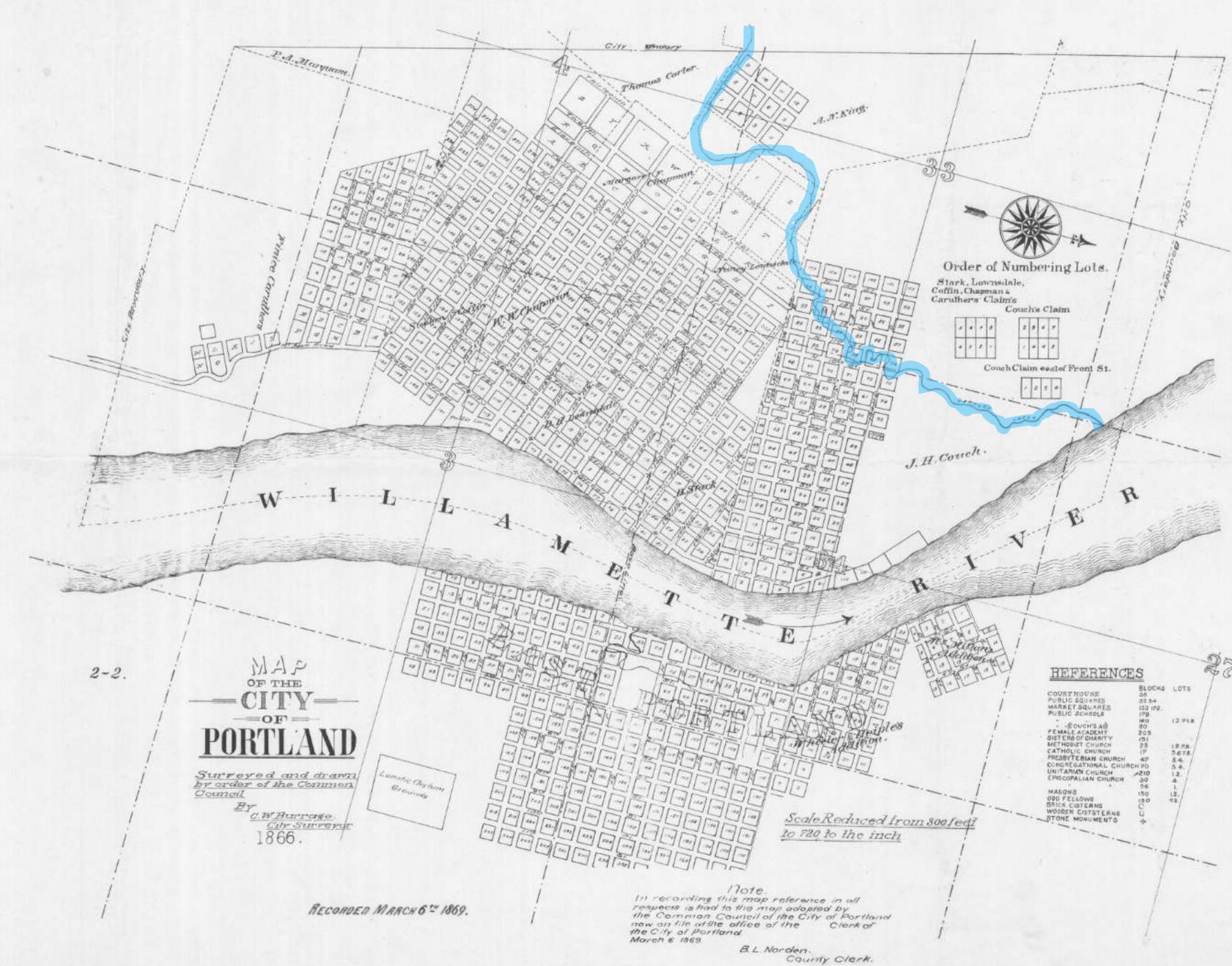
# Portland Plat Map (1854)



# Cadastral Surveys 1852-1860



# Portland City Map (1866)

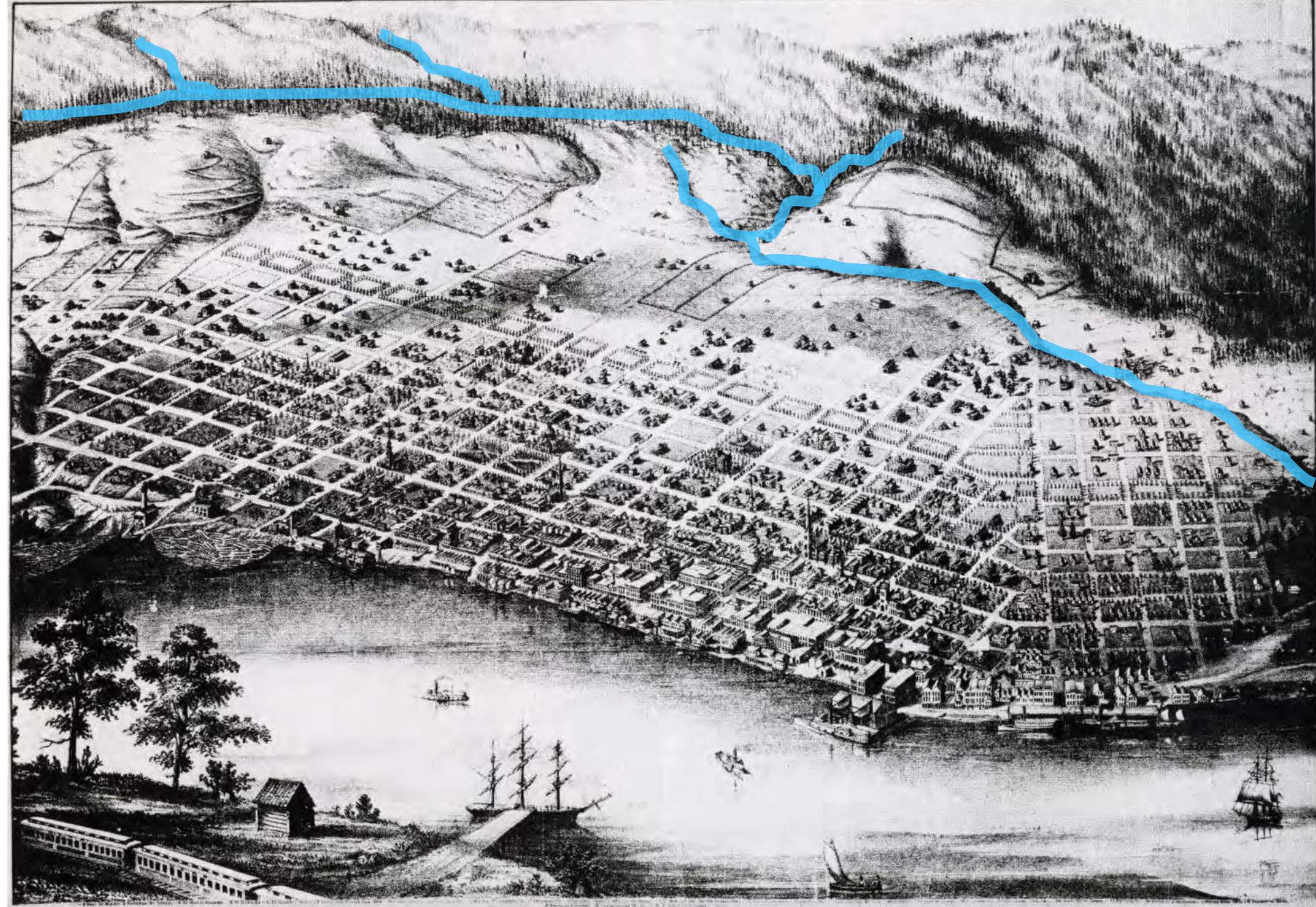


# Aerial Lithograph (1870)

Illustrations from:

- 1870
- 1879
- 1880
- 1890
- 1905

...



1 METROPOLIS HOTEL, COR. FRONT & SALMON STS.  
(BURNED DISTRICT IN RED.)

## CITY OF PORTLAND, OREGON.

LITH. G.T. BROWN & CO. 340 CLAY ST. N.Y.

# Aerial Lithograph (1879)



Drawn and Published by E. S. Oliver. Printed and Published by E. S. Oliver at the office of the Lithographer of Oregon. COLUMBIA RIVER GORGE. MOUNT TABEL. MOUNT ADAMS. MOUNT ST. HELENS. MOUNT HOOD. A. T. Stewart & Co., Lithographers, San Francisco, Cal.

## PORTLAND, OREGON.

Population 22,000.

LOOKING EAST TO THE CASCADE MOUNTAINS.

Price, 25c.

- PUBLIC SCHOOLS**
- No. 1 High School.
  - No. 2 Madison Street School.
  - No. 3 Harrison Street School.
  - No. 4 Central School.
  - No. 5 North School.
- CHURCHES**
- No. 6 First Church.
  - No. 7 Stephen's School.
  - No. 8 Parole School.
  - No. 9 4 Street School.
  - No. 10 Court House.
  - No. 11 Post Office.
  - No. 12 Masonic Temple.
  - No. 13 Opera.
  - No. 14 Fair Palace Building.
  - No. 15 Starbuck Hotel.
  - No. 16 Oregon House Annex.

- WHERSEHOUSES**
- M. E. Church, corner 3rd and Taylor Sts.
  - Evangelical, 3rd and Jefferson Sts.
  - Episcopal, 8th and 10th Sts.
  - Catholic, 3rd and Stark Sts.
  - Presbyterian, 3rd and Washington Sts.
  - Baptist, 4th and Fair Sts.
  - Methodist, 3rd and Stark Sts.
  - Wesleyan, 3rd and Clay Sts.
  - Wesleyan Evangelical, 10th and E Sts.
  - Second M. E., 4th and 10th Sts.
  - Second Episcopal, 8th and Madison Sts.
  - Third Episcopal, 1st and Harrison Sts.
- EAST PORTLAND WHARVES**
- M. E. Church, 1 and 3th Sts.
  - Evangelical, 3th and Nassau Sts.
  - Baptist, 7th and 8th Sts.
  - Episcopal, 4 and 10th Sts.
  - Episcopal, 4 and 10th Sts.
  - Wesleyan, 3rd and 5th Sts.
  - Wesleyan, 3rd and 5th Sts.

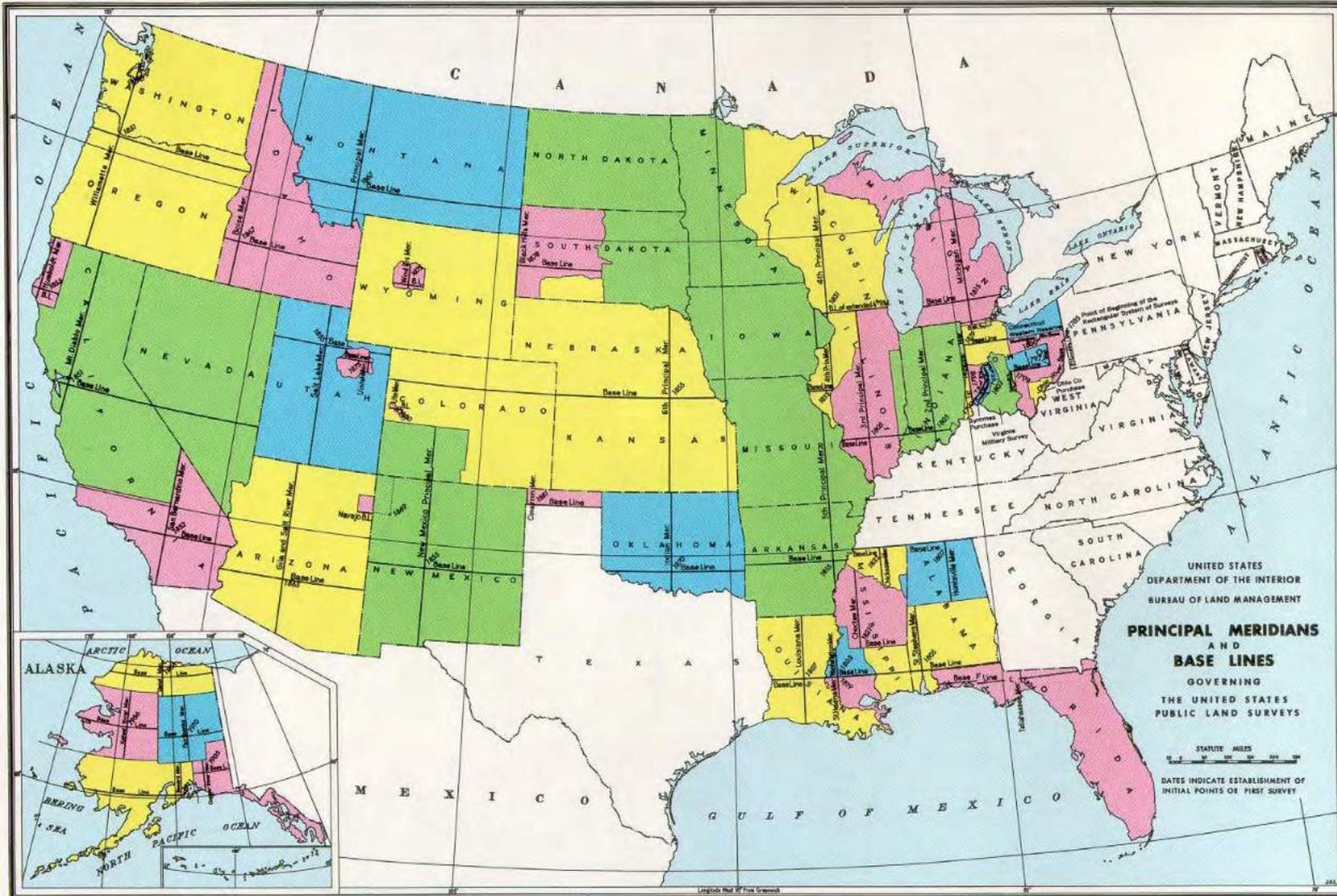
# Lewis & Clark Centennial Exposition Plan & Aerial (1905)



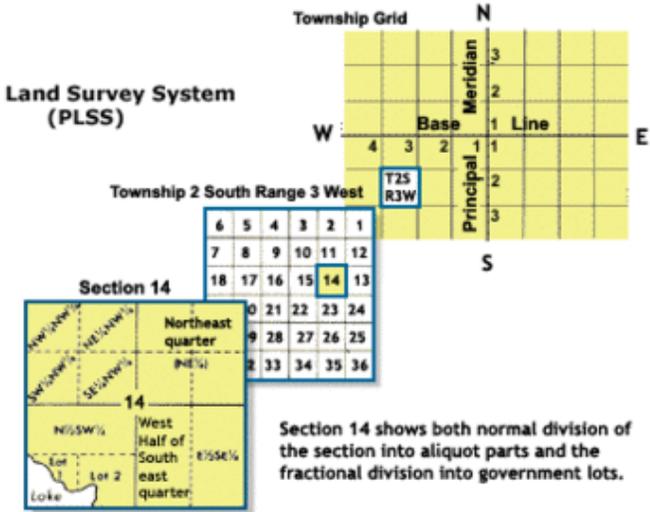


# Cartographic Regressions —

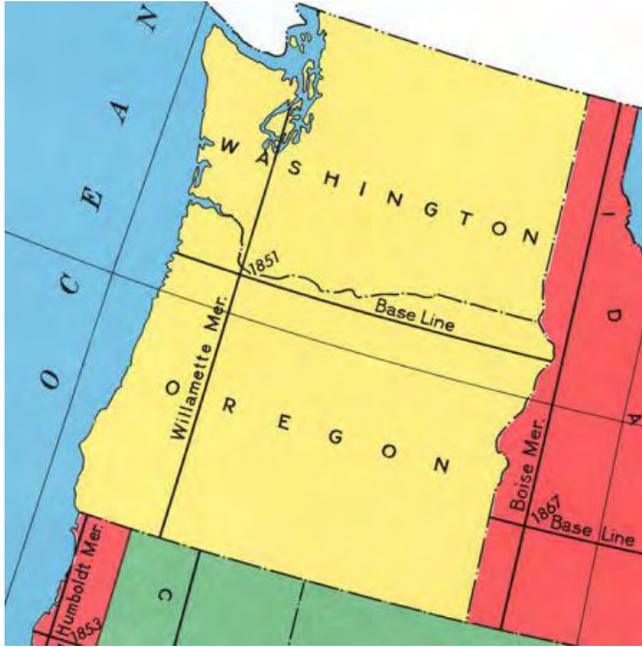
# Public Land Survey System (1785-1890s)



Public Land Survey System (PLSS)

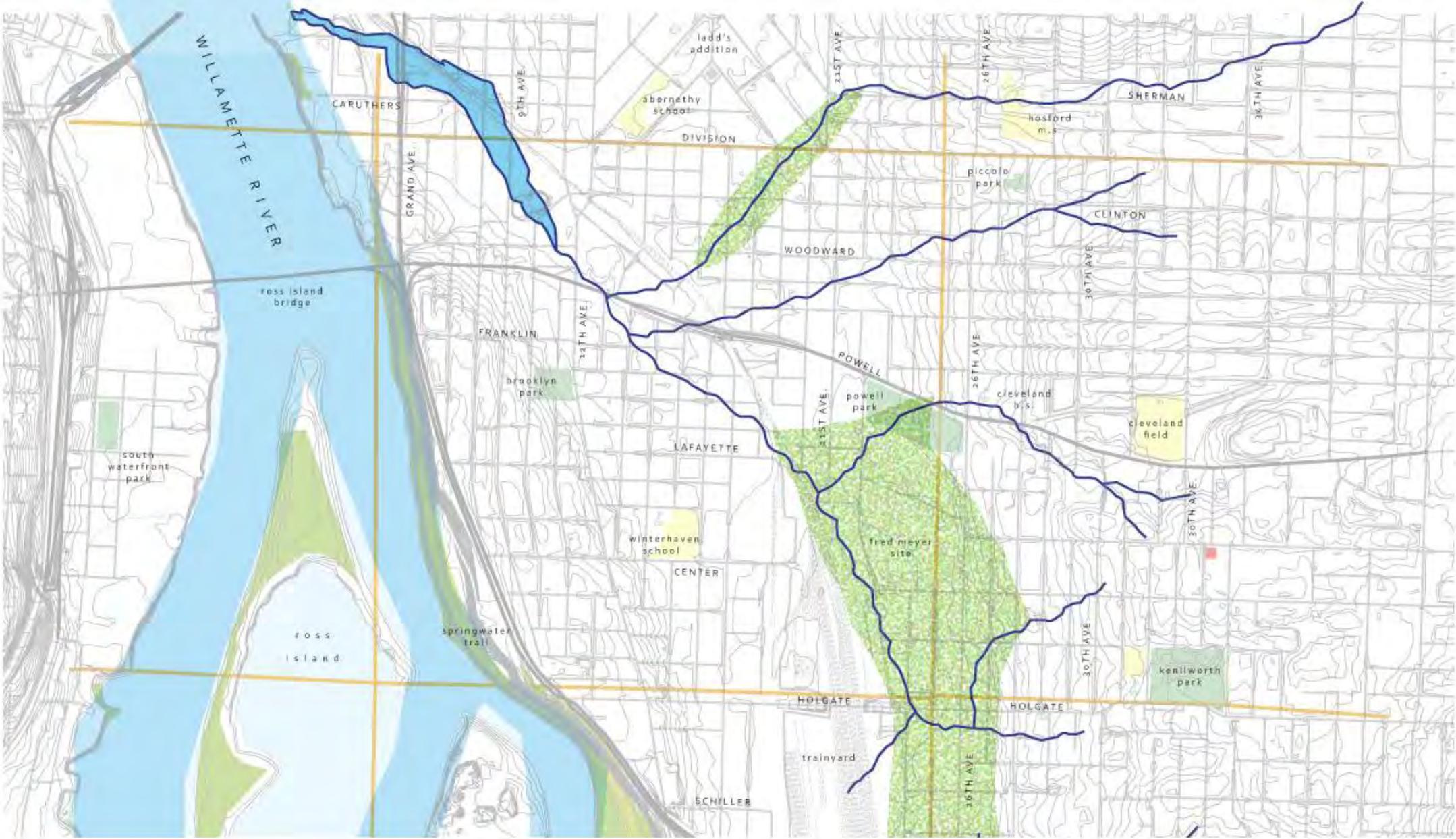


# Portland Cadastral Survey Maps (1852-1855)

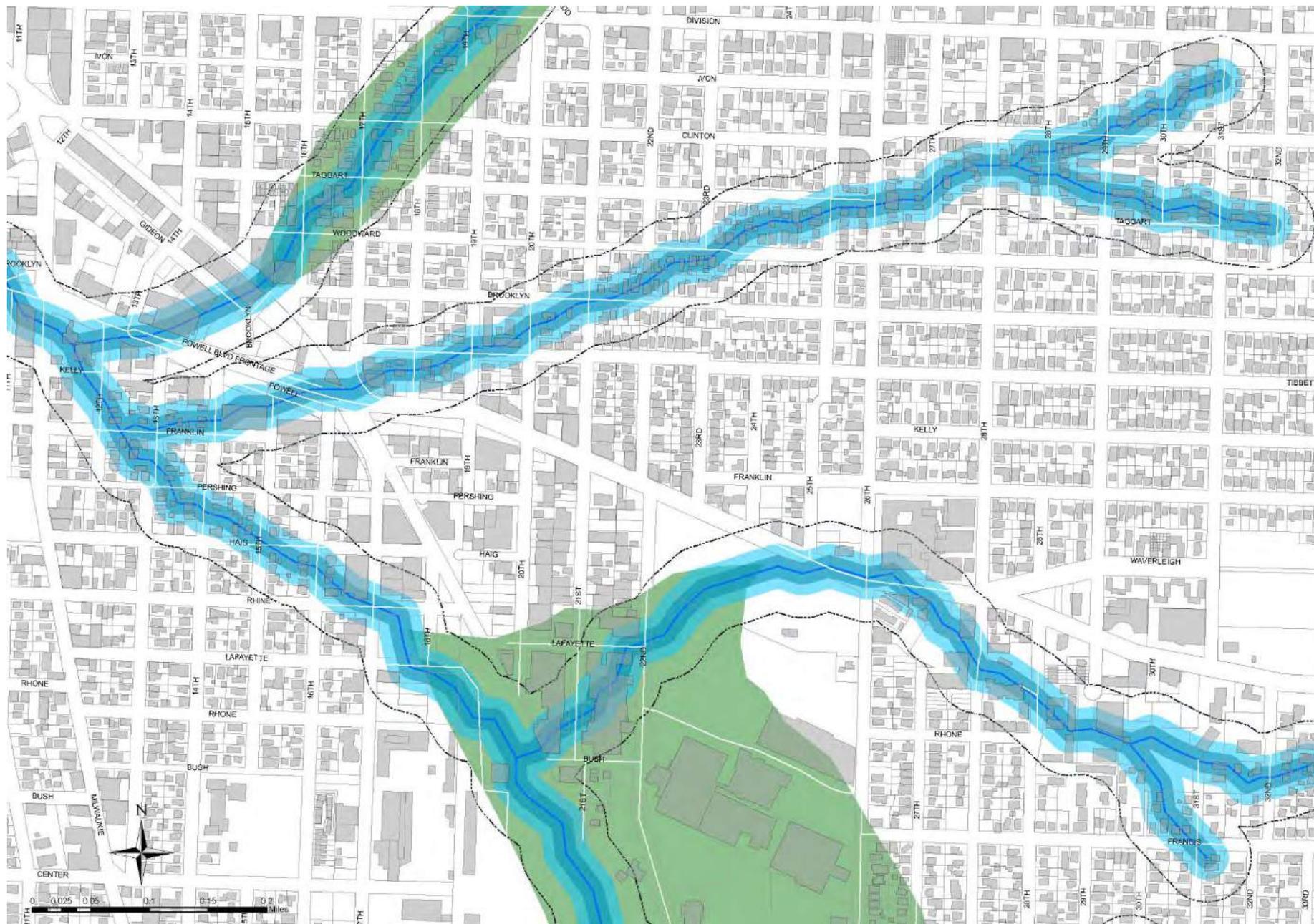




# Taggart Basin (SE Portland)

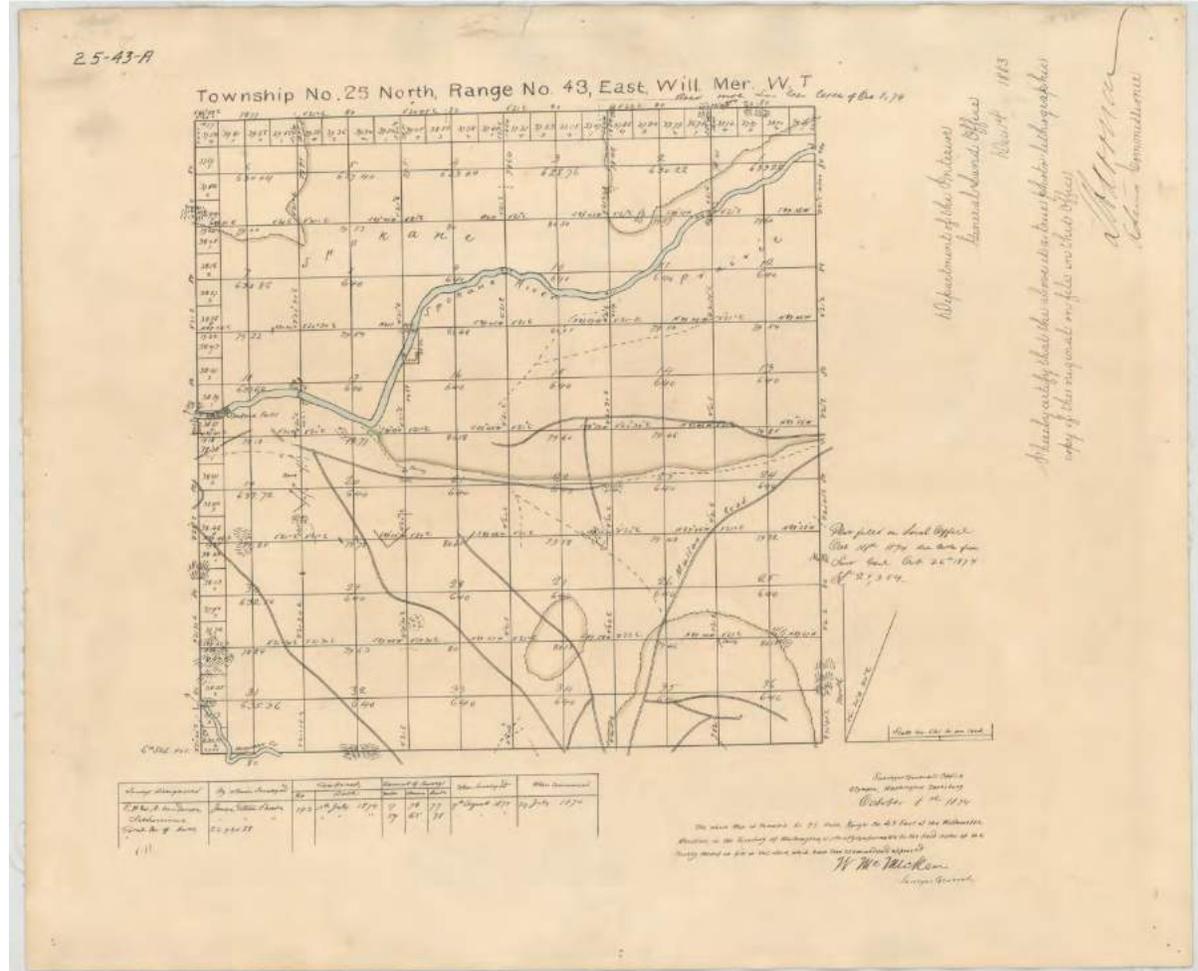
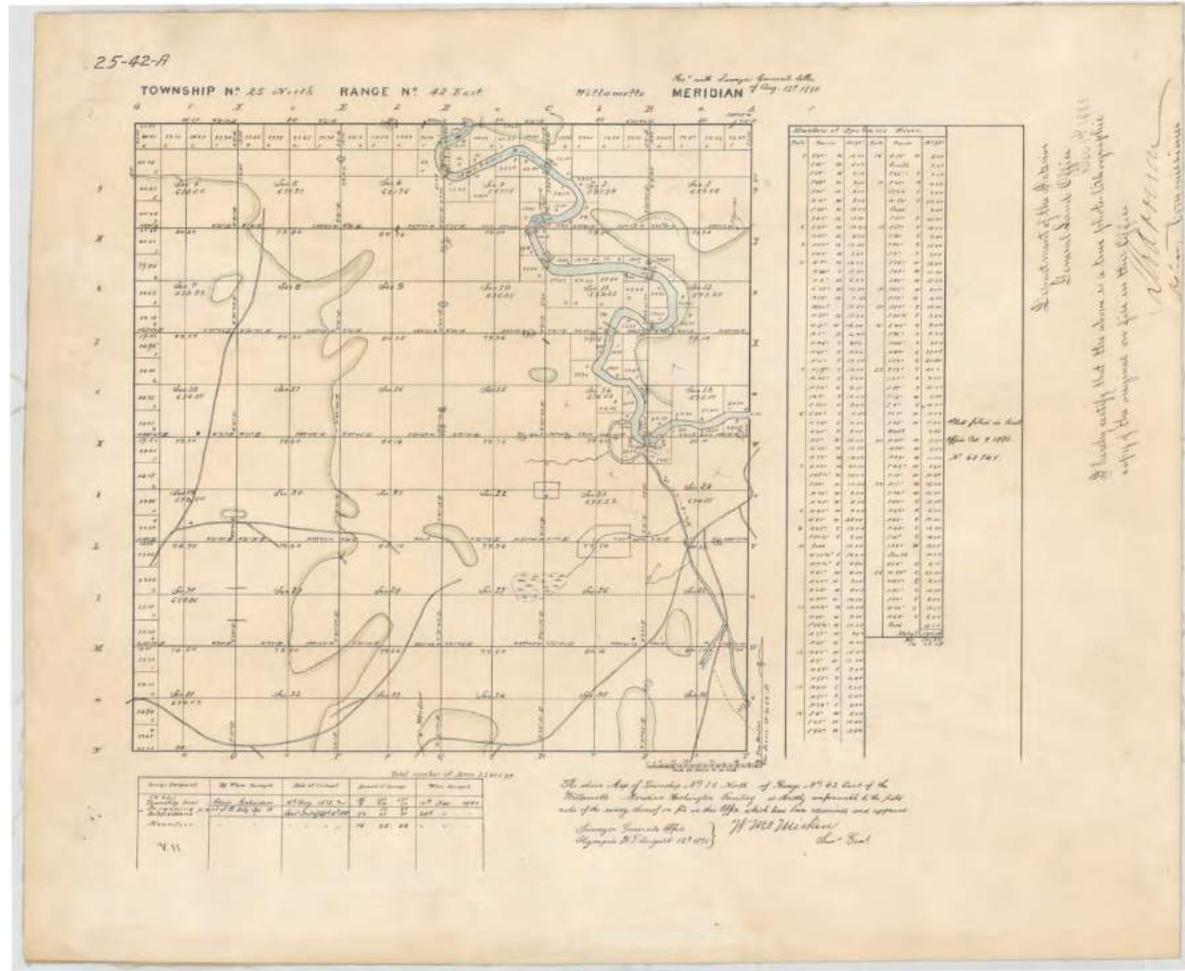


Digitized info  
in GIS – with  
contemporary  
Metro Data &  
more options for  
Analysis

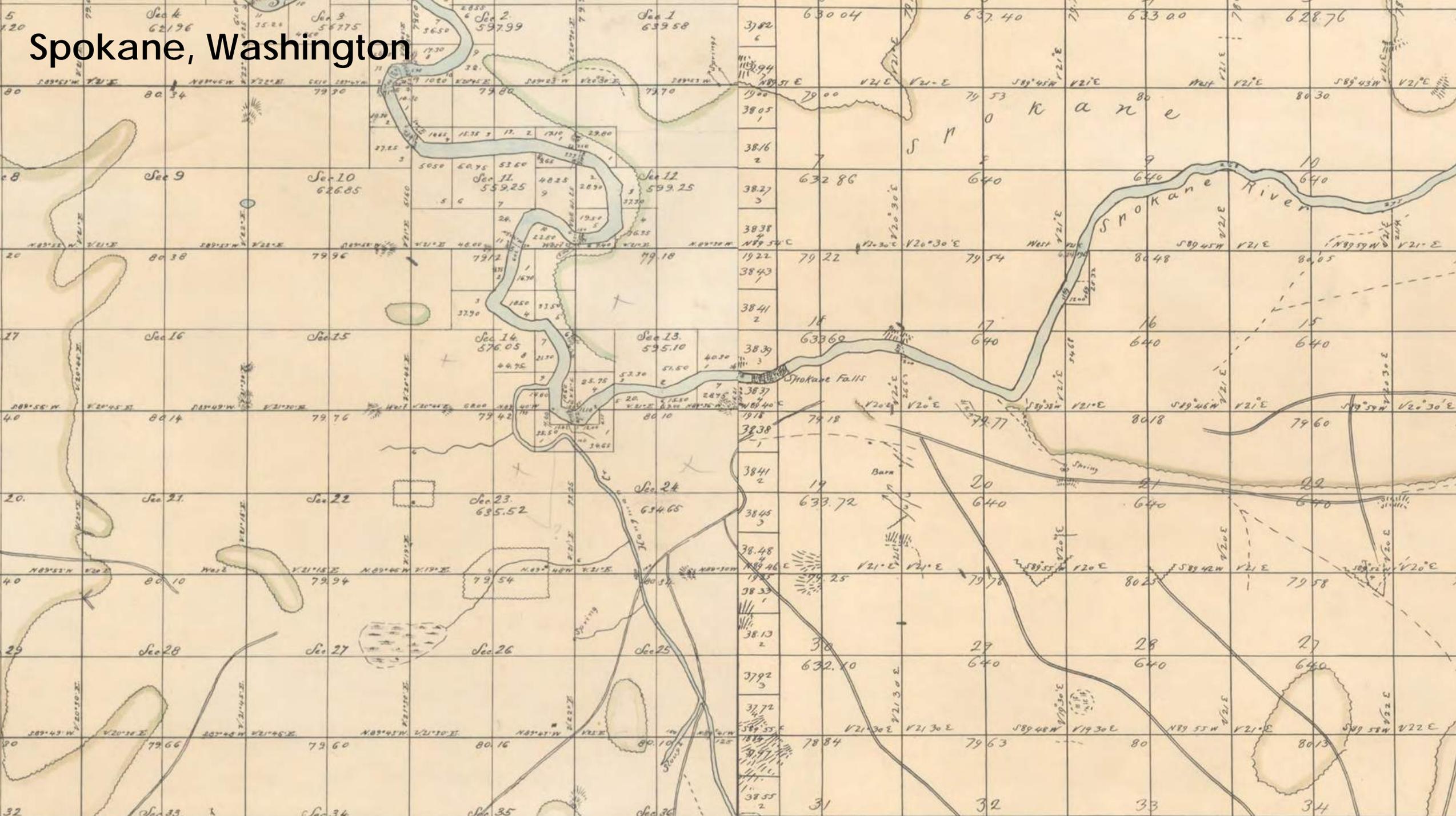


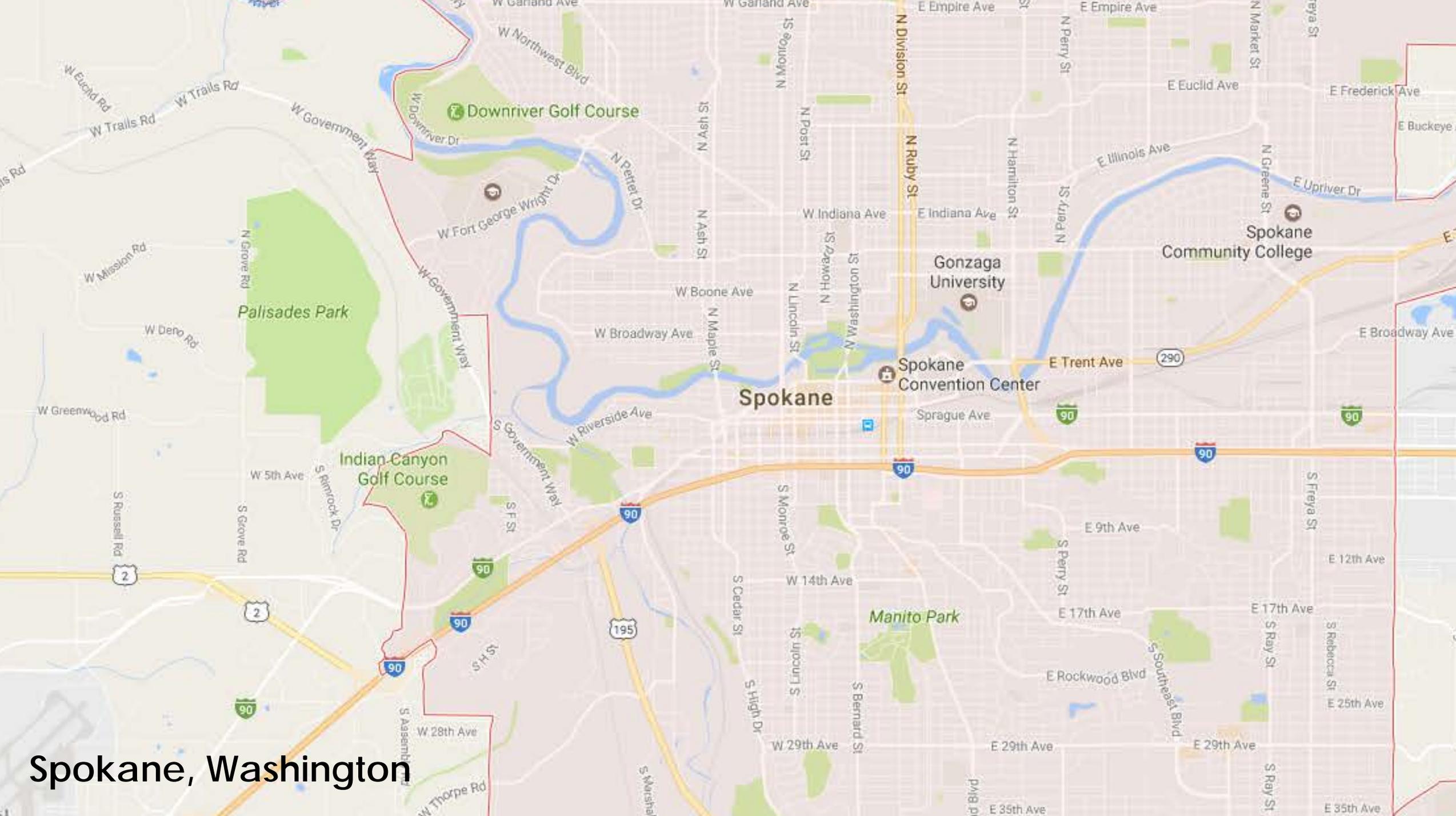
Taggart Basin (SE Portland)

# Spokane, Washington

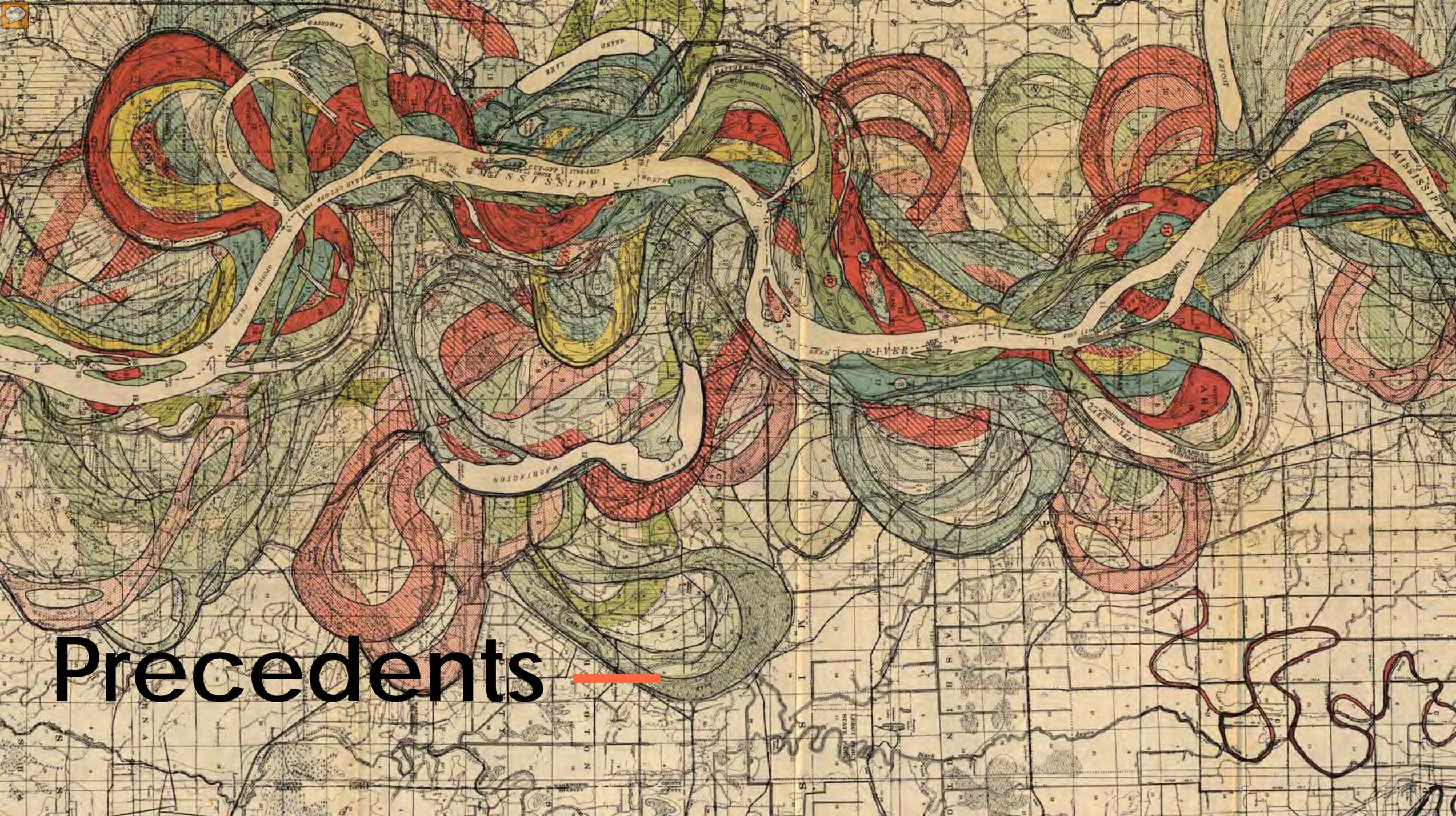


# Spokane, Washington





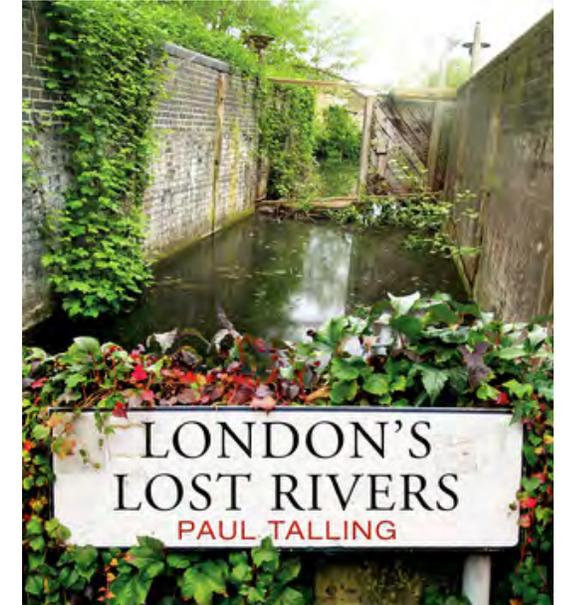
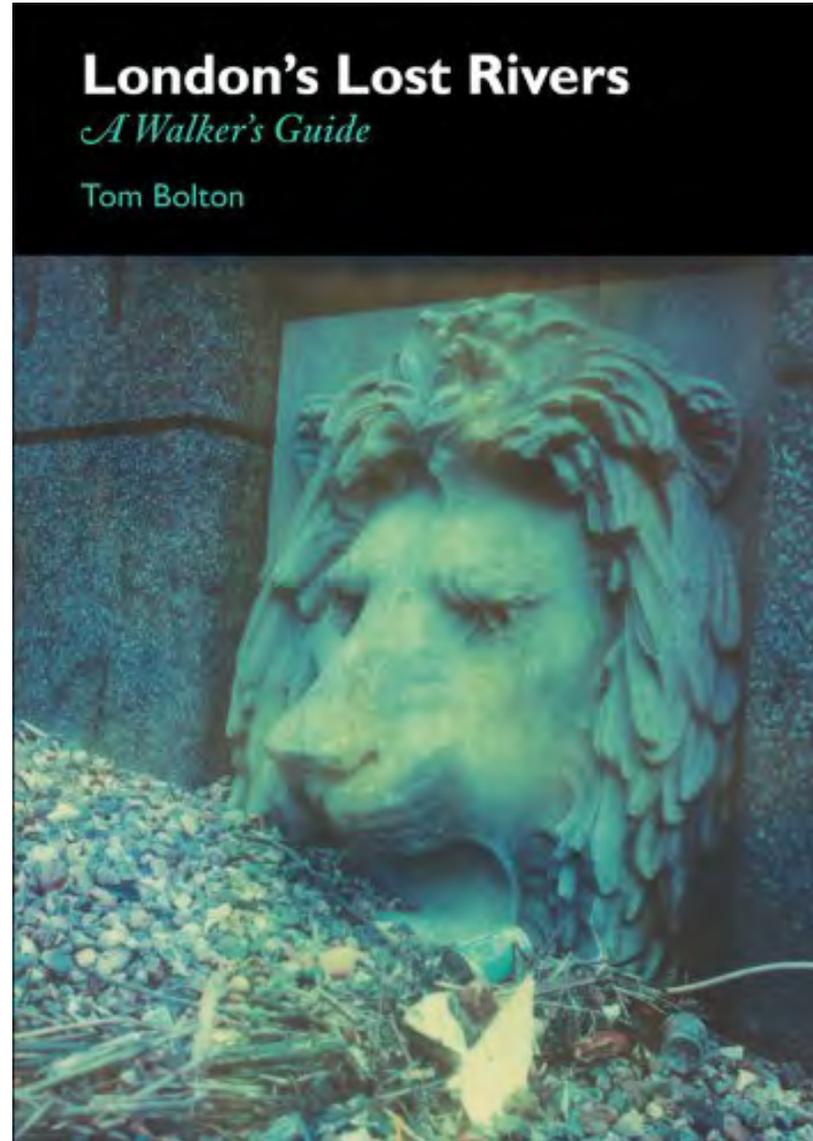
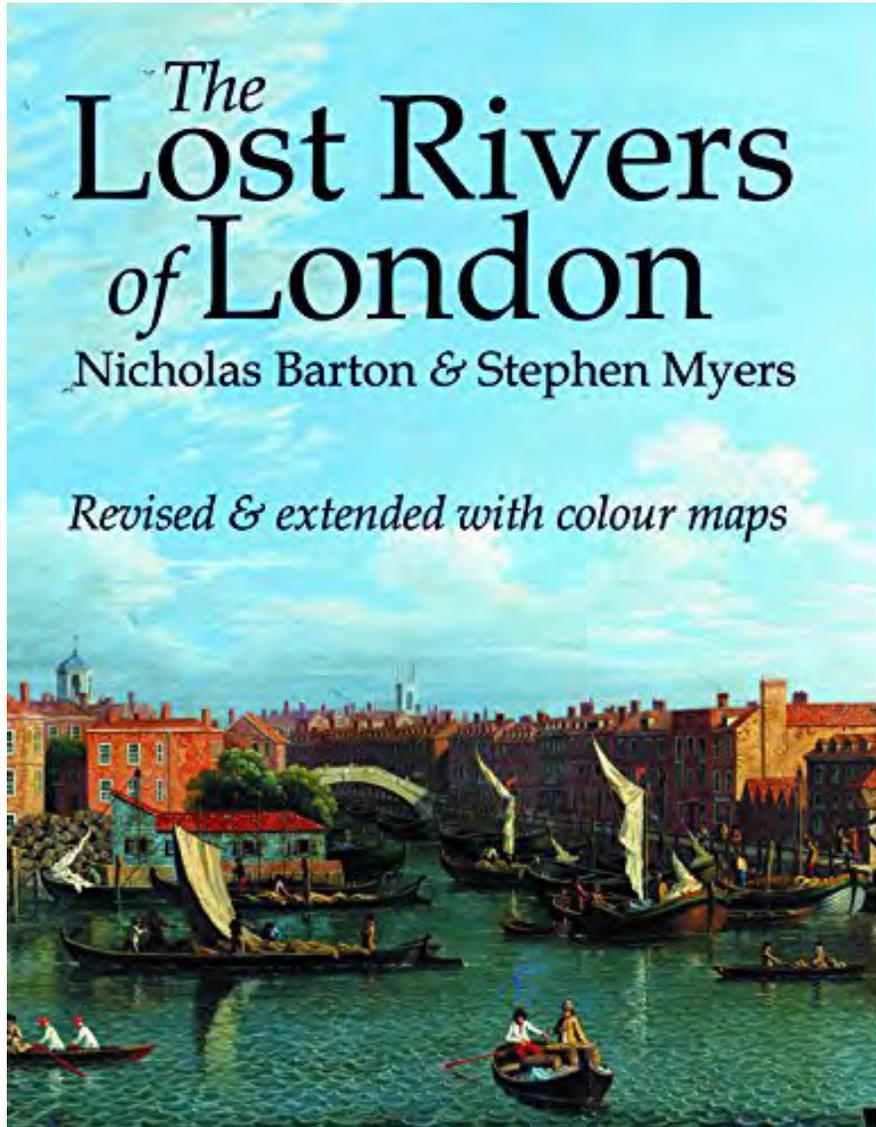
Spokane, Washington



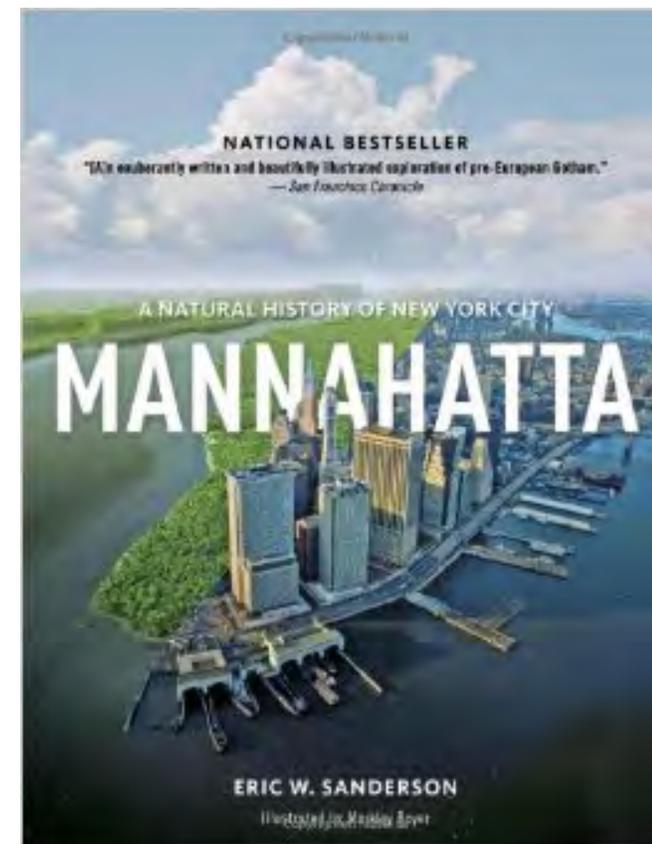
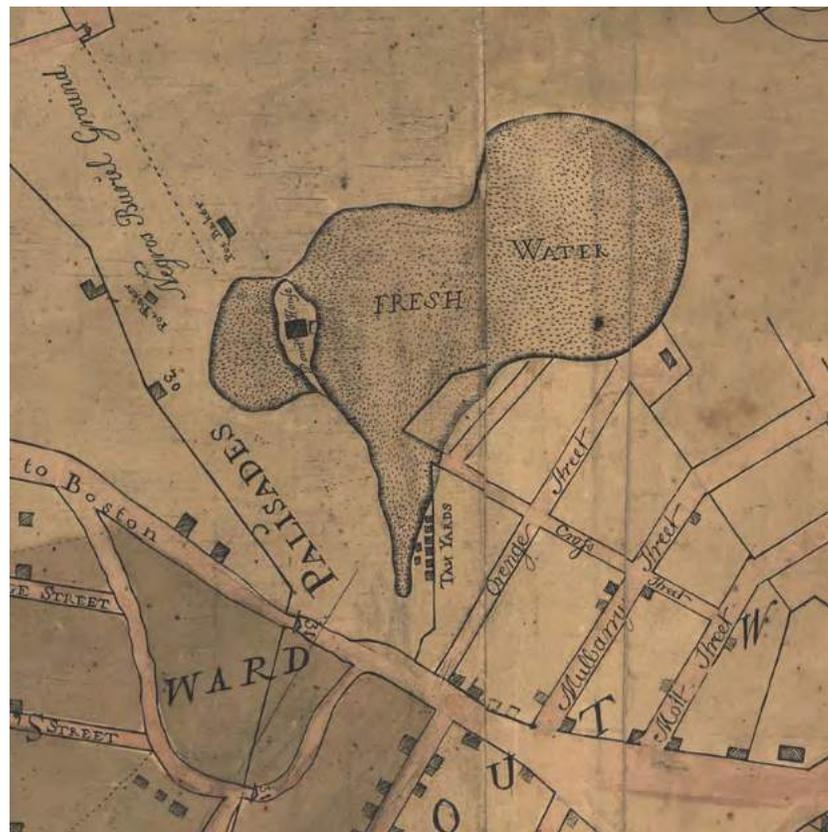
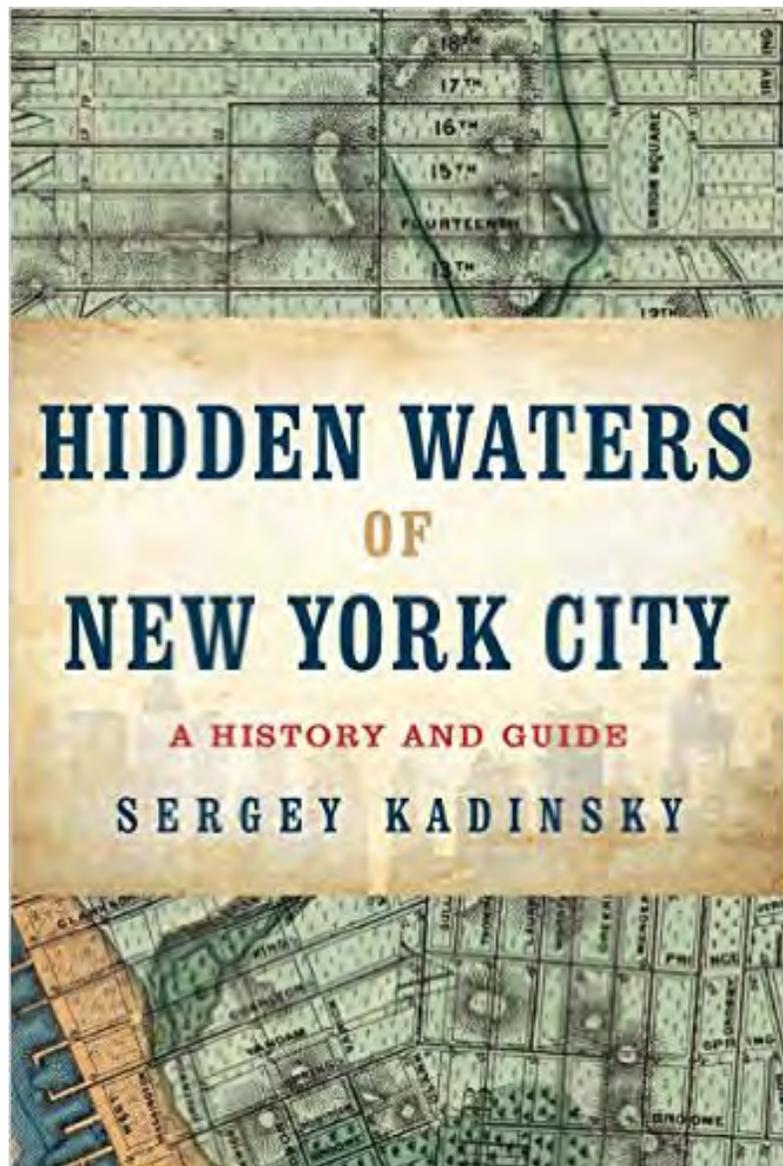
**Precedents** —



# London



# New York City



# PRECEDENTS: CONNECT HISTORICAL ECOLOGY

1609

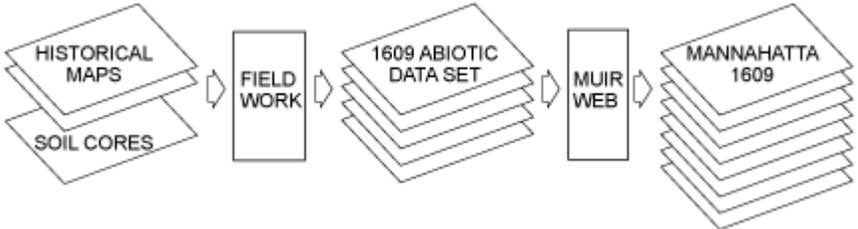


Today

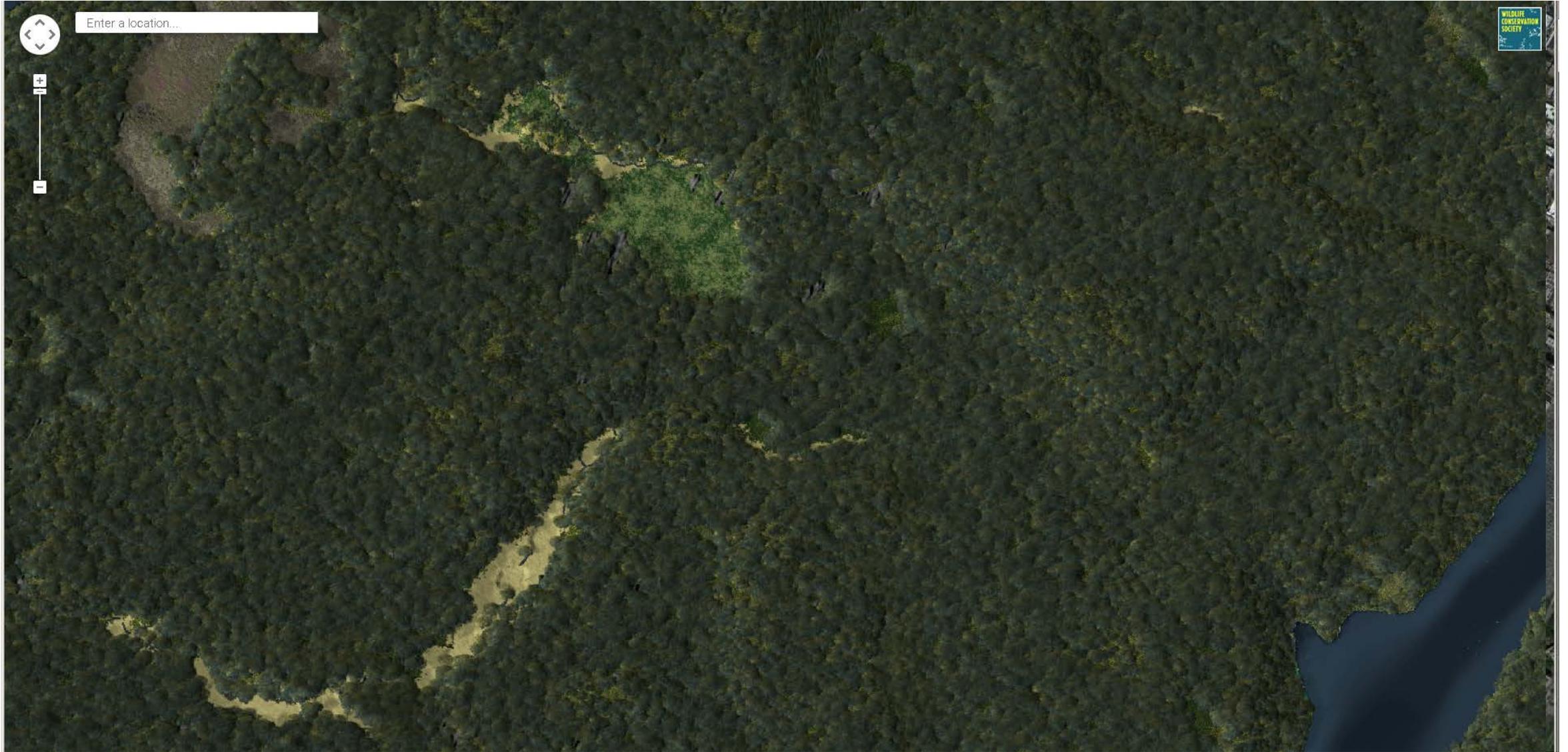


Mannahatta Project  
([www.welikia.org](http://www.welikia.org))

Uncovering the original ecology of New York City, with an aim on connecting modern ecosystem function to 'pre-development' ecological systems.



# PRECEDENTS: CONNECT HISTORICAL ECOLOGY



Mannahatta Project ([www.welikia.org](http://www.welikia.org))

# PRECEDENTS: CONNECT HISTORICAL ECOLOGY

**64TH ST & 65TH ST BETWEEN PARK AVE & MADISON AVE**

Welcome to a wild place: this block in 1609! Through the tabs below, discover the wildlife, Native American use, and landscape factors of this block's original ecology, as reconstructed by the Mannahatta Project. You can also explore the block today and sponsor the Mannahatta Project into the future.

Wildlife | Lenape | Landscape | Modern Day | Support This Block

Find out what plants and animals might have lived in this block in September 1609. Click on the common name to see that species in the center of the Muir web; click on the scientific name to learn more about the ecology of the species.

Mammals | Birds | Reptiles | Amphibians | Fish | Plants

Common Name	Scientific Name	Probability
Meadow Vole	<i>Microtus pennsylvanicus</i>	██████████
White-footed Mouse	<i>Peromyscus leucopus</i>	██████████
Deer Mouse	<i>Peromyscus maniculatus</i>	██████████
Beaver	<i>Castor canadensis</i>	██████████
Southern Flying Squirrel	<i>Glaucomys volans</i>	██████████
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	██████████
Masked Shrew	<i>Sorex cinereus</i>	██████████
Eastern Cottontail	<i>Sylvilagus floridanus</i>	██████████
Raccoon	<i>Procyon lotor</i>	██████████
Eastern Chipmunk	<i>Tamias striatus</i>	██████████
Muskrat	<i>Ondatra zibethicus</i>	██████████
Big Brown Bat	<i>Eptesicus fuscus</i>	██████████
Silver-haired Bat	<i>Lasiurus noctivagans</i>	██████████
Red Bat	<i>Lasiurus borealis</i>	██████████
Hoary Bat	<i>Lasiurus cinereus</i>	██████████
Striped Skunk	<i>Mephitis mephitis</i>	██████████
White-tailed Deer	<i>Odocoileus virginianus</i>	██████████
Gray Wolf	<i>Canis lupus</i>	██████████
North American River Otter	<i>Lontra canadensis</i>	██████████
Bobcat	<i>Lynx rufus</i>	██████████
Mink	<i>Neovison vison</i>	██████████
Mountain Lion	<i>Puma concolor</i>	██████████
Gray Fox	<i>Urocyon cinereoargenteus</i>	██████████
American Black Bear	<i>Ursus americanus</i>	██████████
Dog	<i>Canis lupus familiaris</i>	██████████

BE THE FIRST TO SPONSOR THE WELIKIA PROJECT FOR THIS BLOCK!

RETURN TO MAP

YOU'VE SELECTED THE BLOCK:  
64th St & 65th St between Park Ave & Madison Ave

- About This Block in 1609
- About This Block Today
- Sponsor The Welikia Project for This Block

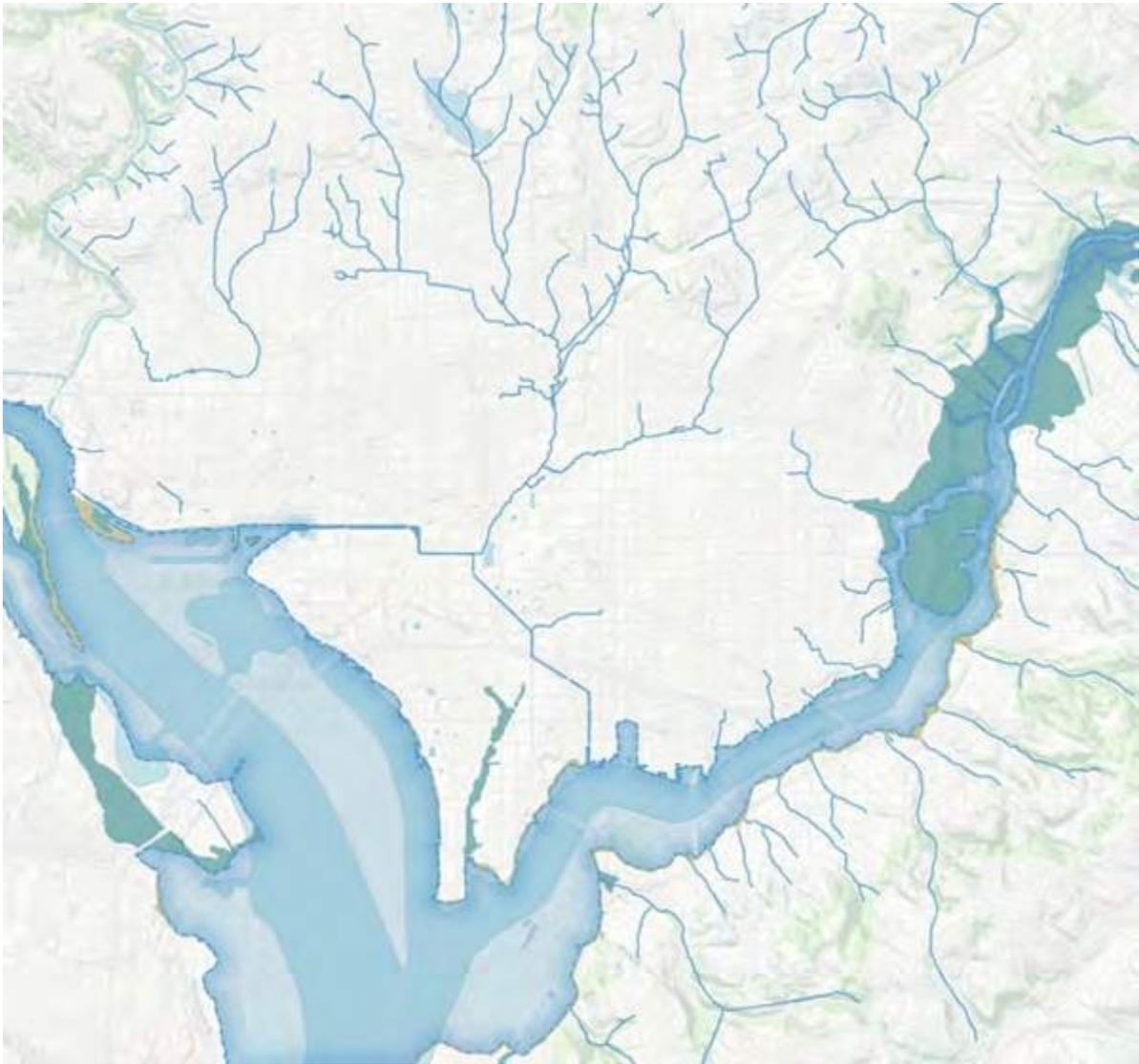
## Block Level Data (1609 & Today)

- Wildlife
- Indigenous Population
- Landscape
- Water Resources

The goal of the project is discover something new about a place we all know so well...

# Washington D.C.

(Imaginary Terrains – David Ramos)



# Philadelphia

(Philly H2O – Adam Levine)

## Philadelphia's Historic Streams



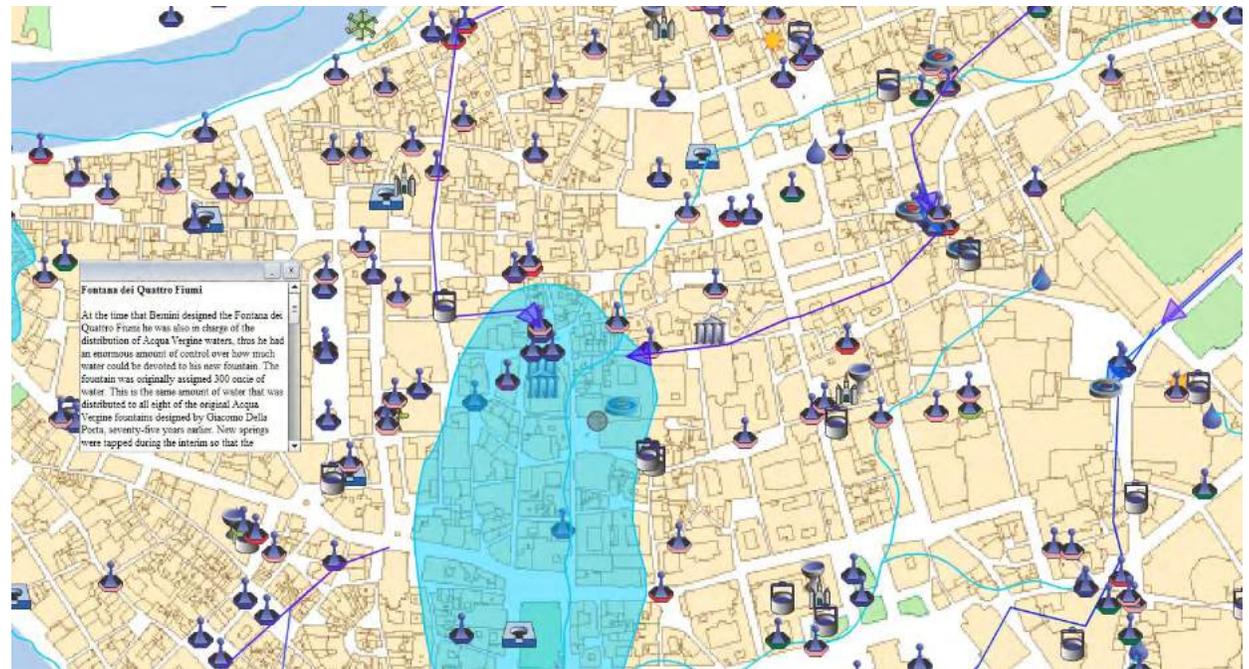
# Toronto

(Lost Rivers Toronto – Helen Mills)  
(Vanishing Point – Michael Cook)



# Rome

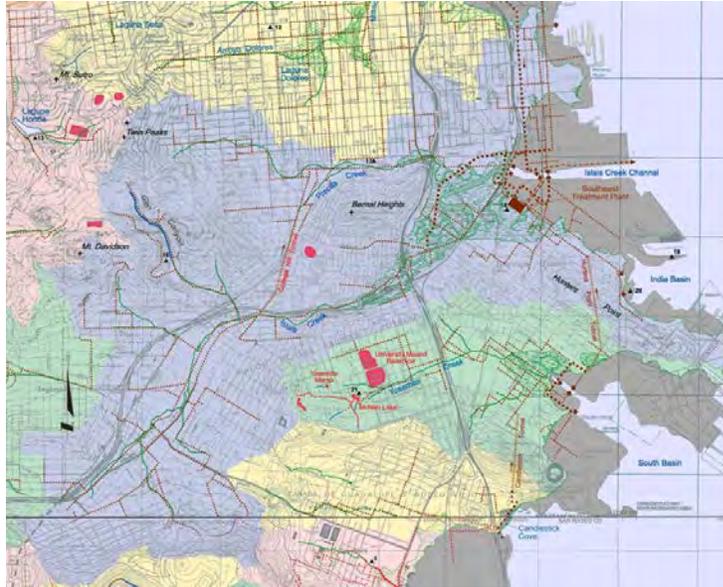
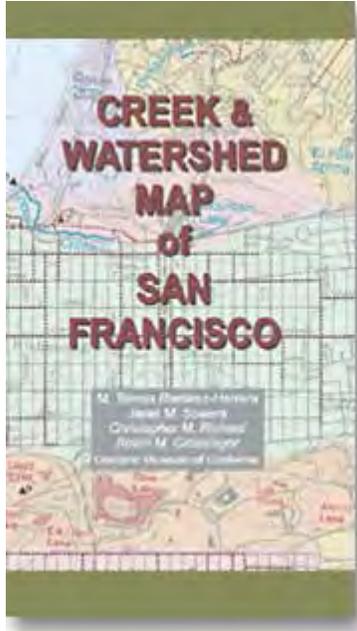
(Aquae Urbis Romae – Katherine Wentworth Rinne)



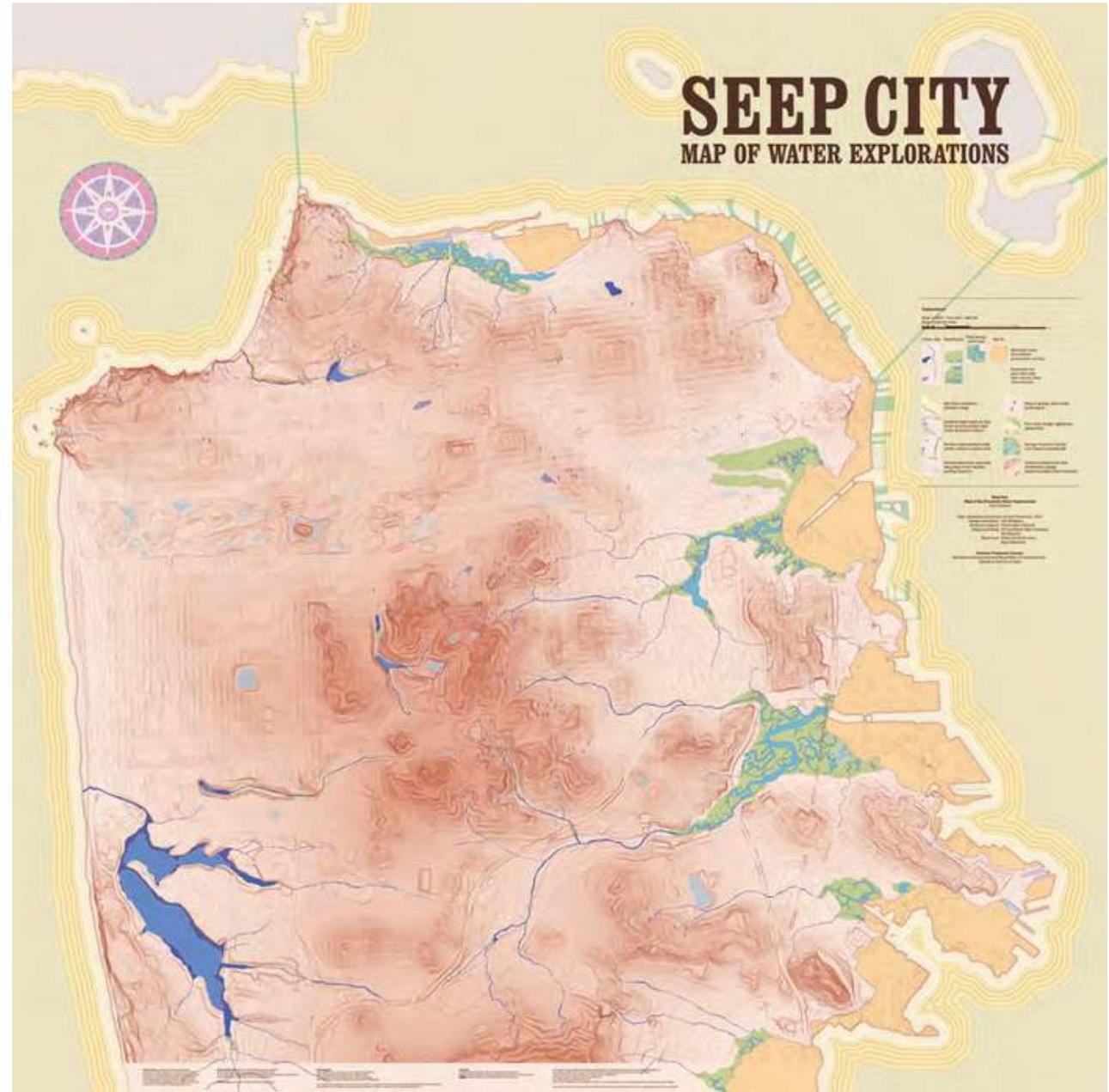
Fontana del Quattro Fiumi  
At the time that Bernini designed the Fontana del Quattro Fiumi he was also in charge of the distribution of Acqua Vergine waters, thus he had an enormous amount of control over how much water could be devoted to his new fountain. The fountain was originally assigned 300 ounce of water. This is the same amount of water that was distributed to all eight of the original Acqua Vergine fountains designed by Giacomo Della Porta, seventy-five years earlier. New springs were tapped during the interim so that the

# San Francisco

(Seep City – Joel Pomerantz)



(SF Estuary Institute)



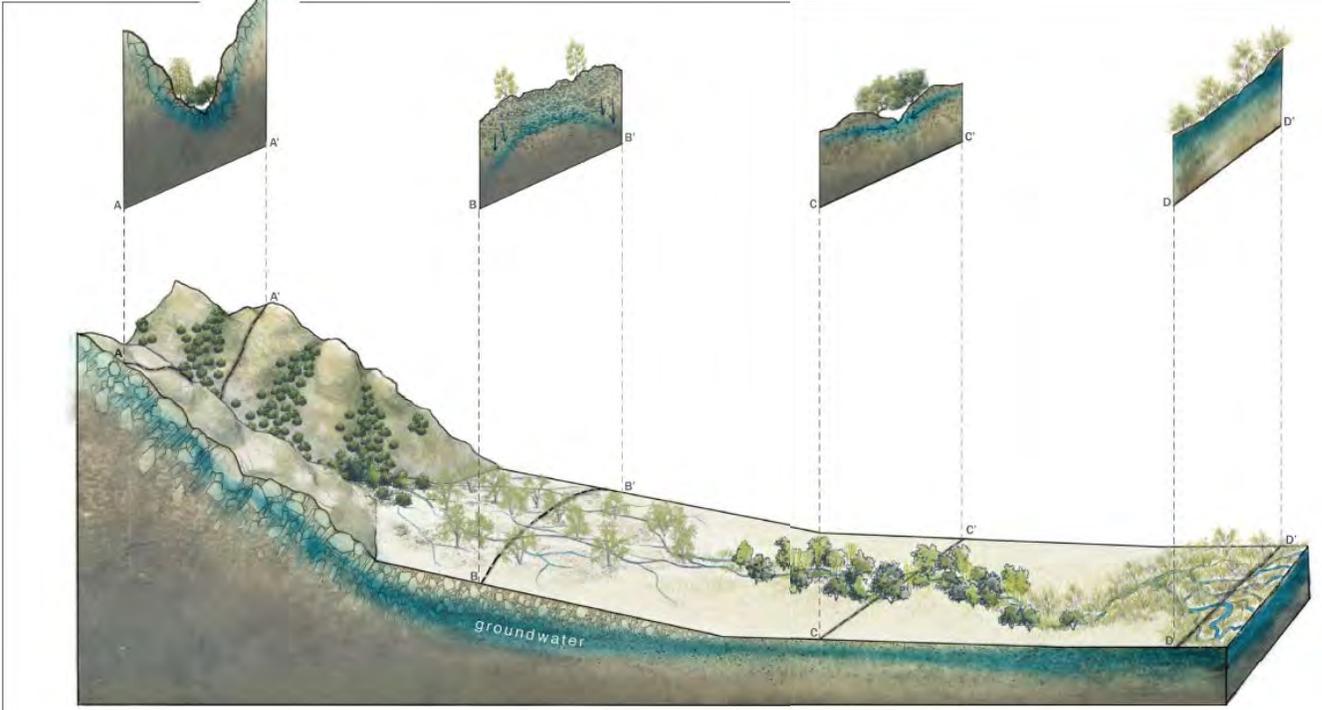
(Ghost Arroyos - Schlickman & Loring)

# PRECEDENTS: CONNECT HISTORICAL ECOLOGY



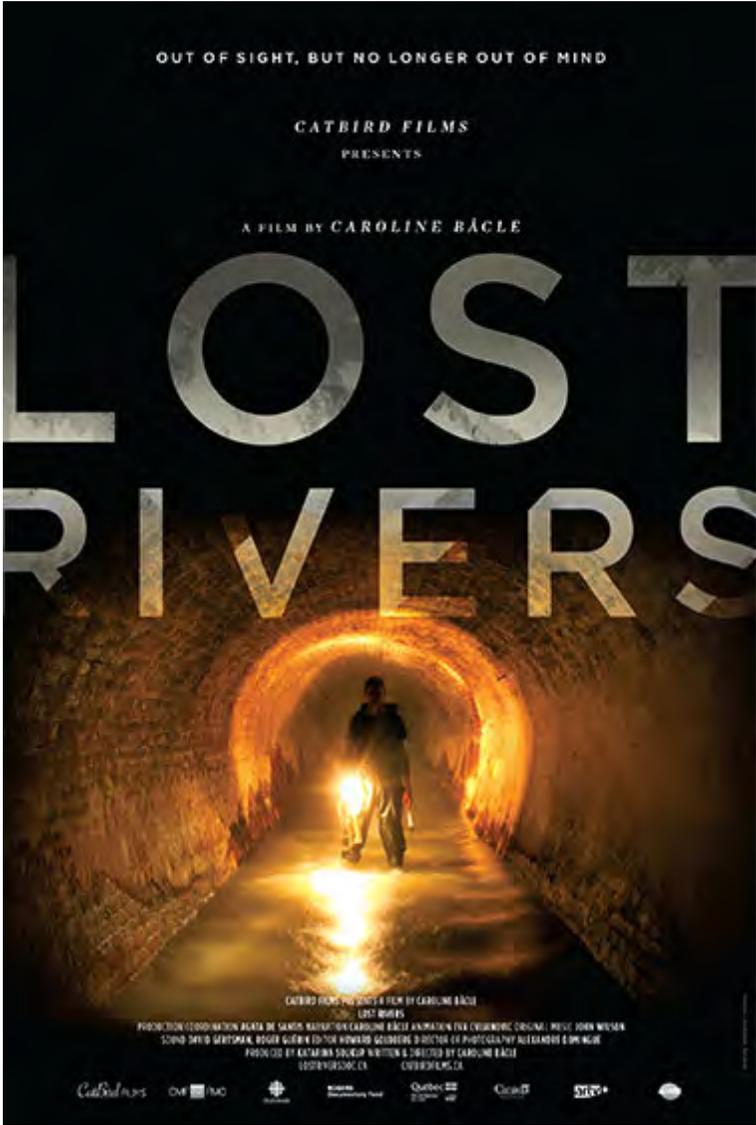
ALAMEDA CREEK WATERSHED Historical Ecology Study

FEBRUARY 2013  
SAN FRANCISCO ESTUARY INSTITUTE



San Francisco Estuary Institute –  
Historical Ecology Studies  
([www.sfei.org](http://www.sfei.org))

# Lost Rivers (Documentary Film)



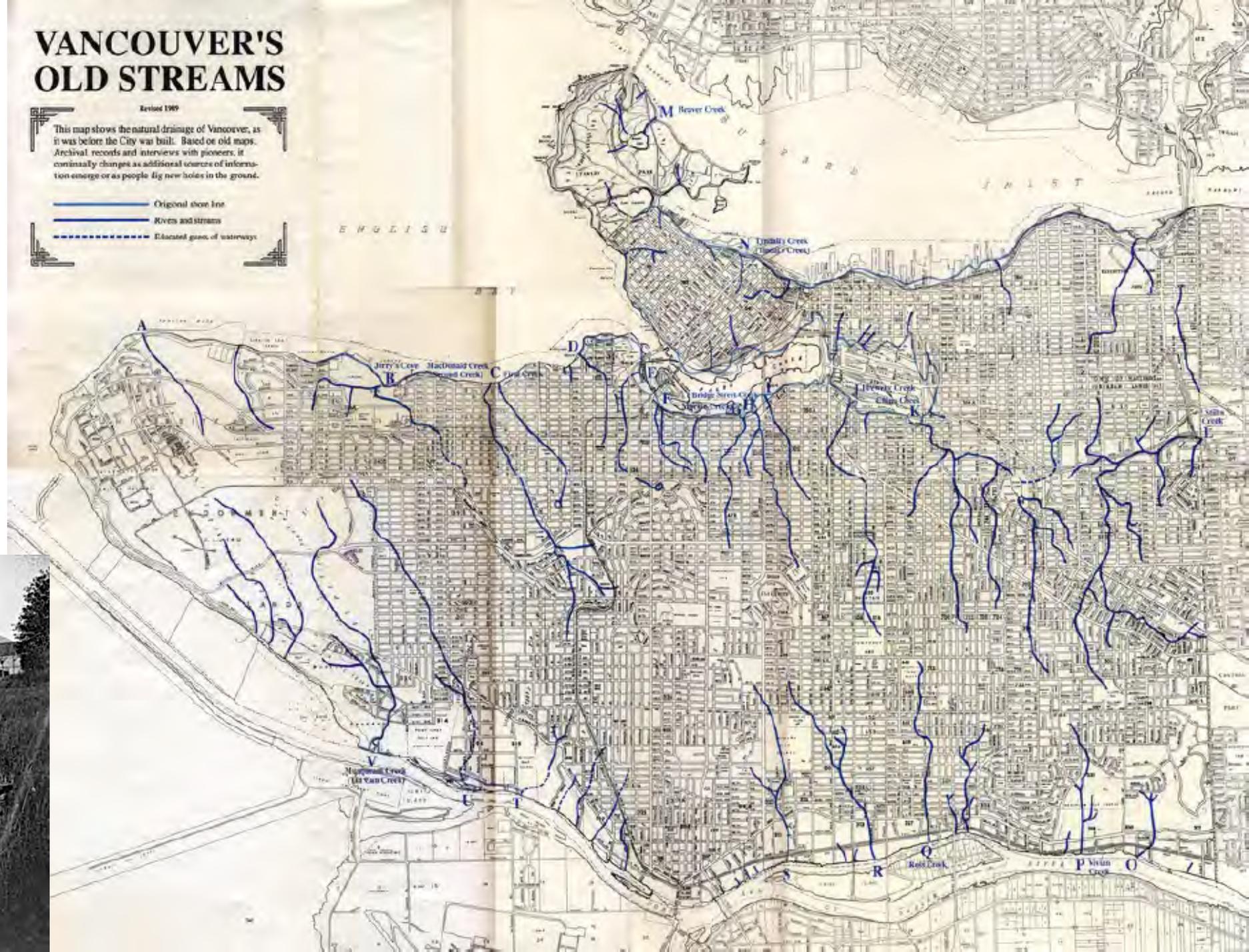
# Vancouver, BC (Sharon Proctor, 1968)

## VANCOUVER'S OLD STREAMS

Revised 1969

This map shows the natural drainage of Vancouver, as it was before the City was built. Based on old maps, archival records and interviews with pioneers, it continually changes as additional sources of information emerge or as people dig new holes in the ground.

- Original shore line
- Rivers and streams
- Elevated grade of waterways



# Seattle - The Waterlines Project

<http://www.burkemuseum.org/static/waterlines/index.html>

## Coast Salish Place Names

### Village Sites

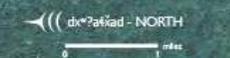
- A. A'ax'medix - The Growing Place
- B. stuw'ix - Little Canoe Channel
- C. Sal'ui - Tied-Up-Away, Inside
- D. paq'at'acu - Brush Spread on the Water
- E. babag'ad - Little Prairie
- F. s'ax'ol s'm'eit - Little Crossing-Over Place
- G. t'u'ur'at'ax' - Hanging House
- H. sa'icag'at - Water at the Head of a Bay
- I. s'ax'w'ic'ib - Swimming Hole
- J. da'w'ab'q'u' - Confluence
- K. sa'w'el'iq'u' - Meeting of Rivers

### Water-related Places

- 1. cab'at'ix' - Elderberry House
- 2. s'tac'us - Face
- 3. s'tap - Deep Water Hole
- 4. b'ax'at'ix - It's Like a Road
- 5. c'ic'iq'at' - Blackcaps on the Side
- 6. s'ic'at'ab - Calmed Down a Little
- 7. s'w'ic - Salt Water
- 8. q'at'ab - Dropped Down
- 9. s'ic'at'ad - Red Paint
- 10. ca'w'ab - Water Falling Over an Edge
- 11. Es'w'et'iq - Digging in the Water
- 12. da'w'at' - Translation Unknown
- 13. s'w'at'ax' - Line of Water
- 14. ba'tat'at' - Spirit Canoe Power
- 15. wa'q'at'ab - Croaking
- 16. q'ax't'ap - Outlet
- 17. s'c'ax'w'el'iq'u' - Thrashed Water
- 18. sa'w'ac'ad'w'ic' - Carry a Canoe
- 19. s'tas'at' - Baby Pathom
- 20. A'w'ic'et'iq - Cold Creek
- 21. x'at'ic'ic' - Small Lake
- 22. sa'w'at'ax' - River Outer Creek
- 23. s'ic'at'ax' - By the Water
- 24. s'w'ic' - Spring
- 25. ca'w'ab - Saw Grass Point
- 26. t'raw' - Smelt
- 27. s'ca'k'ax'id - Cooking Fish on a Stick
- 28. s'tuw'ix - Canoe Opening
- 29. ca'q'as - Tidelands
- 30. x'at'ab'us - Cringing Face
- 31. t'ax'ic' - Fish Drying Rack
- 32. q'w'ic' - Capitalized
- 33. pu'p'at'ap - Little Bend at the Tail End
- 34. cu'w'at'ix' - Sweat House
- 35. ta'c'iu' - Lake
- 36. s'ic'ic'ip - Ducklings
- 37. s'p'ap'at'ad - Marshes

Place names are stories: proof of presence, archives of meaning, evidence of ancestry, and a reference for treaties and other legal connections to territory. The place names on this map, written in the Lushootseed language of the Coast Salish people, are drawn from elders who worked with ethnographers in the early twentieth century, from the work of linguists and scholars such as the late V.I. Fisher, and from an atlas created by Coll Thrush and Mike Thompson for the book *Native Seattle*.

Waterlines is a project of the Burke Museum. Please visit us to learn more about Seattle's past landscapes. [www.burkemuseum.org/waterlines](http://www.burkemuseum.org/waterlines)



- Selected Village Sites
- Water-related Places
- Other Villages
- Other Named Places
- Upland Forests  
Western hemlock, western red cedar, Douglas fir, red huckleberry, black locust, white huckleberry
- Floodplain Forests  
Red alder, light maple, black cottonwood, Oregon ash, red alder
- Prairies  
Garry oak, creosote, broken fern, white huckleberry, black locust, red huckleberry, fireweed, blackberry, wild rose, blackberry, wild rose
- Freshwater Wetlands and Bogs  
Wigwag, sedge, smartweed, sedge, smartweed, sedge, smartweed, sedge, smartweed
- Saltwater Wetlands  
Pacific oyster and spruce-goose clam
- Tidelands  
Water, sand, pebbles, blue mussel, Olympia oyster, acorn barnacle
- Rivers and Creeks  
Trout, salmon, salmon, steelhead
- Lakes and Puget Sound  
Freshwater trout, whitefish, salmon, coho salmon, chinook salmon, steelhead, pink salmon, rainbow trout
- Modern Shoreline

Wetland ecosystems ensure the health of our landscape and provide the structures that are key to the sustainability of critical habitats for fish, wildlife, vegetation, and ourselves. Coast Salish people have used over 200 plants and animals from a diversity of carefully managed habitats. These species continue to be integral to the Coast Salish culture today.

This map is an interpretive photographic and hand-painted rendering of the Coast Salish area in the mid-19th century, just prior to non-native settlement based on mapping done by the Puget Sound Pioneer History Project. Continue to explore Seattle's landscapes through the tours presented on the historic life of this map.

SEATTLE: DISCOVER AND EXPLORE PAST LANDSCAPES

THE  
**WATERLINES**  
PROJECT

# Seattle - The Waterlines Project



1875

1896

1909

1943

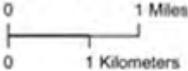
Today

Tideflat

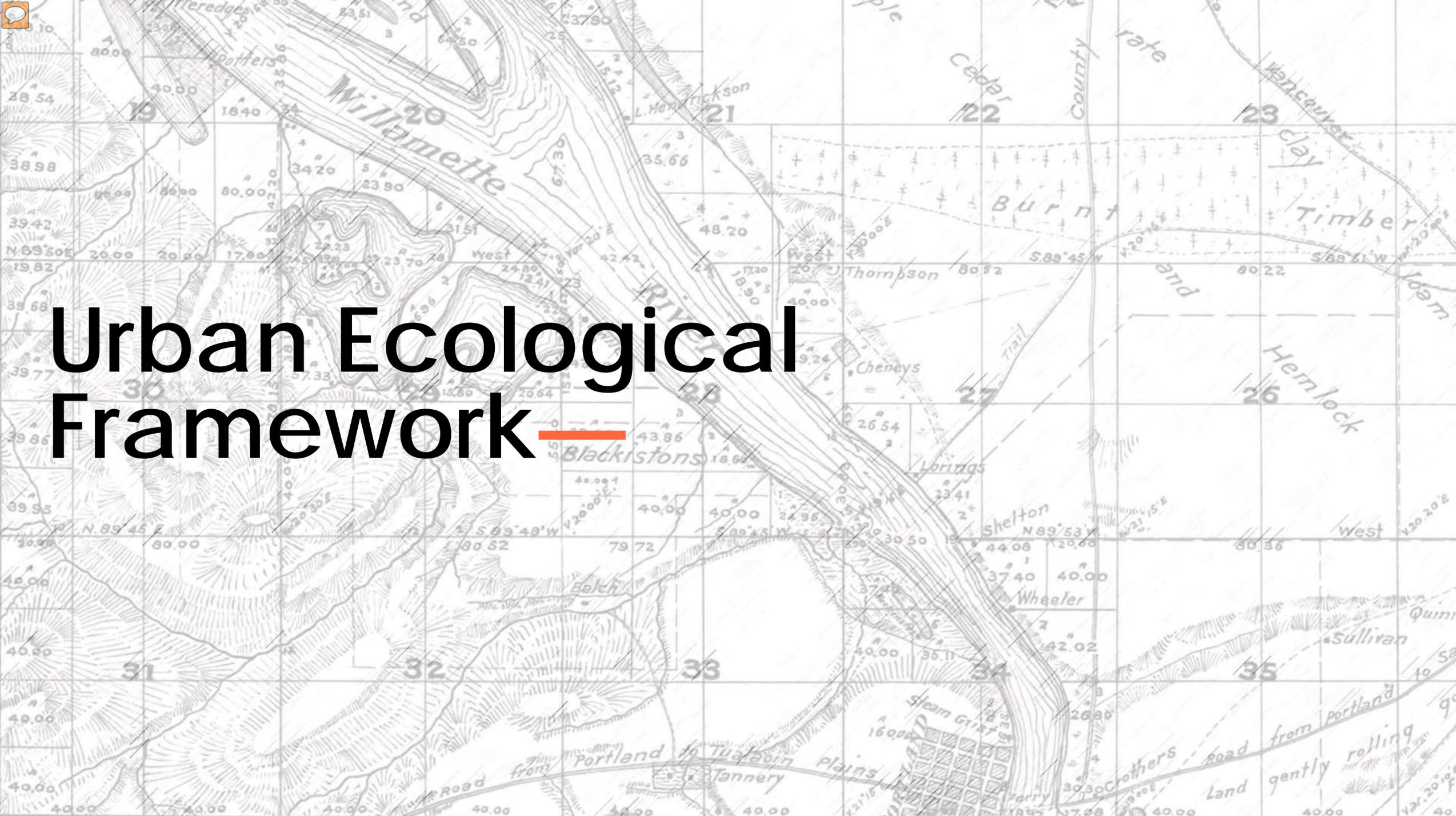
River Channel

Filled Land and Built Structures

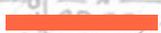
Salt Water Marsh



Historical data from USCGS Topographic Sheet T-1406, 1875; USGS Land Classification Sheet, Seattle Quadrangle, 1897; USGS Topographic map, Seattle Quadrangle, 1909; USGS Topographic map, 1943; The Waterlines Project



# Urban Ecological Framework

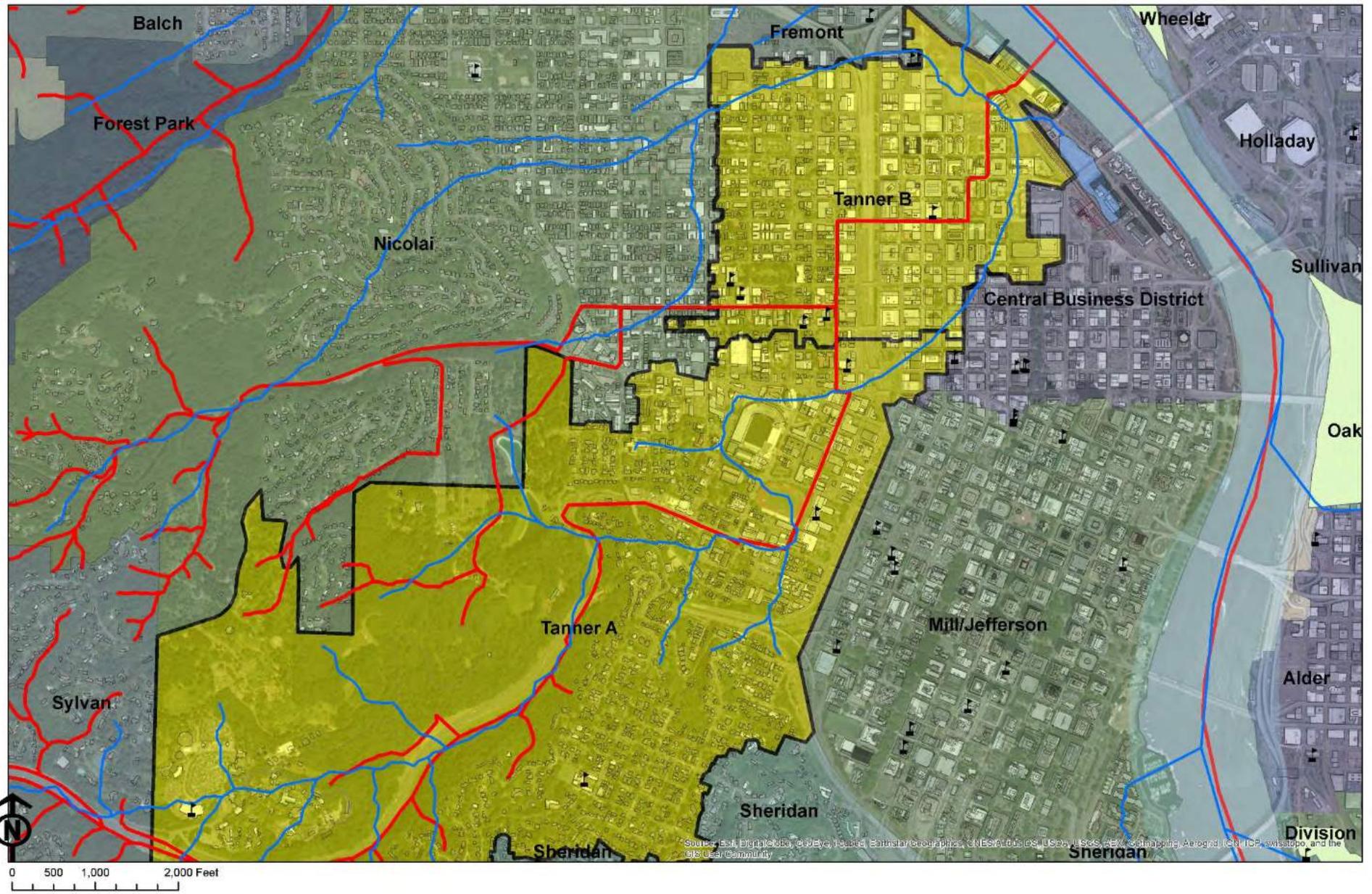


# TANNER CREEK TRANSECT

Ridgetop

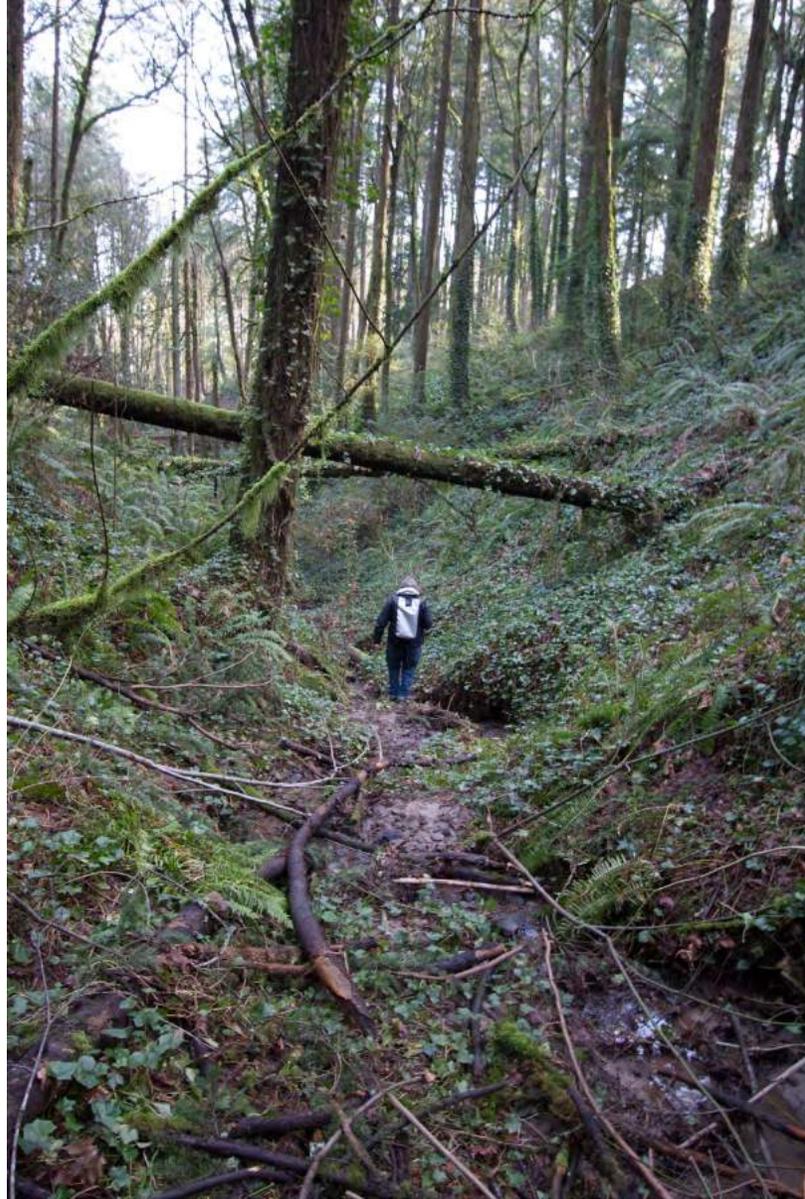


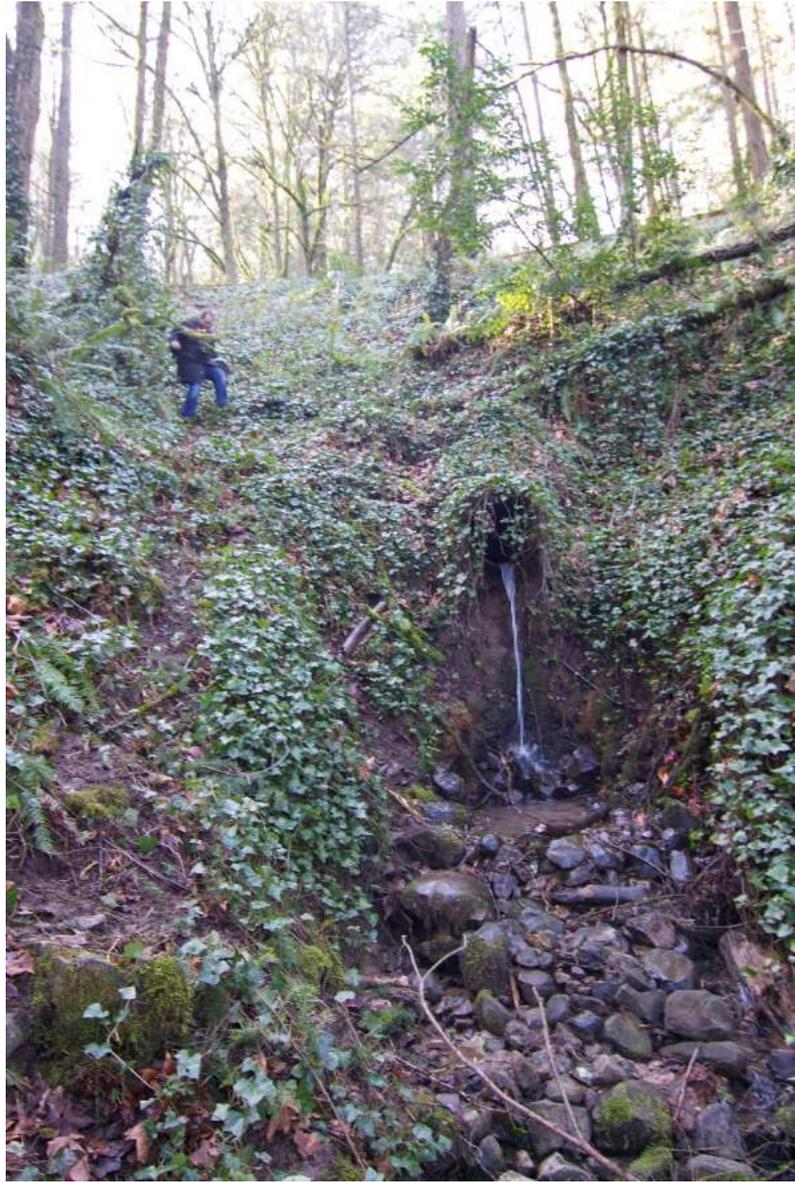
River









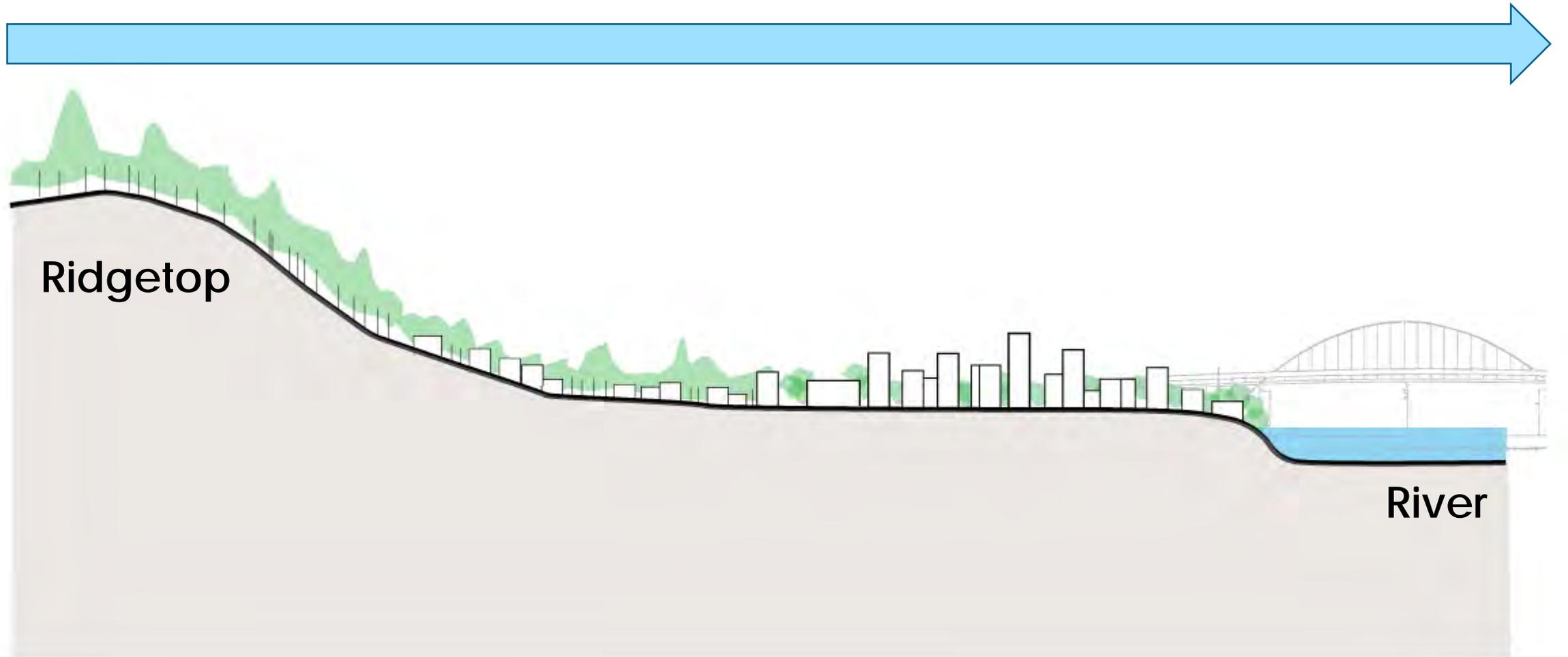




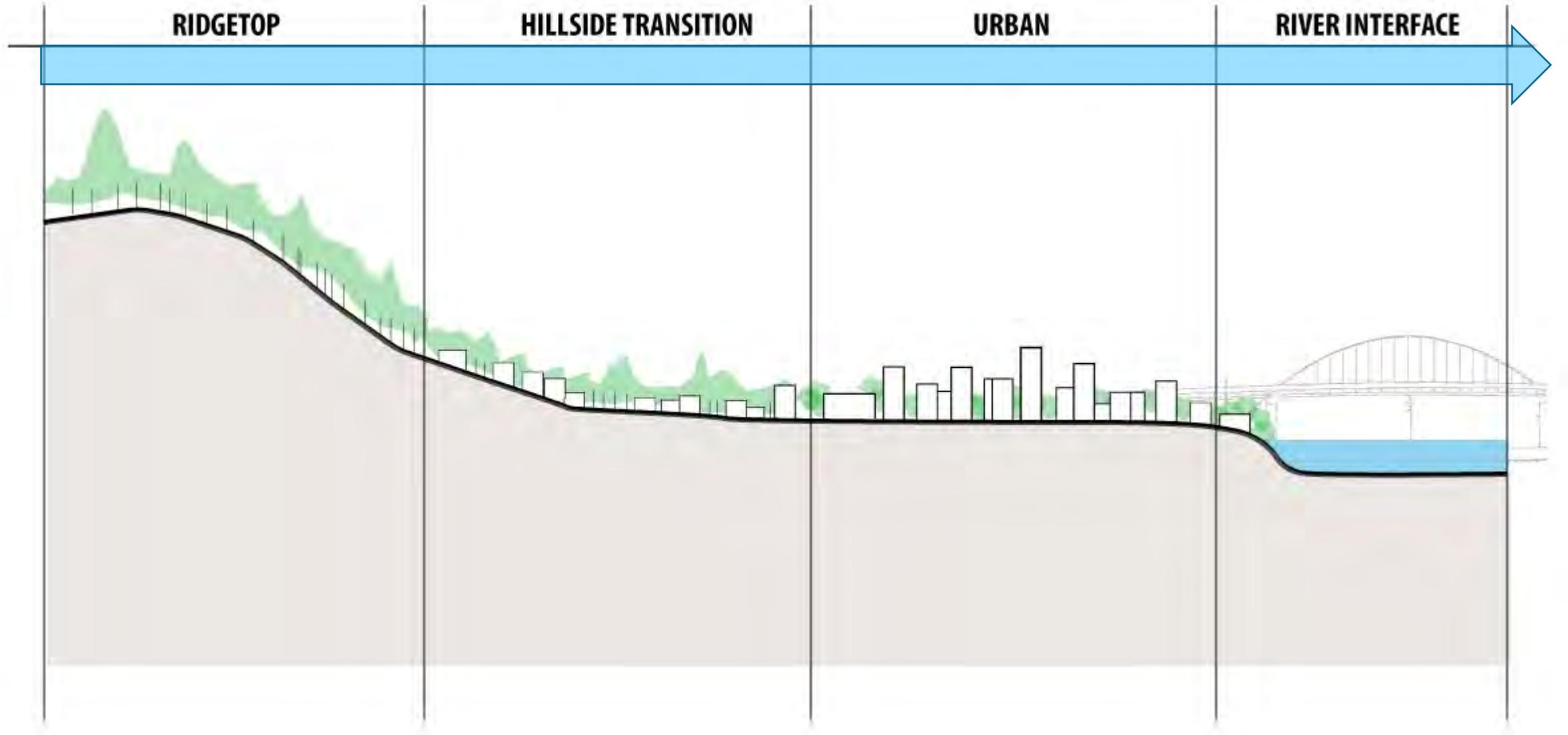
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Tanner Creek Tanner



# TANNER CREEK TRANSECT



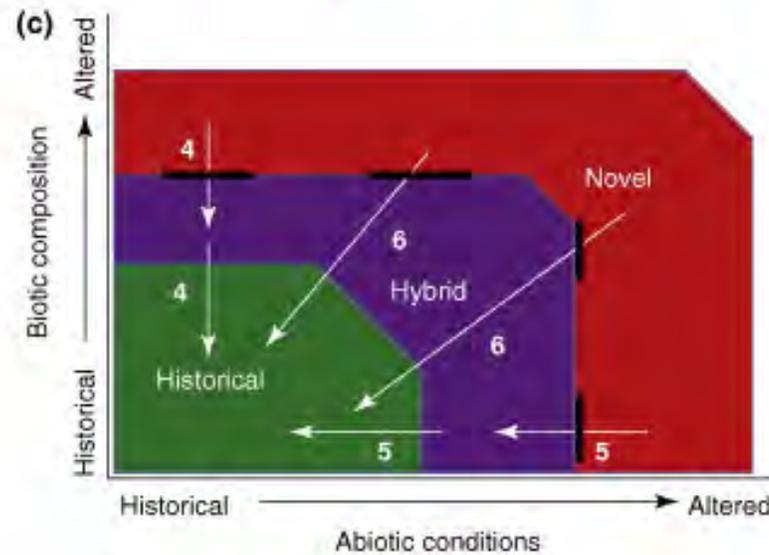
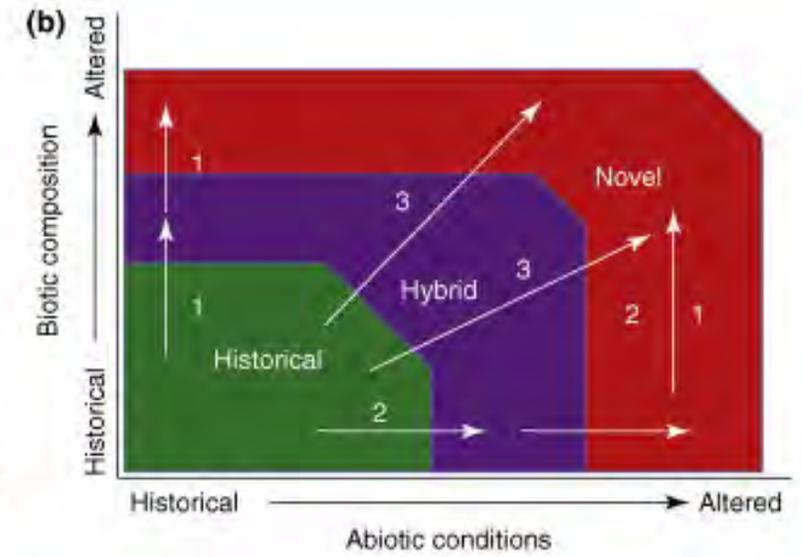
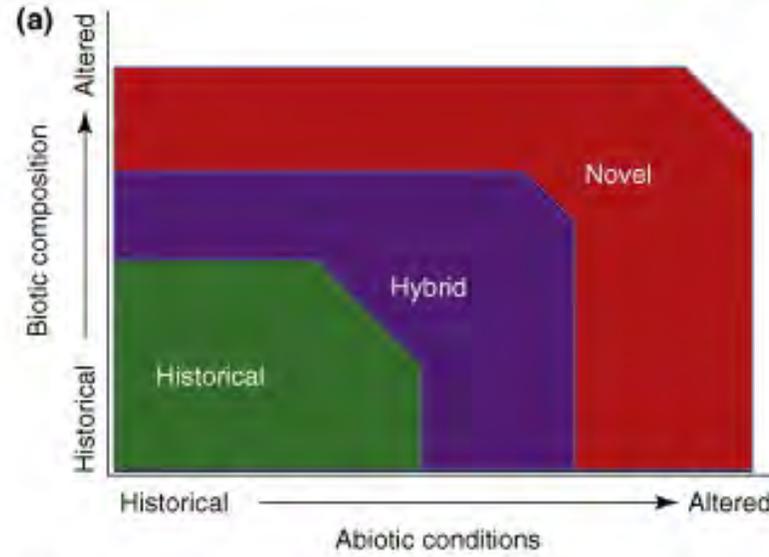
# INTERVENTION ZONES



# HIDDEN HYDROLOGY URBAN ECOLOGY FRAMEWORK

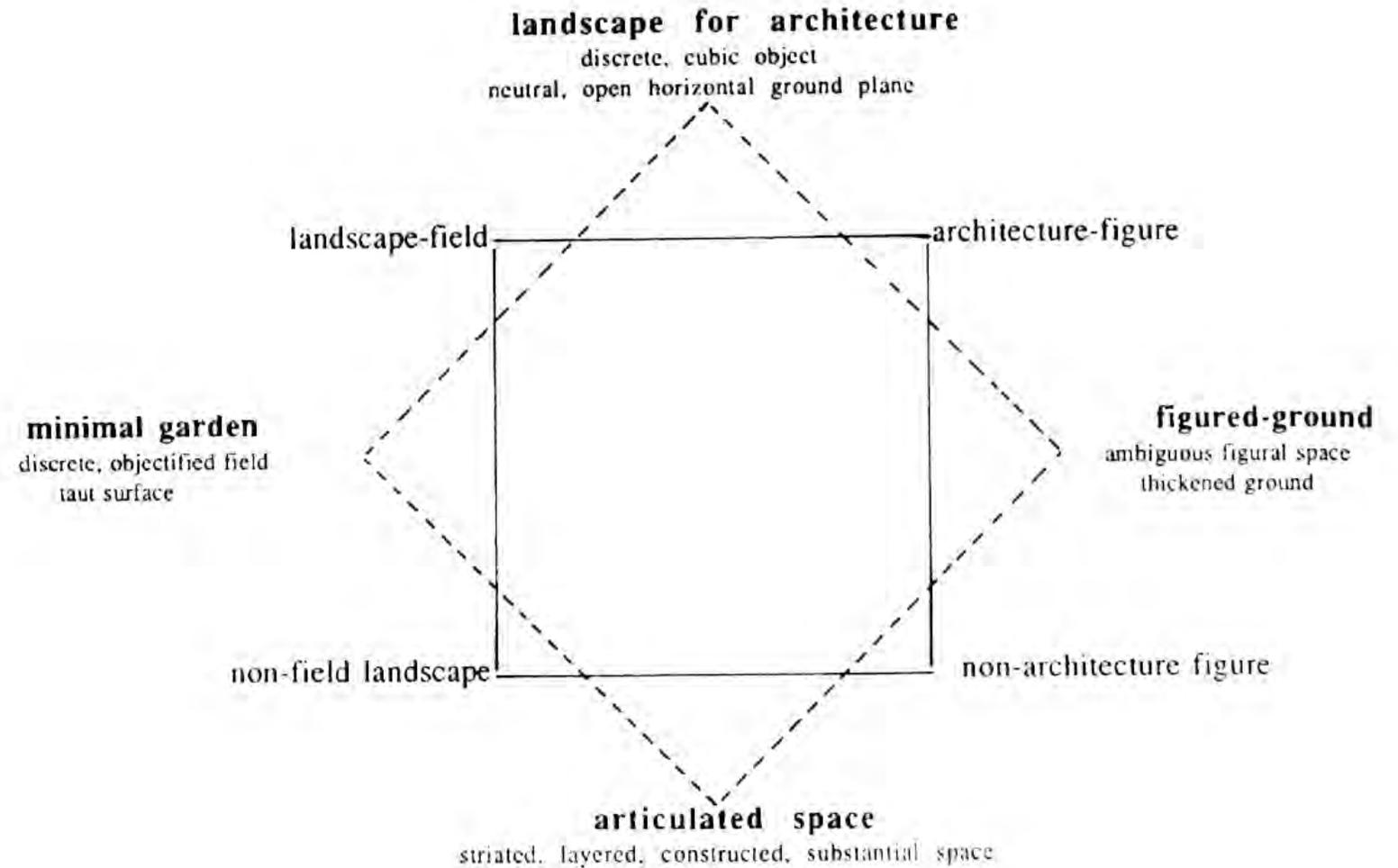
Origin #1  
Novel  
Ecosystems

Historical  
Hybrid  
Novel



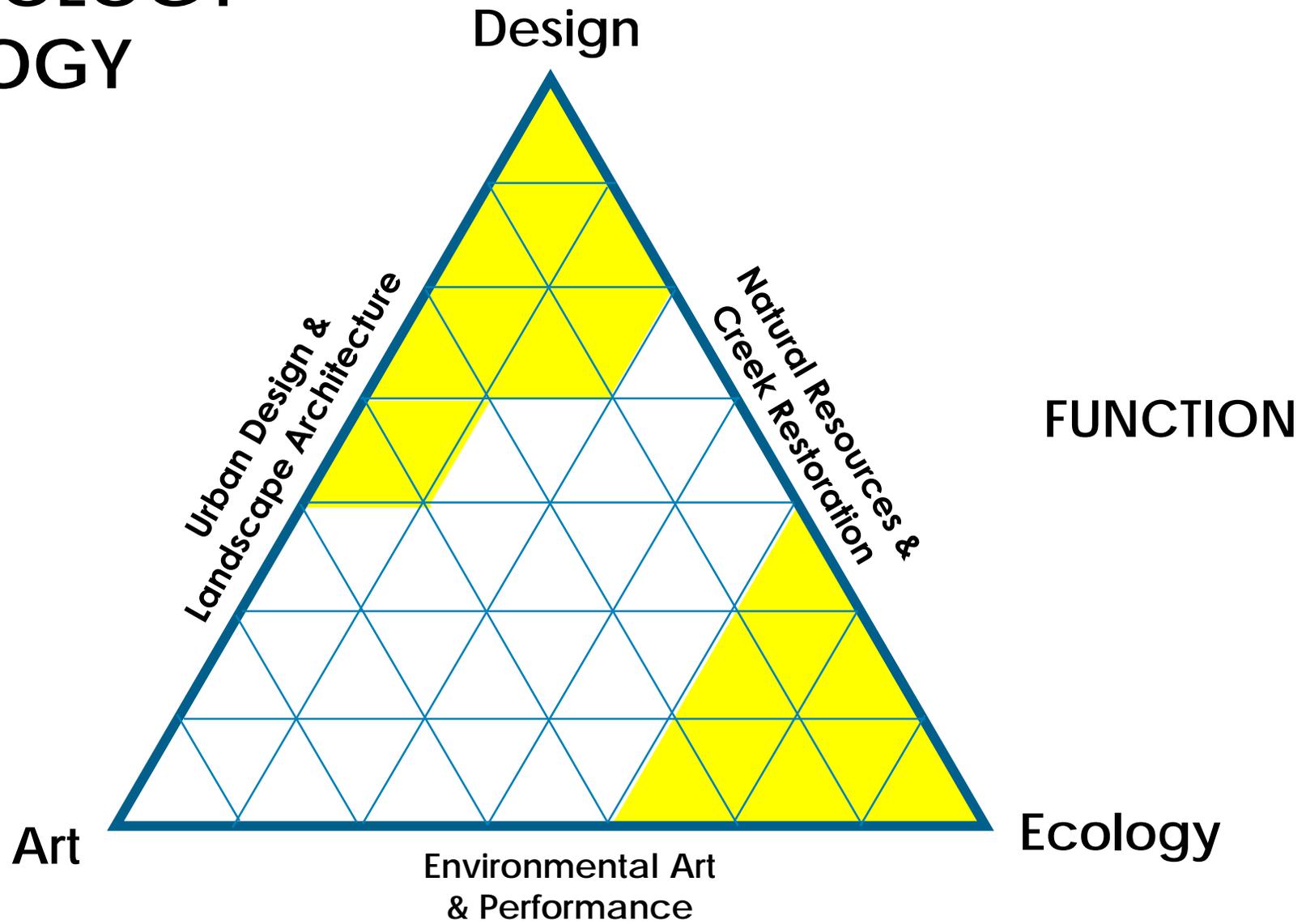
# HIDDEN HYDROLOGY URBAN ECOLOGY FRAMEWORK

## Origin #2 The Expanded Field of Landscape Architecture (Beth Meyer)



# HIDDEN HYDROLOGY URBAN ECOLOGY FRAMEWORK

FORM



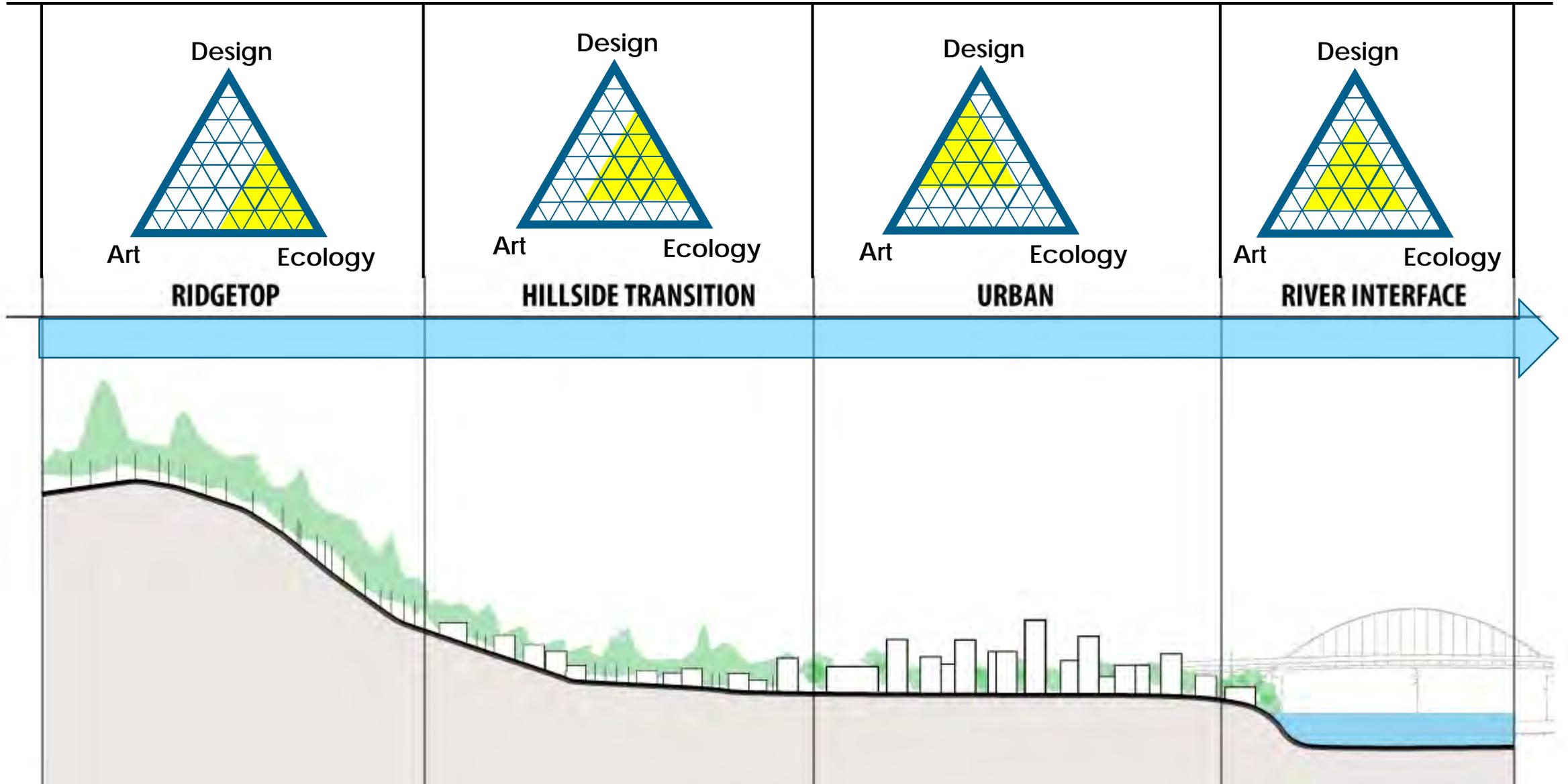
FUNCTION

Art

Environmental Art  
& Performance

Ecology

# INTERVENTION ZONES



# BENEFITS OF URBAN STREAMS

## (Ecological, Social, & Economic)

Increased biodiversity	Human Well Being (biophilic)
Improved water quality	Recreational Opportunities
Flood Protection	Thermal Comfort
Aquifer recharge	Educational Opportunities
Food	Increased Property Values
Drinking water supply	Climate Change Resilience
Stormwater management	Wildlife Habitat
Nutrient Removal	Hydroelectric Power
Support wetlands	Increased economic development
Heat Island Reduction	Ecosystem Services

# HOW TO MEASURES SUCCESS?

## Restoring Neighborhood Streams: Planning, Design & Construction (Ann L. Riley, 2016)



- A geomorphically and biologically functioning stream
- Solution to flooding and excess erosion
- Compatible with adjacent land uses to achieve functioning ecosystem
- Dynamic and resilient
- Reasonable cost

# BENEFITS OF URBAN STREAMS



Can we replicate all of the ecological, social, and economic benefits?



# Interventions



# ECOLOGY

# DESIGN

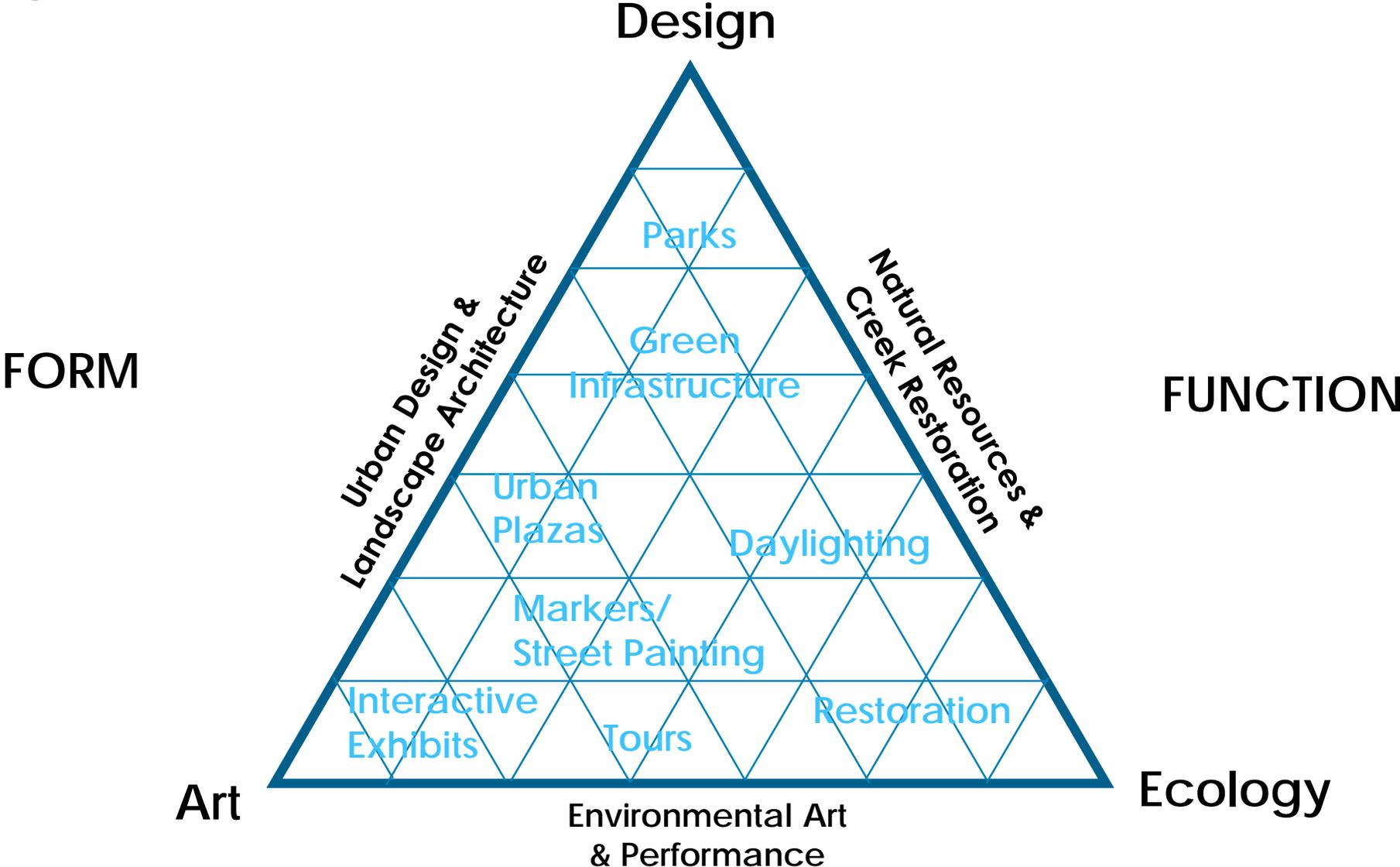
# ART

RESTORATION  
REHABILITATION  
DAYLIGHTING

GREEN INFRASTRUCTURE  
URBAN PARKS/PLAZAS  
OPEN SPACES/TRAILS  
GREENWAYS

STREET PAINTING  
MARKERS  
INTERACTIVE ART  
SOUNDSCAPES  
TOURS

# FRAMEWORK



# PRECEDENTS: DAYLIGHTING

## Thornton Creek Water Quality Channel - Seattle



# The Headwaters at Tryon Creek - Portland



PROJECT CREDIT & IMAGES: Greenworks PC

# Cheonggyecheon Stream – Seoul, South Korea



before



after

# Cheonggyecheon Stream – Seoul, South Korea



# Saw Mill River – Yonkers, NY



# Elizabeth Street – Melbourne, Australia



# Case Studies

[daylighting.org.uk](http://daylighting.org.uk)



**Adam Broadhead**

Tel: +44(0)114 222 5786  
Email: a.broadhead@shef.ac.uk



Associate links:



**the River Restoration Centre**  
*Working to restore and enhance our rivers*

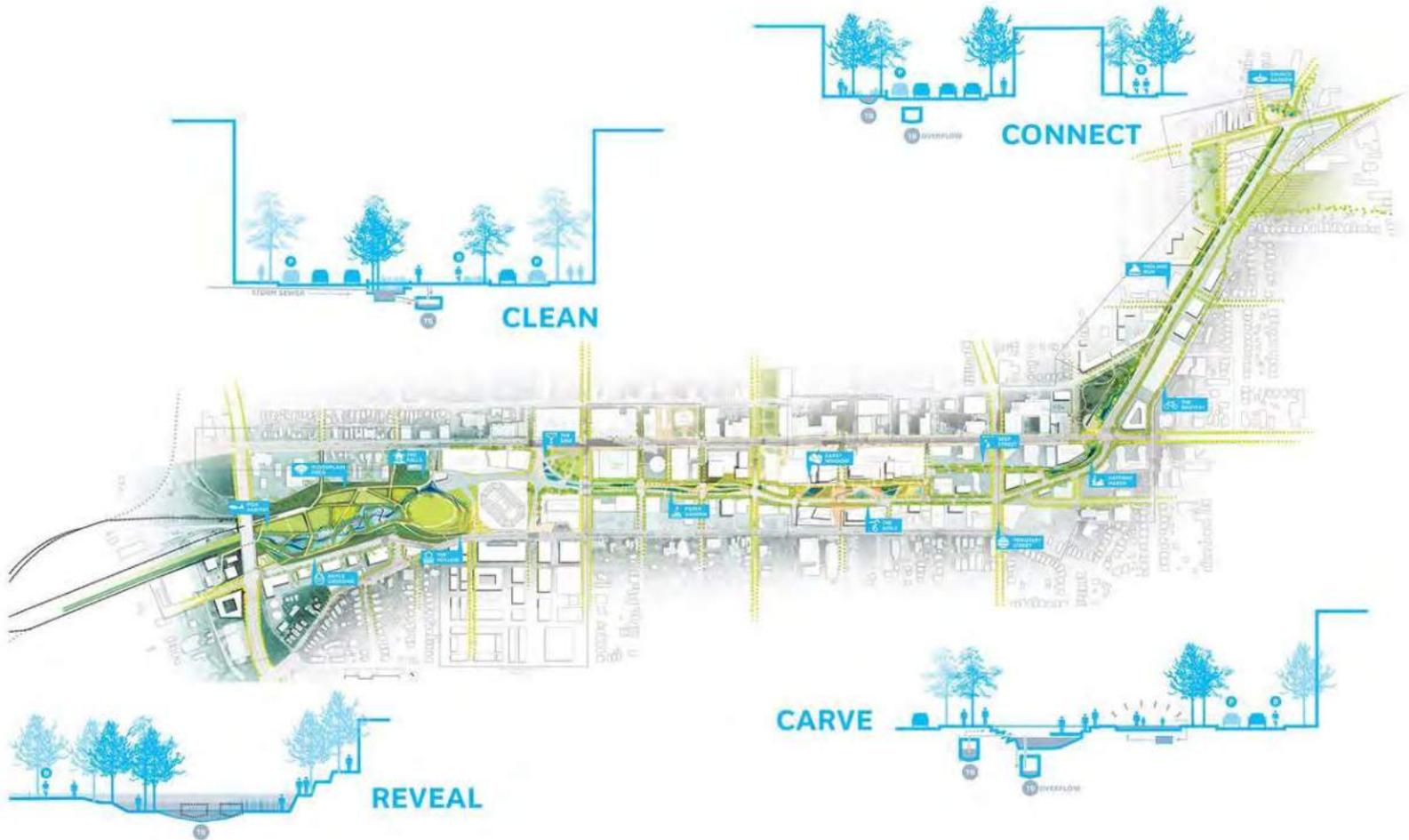


# PRECEDENTS: DESIGN INTERVENTIONS

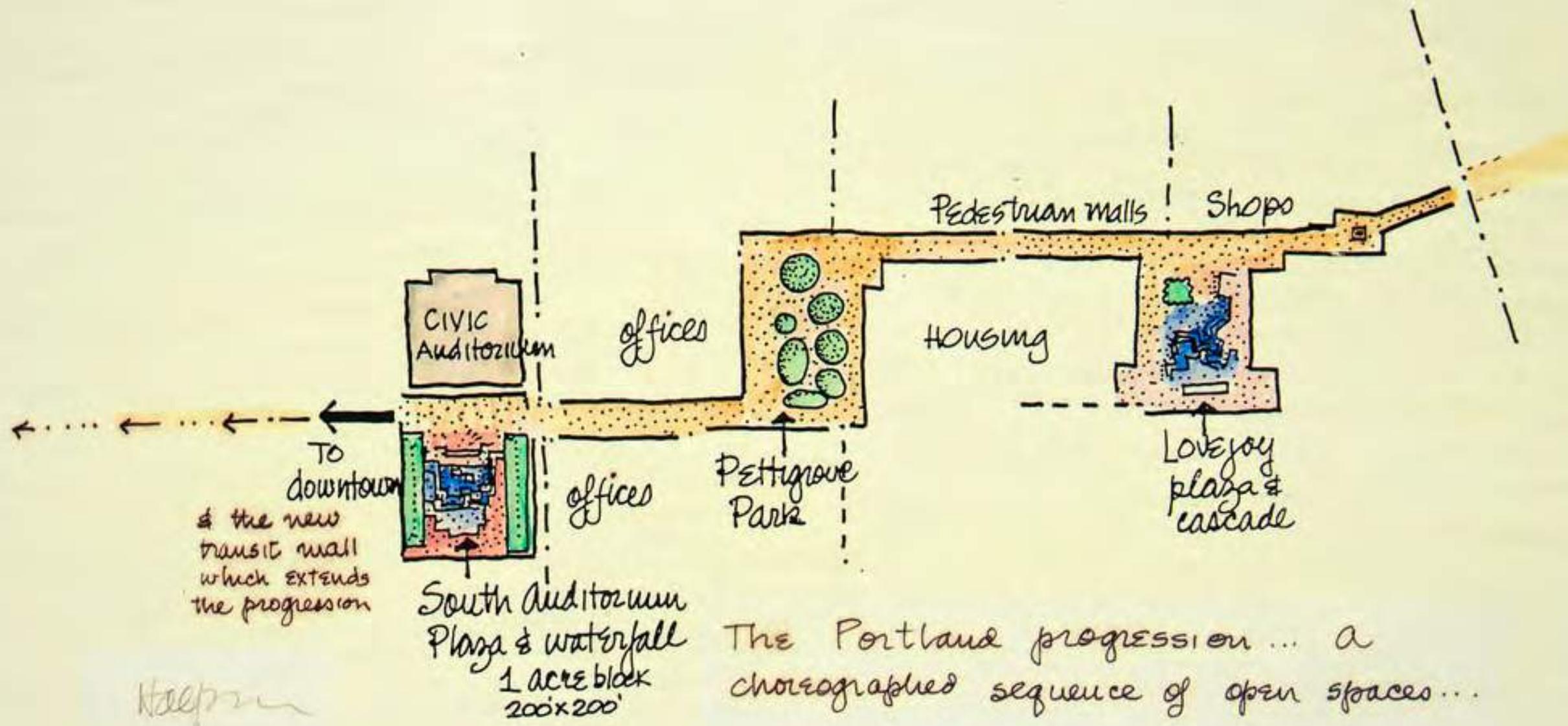
Town Branch Commons – Lexington,  
Kentucky (SCAPE)



# Town Branch Commons – Lexington, Kentucky (SCAPE)



# Portland Park Sequence (Halprin)



The Portland progression... a choreographed sequence of open spaces...

Halprin

# Portland Park Sequence (Halprin)

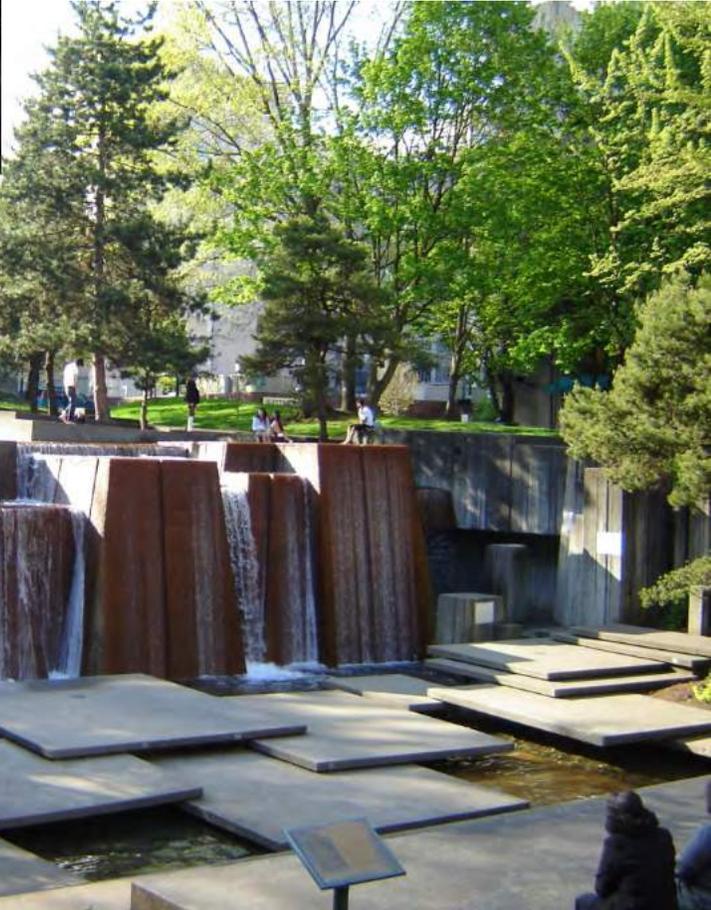


Headwaters



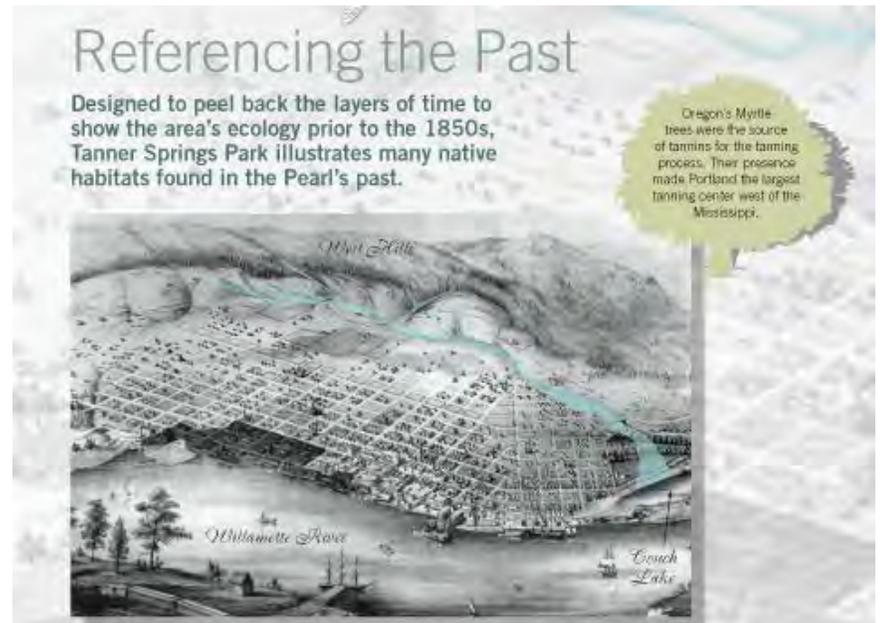
Pettygrove Park

Keller Fountain  
(Auditorium Forecourt)

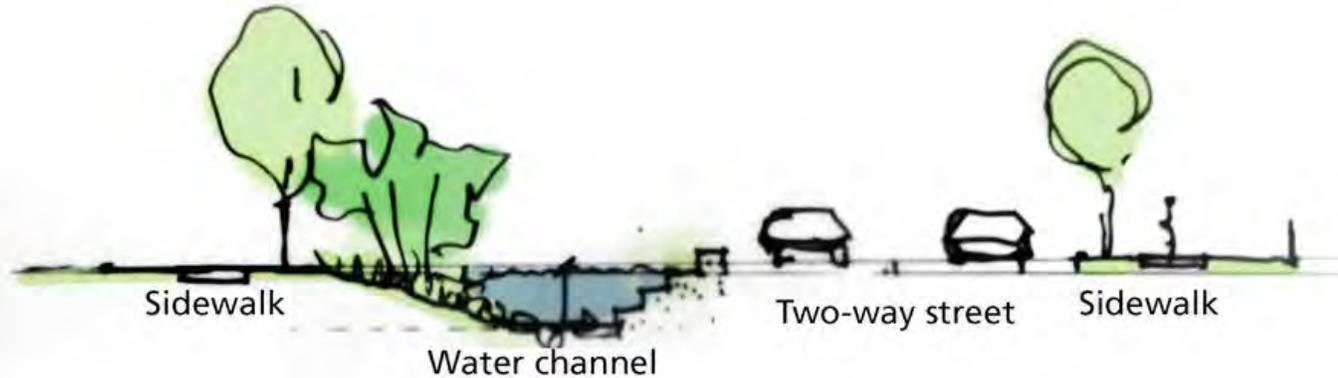
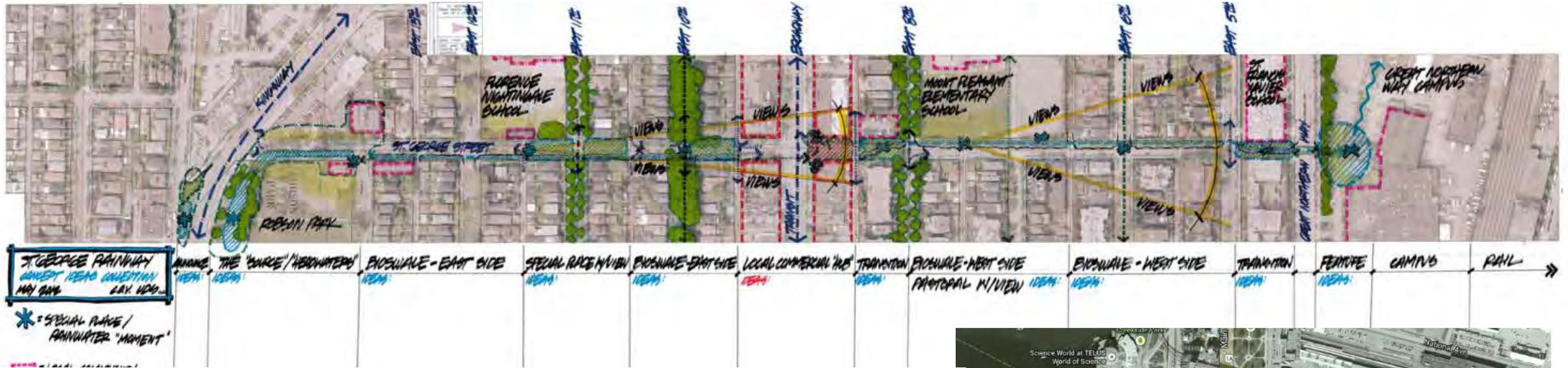


Lovejoy Fountain

# Tanner Springs Park – Portland (Atelier Dreiseitl / Greenworks)



# PRECEDENTS: INTEGRATED GREEN STORMWATER



The St. George Rainway – Vancouver, BC

# PRECEDENTS: INTEGRATED GREEN STORMWATER



The St. George Rainway – Vancouver, BC

# PRECEDENTS: STREET PAINTING



**The St George Rainway Project** is a community driven initiative that seeks to recall a historic waterway in Mt. Pleasant. The goal is to use rainwater runoff from adjacent properties, the street, and connecting laneways to recreate this lost stream as part of a "Rainway" along St. George St. from Kingsway to the False Creek Flats.



# PRECEDENTS: STREET PAINTING



## The Blue Road – Henk Hofstra

A road in Drachten, The Netherlands, is painted blue to symbolise the water. It is 1000 meters long and 8 meters wide. It was created to form an urban river and recreate the path of a waterway that used to be where the road currently runs. They will start to dig a new canal here in 2008.



# PRECEDENTS: STREET PAINTING



# PRECEDENTS: STREET PAINTING



## Ghost Arroyos – Schlickman & Loring

Reveal these forgotten waterways of the city (San Francisco) through a simple, but powerful intervention. Situated between 7th and 9th street, the project will mark the historical footprint of the arroyos onto the urban surface through paint or lighting. Visitors to the festival will be invited to trace the path of the waterways while listening to a curated recording of hydrological soundscapes and oral histories.



# STREET PAINTING



LOCATE: Tanner

# PRECEDENTS: ART / MARKERS



Tanner Creek Markers – Providence Park, NW Portland

## Located on the Floor of Pioneer Square - Portland



## Climbing Along the River

Willows never forget how it feels  
to be young.

Do you remember where you come  
from?

Gravel remembers.

Even the upper end of the river  
believes in the ocean.

Exactly at midnight  
yesterday sighs away.

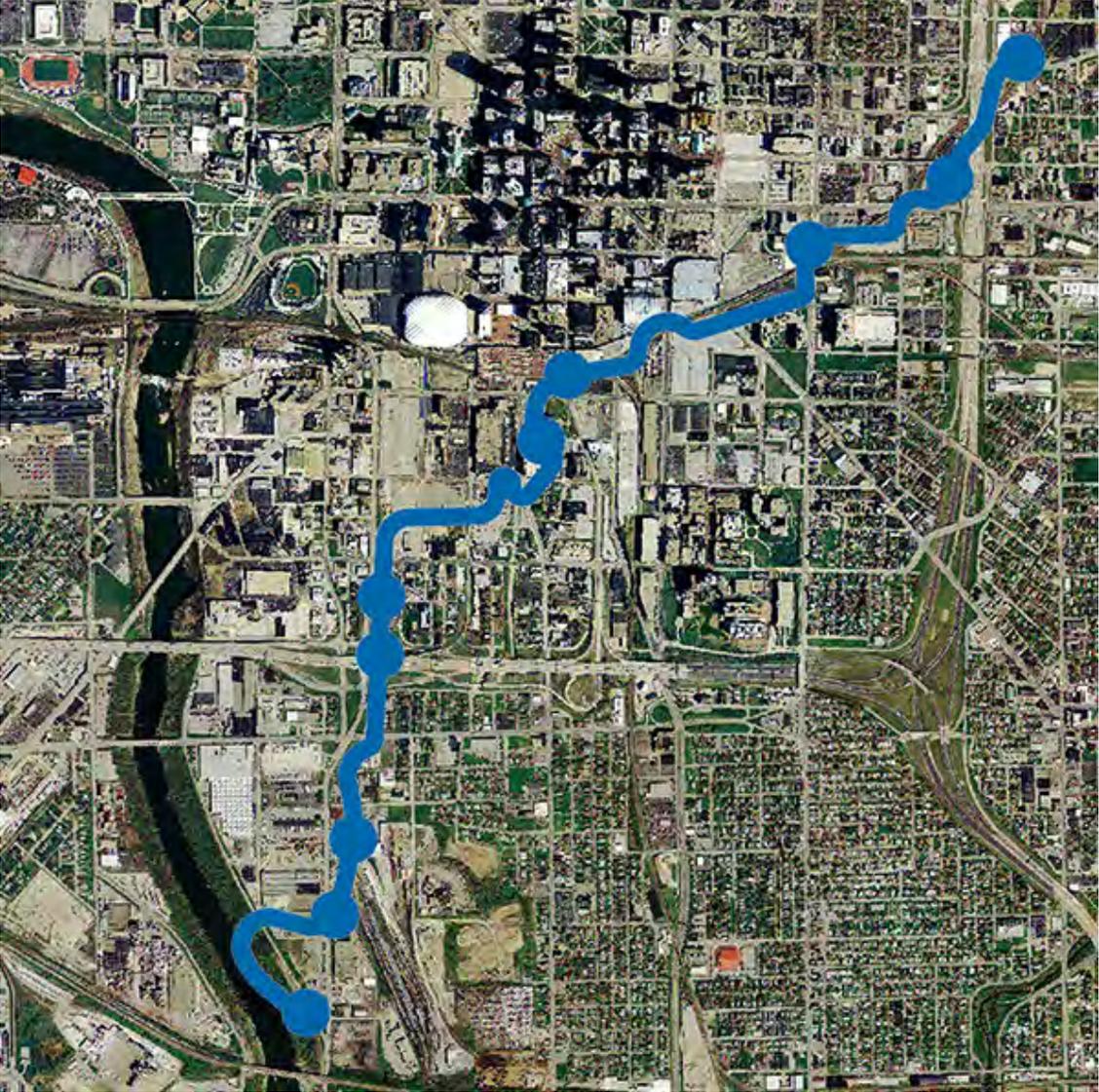
What I believe is,  
all animals have one soul.

Over the land they love  
they crisscross forever.

*William Stafford*

# Charting Pogue's Run – Sean Derry (Artist)

## Indianapolis

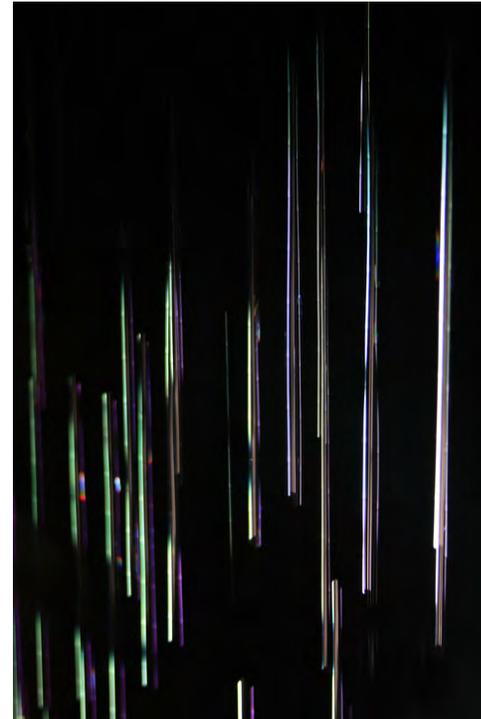


River Effra Markers –  
London



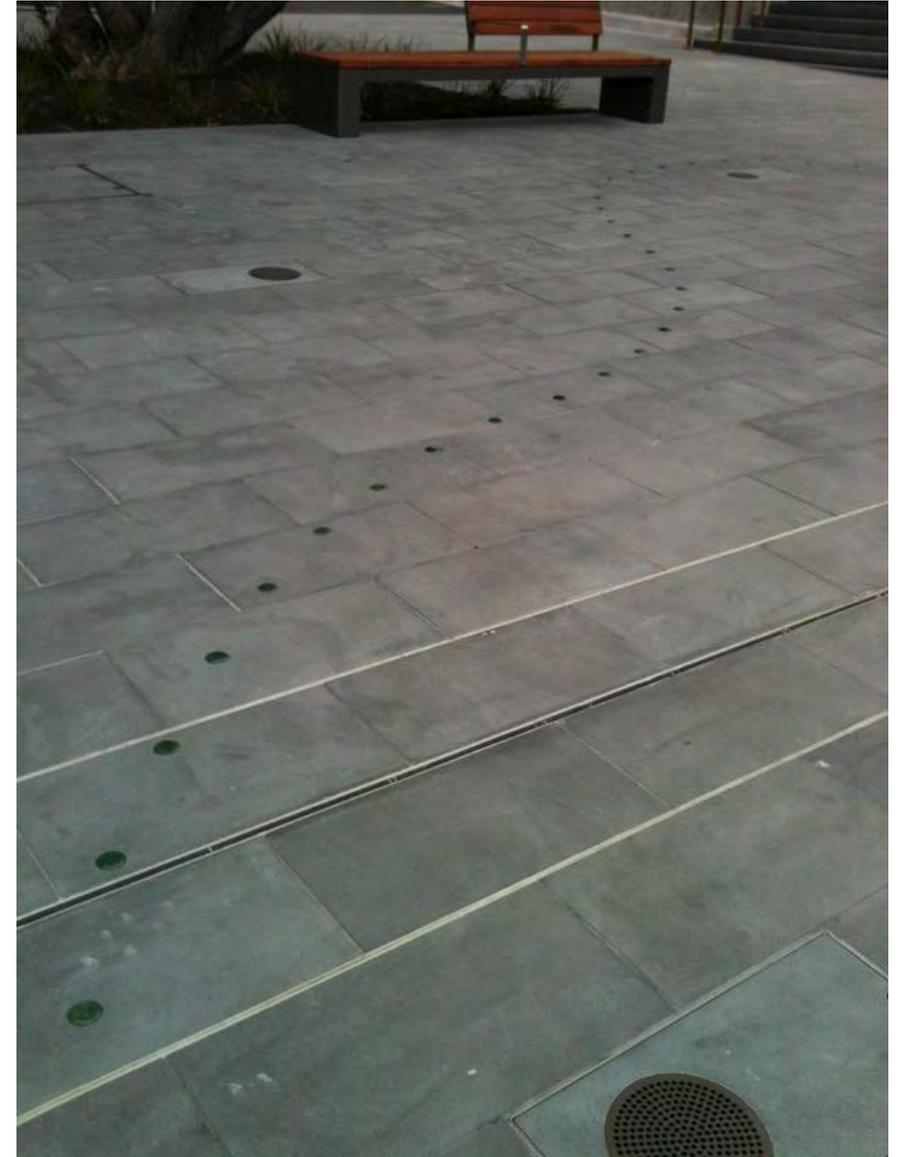
## The Wet Index – Auckland, New Zealand Artist: Kedron Parker

*The Wet Index* is a rain curtain that displays water collected from the source of the Kumutoto Stream, which flows in storm water pipes underneath Woodward Street to the harbour.



## Walk the Line - (Auckland, New Zealand)

Joe Sheehan has almost completed his commissioned artwork, "Walk the Line" ... jade and pounamu discs embedded in the ground, and which follow the course of the (now underground) Waipiro Stream. Joe has installed speakers beneath the plaza and the artwork includes the sound of a stream.





<http://www.ninamontenegro.com/free-the-billboards/>

# HIDDEN STREAM VIEWMASTER



Viewfinder

# PRECEDENTS: SOUNDSCAPES

London Sound Survey

[www.soundsurvey.org.uk](http://www.soundsurvey.org.uk)

## LONDON SOUND SURVEY

HOME | LONDON MAP | SOUND ACTIONS | SOUND MAPS | WILDLIFE | PROJECTS | HISTORICAL | BLOG | SAY HELLO

GO TO A TEXT-ONLY VERSION OF THIS PAGE MADE FOR SCREEN-READING PROGRAMS

SHARE THIS PAGE      



**GENERAL • GRID • WATERWAYS • EDGELANDS • ESTUARY • ANDRE'S LONDON • UNSEEN**

An auditory tribute to Harry Beck's Underground map, the skeleton which has long lent shape to the city in the minds of Londoners. Here sounds were collected from along London's canals and lesser rivers. Completed in March 2012.

Click on a placename below to hear its sounds and read about the recording



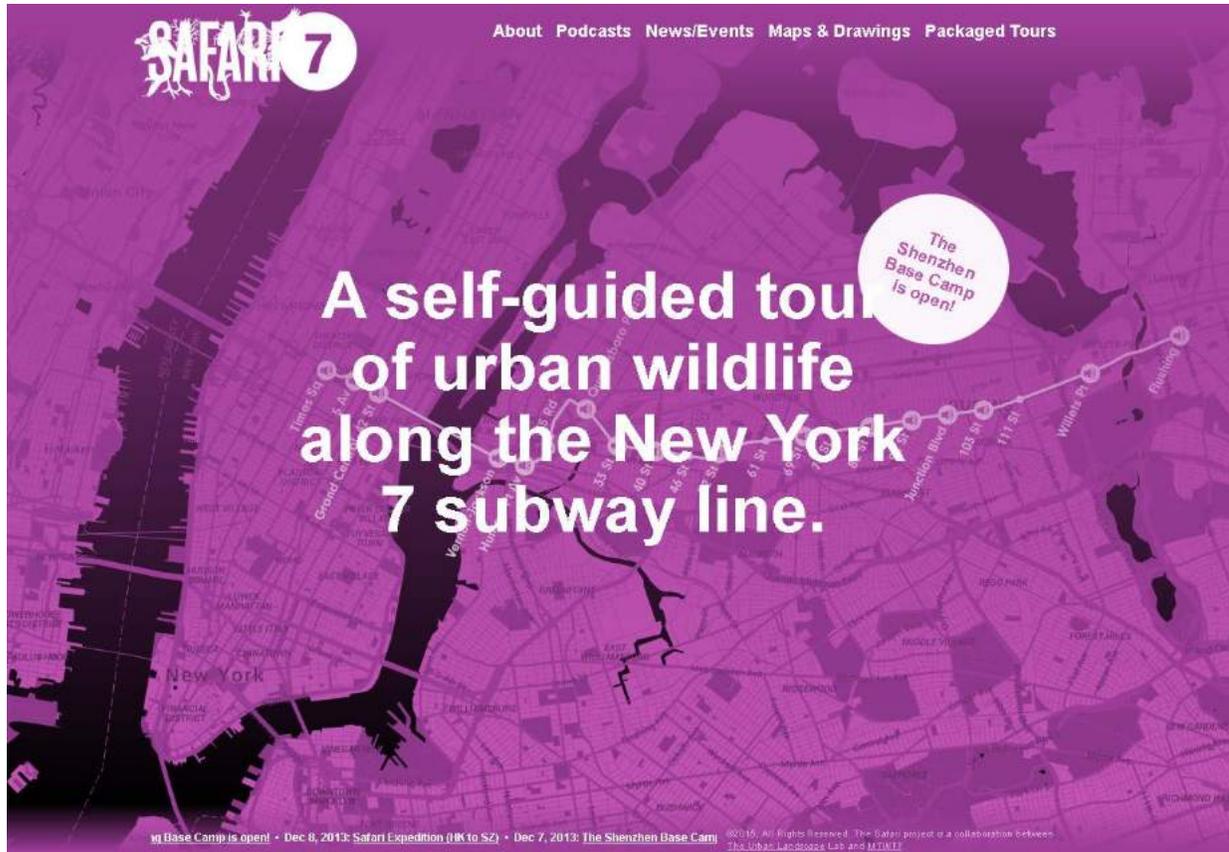
Canvey Island, Hoo Peninsula and Southend

# Bluebrain Central Park

[www.soundsurvey.org.uk](http://www.soundsurvey.org.uk)



# Safari 7 (SCAPE)



safari7.org

## PODCASTS at [www.safari7.org](http://www.safari7.org)



### 42 St - Times S Germs

Alex Cook, Ryan Johns

From Flushing Station to 42nd Street, more germs ride the #7 line each day than people do in a year. A closer look at the micro ecology of NYC's microscopic commuters.



### Hunters Point Dope Fish

Alex Vial

The East River's high level of estrogen has the local fish swimming sideways.



### Grand Central - 42 St U Thant Island

Alison Von Glinow, Lesley Merz

Off the grid and hidden in plain sight, U Thant Island is made from the leftovers from the 7 line's Steinway Tunnel and is home to NYC's cormorant population. Interviews with John Motta, Parklands Commissioner, NYC Dept of Parks and Recreation and Dr. Susan Elbin, Director of Conservation, New York City Audubon Society.



### Queensboro Plaza Squirrels

Meg Kelly, Grace Robinson-Leo

The expansion of Manhattan's East River parks mean a real estate boom for the indigenous eastside squirrels.



### Vernon Blvd - Jackson Av Oysters

Aaron Hsieh, Evelyn Ting

Back in the day Queens Bay was NYC's raw bar, home of the largest oyster population on the East Coast. Interviews with Katie Mosher-Smith, NYNJ Baykeeper.



### 40 St - Lowery St Dogs

Sayli Korgaonkar

From 5th Avenue to Times Square, the price of real estate is directly related to what size dog you keep. Canine demographics across two boroughs.

Safari 7 Spring 2009 podcasts are created by students in a seminar on urban ecology at the Barnard and Columbia Colleges Architecture Program.

Listen in, and check back for more in the future!



### 52 St Ecology of Death

Alex Cook, Ryan Johns

Calvary Cemetery, one of the largest urban necropolises in the nation, has an ecology and chemistry all its own. A look at what goes in, what comes out, and what we should know about the dead in NYC.



### Junction Blvd Pigeons

Alex Vial

New Yorkers have tried dozens of techniques, all unsuccessful, to control the population of the urban freeloaders otherwise known as Rock Doves.



### 82 St - Jackson Hts Coop Courtyards

Aaron Hsieh, Evelyn Ting

Away from the street and behind walls of brick are well-tended garden oases. Are these historic landscapes, public playgrounds, or private gated communities? Residents, preservationists, and neighbors weigh in. Interviews with Donald Keratzas, author of "Jackson Heights: A Garden in the City", Ed Westley and other anonymous residents conducted in Jackson Heights.



### 103 St - Corona Plaza Chickens

Meg Kelly, Grace Robinson-Leo

The urban chicken occupies two spots in Queen's Corona Park, the egg-maker for suburban farmers and the heavy in backyard cockfights. Audio footage of Owen Taylor is from Leonard Lopate, December 21, 2006, and of Martin Edmond and Charlie Johnson from "Cockfighters: The Interviews" by Stephanie J. Castillo.



### 90 St - Elmhurst Av Reef Condos

Lesley Merz, Alison Von Glinow

Homo sapiens aren't the only New Yorkers riding NYC's subway cars. Aquatic New Yorkers strap-hang in decommissioned cars which have been used to build reefs around Manhattan Island.

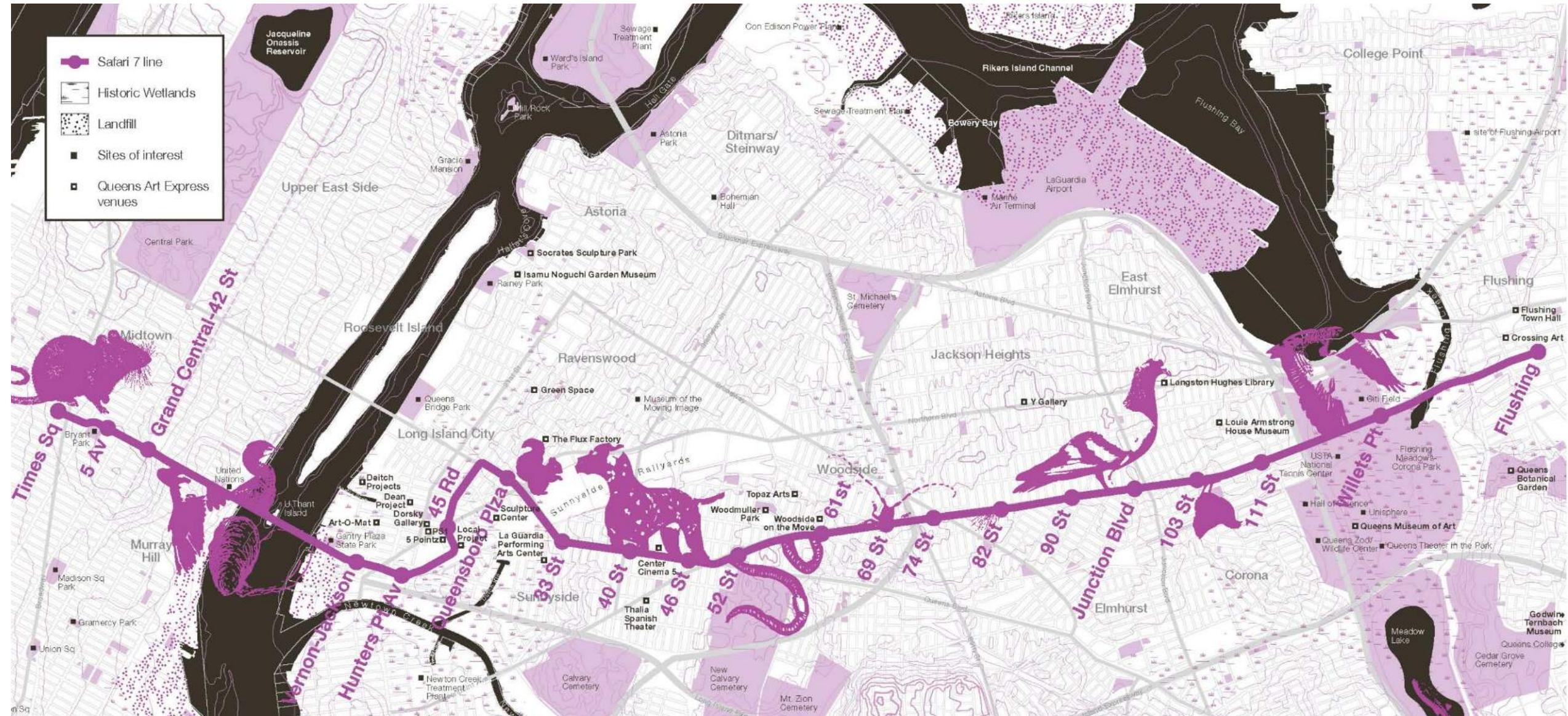


### Willets Point - Shea Flushing Meadows

Emily Glass, Stephanie Odenheimer

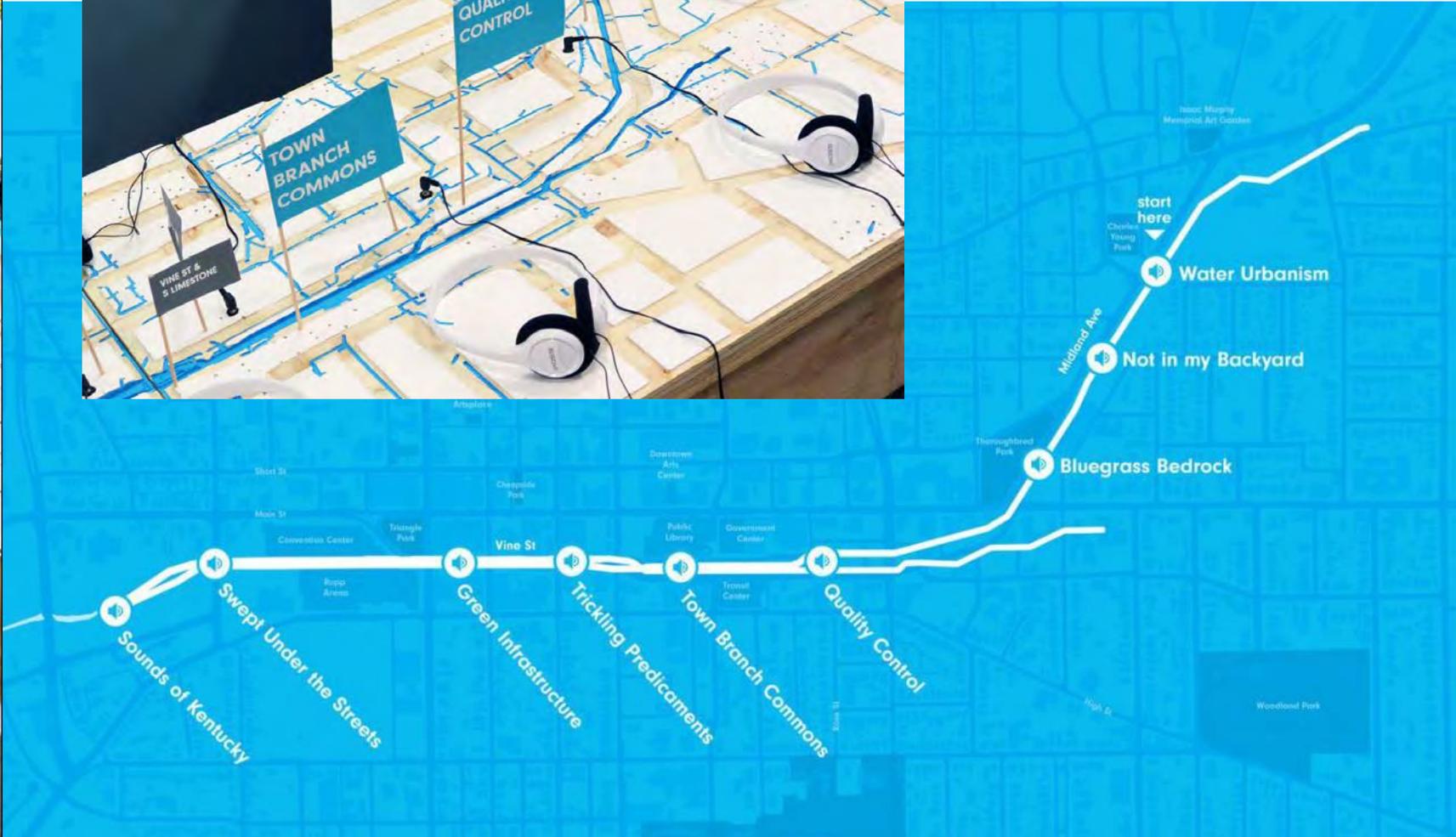
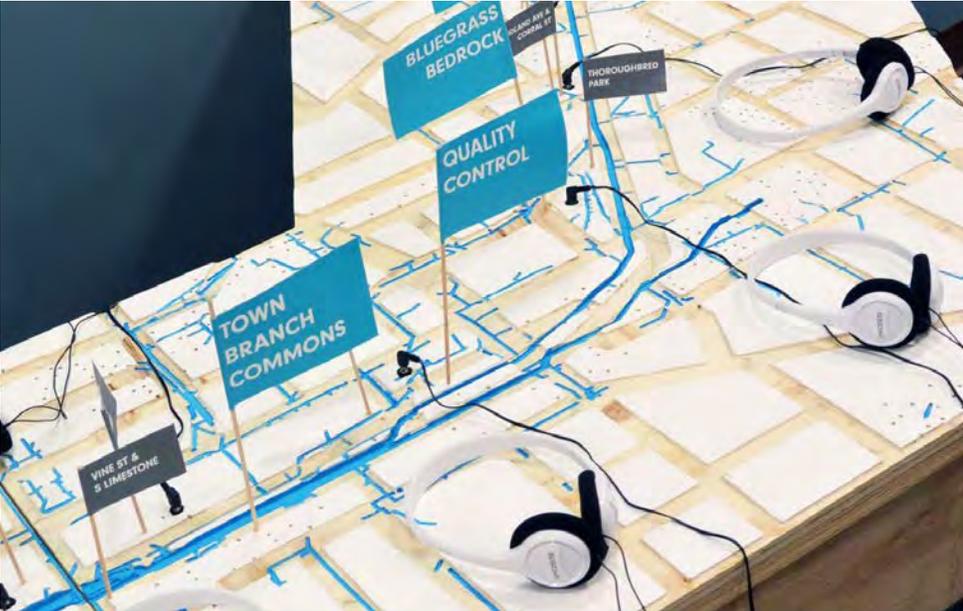
This former ash dumping ground became the site of the 1964 World's Fair, and is also the site of some fishy and fowl activities. Audio footage from NPR's "All Things Considered".

# PRECEDENTS: VIRTUAL TOURS



# Town Branch Water Walk (SCAPE)

[www.townbranchwaterwalk.com](http://www.townbranchwaterwalk.com)



# PRECEDENTS: TOURS

Fathoming  
[www.thinkwalks.org](http://www.thinkwalks.org)

## Walk Map

- Sewer
- Street
- Walking Route
- Lost River
- 📍 Point of Interest



1 Begin your walk at the northwest corner of Crawford and College Streets. Look down at the Garrison Creek icon on the sidewalk. Garrison Creek flowed here for more than 10,000 years until 1884 when it was buried in the sewer below your feet.

In the 1980s, architects James Brown and Kim Storey mapped lost Garrison Creek, the beginning of a communal love affair with its memory. They wanted to bring the Garrison back as a natural system to handle stormwater. Practical, economic, social, and political barriers intervened, but the creek, now firmly entrenched in local sentiment and mythology, lives on in green links, the parks along its path, in curving streets, in the sound of water rushing under streets and in creative community projects.

The idea of using nature as the design template for remaking cities has taken hold since then, and new technologies are being applied to create living buildings and blue-green infrastructure. The environmental, social and cultural benefits are many, including reduced flooding and climate change impacts.

On this walk discover possibilities for a blue-green future for Garrison Creek and learn about the David Suzuki Foundation project to create a "Homegrown National Park" in the watershed of lost Garrison Creek.

- |  |                                    |
|--|------------------------------------|
| 1 De-paving Paradise                           | 7 Going Off Grid                   |
| 2 Cinder Lane                                  | 8 Daylight                         |
| 3 WaterHarvest                                 | 9 Lost Forests                     |
| 4 Lost Garrison Creek Meets Lost Denison Creek | 10 Lost Wetlands and Birds         |
| 5 Homegrown National Park                      | 11 Laneway Nature                  |
| 6 Overflowing                                  | 12 Lost Stafford and Asylum Creeks |

## FATHOMING

SAN FRANCISCO'S SEWER HISTORY  
BIKE TOUR & ART PARTY



Thirsty City (Toronto)  
[www.lostrivers.ca](http://www.lostrivers.ca)

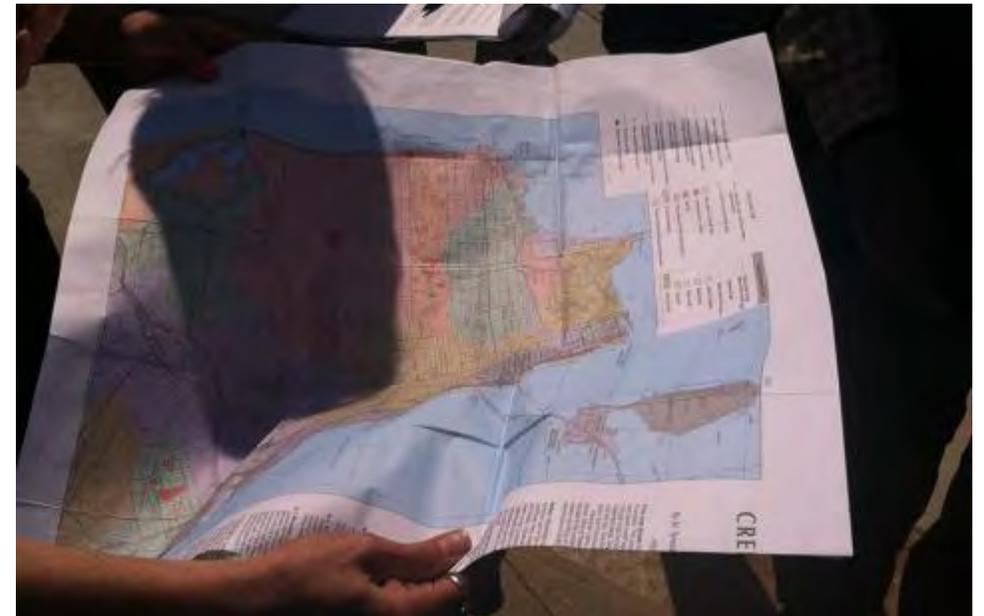
# PRECEDENTS: GUIDED TOURS



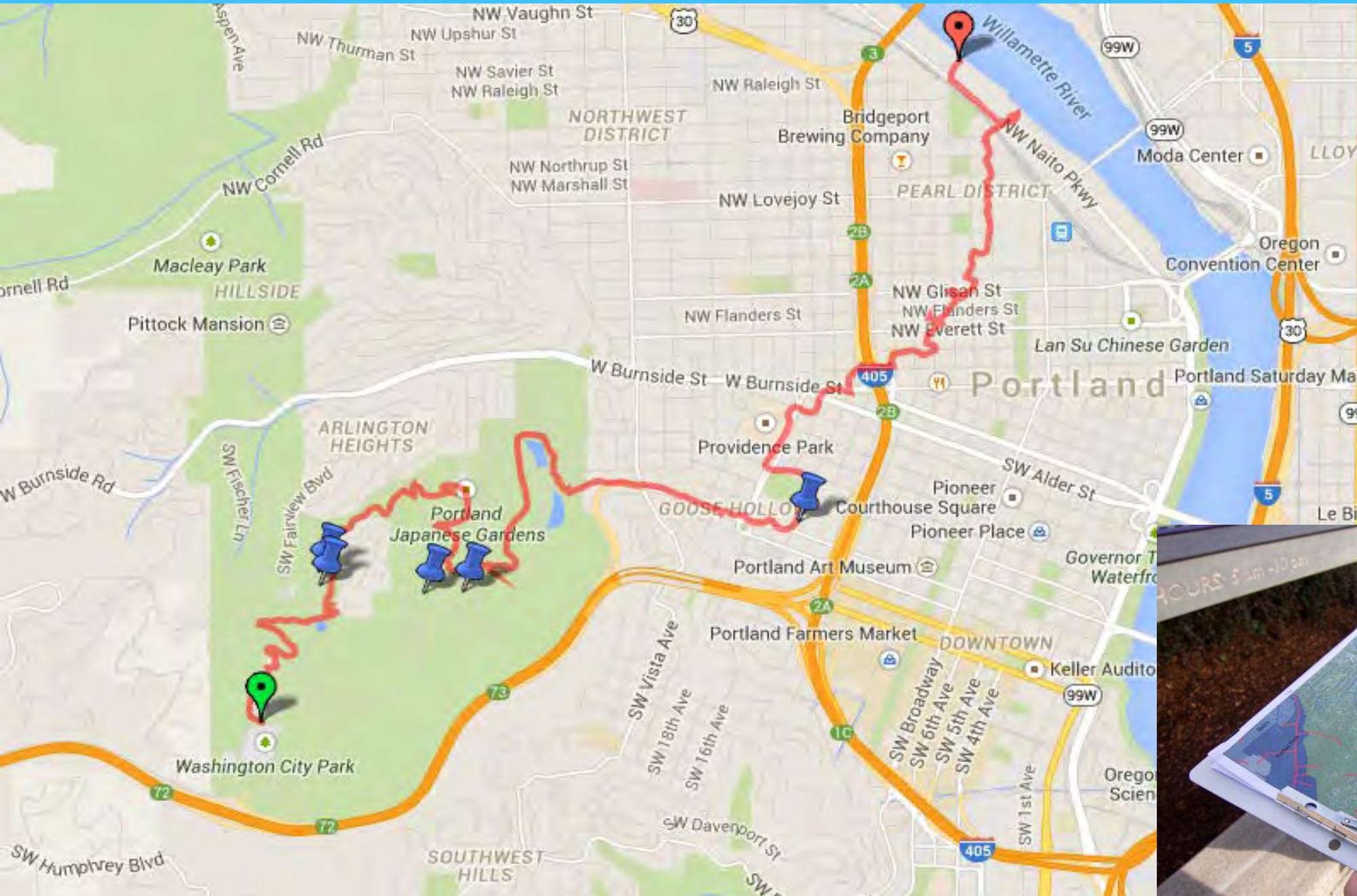
## Southern Exposure Creek Walks

<https://www.soex.org/events/mission-creek-walk>

Tracing the hidden waterway, the group stops at various landmarks along the way to gather ingredients for a lunch along the water. The walk concludes with a gathering on Mission Creek...



# HIDDEN HYDROLOGY TOURS



# PRECEDENTS: REDISCOVER PLACES

## Watershed Delineations

### THE UNITED (WATERSHED) STATES OF AMERICA

What if Powell's proposal had succeeded? What if all American states were defined by watershed boundary? It might look like this...

Before 1869, no one had successfully navigated the mighty Colorado River. But on August 13, 1869 John Wesley Powell, civil war veteran and geologist, and a small support crew stood at the confluence of the Virgin and Colorado Rivers after having done just that. Powell went on to float the Colorado again in 1872, and recounted the events of these adventures in his book later known simply as *Canyons of the Colorado*. Lesser known, but perhaps more important, Powell proposed in his 1879 *Report on the Lands of the Arid Regions of the United States*

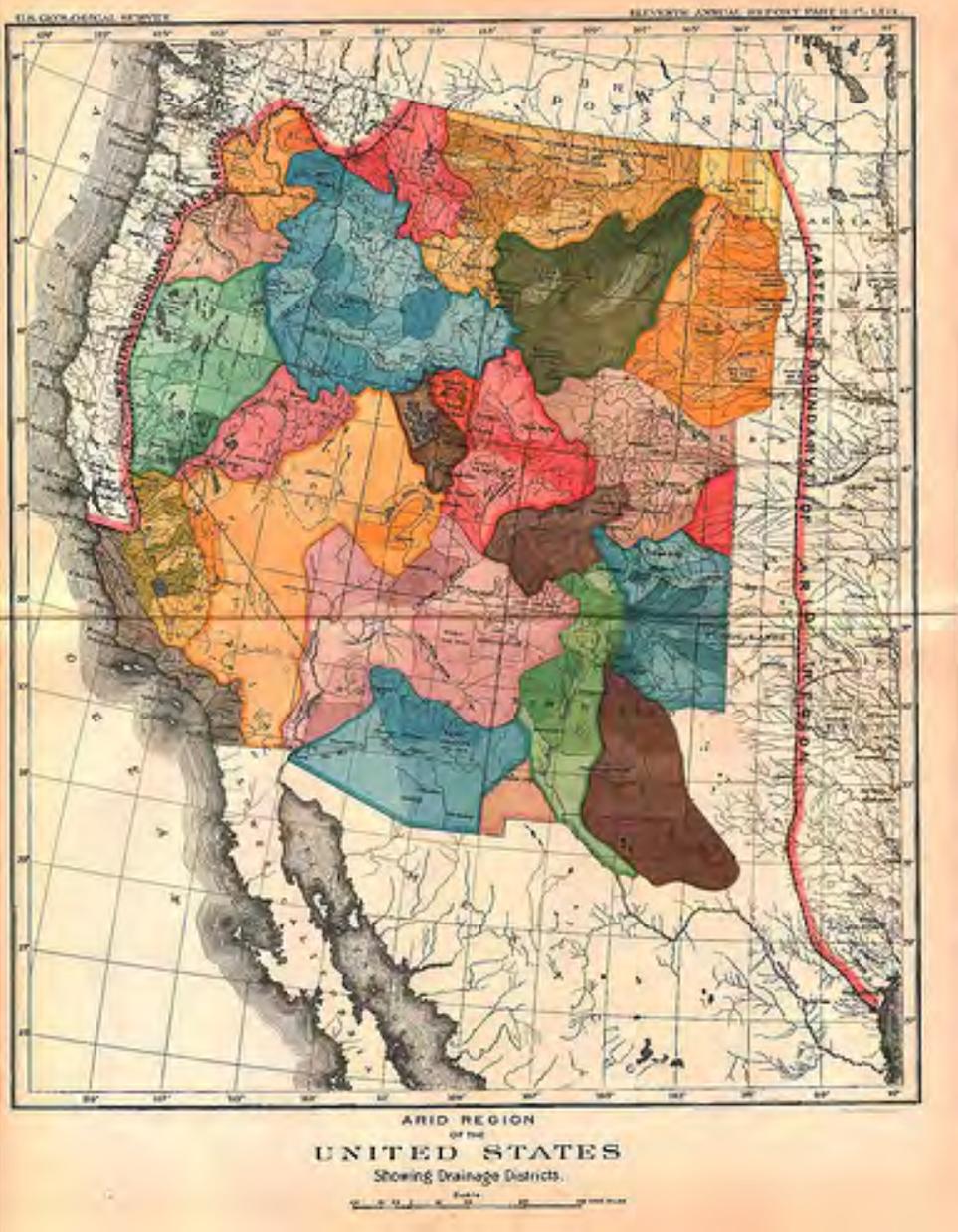
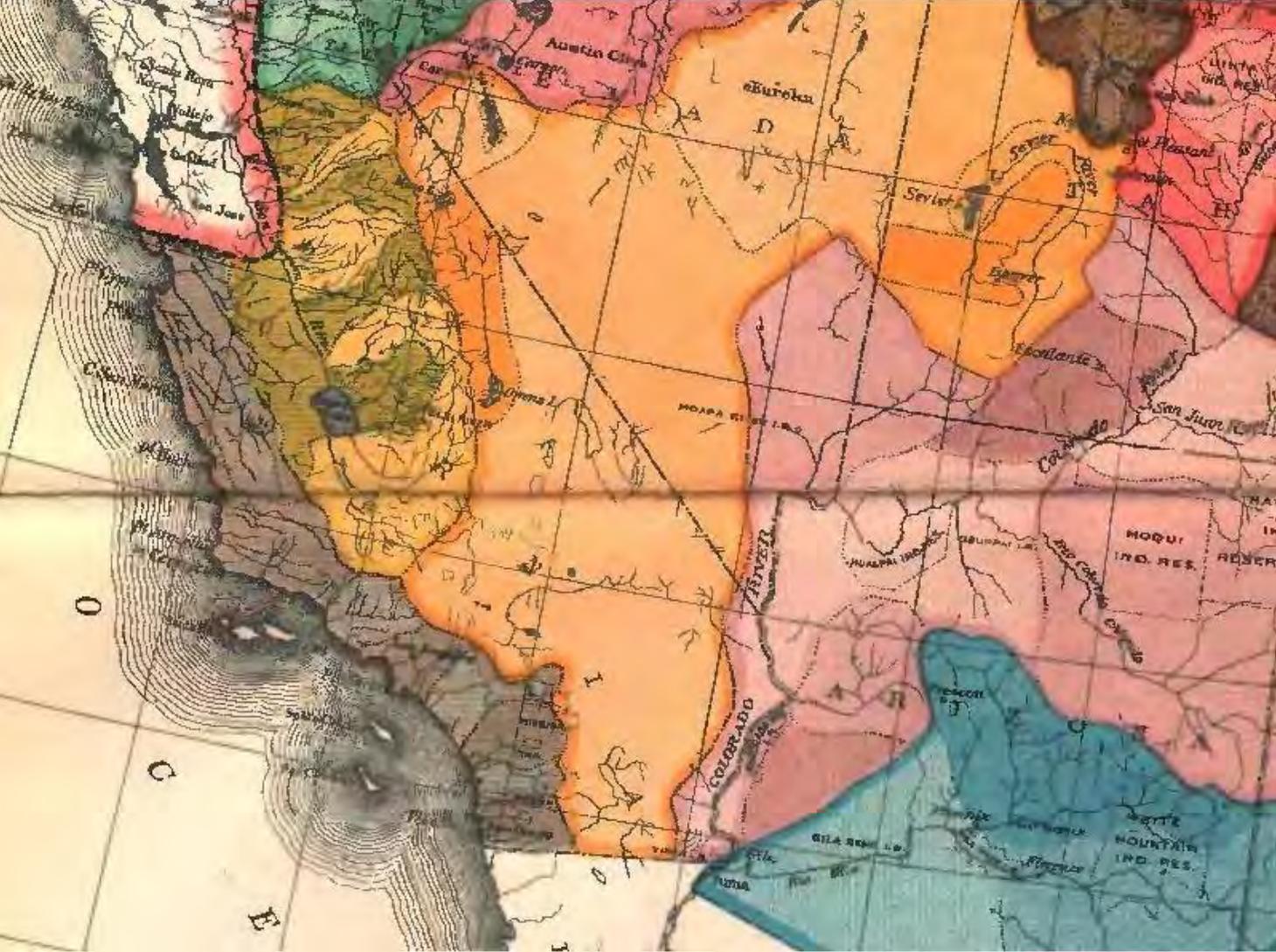
of the states be...  
shed, rather...  
ry. This idea rested...  
at because of an arid...  
organization decided by...  
id lead to water conflict

y, buoyed by Cyrus Thomas and...  
allows the plough, disagreed...  
discredited theory suggested...  
brought into agriculture, mois...  
s exposed to the sky resulting...  
ition. Since railroad companies...  
acts of lands that would have...  
impossible - to capitalize on if...  
it taken root, they used Thomas...  
y sway congressional opinion...  
aries as we see them today.

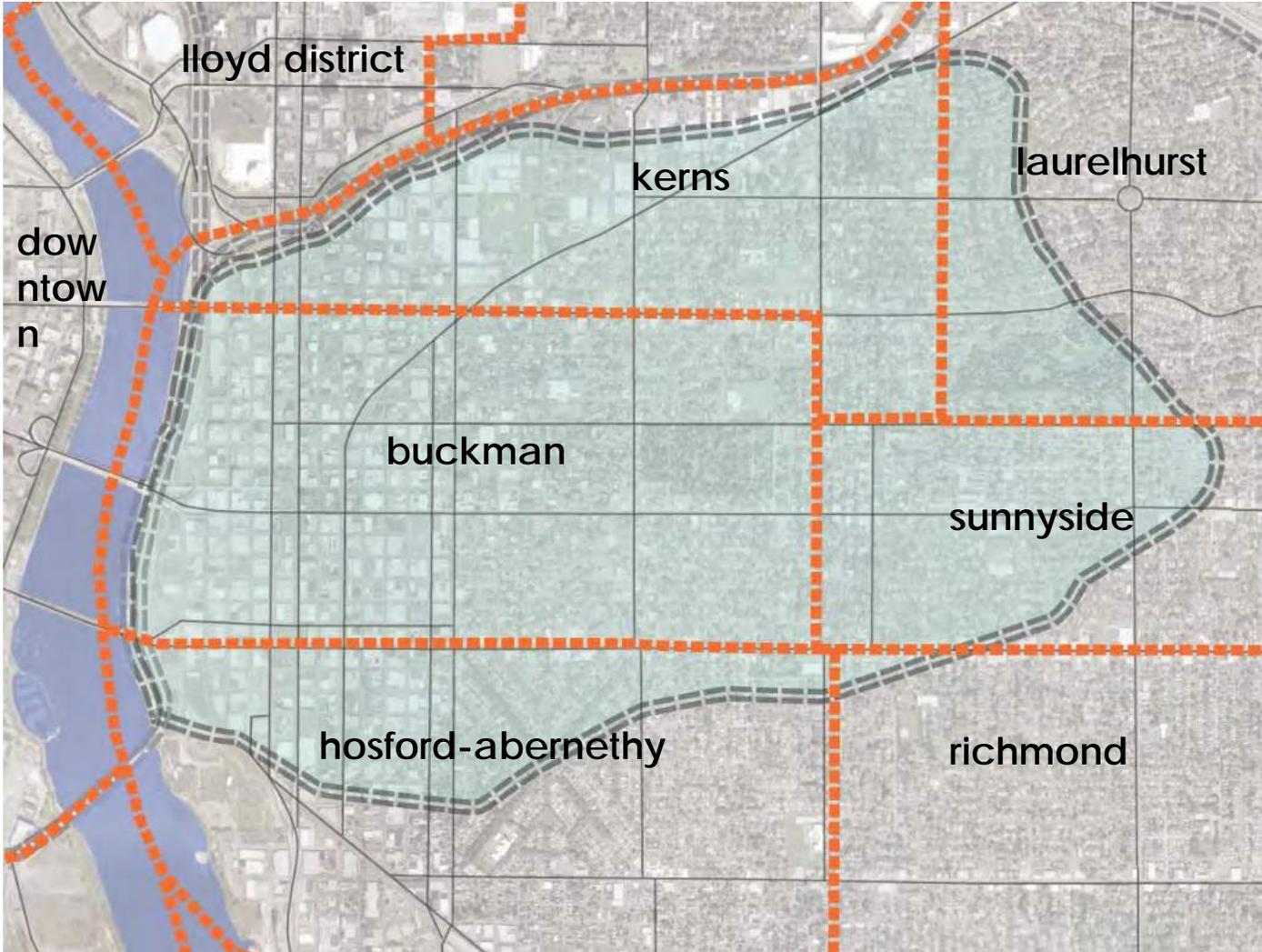


# PRECEDENTS: REDISCOVER PLACES

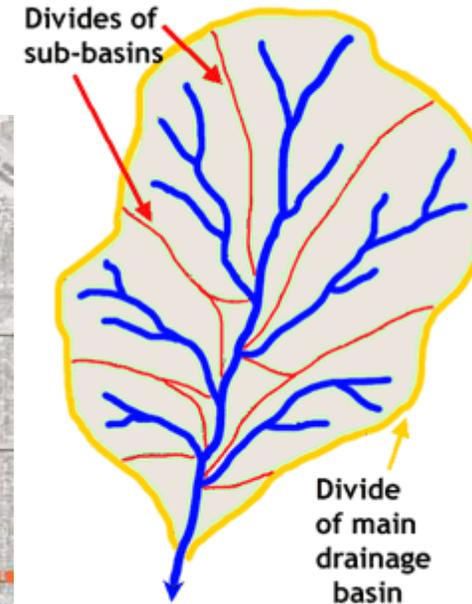
## Watershed Delineations



# NEIGHBORSHEDS



Existing Neighborhoods

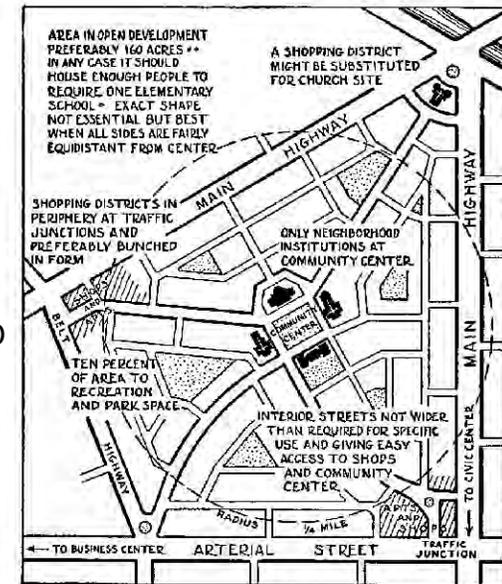


Watersheds  
Organization of areas using natural boundaries

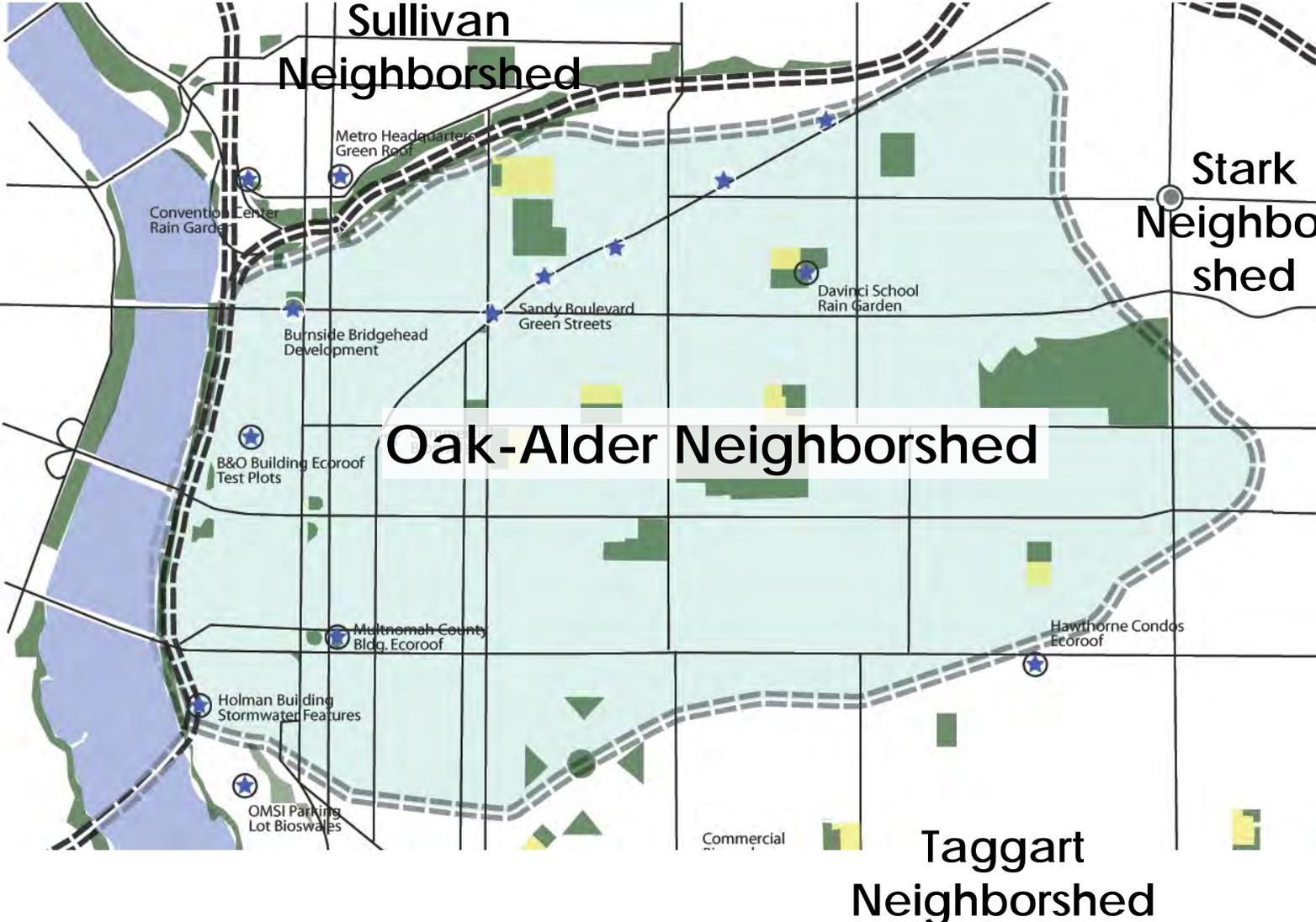
Ability to apply to a variety of scales – nesting (from a basin to a small drainage)

Neighborhoods  
Organization of areas due to common uses and

A scale that is able to be managed and comprehended locally

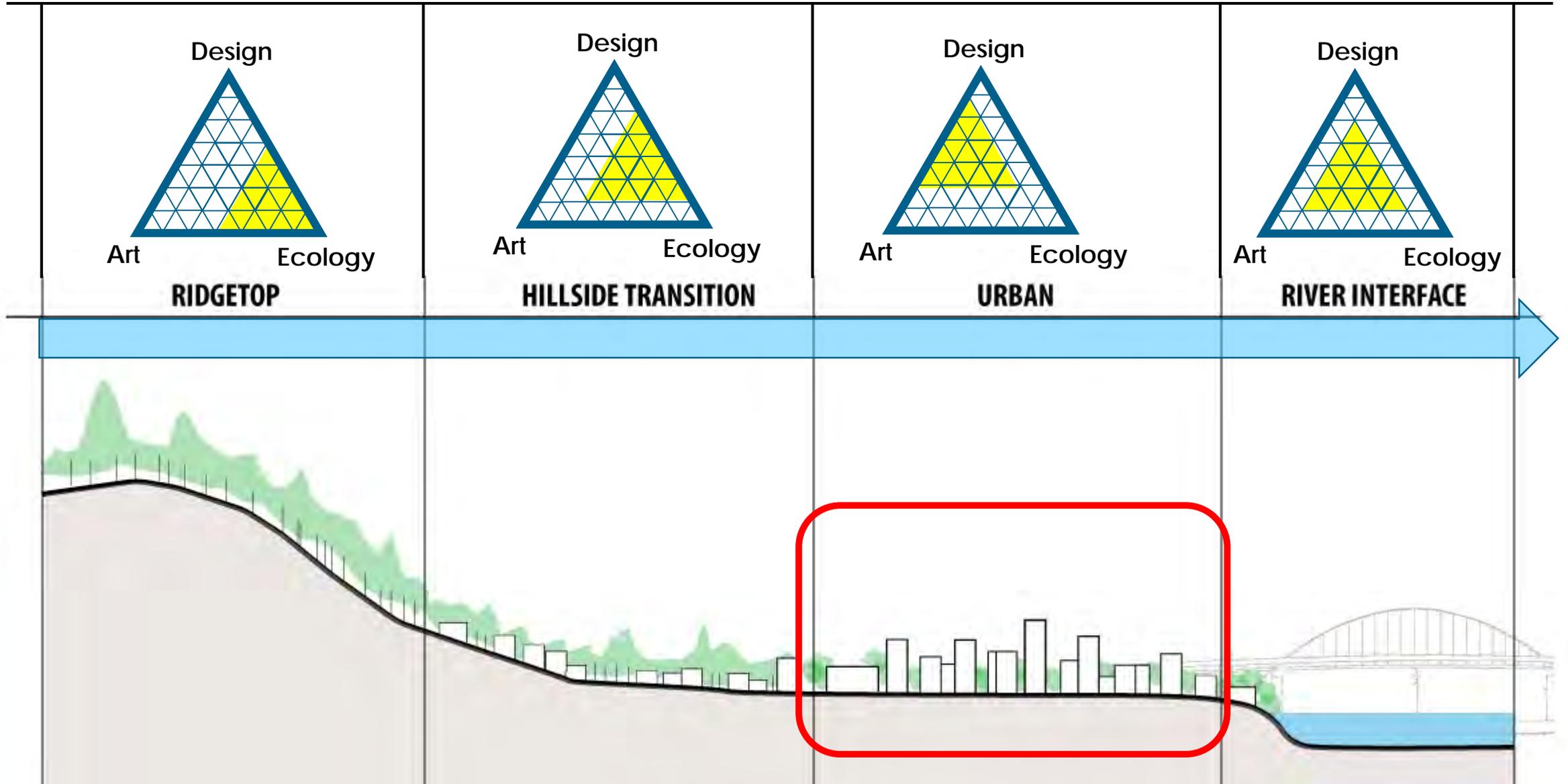


# NEIGHBORSHEDS



Neighborhoods connect residents to natural systems which and increases awareness of greater watershed health.

# INTERVENTION ZONES



# TANNER NEIGHBORSHED

DECORATIVE  
SCULPTURAL  
CASCADE IN ROW



STREAM SCULPTURE  
& NATURE  
SOUNDSCAPE  
INTEGRATED WITH  
BUILDING ENTRY



WALKING/  
JOGGING AUDIO  
-RIDGETOP TO  
RIVER APP



DEPAVE PARKING LOT  
INTO PUBLIC PLAZA  
BETWEEN BUILDINGS



GREEN STREET  
RAIN GARDEN  
PUBLIC PARKLET



INTERSECTION  
REPAIR WITH  
STREAM ROUTE  
(THROUGHOUT)



EXPANDED VEGETATED  
SWALE WITH LINEAR  
POLLINATOR &  
HABITAT CORRIDOR

HIDDEN  
HYDROLOGY  
TOUR MAPS  
& KIOSKS



# Thank you!

MORE INFO:

[www.hiddenhydrology.org](http://www.hiddenhydrology.org)

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Senior Associate

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206.971.5629

